Sandhills ENERGY

May 20, 2026

1041 APPLICATION FOR
Clay Creek, LLC - Lamar SOLAR PROJECT

Sandhills Energy | 1403 Harney Street
Suite 200, Omaha, Nebraska 68102

sandhillsenergy.com

February 19, 2026

Prowers County Land Use
1001 South Main 2nd floor
Lamar, CO 81052
Michelle Hiigel
Land Use Administrator
mhiigel@prowerscounty.net

Dear Michelle,

Sandhills Energy LLC is pleased to submit this 1041application to Prowers County for the proposed 4.8 MWdc solar ground mount currently under development near Lamar Colorado .

What follows is a completed 1041 application and supporting exhibits, including a site layout and schedule, that will assist the county in making its necessary review.

Sandhills Energy is an experienced renewable energy project developer committed to the financial and environmental vitality of rural America. With multiple wind and solar developments in Nebraska and surrounding states, Sandhills Energy is uniquely positioned to provide a local development team to this project.

Thank you for the opportunity to submit this application. We look forward to working with you on this endeavor.

Sincerely,

Marco Giannakouros,

Sandhills Energy
Director, Procurement and Permitting

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Exhibit B

APPLICATION FOR A PERMIT TO CONDUCT A DESIGNATED ACTIVITY OF STATE INTEREST OR TO ENGAGE IN DEVELOPMENT IN A DESIGNATED AREA OF STATE INTEREST

To: Permit Authority, Prowers County

Re: 1041 Application for Clay Creek Energy, LLC - Lamar Solar Array as a matter of state interest.

From: Clay Creek Energy, LLC
Address: 1403 Harney Street#200 Omaha, NE 68102
Telephone: (402) 502-7250

Date submitted: 4/24/2026

Date received and Accepted as Complete:

1. Matter of State Interest.

   The applicant requests that a permit be issued for each othe items checked below:

   A permit to conduct one or more of the following matters of state interest:

   (X) Major Facilities for a Public Utility

   ( ) Development in Areas Containing or Having a Significant Impant upon Natural Resources of Statewide Importance

2. Proposed Activity or Development Construction of a 4.8MW solar ground mount

   General description of the specific activity or development proposed: Please See Supporting 1041 narrative

3. General Description.

   A general, nonlegal description and the popular name, if any, of the tract of land upon which the activity or development is to be conducted: Please see supporting 1041 narrative

4. Legal Description.

   The legal description, including the acreage, of the tract of land upon which the development or the activity is to be conducted, by metes and bounds or by government survey description: (attach additional sheets if necessary): Please see supporting 1041 narrative

5. Owners and Interests.

Set out below the names of those persons holding recorded legal, equitable, contractual and option interest and any other person known to the applicant having an interest in the property described in paragraph 4, above, as well as the nature and extent of those interests for each person, provided that such recorded interests shall be limited to those which are recorded in the Prowers County Clerk and Recorder's Office, the land off of the Bureau of Land Management for this State, the Office of the State Board of Land Commissioners of the Department of Natural Resources, or the Secretary of State's Office of this State (attach additional sheets if necessary): Please see supporting 1041 narrative

6. Submission Requirements:

Submission requirements described in the Guidelines and Regulations for Areas and Activities of State Interest of Prowers County for each of the activities or areas checked in paragraph 1 above, are attached to this application. Those attachments are identified, by letter or number, and described by title below: Please see supporting 1041 narrative

7. Design and Performance Standards.

The attached analyses show that each of the design and performance standards set forth in the regulations for each of the activities or areas checked paragraph 1 above, will be met. The individual analyses are identified by reference to the appropriate paragraph or section numbers corresponding to each standard in the Regulations.

8. Additional Information Requires.

Attach any additional Information required by the Guidelines and Regulations.

9. Duration of Permit.

The Applicant requests a permit for a period of 25 years.

10. Application Fee.

The required application fee is submitted herewith.

APPLICANT:

By: Brian Boerner

Brian Boerner, SVP -Development

Note: Within fifteen (15) days following receipt of a completed application for a permit, the Permit Authority shall determine and set a fee in an amount necessary to cover the costs incurred in the review and approval of the permit application, including all hearings conducted therefor, and shall notify the applicant in writing of said fee and its amount. Not later than the (10) days following receipt of such notice, the applicant shall present to the Permit Authority certified funds in the amount as set. Until the fee is paid to the Permit Authority, the application for a permit shall not be further processed.

CCE - 1041 Permit Final -Application Lamar Solar

Final Audit Report 2026-04-27

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SPECIAL USE PERMIT APPLICATION

Please Attach "Letter of Request" to this Application

PLEASE READ NOTE AND SIGN BELOW:

THE SUBMITTED APPLICATION PACKAGE REQUIRES SPECIFIC REPORTS/INFORMATION WHICH MAY NOT BE ADEQUATE AS DETERMINED THROUGH THE REVIEW PROCESS. ADDITIONAL INFORMATION MAY BE REQUIRED. ALSO, THE ACCEPTANCE OF THE APPLICATION PACKAGE DOES NOT MEAN THE SPECIFIC INFORMATION HAS BEEN APPROVED AND IN FINAL FORM. REVISIONS TO THE INFORMATION AND/OR REPORTS MAY BE REQUIRED. REQUESTS FOR WAIVERS OF ANY OF THESE REQUIREMENTS MUST BE ACCOMPANIED BY A LETTER OF JUSTIFICATION. THE PROWERS COUNTY PLANNING COMMISSIONERS WILL HEAR THE WAIVER REQUEST CONCURRENTLY WITH THE APPLICATION. DENIAL OF THE WAIVER REQUEST SHALL RENDER THIS APPLICATION INCOMPLETE AND RESULT IN THE REQUIREMENT FOR A NEW SUBMITTAL ACCEPTANCE DATE AND REVIEW PERIOD. YOUR SIGNATURE BELOW INDICATES ACCEPTANCE OF THESE CONDITIONS.

Date: May 6, 2026 Brian Boerner

Applicant's / Representative's Signature

Tax parcel number of property (County Assessor's Records) 0000085100

If the land is currently irrigated, will the development of the land be for a use or uses other than irrigated agriculture? _____Yes _____No

Is there a Deed of Conservation Easement attached to this property? _____Yes X No

If YES, attach copy.

1. **Please list the name, address, and telephone number of the following (some may not be applicable):**

   - Applicant(s) Sandhills Energy, LLC

     Address: 1403 Harney Street, Omaha NE 68102

     Telephone Numbers: (402) 502-7250

   - Property Owner (s): State Board of Land Commissioners

     Address: 1127 Sherman Street Suite 300, Denver, CO 80203

     Telephone Numbers: 720.854.3328

   - Applicant's Representative: _____

     Address: _____

     Telephone Numbers: _____

   - Address of Property _____

2. Zone District A-3

3. Legal description of the property (if lengthy, please attach) See Attached

4. Please list any previous applications (e.g., map amendments, zoning variances, special use permits, subdivision variances) in connection with this property N/A

SPECIAL USE APPLICATION CHECKLIST

THE FOLLOWING ITEMS MUST BE SUBMITTED
ALONG WITH THE APPLICATION:
Please include this checklist with your application

_____1 A letter of request (6 copies) that contains:
- _____ Date of application
- _____ Owner and representative (address and phone number)
- _____ Site location and present zoning
- _____ Request and reason for the special use permit
- _____ General Project concepts, including possible impacts on adjoining properties and impacts of county services (roads, fire services etc.)
- _____ Existing and proposed facilities, structures, roads, etc.
- _____ Signature of owner or representative*

* Letter of consent authorizing representative to act in owner's behalf ***must be included***

_____2. Proof of ownership by deed (1 copy)
Deed of Conservation Easement—if applicable (1 copy)

_____3. Proof of water availability if applicable (1 copy)
- _____ Letter from Water District
- _____ Copy of well permit

_____4. Method of wastewater treatment if applicable (1 copy)
- _____ Letter from Sanitation District
- _____ Septic Permit or report of preliminary investigation

_____5. Plot plan (drawn to scale) of the subject property (6 copies) that contains:
- _____ Parcel dimensions
- _____ Parcel acreage
- _____ Existing or proposed structures with dimensions from the structures to the property lines
- _____ North Arrow
- _____ Street Names
- _____ Scale
- _____ Name of access road to site (s)
- _____ Easement(s) (Please submit 3 copies of document)
- _____ Public/Private Road
- _____ Indicate major drainage ways affecting the site and designation of any one-hundred (100) year flood plain on, or adjacent to the site and any existing flood control or water retaining structure.

_____6. Vicinity Map (does not have to be to scale) (6 copies)

_____7. List of all property owners, including addresses, whose property abuts or is within three hundred feet (300 ft.) of the exterior boundaries of the subject property.

_____8. List of all Mineral estate owners entitled to notice pursuant to section 24-65.5-103 or 31-23-215 C.R.S., prepared by an attorney licensed to practice law in the state of Colorado, a title insurance company licensed to do business in the state of Colorado, a certified professional landman certified by the American Association of Professional Landmen, or a title insurance agent licensed in such capacity by the state of Colorado,

_____9. A nonrefundable application fee of $ 100.00 / Site Review $150.00 / $100.00 Public Hearing For a total fee of $350.00

_____10. Any Drawings/Maps larger than 81/2 x l 4 MUST BE FOLDED NO LARGER THAN 12 x 9

THE ABOVE CHECKLIST IS PROVIDED FOR THE CONVENIENCE OF THE APPLICANT AND SHOULD NOT BE USED TO DETERMINE COMPLETENESS OF AN APPLICATION. UPON STAFF REVIEW, ADDITIONAL INFORMATION MAY BE REQUIRED.

SPECIAL USE PERMIT
SUPPLEMENTAL INFORMATION

The submittal deadline is 2:00 p.m. on the 21st day of each month, or if the 21st is a weekend or Holiday the following Monday. Complete applications will be scheduled before the Prowers County Planning Commission normally on the second (2) Wednesday of the following month. The Planning Commission will consider making recommendation on the special use permit at the monthly meeting.

At such time as the Planning Commission schedules the request for a special use permit for public hearing, notice of the public hearing will be sent to property owners whose property abuts or is within three hundred feet (300 ft.) of the exterior boundaries of the subject property along with publication in the newspaper.

After hearing the request at public hearing, the Planning Commission considers the following factors in reaching its decision:

(1) Is the requested use listed as a Special Permitted Use in the district in which the parcel is located?

(2) Will the granting of the Special Use substantially modify the Land Use Plan or the intent, purpose and spirit of this resolution?

(3) Does the Special Use proposal incorporate reasonable means to create an environment harmonious with that of the surrounding properties?

(4) Will the Special Use adversely affect the public health, safety, or welfare?

GUIDELINE

FOR A

"LETTER OF REQUEST"

Where applicable, please provide the following information, in a letter format, to serve as a "Letter of Request" to accompany your application for special use:

1 . Date of Application.

2. Owner and Owner's Representative or Consultant (Addresses and telephone numbers).

3. Site location, dimensions and size of property (in feet and acres), and present zoning.

4. Action requested and the reason/purpose for the request (Incorporate answers to the above four factors considered by the Commissioners).

5. Existing and proposed facilities, structures, roads, etc.

6. **WAIVER OF ANY REQUIRED INFORMATION/REPORTS AND JUSTIFICATION FOR THE WAIVER MUST BE INCLUDED IN THIS LETTER.**

Lamar Special_Use_Permit_Application_Fillable

Final Audit Report 2026-05-07

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NARRATIVE RESPONSE TO 1041 APPLICATION REQUIREMENTS

General Project Concept

The proposed project is an 5.82MWdc 4.8MWac solar ground mount that will be located on approximately 33.68 acres adjacent to the City of Lamar, in Prowers County Colorado. The basic functioning of the facility is as follows: Rows of photovoltaic modules convert sunlight to direct current (DC) electricity. The modules are mounted on a steel racking system secured by foundation anchors. The modules utilize a single axis tracking system to continually orient the panels to track the sun as it moves across the sky. Cables running along the rows transfer the DC electricity to inverters which convert it to alternating current (AC). The electricity is then directed to the project substation at the point of interconnection, where the utility distributes it to the electrical grid for use. The project will also incorporate SCADA, a weather station, and a communication system.

A description of baseline conditions and the impacts that the proposed use may cause

The project area is located in a flat, open pastoral field with the Arkansas River flowing 4.3 miles north. Willow creek is located to the west and Clay Creek to the east. The larger area is characterized by expansive farmland and open plains. Colorado SHPO has concurred with the cultural survey conducted at the site that determined no historic properties are affected. An Environmental Review was also conducted at the project site. Due to the pre-disturbed nature of the project area and the lack of a significant environmental impact, the site has received a “Categorical Exclusion involving no or Minimal Disturbance” from the USDA. A System Impact study has been conducted for the project, and can be viewed in Exhibit S.

Compliance with Prowers County Comprehensive Plan

The development of this array aligns with the stated goal in the Prowers County Comprehensive plan of creating a resilient economy in part through the development of renewable energy operations. It would support the goal of fostering a healthy community through the lowering of CO2 and other pollutants and would provide the county with a way to further diversify its electrical infrastructure.

Location Map/Site Plan

Please see the Site Plan attached to Exhibit A of this Application.

Electrical Planset

Please Reference the electrical plan set included in Exhibit A. All of the added solar infrasturucre will be behind the meter. No new lines will be added to the exisiting transmission service. The aproximate location of the MV line is shown in the site plan. No new substation is required for this project. The solar generation will be collected and stepped up using two 3,000 kVA transformers at 24.9 kV wye, with a total output of approximately 4.8 MW. The customer will be responsible for installing the underground medium-voltage conductors from the transformers, routing overhead to the riser pole, and extending to the GOAB/recloser pole. The utility will be responsible for interconnection from the GOAB/recloser pole to the grid. The interconnection voltage is 24.9kV Y. A detailed study can be found in Exhibit S - System Impact Study. A memo with further detail regarding the electrical infrastructure can be referenced in Exhibit T.

Projected Development Schedule

1. Estimate maximum number of employees, number of shifts and employees per shift during the following phases: construction, operation and maintenance.

The peak activity at the site will see 25-30 employees working 10-hour days, 5 days a week. The operations and maintenance phase will require 1-2 technicians to come to the site at least twice per month.

2. Specify any future phases or extensions of the facility and relationship of the facility (if currently foreseen) to larger programs and plans.

No future phases or extensions are planned at this time.

3. Specify timetable for planning (e.g., federal permits, state permits, local zoning, etc.).

With the exception of the County Special Use Permit, and this 1041 Application, all of the necessary pre-construction permitting has been secured. Upon acceptance of this special use permit and 1041 application, the EPC overseeing this project will begin securing the permits necessary to commence mobilization at the project site (e.g. building, electrical, SWPPP).

4. Estimate beginning and completion of construction and beginning of operation of facility.

Construction is estimated to begin mobilization activities in Q2, 2026 with mechanical completion and energy testing to begin prior to December 31, 2026.

5. Describe support facilities (e.g. pollution control parking areas, landscaping, etc.) to be provided.

The operations and maintenance team will implement a regular vegetation management plan as a part of the larger operations and maintenance schedule at the site.

6. Describe alternatives to meet the objectives of the proposed site selection and construction.

The alternatives to the proposed project would be the production of energy via traditional fossil fuels, or no development at all. Neither of these alternatives provide the environmental, economic, and cost savings benefits to Prowers County that the proposed development will provide. And neither alternative aligns with the intent to create a resilient economy through the development of renewable energy operations, as stated in the Prowers County Comprehensive plan. The most suitable site for this project was chosen in cooperation with the Colorado State Board of Land Commissioners.

The development of this array aligns with the stated goal in the Prowers County Comprehensive plan of creating a resilient economy in part through the development of renewable energy operations. It would support the goal of fostering a healthy community through the lowering of CO2 and other pollutants and would provide the county with a way to further diversify its electrical infrastructure.

Hazards and Emergency Procedures

1. Describe hazards, if any, of fire, explosion and other dangers to the health, safety and welfare of the employees and the general public.

The electrical components of the array pose a fire hazard similar to the other electrical infrastructure in Prowers County. The project will be developed in compliance with the National Electric Code developed by the NFPA. A fire safety plan (Exhibit F) and emergency response plan (Exhibit K) will be employed at the site to further mitigate any potential fire and electrical hazards. Additionally, Sandhills will seek the input and coordination of local emergency and fire services regarding the implementation of these plans, to ensure that the site is set up for efficient and effective responses to any emergency or safety related event that may occur.

2. Describe hazards, if any, of environmental damage and contamination due to materials used at or activities taking place at the proposed facility.

The operation of the Project will not produce any hazardous waste or wastewater. The project will be operated and maintained in accordance with industry best practices. There should be no significant environmental liabilities associated with cleanup or remediation.

3. Describe emergency procedures to be used in the event of fire, explosion or other event which may endanger the public health, safety and welfare.

Please reference the preliminary Emergency Response plan attached to Exhibit K.

4. Describe any prevalent natural hazards that will affect or be affected by development, and describe mitigating measures to be taken to reduce danger due to such natural hazards.

The proposed development will not have a direct effect on natural hazards in the area. The most likely natural hazards to affect the development would be severe weather events. Our operations team will be continuously monitoring both the site and forecasted weather events. During these times, the tracking can be placed in a "stowed" position to mitigate the worst effects of severe weather upon the project. Additionally, The O&M team will make a site visit directly following any severe weather events to inspect and properly resolve the aftereffects.

(i) Delineation of base area (that area likely to be subject to land use changes as a result of the project).

Please reference the site Plan attached in Exhibit A for the proposed project area.

(A) Map showing base area; describe how the determination was made.

For a map of the base area, please reference the site plan attached to Exhibit A. The site plan encompasses the total area that will be involved in the construction and daily operation of the solar array, including the perimeter fence. Changes to land use are not expected outside of the development indicated in the fenced in area, and the interconnection with the utility.

(B) Map showing all special districts, (school, fire, water sanitation, etc.) affected by the proposal.

As indicated by the Colorado Department of Local Affairs Special Districts Map, the following special districts fall within the project area: Lamar RE-2 School District, Prowers Soil Conservation District, Lower Arkansas Valley Water Conservancy District (Exhibit N).

(ii) Delineation of impact area (that area whose physical and socio-economic environment is likely to be impacted, beneficially and adversely, by the site selection and construction of the proposed facility).

The primary impact area will be the project site itself, and the municipal city limits of the City of Lamar Colorado.

(iii) Objectives of the proposed site selection and facility.

The objective of the proposed facility, is the construction and operation of a ground mounted solar array that that can deliver low pollution, cost effective energy to the utility, that can then be directly distributed to the surrounding community.

(A) Describe the relationship of project to local land use policies and comprehensive plans and to policies and plans adopted or under preparation by federal, state and other affected local governmental agencies.

The development of this array aligns with the stated goal in the Prowers County Comprehensive plan of creating a resilient economy in part through the development of renewable energy operations. It would support the goal of fostering a healthy community through the lowering of CO2 and other pollutants and would provide the county with a way to further diversify its electrical infrastructure.

B) Describe the relationship of the project to other existing and planned utility facilities of similar nature, other communication or energy generation and transmission facilities, local government capital improvement programs, and special district expansion programs.

The project will be integrated into and will produce power alongside the existing City of Lamar electrical infrastructure.

(iv) Description of need for project

(A) Describe briefly why the public convenience and necessity require the facility of the size and nature proposed be constructed on the site proposed.

The development of this array is a key part of the Arkansas River Power Authority's strategy to maintain low electricity rates for its customers including the City of Lamar. The set rate in the proposed power purchase agreement will insulate the community against future uncertainty and cost increases in the energy industry.

B) Sources of demographic and economic data and methods of analysis.

The Following Sources were utilized to develop the demographic and economic narrative in this application:

City of Lamar. (2025). 2025 Lamar Comprehensive Plan. https://ci.lamar.co.us/files/75b02685c/Lamar+2025+Comprehensive+Plan_spread.pdf

US Census Bureau. (2024) 2024 ACS 1 Year Estimate Table B19083. GINI index of Income Inequality. https://data.census.gov/table/ACSDT5Y2020.B19083

Move, Inc. Lamar, CO housing market overview. https://www.realtor.com/realestateandhomes-search/Lamar_CO/overview

(C) Market function (i.e. what user needs and patterns will project fulfill).

As stated earlier in this form, the project aligns with the Prowers County Comprehensive plan of creating a resilient economy in part through the development of renewable energy operations. Additionally, the set rate in the proposed power purchase agreement will insulate the community against future uncertainty and cost increases in the energy industry.

(v) Description of support facilities needed

(A) Type of water quality control.

A stormwater discharge permit will be pulled to address discharge during construction activities. After commissioning, impacts to water quality are not anticipated during the day-to-day operation of the site.

1.Describe proposed sewage treatment facilities and nonpoint source controls. ii. Describe pollutant loads (point and non- point sources) expected directly from development. Specify seasonal variations.

Sewage treatment facilities will not be applicable to this project. The project is not expected to be a significant source of pollutants. The development of this project will likely result in a net reduction of air pollution over the life of the array.

(B) Public services and facilities.

1. Estimate police and fire protection requirements.

The project will not require police and/or fire protection resources during the regular day-to-day construction or operation of the facility. Please reference Exhibit U, for confirmation from the Prowers County Sherrif, that additional resources will not be required for the project. In the event that an emergency occurs at the site, police and fire protection may be required. Response protocols at the site will follow the guidelines laid out in the Fire Safety Plan (Exhibit F) and Emergency Response plan (Exhibit K), in coordination with local fire and emergency services.

2. Estimate public road maintenance requirements.

The day-to-day operation of the facility will not have a significant impact on public roads. The only vehicles entering the site will be the operations and maintenance crew, during repairs and regularly scheduled maintenance. Sandhills is open to signing a road agreement if the county feels this is necessary.

3. Estimate educational and health service requirements.

The proposed project will not have a significant need for educational or health services facilities.

4. Estimate facilities and services required to provide adequate water supply and sewage treatment.

No sewage treatment will be necessary. Water facility use at the site will be minimal if needed at all.

(vi) Description of employment and economic opportunities.

(A) Describe capital investment in facility.

The estimated total cost for this project is $11,992,022

(B) Estimate anticipated revenues to local, state and federal governments, special districts.

- **Colorado state tax assessment annual levelized equivalent is estimated to be $23,118 per the below schedule**

Year	Property Tax
Year 1	$21,447
Year 2	$20,859
Year 3	$20,257
Year 4	$20,460
Year 5	$20,664
Year 6	$20,871
Year 7	$21,080
Year 8	$21,291
Year 9	$21,503
Year 10	$21,719
Year 11	$21,936
Year 12	$22,155
Year 13	$22,377
Year 14	$22,600
Year 15	$22,826
Year 16	$23,055
Year 17	$23,285
Year 18	$23,518
Year 19	$23,753
Year 20	$23,991
Year 21	$24,231
Year 22	$24,473
Year 23	$24,718
Year 24	$24,965
Year 25	$25,215
Year 26	$25,467
Year 27	$25,721
Year 28	$25,979
Year 29	$26,238
Year 30	$26,501
Total	**$693,153**

- **Describe how that anticipated tax revenue is likely to be split up**

Based on the Prowers County 2024 Mill levies, the tax revenue is anticipated to be split up as follows:

Prowers County 33%

Lamar School Districts 26%

Special Districts 41%

(C) Describe employment opportunities.

Both Sandhills and our EPC partners seek to hire as many local laborers as possible from the communities where our projects are developed. Any work that needs to be subcontracted during the development and construction phases of the project, will also prioritize partnerships with local companies in Lamar, CO and Prowers County.

(vii) Description of visual conditions (base area).

(A) Map area within view of project.

(B) Map access and travel routes, public areas, residential areas that will have a view of the project.

For a detailed account and mapping of the base area and surrounding properties, please reference the Phase 1 ESA attached in Exhibit O.

(viii) Description of noise conditions (base area). Describe and map possible expected noise levels by immediate and future facility operation.

The day-to-day operation of the facility should not pose a significant noise impact to the surrounding area. With a setback of 500ft to the nearest non-participating residence, any noise coming from the transformer or tracker motors would be well below 45 dB and would most likely be masked by other ambient noise. The nearest residence is ~1,300ft away. At that range, any noise from the equipment would be totally imperceptible. The majority of the noise during the temporary construction period will be the driving of piles. This phase of construction is expected to last approximately 6 weeks, with shifts of 9-10 hours per day. Currently the nearest occupied residence appears to be approximately ~1,300 from the property line. At this distance, even the loudest equipment during the temporary construction phase would be around 55 dB or below. Please reference Exhibit V, a noise study that was conducted for a PD10, the machine that will be driving piles at the site. At 100ft, the machine produces 75 dB. Sound diminishes by ~6 dB each time distance is doubled. At ~1,300ft, the machine would produce approximately 52.7 dB. Which would be equivalent to the sound of a dishwasher or refrigerator running.

(ix) Description of socio-economic environment (impact area).

(A) Characteristics of the existing population.

According to Lamar Colorado's 2025 comprehensive plan. Median age in Lamar, CO was 33.1 years. Median household income level in Lamar, CO is $61,122, with an average of 2.6 people per household. 31% of workers have a high school diploma or equivalent certificate. 33% have attended some amount of college. 8% have a bachelor's degree, with 12% of these workers having achieved a post graduate degree after college. In terms of generational demographics, the largest groups in Lamar are Gen Z, Millennials, and Gen X. The Ethnic makeup of Lamar is 53% White, 45% Latino/A and 2% Black (City of Lamar. Lamar 2025 Comprehensive Plan). According to the 2023 ACS survey, the Gini coefficient in Colorado is .462 (U.S. Census Bureau. 2024 ACS 1 Year Estimate. Table B19083).

(B) Current employment.

According to the City of Lamar 2025 Comprehensive Plan, the major employment sectors in Lamar are as follows. The largest employment sector is Education, Health and Social Assistance with 29% of workers being employed in this sector. The next three largest employment sectors are relatively equal in size: Retail Trade (11%) , Arts, Entertainment, Recreation, and Accommodation (11%), and Construction (9%). The unemployment rate in Lamar Colorado currently stands at 4% (City of Lamar. Lamar 2025 Comprehensive Plan).

(C) Inventory local governments and special districts providing services in base areas.

The project area is under the Jurisdiction of the Prowers County Rural Fire Dept and The Prowers County Sheriff's Office. The hospital nearest to the project is Prowers Medical Center. Local Fire and Emergency services would not be required during the regular operation of the site; they would only be needed in the event of an emergency at the project site. Roads that will be utilized to enter the site are maintained by a combination of the City of Lamar, Prowers County, and the CDOT. The project will utilize the City of Lamar electrical grid to distribute energy produced at the site. If the project requires repair or maintenance, this will be conducted by a dedicated O&M team that will make routine inspections at the site.

(D) Housing

There were 44 houses available for sale in Lamar, CO as of November 5, 2025. Price range for these houses was $12,000 – $1.75M. Median sale price was $197K (realtor.com). 72% of the Houses in Lamar Colorado are single family homes, 15% are multi-unit homes, and 13% are mobile homes. 69% of these houses are owner occupied, with the remainder of 31% being renter occupied (City of Lamar. Lamar 2025 Comprehensive Plan).

(E) Existing Transportation Network.

Please Reference the CDOT Level 2 Traffic Study included in Exhibit T.

(F) Description of historical and archaeological

resources.

1. Describe historical and archaeological sites by means of completing state

inventory forms and submit these to the Historical Society for evaluation.

2. Describe resources individually and as they relate to the community; include

photos wherever possible.

Please see the Cultural Resources Survey attached in Exhibit L, and the Letter of Concurrence from Colorado SHPO in Exhibit M, that indicate a finding of "No Historic Properties Affected".

Atmospheric Conditions and Background Ambient Air Quality

As mentioned by the county in previous review comments, the main impact/concern in regards to ambient air quality during the construction phase of the project will be dust. During the initial construction phase, dust suppression will be implemented as required and/or by AHJ instruction. Typical measures may include: Applying water on unpaved access roads and disturbed areas; Maintaining reduced vehicle speeds within the construction limits; temporarily limiting earthwork or grading activities during high-wind events; and tracking pads at exits to prevent mud and dust from being carried onto public roads.

Atmospheric Conditions and Background Ambient Air Quality (Continued)

The Site Superintendent will direct dust-control activities as needed to maintain compliance and minimize impacts to adjacent properties or roadways. We do not anticipate dust to be a concern during the day-to-day operation of the array. Following comissioning, The operation of the proposed solar array will not emit air pollutants. The array will, however, offset pollutants that would have been produced by other conventional sources of fuel, such as coal or natural gas. The result will be a net positive reduction in overall pollutants. Please also reference the revegetation plan (Exhibit Q) which will also reduce the amount of freely available dust following comissioning of the solar array.

Economic Impact

The primary economic benefits of this project will be tax revenue at ~$23,118 and reduced energy costs for local residents and businesses. The development of this solar array is a key component of the Arkansas River Power Authority's (ARPA) strategy to maintain low electricity rates for its customers, including the City of Lamar and Prowers County.

Based on the rate established in the proposed power purchase agreement, ARPA's long-term financial model projects that, despite increasing transmission costs and inflationary pressures, ARPA can maintain current rates through 2030. This includes maintaining the 8.5% rate decrease implemented in 2025. Furthermore, the addition of solar generation will insulate ARPA communities against future market uncertainty, such as cost increases and evolving renewable portfolio requirements.

The project will also require ongoing operations and maintenance throughout its 25-year lifespan, creating local job opportunities in vegetation management and solar array maintenance.

Environmental Surveying

Please reference the Environmental Review attached in Exhibit S for a detailed summary of site characteristics, potential presence of endangered species and the mitigations that will be implemented. The project has been approved for a Department of Energy Categorical Exclusion B5.16 by the USDA.

Erosion Control

Please reference the erosion control measures incorporated into the plan set in Exhibit A.

Applicant shall provide evidence of liability insurance to cover loss or damage to persons and structures during construction and operation of the Solar Energy Facility

Please reference the Proof of Liability Insurance attached in Exhibit B.

Zoning of Property

The proposed parcel for the project is currently zoned A-3 (Fragile Land).

Proof of Ownership

Please reference the Lease Agreement attached in Exhibit C.

Geotechnical Report

Please reference the Geotechnical Report attached in Exhibit D.

Visual Resources

Please reference the glare study in Exhibit F which indicates that the solar array will not be a significant source of glare for adjoining properties. Additionally, our proposed design adheres to the 500ft setback for all nonparticipating residences stated in the county zoning regulations.

Reclamation Potential

In contrast to more permanent residential and commercial developments, the decommissioning of a solar array is an efficient process that allows a full return of the underlying land to its previous use following decommissioning. Any initial reduction in agricultural productivity is a short term-effect, which is manageable through proper decommissioning, planting of proper seed mixes during the lifetime of the project, and proper mowing and fertilizing.

Maintenance of Solar Collectors

The solar collector will be maintained and operated in accordance with manufacturer specifications, OwnerEnvironmental Health and Safety Plans, and applicable Occupational Health and Safety Administration (OSHA)requirements to ensure the safety of site personnel and the public. Please reference Exhibit G for a general O&M Schedule.

Decommissioning

The decommissioning of a solar array is an efficient process that allows a full return of the underlying land toits previous use following decommissioning. Sandhills will prioritize reuse and recycling over disposal of the materials removed. We will restore the land to its original condition for its original use, unless otherwise directed by the landowner. Subject to landowner preference, restoration will include a return to the same or functionally similar pre-construction drainage patterns including farm drainage tiles, decompaction of soil, and seeding with an appropriate, low-growing vegetative cover, stabilizing soil, enhancing soil structure, and increasing soil fertility. For further details, please reference the preliminary decommissioning plan attached in Exhibit I. A final version, stamped by a PE and approved by Prowers County, will be developed prior to construction.

Guarantee of Financial Security

Sandhills commits to providing a guarantee of financial security deemed adequate and payable to Prowers County in the form of letter of credit, cash or bond ("Financial Assurance") within the first ten (10) years of the project. Financial Assurance shall be secured by Sandhills or its successors and assigns, for the purpose of adequately performing decommissioning. Estimated cost shall be based on the cost estimate provided in Sandhills' Decommissioning Plan. The Decommissioning Plan shall be prepared by an independent registered professional engineer licensed in the State of Colorado and shall take into account the salvage values of the Solar Energy Facility components. The cost estimate will be updated by Sandhills every five (5) years after year 10 of operations. Should there be a dispute in the cost estimate, Prowers County may retain outside agencies or technical consultant to provide a cost estimate, at the sole cost and expense of Sandhills.

Community Involvement

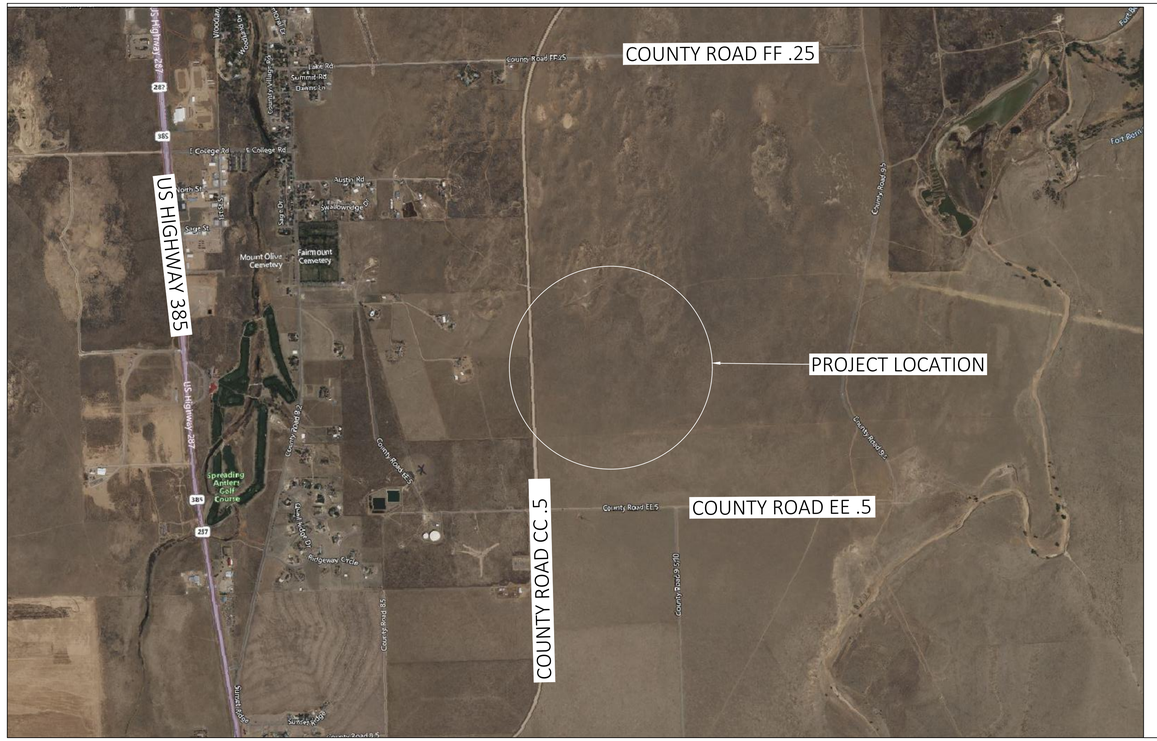
Sandhills is currently in discussions with Lamar Community College, to develop opportunities for the project site to become an educational tool, and potentially sponsor renewable energy related traning for students. The Sandhills team seeks to be an active partner in the communities where we build our projects. Our team is receptive to discuss additional opportunities for community engagement that Prowers County staff feel might be a good fit for this project.

Housing for Project Construction Workers and Supervisors

The crew's size at the height of construction will consist of roughly 15-20 workers, with housing arrangements being made on their own. Ideally withing 30 minutes of the site. Sandhills encourages its contractors to support local lodging (Hotels, campgrounds, etc.).

EXHIBIT A - SITE PLAN

Sheet List Table	
Sheet Number	Sheet Title
01	TITLE SHEET
02	NOTES AND SEQ
03	EXISTING CONDITIONS AND REMOVALS PLAN
04	SITE PLAN
05	GRADING PLAN
06	EROSION AND SEDIMENT CONTROL PLAN
07	RESTORATION AND LANDSCAPING PLAN
08	RESTORATION AND LANDSCAPING DETAILS
09	DETAILS 1
10	DETAILS 2
11	DETAILS 3
12	DETAILS 4
13	DETAILS 5

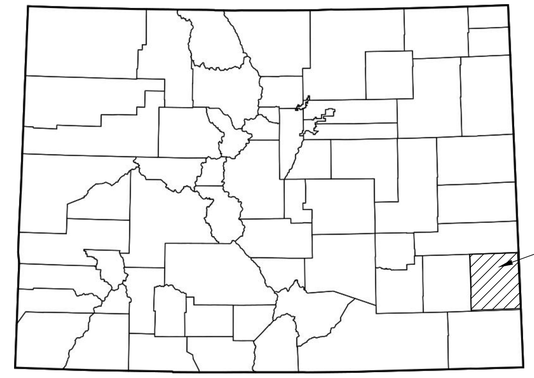


INTERCONNECTION SYSTEMS, INC.

LAMAR SOLAR

LAMAR, PROWERS COUNTY, COLORADO

IFP - ISSUED FOR PERMITS



N

PROJECT LOCATION, REFERENCE MAP

LEGEND

	EXISTING	PROPOSED
PROPERTY BOUNDARY		
PARCEL LINE		
MINOR CONTOUR	952	952
MAJOR CONTOUR	950	950
FENCE		
CONCRETE		
TREES		
UNDERGROUND ELECTRIC	UG	
OVERHEAD ELECTRIC	OE	
WETLAND BOUNDARY	W	
GRAVEL ROAD		
SILT FENCE		SF SF
SEDIMENT CONTROL LOG		
CONSTRUCTION ENTRANCE		

ENGINEERING SEAL(S) & SIGNATURE(S)

COLORADO LICENSED
DEREK R. LASH
67079
04/07/2026
PROFESSIONAL ENGINEER

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF COLORADO.

DEREK R. LASH, PE
LICENSE #67079

COLORADO 811
KNOW WHAT'S BELOW. CALL BEFORE YOU DIG.

GENERAL NOTES

EXISTING UTILITIES

THE LOCATION OF UNDERGROUND FACILITIES AND/OR STRUCTURES AS SHOWN ON THE PLANS ARE BASED ON AVAILABLE RECORDS AT THE TIME THE PLANS WERE PREPARED AND ARE NOT GUARANTEED TO BE COMPLETER OR CORRECT.

THE SUBSURFACE UTILITY INFORMATION SHOWN IS UTILITY QUALITY LEVEL D, AS DETERMINED USING THE GUIDELINES OF "CI/ASCE 38-02 STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL UTILITIES 72 HOURS PRIOR TO CONSTRUCTION TO DETERMINE THE EXACT LOCATION OF ALL FACILITIES AND TO PROVIDE ADEQUATE PROTECTION OF SAID UTILITIES DURING THE COURSE OF WORK.

CONSTRUCTION NOTE

CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO MAINTAIN OPERATION OF EXISTING UTILITIES THROUGHOUT THE DURATION OF THE PROJECT. IN THE EVENT THAT AN INTERRUPTION OF SERVICE IS UNAVOIDABLE IN ORDER TO COMPLETE THE WORK, CONTRACTOR SHALL PROVIDE ADEQUATE NOTIFICATION TO ALL AFFECTED ENTITIES A MINIMUM OF 3 WORKING DAYS IN ADVANCE OF ANY INTERRUPTION.

GOVERNING SPECIFICATIONS

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO COLORADO MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING FIELD MANUAL FOR TEMPORARY CONTROL ZONE LAYOUTS.

THE 2025 EDITION OF THE COLORADO DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" SHALL GOVERN.

"THE INFORMATION SHOWN ON THIS DRAWING CONCERNING TYPE AND LOCATION OF UNDERGROUND UTILITIES IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATIONS AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. IF ADDITIONAL UTILITIES ARE KNOWN TO EXIST IN THE PROPERTY, THE OWNER WILL PROVIDE EXISTING PLANS OF OTHER UTILITIES SERVING THE SITE AND THE BUILDING THAT OTHERWISE CANNOT BE LOCATED BY A VISUAL INSPECTION OF THE PROPERTY OR OF WHICH THE SURVEYOR WOULD HAVE NO KNOWLEDGE".

EOR water ecology community
EMMONS & OLIVIER RESOURCES, INC.
1919 UNIV. AVE. W. #300 ST. PAUL, MN
TEL: 651.770.8448 WWW.EORINC.COM

DATE	NO.	DESCRIPTION
04/07/2026	1	IFP - ISSUED FOR PERMITS
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DESIGNED BY: ERK
DRAWN BY: IJA
CHECKED BY: DRL

EOR JOB #1675-0050

ISI SOLAR

LAMAR SOLAR
LAMAR, PROWERS COUNTY, COLORADO

Pivot Energy

INTERCONNECTION SYSTEMS, INC. CENTRAL CITY, NE 68826

TITLE SHEET

SHEET 01 OF 15

Plot Date: 04/07/2026
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GENERAL SITE WORK NOTES

1. CONTRACTOR TO VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO BEGINNING ANY CONSTRUCTION BY CALLING UTILITY NOTIFICATION CENTER OF COLORADO (303) 232-1991.
2. VERIFY HORIZONTAL LOCATION AND ELEVATION WHERE A CONNECTION TO EXISTING PAVEMENT, STRUCTURE, PIPE OR OTHER SITE FEATURE IS TO BE MADE. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR VARIATIONS FROM THE PLANS.
3. REFERENCE TO COLORADO DOT SPECIFICATIONS SHALL MEAN 2025 SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY APPROPRIATE ADDITIONAL PERMITS. THIS MAY INCLUDE FOR DEWATERING, BURNING, OR OTHER GRADING ACTIVITIES.

STORM SEWER NOTES

1. STORM SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH CDOT DIVISION 600 SPECIFICATIONS.

GENERAL UTILITY NOTES

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING UTILITY LOCATIONS AND INVERTS, SHOWN OR NOT SHOWN. ANY DISCREPANCY BETWEEN PLANS AND FIELD CONDITIONS SHALL BE REPORTED TO THE ENGINEER IMMEDIATELY.
2. ALL UTILITY WORK SHALL BE PERFORMED IN ACCORDANCE WITH PROWERS COUNTY AND CDOT REQUIREMENTS.
3. UTILITY TRENCHES SHALL BE COMPACTED TO 95% STANDARD PROCTOR MAXIMUM DRY DENSITY (ASTM D698.78 OR AASHTO T-99) FROM THE PIPE ZONE TO WITHIN THREE FEET OF THE GROUND SURFACE AND 100% STANDARD PROCTOR IN THE UPPER THREE FEET UNDER WALKS AND PAVEMENTS, AND 90% STANDARD PROCTOR IN LANDSCAPE AREAS.

STORMWATER MANAGEMENT PLAN (POLLUTION PREVENTION) NOTES

1. THE CONTRACTOR SHALL IMPLEMENT EROSION CONTROL IN ACCORDANCE WITH COUNTY AND STATE REQUIREMENTS AND AS SHOWN ON PLANS.
2. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES, INCLUDING THE REMOVAL OF ACCUMULATED SEDIMENT AT ½ CAPACITY FROM BMPS DURING THE DURATION OF CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED.
3. CONTRACTOR TO ADHERE TO ALL COUNTY AND STATE PERMIT REQUIREMENTS, INCLUDING THE REQUIREMENT TO MINIMIZE THE AREA DISTURBED BY GRADING AT ANY GIVEN TIME AND TO COMPLETE TURF RESTORATION WITHIN THE TIME REQUIRED BY THE PERMIT AFTER COMPLETION OF GRADING OF AN AREA.
4. ALL CONSTRUCTION ENTRANCES SHALL BE SURFACED WITH CRUSHED ROCK (OR APPROVED EQUAL) ACROSS FULL WIDTH FROM ENTRANCE POINT TO 50 FEET INTO THE CONSTRUCTION ZONE.
5. ALL EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH STATE AND COUNTY REQUIREMENTS.
6. THE CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES, INCLUDING THE REMOVAL OF ACCUMULATED SILT IN FRONT OF SILT FENCES, SEDIMENT CONTROL LOGS, ETC. DURING THE DURATION OF THE CONSTRUCTION.
7. MAINTAIN EXISTING EROSION CONTROL. RE-ESTABLISH ANY EXISTING EROSION CONTROL DISTURBED BY CONSTRUCTION.
8. CONTRACTOR SHALL PROVIDE ADDITIONAL TEMPORARY EROSION CONTROL MEASURES AS REQUIRED FOR CONSTRUCTION.
9. REMOVE ALL EROSION CONTROL MEASURES AFTER THE WORK HAS BEEN ACCEPTED BY THE COUNTY, STATE, AND PROJECT ENGINEER.
10. THE CONTRACTOR SHALL REMOVE ALL SOILS AND SEDIMENT TRACKED ONTO EXISTING STREETS AND PAVED AREAS WITHIN 24 HOURS OF NOTICE IN ACCORDANCE WITH COUNTY AND STATE REQUIREMENTS.
11. IF BLOWING DUST BECOMES A NUISANCE, THE CONTRACTOR SHALL APPLY WATER FROM A TANK TRUCK TO ALL CONSTRUCTION AREAS.
12. STOCKPILED SOIL IS ONLY PERMITTED IN APPROVED LOCATION(S) AT SLOPES EQUAL TO OR FLATTER THAN 2h:1v. ALL STOCKPILED SOILS SHALL BE PROTECTED WITH TWO ≥ 6" DIAMETER COMPOST/ROCK LOGS AND DAILY SURFACE PROTECTION.
13. NO RE-FUELING OF TRUCK AND CONSTRUCTION EQUIPMENT IS PERMITTED ANYWHERE ON SITE EXCEPT IN THE VICINITY OF FIELD APPROVED STAGING AREA(S). A CONSPICUOUSLY LABELED SPILL KIT MUST BE ON SITE AND BE KEPT IN THE VICINITY OF THE STAGING AREA(S).
14. TRUCK AND CONSTRUCTION VEHICLE WASHING AND DEGREASING IS PROHIBITED ON SITE, EXCEPT WHERE NOTED ON THE SWMP STAGING AREA NOTES. CONSTRUCTION EQUIPMENT MUST BE THOROUGHLY CLEANED PRIOR TO ACCESSING THE SITE TO LIMIT THE SPREAD OF INVASIVE SPECIES.
15. NO HAZARDOUS MATERIALS (OIL, GAS, FLUIDS, PAINTS, LUBRICANTS, ETC.) ARE TO BE STORED ON SITE.
16. CONCRETE AND OTHER WASHOUT LIQUIDS SHALL BE CONTAINED IN A LABELED FACILITY. NO WASHOUT MATERIAL SHALL DISCHARGE TO GROUND OR PAVEMENT SURFACES.
17. ANY SEDIMENT REMAINING IN PLACE AFTER THE EROSION CONTROL DEVICE IS NO LONGER REQUIRED SHALL BE GRADED TO CONFORM WITH THE EXISTING GRADE, PREPARED, AND SEEDED WITH THE APPROPRIATE SEED MIX AS NOTED ON THE PLANS.
18. SUITABLE GRADING MATERIAL SHALL CONSIST OF ALL SOIL ENCOUNTERED ON THE SITE WITH EXCEPTION OF TOPSOIL, DEBRIS, ORGANIC MATERIAL AND OTHER UNSTABLE MATERIAL. CONTRACTOR SHALL STOCKPILE TOPSOIL AND GRANULAR FILL AT SUITABLE LOCATIONS AS DETERMINED BY CONTRACTOR.
19. EXISTING GRANULAR MATERIALS SHALL BE SEGREGATED AND STOCKPILED FOR REUSE ON-SITE.
20. CONTRACTOR SHALL STRIP, STOCKPILE AND RE-SPREAD EXISTING ON-SITE TOPSOIL TO PROVIDE A UNIFORM THICKNESS OF AT LEAST 6 INCHES ON ALL GRADED AREAS.
21. SUBGRADE EXCAVATION SHALL BE BACKFILLED IMMEDIATELY AFTER EXCAVATION TO HELP OFFSET ANY STABILITY PROBLEMS DUE TO WATER SEEPAGE OR STEEP SLOPES. WHEN PLACING NEW SURFACE MATERIAL ADJACENT TO EXISTING PAVEMENT, THE EXCAVATION SHALL BE BACKFILLED PROMPTLY TO AVOID UNDERMINING OF THE EXISTING PAVEMENT.
22. GRADES SHOWN ARE FINISHED GRADES, CONTRACTOR SHALL ROUGH GRADE TO SUBGRADE ELEVATION, LEAVE SITE READY FOR SUBBASE.
23. FINAL GRADING TOLERANCES ARE ±0.1 FEET OF PLAN GRADES.
24. ALL EXCESS MATERIAL, BITUMINOUS SURFACING, CONCRETE ITEMS, ANY ABANDONED UTILITY ITEMS, AND OTHER UNSTABLE MATERIALS SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE DISPOSED OFF THE CONSTRUCTION SITE. DISPOSAL SHALL BE DONE IN A MANNER THAT MEETS ALL APPLICABLE REGULATIONS.
25. CONTRACTOR IS RESPONSIBLE FOR GRADING AND SLOPING THE FINISHED GROUND SURFACE TO PROVIDE SMOOTH & UNIFORM SLOPES, WHICH PROVIDE POSITIVE AND PREVENT PONDING IN LOWER AREAS.
26. SLOPES AT 3:1 OR STEEPER, AND/OR WHERE INDICATED ON THE PLANS SHALL BE SEEDED AND HAVE AN EROSION CONTROL BLANKET INSTALLED OR MAY BE HYDROSEEDED WITH BONDED FIBER MATRIX (BFM).

GENERAL LANDSCAPE NOTES

1. CONTRACTOR SHALL INSPECT THE SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS RELATING TO THE NATURE AND SCOPE OF WORK.
2. CONTRACTOR SHALL VERIFY PLAN LAYOUT AND BRING TO THE ATTENTION OF THE ENGINEER DISCREPANCIES WHICH MAY COMPROMISE THE DESIGN OR INTENT OF THE LAYOUT.
3. CONTRACTOR SHALL ASSURE COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS GOVERNING THE WORK AND MATERIALS SUPPLIED.
4. CONTRACTOR SHALL PROTECT EXISTING ROADS, CURBS/GUTTERS, TRAILS, TREES, IRRIGATION SYSTEM, LAWNS AND SITE ELEMENTS DURING CONSTRUCTION OPERATIONS.
5. CONTRACTOR SHALL REVIEW THE SITE FOR DEFICIENCIES IN SITE CONDITIONS WHICH MIGHT NEGATIVELY AFFECT PLANT ESTABLISHMENT, SURVIVAL OR WARRANTY. UNDESIRABLE SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BEGINNING OF WORK.

GENERAL EARTHWORK NOTES

1. AGGREGATE QUANTITY DOES NOT INCLUDE ADDITIONAL VOLUME OF MATERIAL TO ACHIEVE COMPACTION.
2. TOPSOIL STRIPPING, STOCKPILING AND RESPREADING IS INCIDENTAL TO UNCLASSIFIED EXCAVATION.

CONSTRUCTION SEQUENCING

1. INSTALLATION OF TEMPORARY EROSION AND SEDIMENT CONTROL BMPS.
2. CONSTRUCTION OF GRAVEL ACCESS ROAD.
3. SECURITY FENCE INSTALLATION.
4. DRIVING PILES FOR PV EQUIPMENT.
5. INSTALLATION OF PV EQUIPMENT.
6. TOPSOIL STABILIZATION.
7. FINAL STABILIZATION.

Item No.	CDOT Ref #	Item	Estimated Quantity	Units
1	203.12	UNCLASSIFIED EXCAVATION (4061 CY CUT, 1423 CY FILL: NET 2637 CY CUT)	2637	CY
2	208.12	VEHICLE TRACKING PAD	1	EA
3	208.12	EROSION LOG (TYPE 1)	967	LF
4	208.12	SILT FENCE	2834	LF
5	212.08	SEEDING (NATIVE)	32.19	AC
6	213.05	MULCHING (CRIMPED STRAW)	32.19	AC
7	216.08	SOIL RETENTION BLANKET (BIODEGRADABLE CLASS 1)	6291	SY
8	304.08	AGGREGATE BASE COURSE (AASHTO NO. 3)	360	CY
9	304.08	AGGREGATE BASE COURSE (AASHTO NO. 56)	70	CY
10	607.05	24 FOOT GATE (CHAIN LINK)	1	EA
11	607.05	FENCE, (WOOVEN WIRE) (96 INCH)	4834	LF
12	626.02	MOBILIZATION	1	LS
13	SPECIAL	CONCRETE EQUIPMENT PAD	2	LS

COLORADO LICENSED
DEREK R. LASH
67079
04/07/2026
PROFESSIONAL ENGINEER

EOR water ecology community
EMMONS & OLIVIER RESOURCES, INC.
1919 UNIV. AVE. W. #300 ST. PAUL, MN
TEL: 651.770.8448 WWW.EORINC.COM

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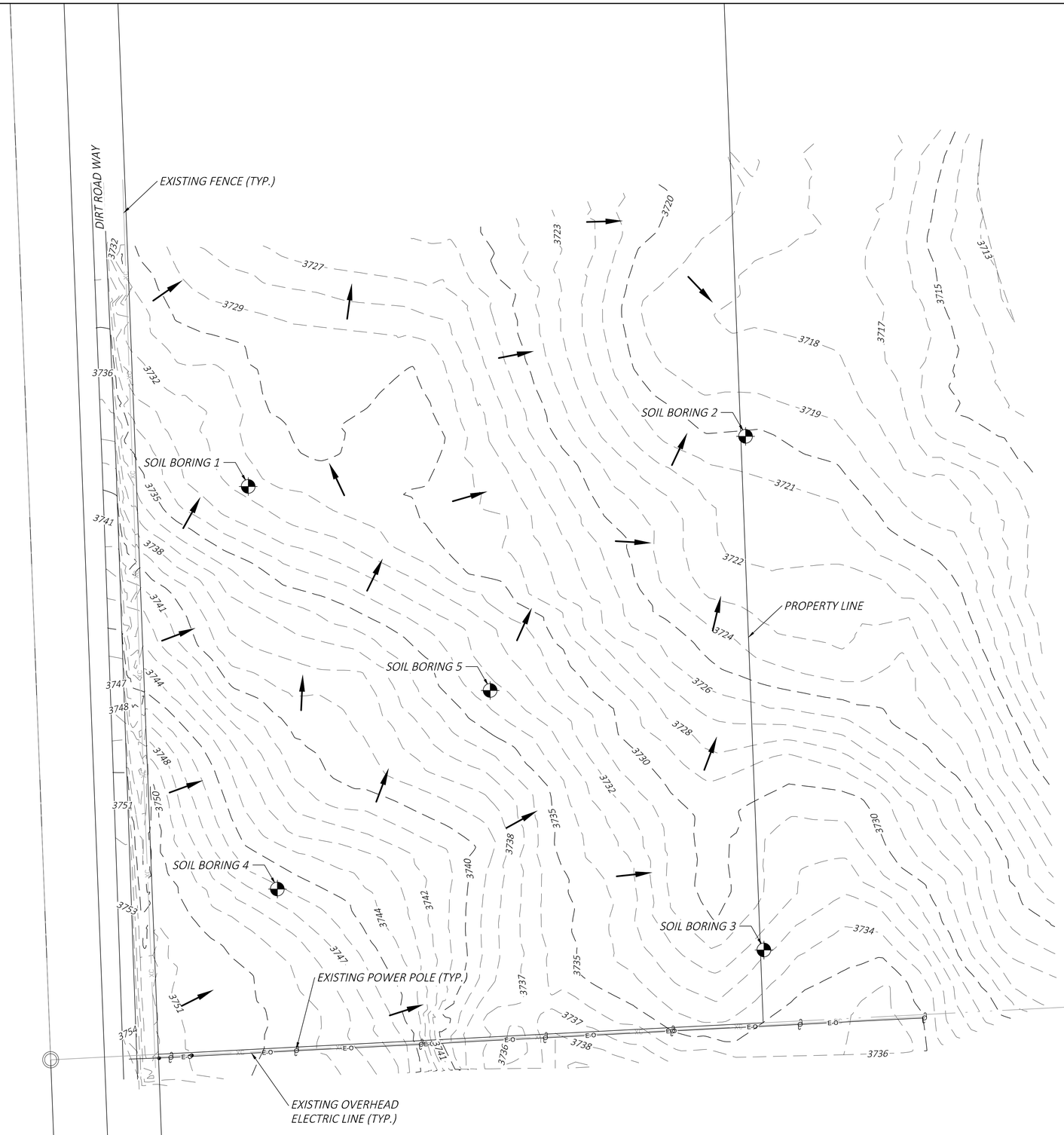
DESIGNED BY: ERK
DRAWN BY: IJA
CHECKED BY: DRL
EOR JOB #1675-0050

ISI SOLAR

LAMAR SOLAR
LAMAR, PROWERS COUNTY, COLORADO
Pivot Energy
INTERCONNECTION SYSTEMS, INC. CENTRAL CITY, NE 68826

NOTES AND SEQ

Plot Date: 04/07/2026
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COLORADO 811
KNOW WHAT'S BELOW. CALL BEFORE YOU DIG.

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DEREK R. LASH
67079
04/07/2026
PROFESSIONAL ENGINEER

BAR IS ONE INCH ON OFFICIAL DRAWINGS
0 1" 2"
IF NOT ONE INCH ADJUST SCALE ACCORDINGLY

SCALE IN FEET
0' 50' 100' 200'

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ISI SOLAR

LAMAR SOLAR

LAMAR, PROWERS COUNTY, COLORADO

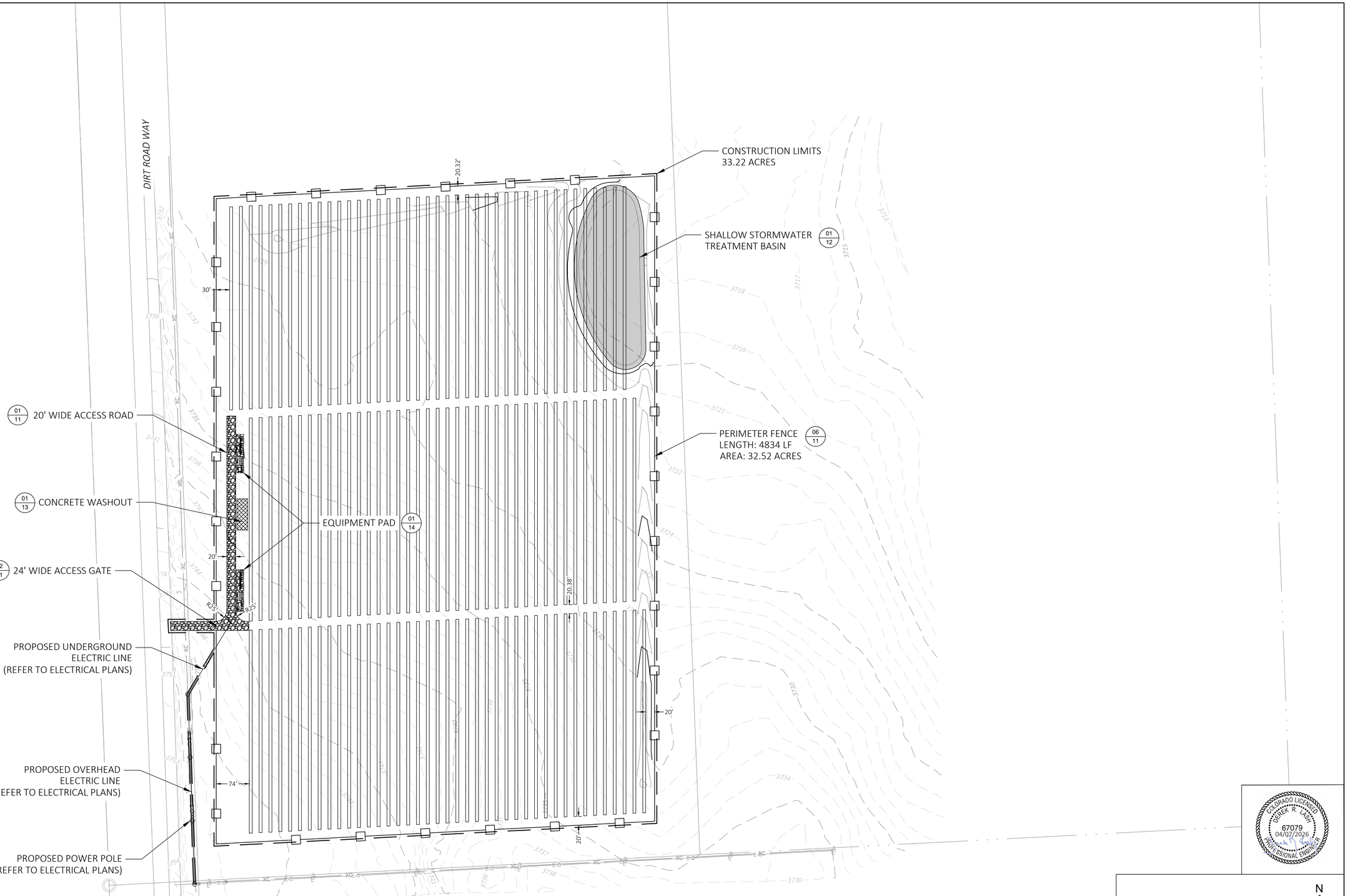
Pivot Energy

INTERCONNECTION SYSTEMS, INC. CENTRAL CITY, NE 68826

EXISTING CONDITIONS AND REMOVALS PLAN

SHEET 03 OF 15

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1919 UNIV. AVE. W. #300 ST. PAUL, MN
TEL: 651.770.8448 WWW.EORINC.COM

DATE	NO.	DESCRIPTION
04/07/2026	1	IFP - ISSUED FOR PERMITS
	2	
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	5	
	6	

DESIGNED BY: ERK
DRAWN BY: IJA
CHECKED BY: DRL

EOR JOB #1675-0050

ISI SOLAR

LAMAR SOLAR

LAMAR, PROWERS COUNTY, COLORADO

Pivot Energy

INTERCONNECTION SYSTEMS, INC. CENTRAL CITY, NE 68826

SITE PLAN

SHEET 04 OF 15

Plot Date: 04/07/2026
Drawing name: X:\Clients_Private\01675_Interconnection_Systems_Inc\0050_Lamar_Solar\09_GIMS\dwg\Sheets\1675-0050 SITE PLAN.dwg
Xrefs: 4Base Data
4Eng-shee
4875-0060_TitleBlock , Images: ...\..\Images\811.jpg V:\Lash\Licensure_CE\Signature\DLash-Signature_20150105 V:\Lash\Licensure_CE\PE\CO\Stamps\LASH CO 08.19.25 X:\Clients_Private\01675_Interconnection_Systems_Inc\0041_Pivot_Solar_58_60\09_GIMS\Images\pivot logo

Plot Date: 04/07/2026
Plotted By: Derek Lash
Xrefs Attached: None
Drawing Name: C:\Clients_Private\01675_Interconnection_Systems_Inc\0041_Pivot_Solar_58_60\09_GIMS\dwg\Sheets\1675-0050 GRADING PLAN.dwg
4Engineers
1675-0050_TitleBlock
4Proposed Surface 1 Images: ..\..\Images\811.jpeg V:\Lash\Licensure_CES\Signature\DLash-Signature_20150105 V:\Lash\Licensure_CEPE\CO\Stamps\LASH CO 08.19.25 X:\Clients_Private\01675_Interconnection_Systems_Inc\0041_Pivot_Solar_58_60\09_GIMS\Images\pivot logo

CONSTRUCTION LIMITS
33.22 ACRES

04
11
STABILIZED OVERFLOW
EOF: 3718.75

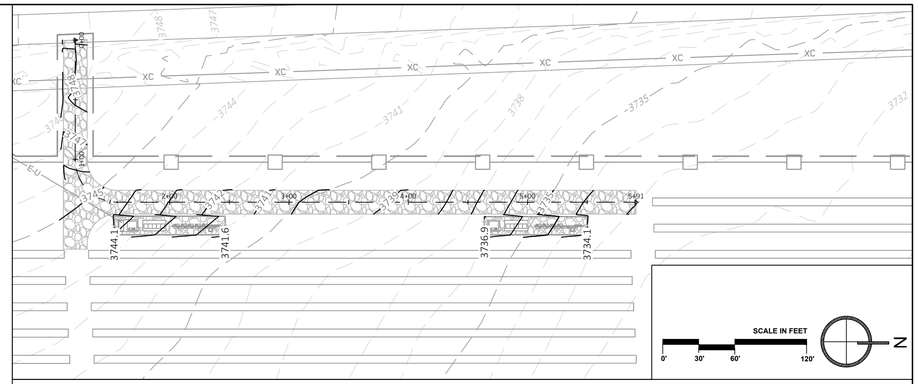
SHALLOW STORMWATER TREATMENT BASIN
TOP: 3719.00
EOF: 3718.75
BOTTOM: 3718.00

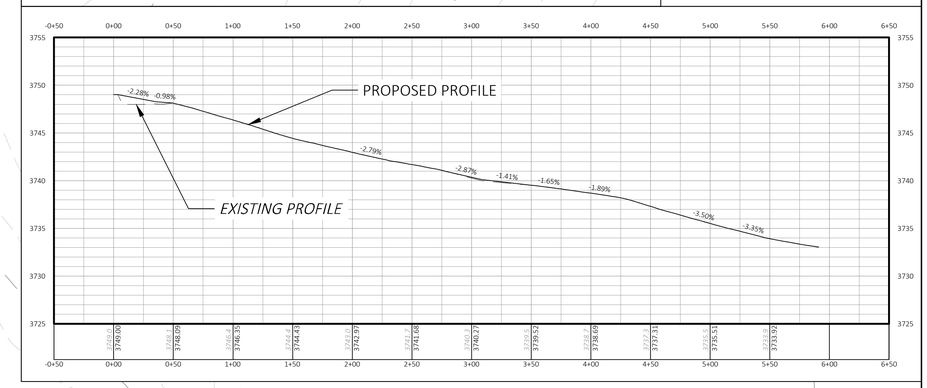
01
12

INSET A

DIRT ROAD WAY

3734.1
EQUIPMENT PAD
3736.9
3741.6
EQUIPMENT PAD
3744.1





COLORADO LICENSED
DEREK R. LASH
67079
04/07/2026
PROFESSIONAL ENGINEER

BAR IS ONE INCH ON OFFICIAL DRAWINGS
0 1"
IF NOT ONE INCH ADJUST SCALE ACCORDINGLY

SCALE IN FEET
0' 50' 100' 200'
N

COLORADO 811
KNOW WHAT'S BELOW. CALL BEFORE YOU DIG.

EOR water ecology community
EMMONS & OLIVIER RESOURCES, INC.
1919 UNIV. AVE. W. #300 ST. PAUL, MN
TEL: 651.770.8448 WWW.EORINC.COM

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF COLORADO.

DEREK R. LASH DATE: 04/03/2026 LICENSE # 67079

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CHECKED BY: DRL

EOR JOB #1675-0050

ISI SOLAR

LAMAR SOLAR

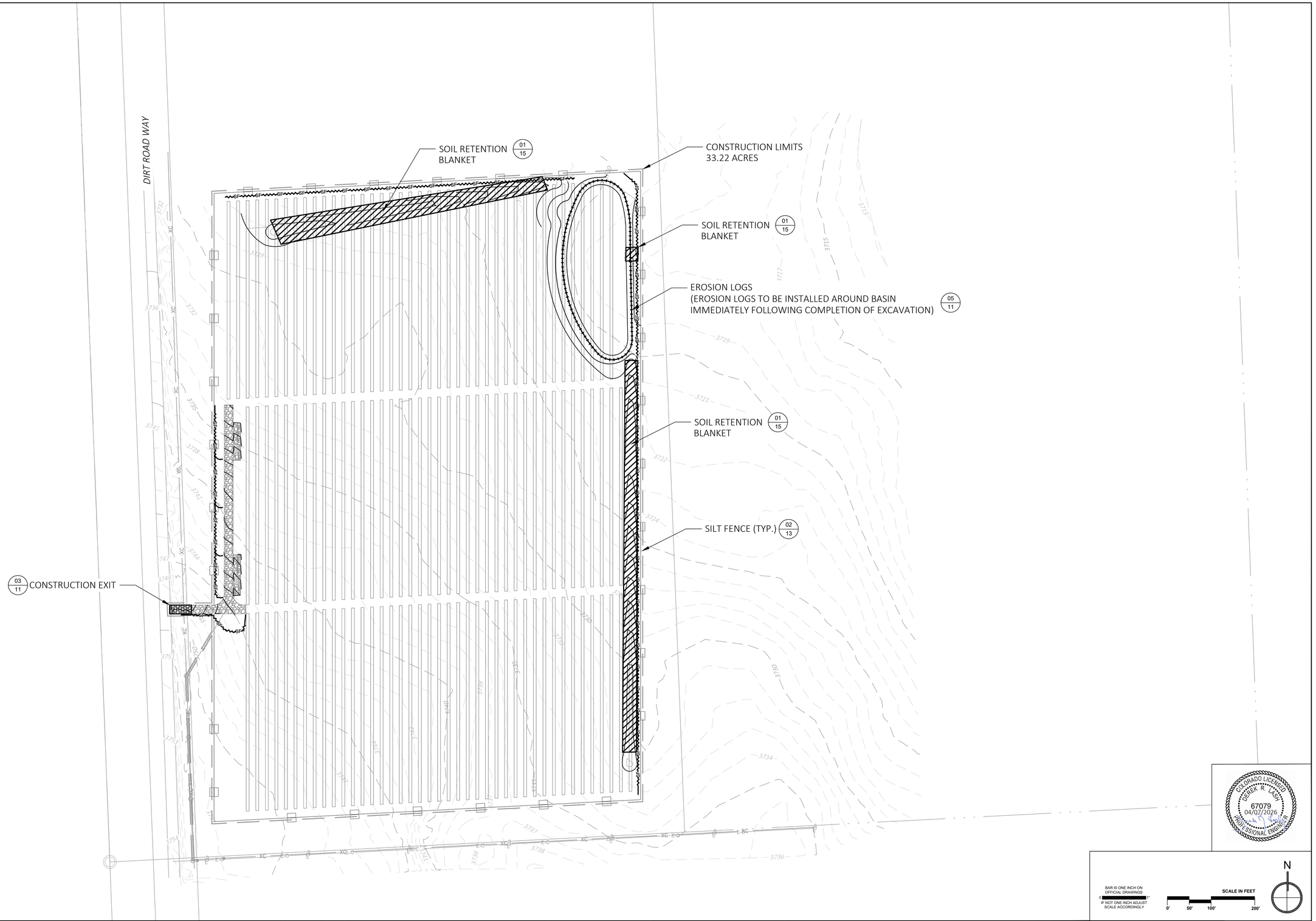
LAMAR, PROWERS COUNTY, COLORADO

Pivot Energy

INTERCONNECTION SYSTEMS, INC. CENTRAL CITY, NE 68826

GRADING PLAN

SHEET 05 OF 15



Plot Date: 04/07/2026
Plotted By: Derek Lash
Xrefs: 4Esplines
4Esplines
4Fb75-0050 Thatblock
4Proposed_Surface_Features
4Images: ..\..\Images\811.jpeg
V:\Lash\Licensure_CE\Signature\DLash-Signature_20150105
V:\Lash\Licensure_CE\PE\CO\Stamps\LASH CO 08.19.25
X:\Clients_Private\01675_Interconnection_Systems_Inc\0041_Pivot_Solar_58_60\09_GIMS\Dwg\Sheets\16775-0050 ESC.dwg

COLORADO LICENSED
DEREK R. LASH
67079
04/07/2026
PROFESSIONAL ENGINEER

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CHECKED BY: DRL

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Pivot Energy

INTERCONNECTION SYSTEMS, INC. CENTRAL CITY, NE 68826

EROSION AND SEDIMENT CONTROL PLAN

SHEET 06 OF 15

SEED SCHEDULE

SYMBOL	CODE	SEED MIX NAME	RATE	AREA	QTY
	S1	RENOVO WESTERN NATIVE RESTORATION MIX	18 LB / AC	1,349,850 SF (30.99 AC)	558 LB
	S2	WESTERN NATIVE SEED HIGH PLAINS FOOTHILLS WET MEADOW MIX	8 OZ / 1000 SF	52,848 SF (1.2 AC)	27 LB

NOTE: SEED MIXES SHALL BE APPLIED WITH CRIMPED WEED-FREE STRAW MULCH @ 2.25 TONS / ACRE



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Pivot Energy

INTERCONNECTION SYSTEMS, INC. CENTRAL CITY, NE 68826

RESTORATION AND LANDSCAPING PLAN

SHEET 07 OF 15

Plot Date: 04/07/2026
Drawing name: X:\Clients_Private\01675_Interconnection_Systems_Inc\0050_Lamar_Solar\09_GIMS\dwg\Sheets\1675-0050 ESC.dwg
Xrefs: Base, Base_Hatch, 4Edgelines, 4Proposed_Surface
Images: ...\..\Images\811.jpeg, X:\Lash\Licensure_CE\Signature\DLash-Signature_20150105, X:\Lash\Licensure_CE\PE\CO\Stamps\LASH CO 08.19.25, X:\Clients_Private\01675_Interconnection_Systems_Inc\0041_Pivot_Solar_58_60\09_GIMS\Images\pivot logo

GENERAL NOTES

1. LANDSCAPE CONTRACTOR SHALL INSPECT THE SITE AND BECOME FAMILIAR WITH EXISTING CONDITIONS RELATING TO THE NATURE AND SCOPE OF WORK.
2. LANDSCAPE CONTRACTOR SHALL VERIFY PLAN LAYOUT AND BRING TO THE ATTENTION OF THE ENGINEER DISCREPANCIES WHICH MAY COMPROMISE THE DESIGN OR INTENT OF THE LAYOUT.
3. LANDSCAPE CONTRACTOR SHALL ASSURE COMPLIANCE WITH APPLICABLE CODES AND REGULATIONS GOVERNING THE WORK AND MATERIALS SUPPLIED.
4. LANDSCAPE CONTRACTOR SHALL VERIFY ALIGNMENT AND LOCATION OF UNDERGROUND AND ABOVE GRADE UTILITIES AND PROVIDE THE NECESSARY PROTECTION FOR SAME BEFORE CONSTRUCTION BEGINS.
5. LANDSCAPE CONTRACTOR SHALL REVIEW THE SITE FOR DEFICIENCIES IN SITE CONDITIONS WHICH MIGHT NEGATIVELY AFFECT PLANT ESTABLISHMENT, SURVIVAL OR WARRANTY. UNDESIRABLE SITE CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO BEGINNING OF WORK.
6. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR ONGOING MAINTENANCE OF NEWLY INSTALLED MATERIALS UNTIL TIME OF FINAL ACCEPTANCE BY LANDSCAPE ARCHITECT. REPAIR OF ACTS OF VANDALISM OR DAMAGE WHICH MAY OCCUR PRIOR TO FINAL ACCEPTANCE SHALL BE THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR.

SEEDING NOTES

1. PROVIDE YELLOW-TAG CERTIFIED NATIVE SEED FROM WITHIN 175 MILES OF THE PROJECT SITE.
2. SOW SEED MIXES ON ALL DISTURBED AREAS AFTER ALL GRADING ACTIVITIES HAVE BEEN COMPLETED. SEEDING MAY TAKE PLACE PRIOR TO PILE DRIVING AND SOLAR ARRAY INSTALLATION, HOWEVER ANY DISTURBED AREAS WILL HAVE TO BE RE-SEEDED.
3. ACCEPTABLE SEEDING DATES ARE SEPTEMBER 1 - OCTOBER 31 IN THE FALL. WRITTEN PERMISSION MUST BE GRANTED BY THE ENGINEER TO PERFORM SEEDING OPERATIONS ON ANY OTHER DATES OF THE YEAR.
4. SOW NATIVE SEEDS WITH A MULTI-BOX BROADCAST SEEDER SUCH AS THE TRILLION BY TRUAX, WHERE POSSIBLE.
5. IF PLANTING VIA BROADCAST METHOD: HAND BROADCAST HALF OF THE SEED WHILE WALKING IN ONE DIRECTION (E.G. NORTH TO SOUTH) AND THE OTHER HALF IN A PERPENDICULAR DIRECTION (E.G. EAST TO WEST). AFTER HAND BROADCASTING, RAKE THE AREA AGAIN AND GENTLY COMPACT THE SOIL USING A LAWN ROLLER OR SIMILAR DEVICE.
6. COVER NATIVE SEED MIXES WITH CLEAN, WEED-FREE STRAW MULCH, AND DISC ANCHOR, EXCEPT WHERE EROSION CONTROL BLANKET IS INDICATED ON PLANS.
7. USE TEMPORARY EROSION CONTROL DEVICES (SEDIMENT LOGS, SILT FENCE) AS NEEDED TO PREVENT EROSION PRIOR TO AND DURING SEED ESTABLISHMENT.

SEED ESTABLISHMENT NOTES

1. IN THE SPRING AFTER PLANTING, WATER THE SOIL LIGHTLY (SOIL SHOULD BE KEPT MOIST BUT NOT SOAKED) AT REGULAR INTERVALS UNTIL THE SEEDLINGS HAVE AT LEAST TWO SETS OF LEAVES. APPROXIMATELY 4-6 WEEKS. NEXT, WATER DEEPLY AND LESS FREQUENTLY TO PROMOTE DEEP ROOT GROWTH, APPROXIMATELY 1-2 INCHES EVERY WEEK OR TWO. SANDY SOIL SHOULD BE WATERED MORE FREQUENTLY THAN CLAYEY SOIL.
2. MONITOR THE SITE MONTHLY DURING THIS PERIOD TO DETECT AREAS OF WEED COLONIZATION. CUT OR TREAT ALL NOXIOUS WEEDS (AS CURRENTLY DEFINED BY CO DEPARTMENT OF AGRICULTURE) WITH GLYPHOSATE HERBICIDE AS SOON AS DETECTED.
3. DURING THE FIRST GROWING SEASON MOW OR CUT THE ENTIRE SEEDED AREA EVERY 30 DAYS UNTIL SEPTEMBER 30TH AT A HEIGHT OF 5-8".
4. DURING THE SECOND GROWING SEASON MOW OR CUT THE ENTIRE SEEDED AREA ONCE IN MID-JUNE AND ONCE IN MID-AUGUST AT A HEIGHT OF 5-8".
5. IF AREAS OF BARE GROUND PERSIST AFTER FIRST GROWING SEASON RESEED PER PLAN.
6. AFTER THE FIRST TWO GROWING SEASONS MOW OR CUT NATIVE SEED AREAS IN LATE FALL OR EARLY SPRING. RAKE OUT AND REMOVE DOWNED VEGETATION.

RENOVO Western Native Reclamation Mix

Seeding rate: 18 lbs/ac

Type	Scientific Name	Common Name	% Mix (by wt)
Graminoid	*Triticum x Secale*	Triticale	10.00%
	Pascopyrum smithii	Western Wheatgrass	10.00%
	Nassella viridula	Green Needlegrass	8.00%
	Elymus trachycaulus	Slender Wheatgrass	8.00%
	Pseudoroegneria spicata	Bluebunch Wheatgrass	6.00%
	Bouteloua gracilis	Blue Grama	5.00%
	Elymus canadensis	Canada Wildrye	5.00%
	Festuca idahoensis	Idaho Fescue	5.00%
	Schizachyrium scoparium	Little Bluestem	5.00%
	Koleria macrantha	Prairie Junegrass	5.00%
	Calamovilfa longifolia	Prairie Sandreed	5.00%
	Bouteloua curipendula	Sideoats Grama	5.00%
	Elymus lanceolatus	Thickspike Wheatgrass	5.00%
	Sporobous cryptandrus	Sand Dropseed	4.00%
	Poa secunda	Sandberg Bluegrass	4.00%
	Eriocoma hymenoides	Indian Rice Grass	3.00%
	Bouteloua dactyloides	Buffalograss	2.00%
		Total Guild:	95.00%
Graminoid	*Rudbeckia hirta*	Black-Eyed Susan	1.00%
	Gaillardia aristata	Blanketflower	1.00%
	Ratibida columnifera	Prairie Coneflower	1.00%
	Cleome serrulata	Rocky Mountain Bee Plant	1.00%
	Achillea millefolium	Western Yarrow	1.00%
		Total Guild:	5.00%

High Plains Foothills Wet Meadow Seed Mix

seeding rate: 8oz per 1,000 sq.ft.

Type	Scientific Name	Common Name	% Mix (by wt)
Graminoid	*Bolboschoenus maritimus*	Alkali Bulrush	15.00%
	Carex praegracilis	Black Creeper Sedge	5.00%
	Carex microptera	Popcorn Sedge	1.00%
	Carex nebrascencis	Nebraska Sedge	5.00%
	Deschampsia cespitosa	Tufted Hairgrass	5.00%
	Elocharis palustris	Spikerush	10.00%
	Elymus canadensis	Canada Wildrye	15.00%
	Juncus balticus	Baltic Rush	5.00%
	Panicum virgatum	Switchgrass	15.00%
	Schoenoplectus acutus	Hard Stem Bulrush	5.00%
	Schoenoplectus americanus	Olney's Three-Square Bulrush	5.00%
	Schoenoplectus tabernaemontani	Soft Stem Bulrush	5.00%
	Sorghastrum nutans	Indian Grass	5.00%
	Spartina pectinata	Prairie Cordgrass	4.00%
		Total Guild:	100.00%

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COLORADO LICENSED DEREK R. LASH 67079 04/07/2026 PROFESSIONAL ENGINEER

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DESIGNED BY: ERK
DRAWN BY: IJA
CHECKED BY: DRL

EOR JOB #1675-0050

ISI SOLAR

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LAMAR, PROWERS COUNTY, COLORADO
Pivot Energy
INTERCONNECTION SYSTEMS, INC. CENTRAL CITY, NE 68826

RESTORATION AND LANDSCAPING DETAILS

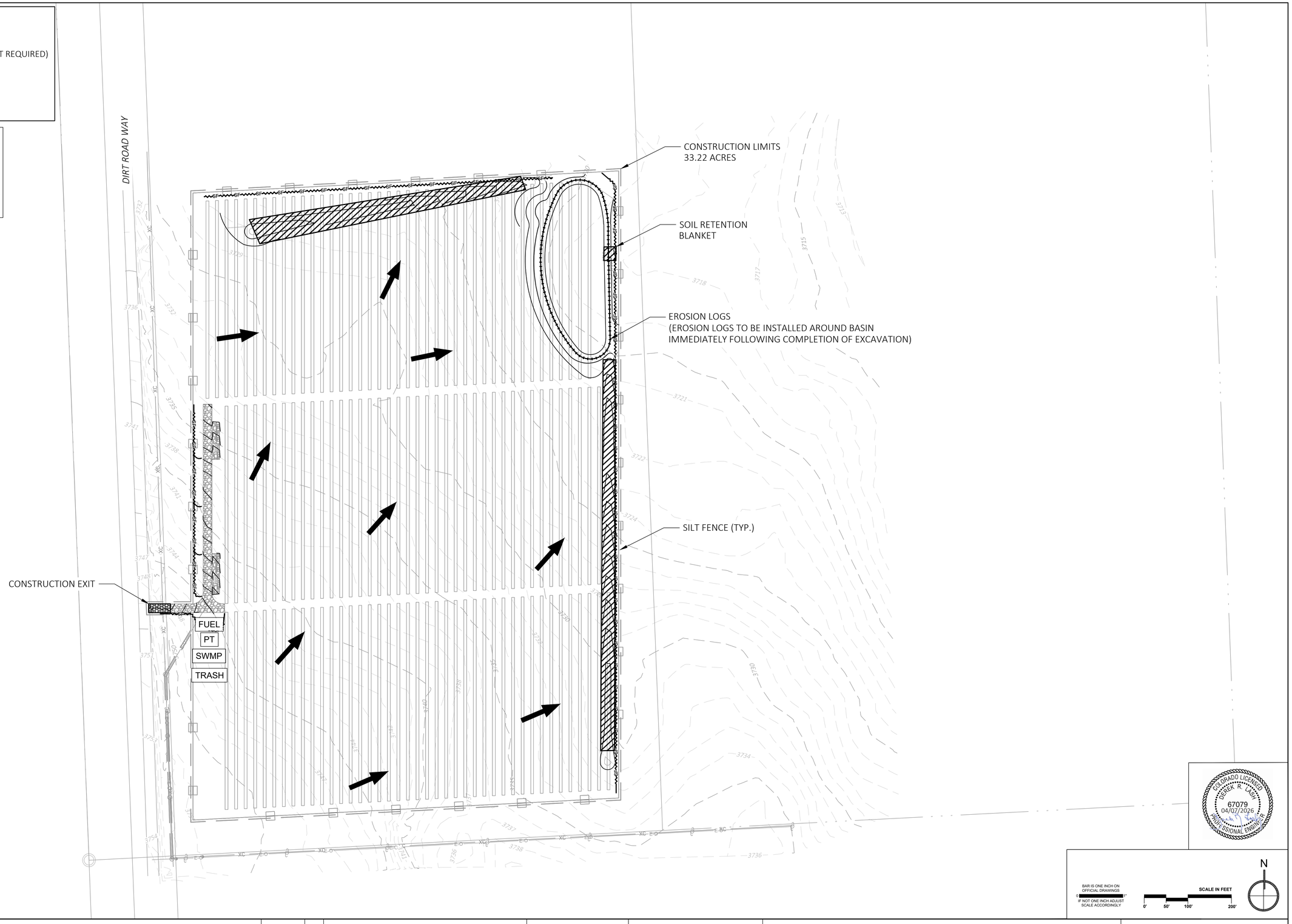
SHEET 08 OF 15

Plot Date: 04/07/2026
Drawing Name: X:\Clients_Private\01675_Interconnection_Systems_Inc\0050_Lamar_Solar\09_GIMS\dwgSheets\1675-0050 ESC.dwg
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4Engineer
4Project Surface
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LEGEND

FUEL	FUELING STATION (SECONDARY CONTAINMENT REQUIRED)
PT	PORTABLE TOILET
SWMP	SWMP LOCATION
TRASH	TRASH RECEPTACLE

NOTES:
1. SPILL KIT MUST BE ON SITE AND BE KEPT IN THE VICINITY OF THE STAGING AREA(S).
2. NO HAZARDOUS MATERIALS (OIL, GAS, FLUIDS, PAINTS, LUBRICANTS, ETC.) ARE TO BE STORED ON SITE.
3. CONCRETE AND OTHER WASHOUT LIQUIDS SHALL BE CONTAINED IN A LABELED FACILITY. NO WASHOUT MATERIAL SHALL DISCHARGE TO GROUND OR PAVEMENT SURFACES.



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N

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INTERCONNECTION SYSTEMS, INC. CENTRAL CITY, NE 68826

SWMP SITE PLAN

SHEET 09 OF 15

Plot Date: 04/07/2026
Drawn By: Ian A. \\Clients_Private\01675_Interconnection_Systems_Inc\0050_Lamar_Solar\09_GIMS\dwg\Sheets\1675-0050 SWPPP.dwg
Xrefs Bound In:
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Plot Date: 04/07/2026
Drawing Name: X:\Clients_Private\01675_Interconnection_Systems_Inc\0050_Lamar_Solar\09_GIMS\DwgSheets\1675-0050 SWPPP.dwg
Xrefs Attached: No
4Edgelines
41675-0050 - TitleBlock
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1 MILE BOUNDARY

WILLOW CREEK
AUID: COARLA09a_D
AQUATIC USE: AQL (AQUATIC LIFE)
ANALYTE: ARESENIC, DISSOLVED MANGANESE, DISSOLVED SELENIUM AND URANIUM

PROJECT LIMITS

UNNAMED STREAM

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0' 500' 1000' 2000'

N

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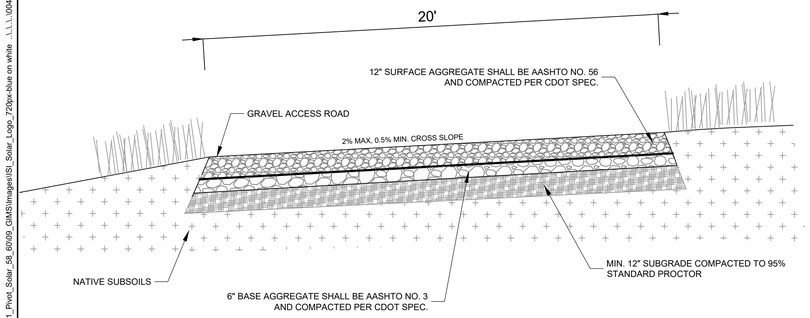
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LAMAR, PROWERS COUNTY, COLORADO

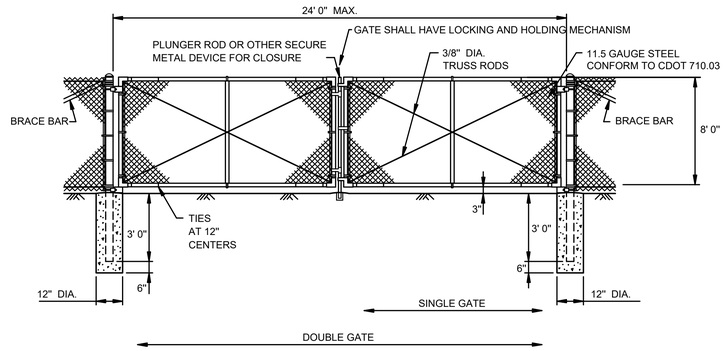
Pivot Energy

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SWMP WATERS MAP



01 / 11 — 20 FOOT WIDE ACCESS ROAD CROSS SECTION
NOT TO SCALE

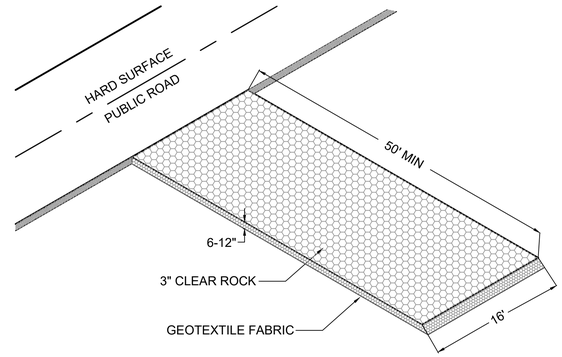


VEHICULAR GATE

NOTES:

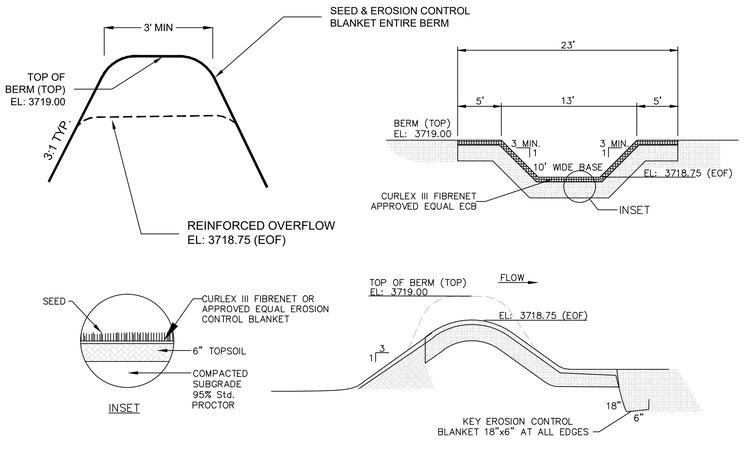
1. POSTS FOR VEHICULAR GATES SHALL BE NPS 3-1/2" NOM. I.D. AASHTO M181, 9.12 LBS./FT., 6'-0" LENGTH.
2. FRAMES FOR VEHICULAR GATES SHALL BE: NPS 1-1/2" NOM. I.D. AASHTO M181, 2.72 LBS./FT.
3. CONTRACTOR TO PROVIDE KNOX BOX FOR KEY ACCESS BY MAINTENANCE PERSONNEL AND FIRST RESPONDERS.
4. GATE TO OPEN OUT AND HAVE POSTS FOR SECURING FENCE GATES IN OPEN POSITION.

02 / 11 — 24 FOOT WIDE ACCESS GATE
NOT TO SCALE

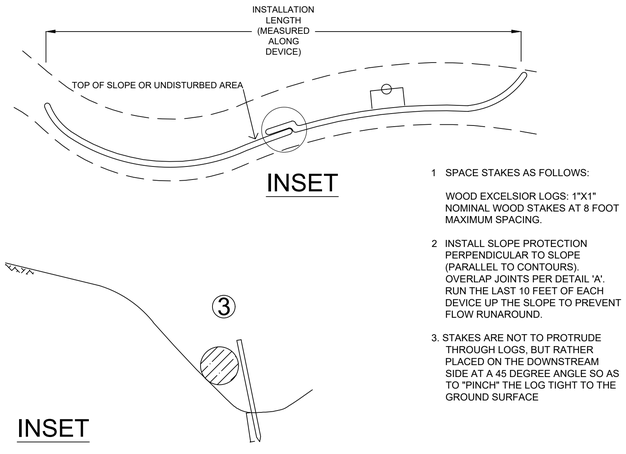


NOTE :
- STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED FOR THE DURATION OF THE CONSTRUCTION PROCESS.
- ROCK SHALL BE UNDERLINED WITH GEOTEXTILE FABRIC PER CDOT SPEC.
- ENGINEERED RUMBLE EXIT PAD SHALL BE AN ACCEPTABLE ALTERNATIVE.

03 / 11 — CONSTRUCTION EXIT
NOT TO SCALE



04 / 11 — STABILIZED OVERFLOW
NOT TO SCALE



1 SPACE STAKES AS FOLLOWS:

WOOD EXCELSIOR LOGS: 1"X1" NOMINAL WOOD STAKES AT 8 FOOT MAXIMUM SPACING.

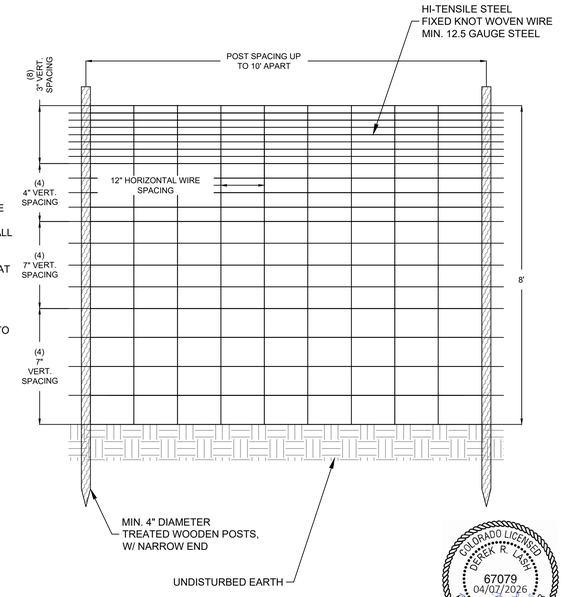
2 INSTALL SLOPE PROTECTION PERPENDICULAR TO SLOPE (PARALLEL TO CONTOURS). OVERLAP JOINTS PER DETAIL 'A'. RUN THE LAST 10 FEET OF EACH DEVICE UP THE SLOPE TO PREVENT FLOW RUNAROUND.

3. STAKES ARE NOT TO PROTRUDE THROUGH LOGS, BUT RATHER PLACED ON THE DOWNSTREAM SIDE AT A 45 DEGREE ANGLE SO AS TO "PINCH" THE LOG TIGHT TO THE GROUND SURFACE

05 / 11 — EROSION LOG
NOT TO SCALE

NOTES:

1. VERTICAL SPACING MUST BE LARGEST AT THE GROUND SURFACE AND SMALLEST AT THE TOP OF THE FENCE TO ALLOW PASSAGE OF SMALL MAMMALS, REPTILES, AND OTHER WILDLIFE
2. MINIMUM VERTICAL WIRE SPACING AT THE BOTTOM OF THE FENCE SHALL BE 8 INCHES
3. DEPENDING ON SOILS, UTILIZE TREATED WOODEN POSTS DRIVEN INTO THE SOIL (NARROWER END INTO GROUND), AVOID THE USE OF CONCRETE FOOTINGS



COLORADO LICENSED
DEREK R. CASEY
67079
04/07/2026
PROFESSIONAL ENGINEER

06 / 11 — PERIMETER FENCE
NOT TO SCALE

EOR water ecology community
EMMONS & OLIVIER RESOURCES, INC.
1919 UNIV. AVE. W. #300 ST. PAUL, MN
TEL: 651.770.8448 WWW.EORINC.COM

DATE	NO.	DESCRIPTION
04/07/2026	1	IFP - ISSUED FOR PERMITS
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DESIGNED BY: ERK
DRAWN BY: IJA
CHECKED BY: DRL

EOR JOB #1675-0050

ISI SOLAR

LAMAR SOLAR
LAMAR, PROWERS COUNTY, COLORADO

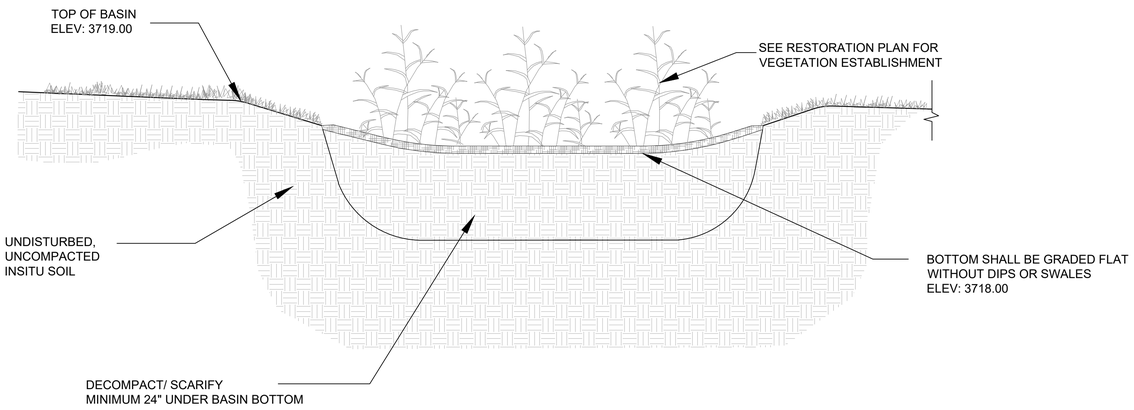
Pivot Energy

INTERCONNECTION SYSTEMS, INC. CENTRAL CITY, NE 68826

DETAILS 1

SHEET 11 OF 15

Plot Date: 04/07/2026
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01/12 STORMWATER TREATMENT BASIN
NOT TO SCALE

67079
04/07/2026
COLORADO LICENSED
DISSER R. LASH
PROFESSIONAL ENGINEER

water ecology community
EMMONS & OLIVIER RESOURCES, INC.
1919 UNIV. AVE. W. #300 ST. PAUL, MN
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EOR JOB #1675-0050

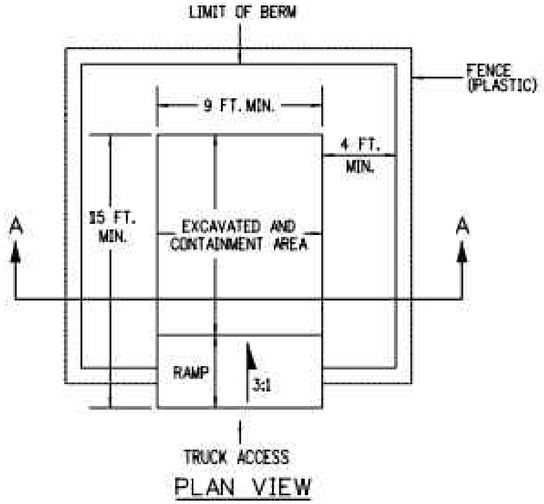
ISI SOLAR

LAMAR SOLAR
LAMAR, PROWERS COUNTY, COLORADO
Pivot Energy
INTERCONNECTION SYSTEMS, INC. CENTRAL CITY, NE 68826

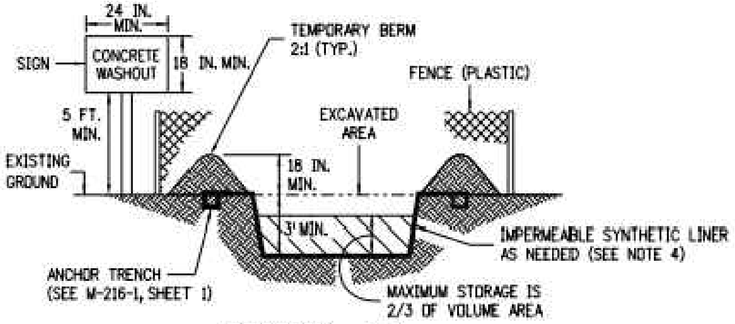
DETAILS 2

SHEET 12 OF 15

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PLAN VIEW



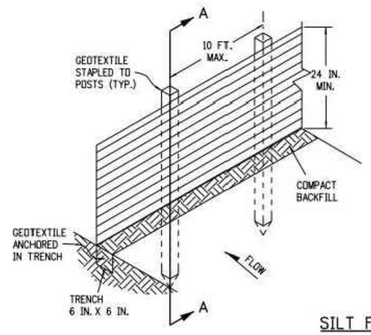
SECTION A-A

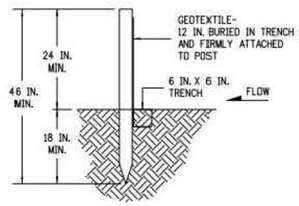
NOTES:

1. A FENCE (PLASTIC) CONFORMING TO SECTION 607 SHALL BE INSTALLED AROUND THE CONCRETE WASHOUT STRUCTURE, EXCEPT AT THE OPENING.
2. THE CONCRETE WASHOUT SIGN SHALL HAVE LETTERS AT LEAST 3 INCHES HIGH AND CONFORM TO SUBSECTION 630.02.
3. ALL MATERIALS AND LABOR TO COMPLETE THE CONCRETE WASHOUT STRUCTURE SHALL BE INCLUDED IN THE COST OF WORK AND NOT PAID FOR SEPARATELY.
4. THE BOTTOM OF EXCAVATION SHALL BE A MINIMUM OF FIVE FEET ABOVE GROUND WATER. IF NOT, THE BOTTOM OF EXCAVATION SHALL BE IN ACCORDANCE WITH 208.02 (k).
5. THE PAY ITEM NUMBER FOR CONCRETE WASHOUT STRUCTURE (EACH) IS 208-00045.

CONCRETE WASHOUT STRUCTURE

01/13 CONCRETE WASHOUT
NOT TO SCALE



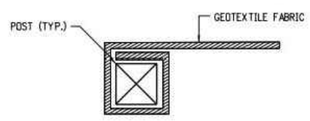


SECTION A-A

SILT FENCE

NOTES:

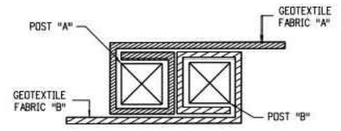
1. GEOTEXTILE SHALL BE ATTACHED TO WOOD POSTS WITH THREE OR MORE STAPLES PER POST. STAPLES SHALL BE HEAVY DUTY WIRE AND AT LEAST 1 INCH LONG.
2. WOOD POST SHALL BE 1 IN. X 1 IN. NOMINAL.
3. THE PAY ITEM NUMBER FOR SILT FENCE (LF) IS 208-00020.
4. THE SILT FENCE SHALL BE PLACED ON THE CONTOUR (AT THE SAME ELEVATION ±6 IN.). THE ENDS SHALL BE FLARED UP SLOPE (MINIMUM ELEVATION GAIN OF 18 IN.).



END SECTION DETAIL (PLAN VIEW)

NOTE:

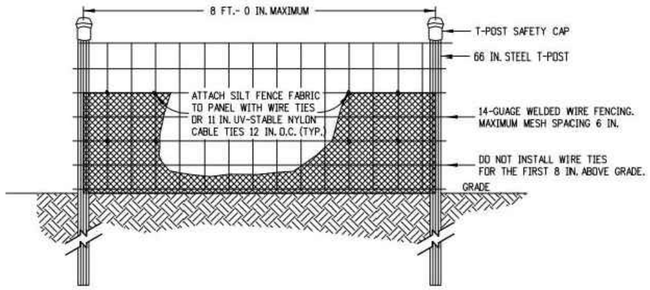
1. THE END OF THE SILT FENCE FABRIC SHALL BE WRAPPED APPROX. 6 INCHES AROUND A WOODEN POST ONE FULL TURN, THEN SECURED ALONG THE POST WITH 6 HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG.



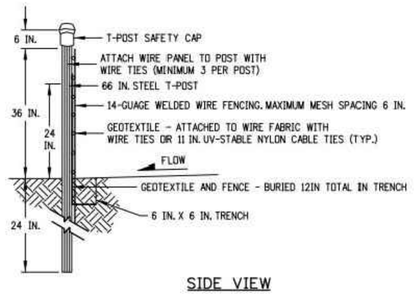
JOINING SECTION DETAIL (PLAN VIEW)

NOTES:

1. THE ENDS OF THE SILT FENCE FABRIC SHALL BE JOINED TOGETHER BY WRAPPING APPROX. 6 INCHES OF EACH END AROUND A WOODEN POST ONE FULL TURN, THEN SECURED ALONG THE POST WITH 6 HEAVY DUTY WIRE STAPLES AT LEAST 1 INCH LONG.
2. POSTS SHALL BE TIGHTLY ABUTTED WITH NO GAPS TO PREVENT POTENTIAL FLOW-THROUGH OF SEDIMENT AT JOINT.



ELEVATION VIEW



SIDE VIEW

NOTES:

1. THE ENDS OF THE SILT FENCE FABRIC SHALL BE JOINED TOGETHER BY WRAPPING APPROX. 6 INCHES OF EACH END AROUND A STEEL T-POST, THEN SECURED ALONG THE POST WITH WIRE TIES (MINIMUM 3 PER POST).
2. POSTS SHALL BE TIGHTLY ABUTTED WITH NO GAPS TO PREVENT POTENTIAL FLOW-THROUGH OF SEDIMENT AT JOINT.
3. SILT FENCES SHALL NOT BE USED FOR CHECK DAMS.
4. THE PAY ITEM NUMBER FOR SILT FENCE (REINFORCED) (LF) IS 208-00021.

SILT FENCE (REINFORCED)

SILT FENCE APPLICATIONS

02/13 SILT FENCE
NOT TO SCALE

COLORADO LICENSED
DEREK R. LASH
67079
04/07/2026
PROFESSIONAL ENGINEER

EOR water ecology community
EMMONS & OLIVIER RESOURCES, INC.
1919 UNIV. AVE. W. #300 ST. PAUL, MN
TEL: 651.770.8448 WWW.EORINC.COM

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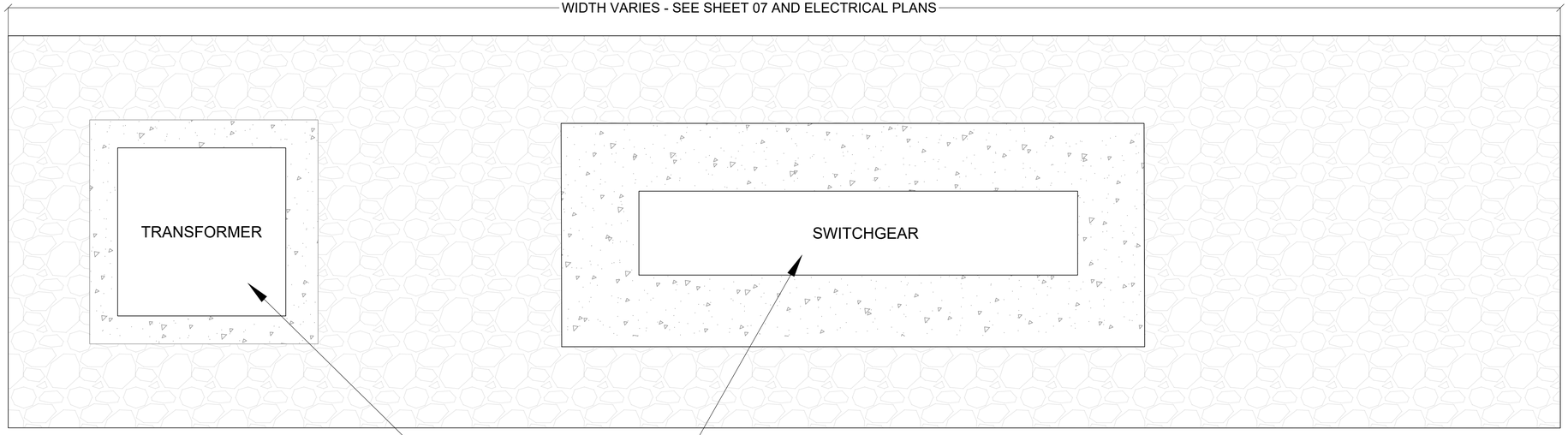
DESIGNED BY: ERK
DRAWN BY: IJA
CHECKED BY: DRL
EOR JOB #1675-0050

ISI SOLAR

LAMAR SOLAR
LAMAR, PROWERS COUNTY, COLORADO
Pivot Energy
INTERCONNECTION SYSTEMS, INC. CENTRAL CITY, NE 68826

DETAILS 3

Plot Date: 04/07/2026
Drawing name: X:\Clients_Private\01675_Interconnection_Systems_Inc\0050_Lamar_Solar\09_GIMS\DwgSheets\1675-0050 DETAILS.dwg
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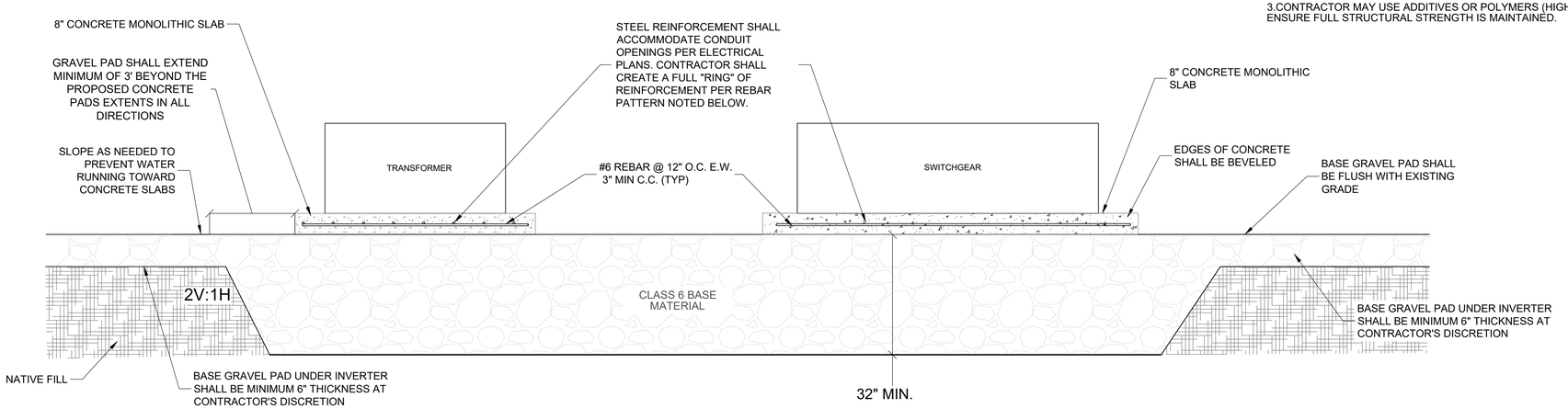
NOTES:

1.BASE SHALL BE CLASS 6 MATERIAL AND BACKFILLED IN LIFTS NO GREATER THAN 6" AND COMPACTED TO A MINIMUM OF 95% OF THE STANDARD PROCTOR MAXIMUM DRY DENSITY.

1.CONCRETE SHALL BE CDOT STANDARD EXPOSED SLAB MIX (MINIMUM 4000 PSI STRENGTH) OR EQUIVALENT. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COMPACTION AND CONCRETE TESTING TO ENSURE COMPLIANCE WITH DESIGN.

2.ALL ELECTRICAL CONNECTIONS, CONDUIT, WINDOWS, METERS, TRANSFORMERS AND OTHER ELECTRICAL EQUIPMENT SHALL BE INSTALED PER ELECTRICAL PLANS.

3.CONTRACTOR MAY USE ADDITIVES OR POLYMERS (HIGH-EARLY, E.G.) TO SHORTEN CURE TIME, BUT MUST ENSURE FULL STRUCTURAL STRENGTH IS MAINTAINED.



01/14 EQUIPMENT PAD
NOT TO SCALE

COLORADO LICENSED
DEREK R. LASH
67079
04/07/2026
PROFESSIONAL ENGINEER

EOR water ecology community
EMMONS & OLIVIER RESOURCES, INC.
1919 UNIV. AVE. W. #300 ST. PAUL, MN
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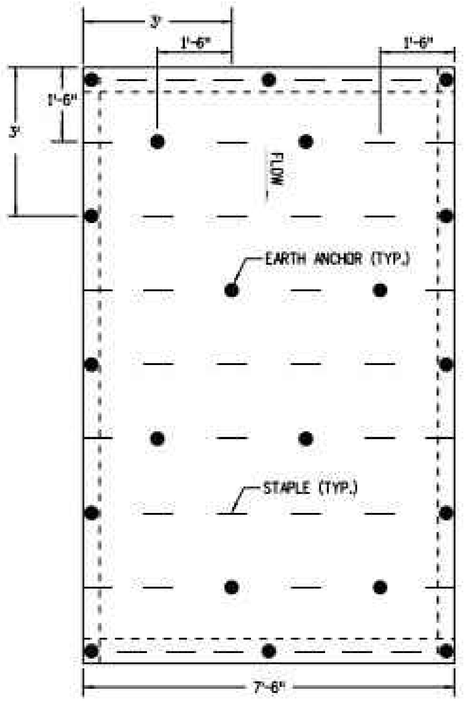
DESIGNED BY: ERK
DRAWN BY: IJA
CHECKED BY: DRL
EOR JOB #1675-0050

ISI SOLAR

LAMAR SOLAR
LAMAR, PROWERS COUNTY, COLORADO
Pivot Energy
INTERCONNECTION SYSTEMS, INC. CENTRAL CITY, NE 68826

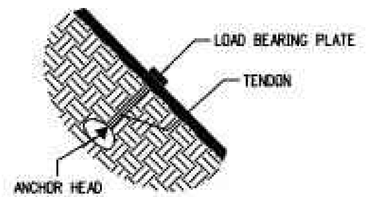
DETAILS 4
SHEET 14 OF 15

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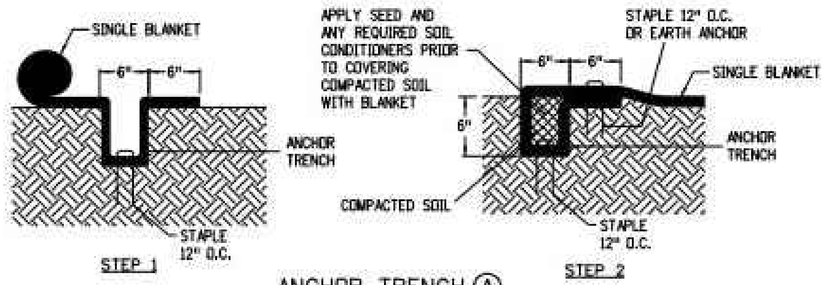
TYPICAL STAPLE OR EARTH ANCHOR PATTERN FOR SLOPE APPLICATION

IF EARTH ANCHORS ARE NOT SPECIFIED ON THE PLANS, ONLY STAPLES SHALL BE USED. SEE SUBSECTION 216.04



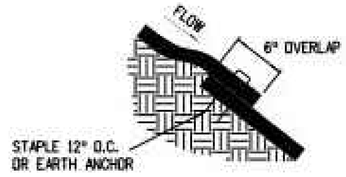
EARTH ANCHOR

NOTES:
1. EARTH ANCHORS WILL BE USED INSTEAD OF STAPLES WHEN SPECIFIED IN THE PLANS.
2. EARTH ANCHORS SHALL BE PAID FOR SEPERATLY AS SPECIFIED IN SECTION 216.



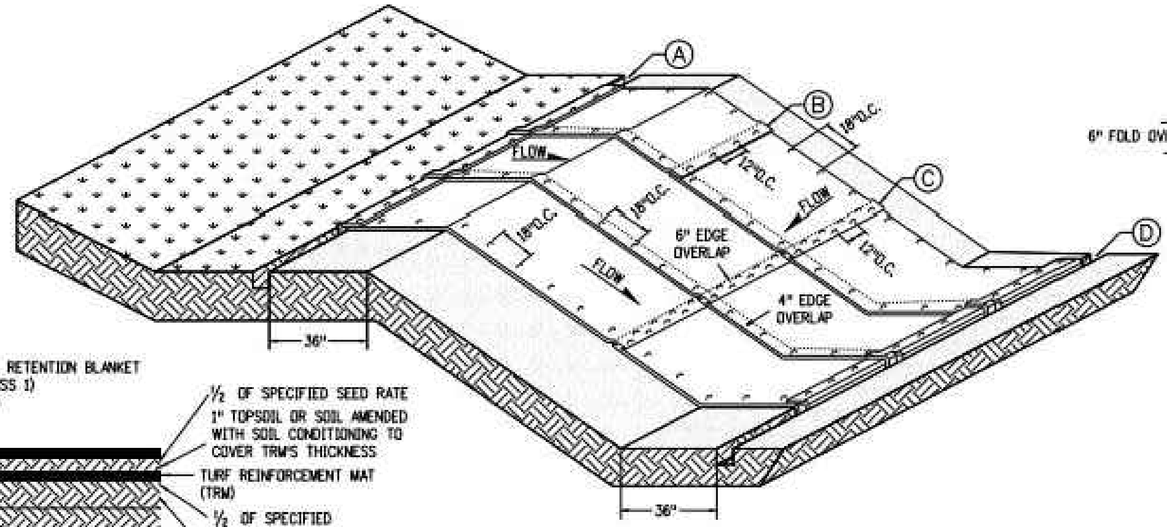
ANCHOR TRENCH (A)

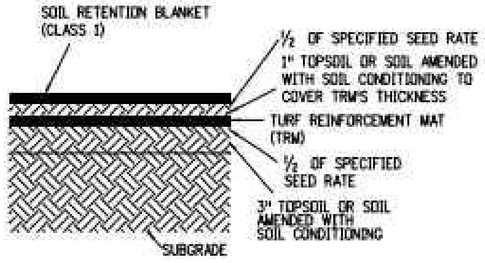
TO BE USED AT THE UPSLOPE AND DOWNSLOPE ENDS OF BLANKET ACROSS THE ENTIRE WIDTH OF SLOPE UNLESS SLOPE RUNS INTO RECEIVING WATER. (SEE DOWNSLOPE END STAPLE CHECK).



CONSECUTIVE ROLL OVERLAP (B)

TO BE USED WHEREVER ONE ROLL OF BLANKET ENDS AND ANOTHER BEGINS WITH THE UPHILL BLANKET PLACED ON TOP OF THE BLANKET ON THE DOWNHILL SIDE.



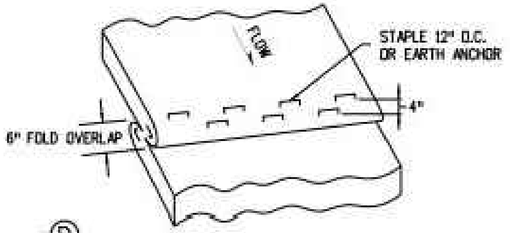


SOIL FILLED TRM APPLICATION

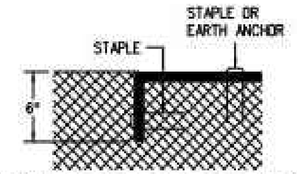
1. PLACE 3" TOPSOIL OR SOIL AMENDED WITH SOIL CONDITIONING.
2. APPLY HALF OF THE SPECIFIED SEED AT THE BROADCAST RATE AND RAKE IT INTO THE SOIL.
3. INSTALL TRM.
4. PLACE 1" TOPSOIL OR SOIL AMENDED WITH SOIL CONDITIONING INTO THE MATRIX TO COVER THE PRODUCT'S THICKNESS.
5. APPLY THE REMAINING HALF OF THE SPECIFIED SEED AT THE BROADCAST RATE AND RAKE IT INTO THE SOIL.
6. INSTALL SOIL RETENTION BLANKET (CLASS 1).

SOIL RETENTION BLANKETS/TURF REINFORCEMENT MATS (TRM) SLOPE APPLICATION

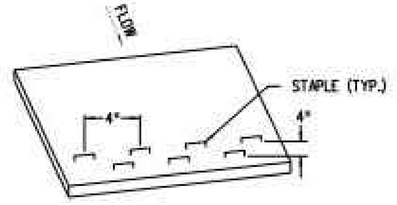
IN ACCORDANCE WITH SECTION 216.



STAPLE CHECK (C)



TERMINATION OF CHANNEL (D)



DOWNSLOPE END STAPLE CHECK

TO BE USED WHEN SLOPE RUNS INTO A RECEIVING WATER AND CANNOT BE EXTENDED 3 FEET BEYOND SLOPE.

COLORADO LICENSED DEREK R. LASH 67079 04/07/2026 PROFESSIONAL ENGINEER

01/15 SOIL RETENTION BLANKET (CDOT STANDARD DETAIL PLAN NO. M-216-1)
NOT TO SCALE

water ecology community
EMMONS & OLIVIER RESOURCES, INC.
1919 UNIV. AVE. W. #300 ST. PAUL, MN
TEL: 651.770.8448 WWW.EORINC.COM

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EOR JOB #1675-0050

ISI SOLAR

LAMAR SOLAR
LAMAR, PROWERS COUNTY, COLORADO
Pivot Energy
INTERCONNECTION SYSTEMS, INC. CENTRAL CITY, NE 68826

DETAILS 5

SHEET 15 OF 15

Plot Date: 04/07/2026
Drawing name: X:\Clients_Private\01675_Interconnection_Systems_Inc\050_Lamar_Solar\09_GIMS\dwg\Sheets\1675-0050 DETAILS.dwg
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LAMAR SOLAR

5.85MWDC/4.75MWAC

LAMAR, CO 81052

38.0237°, -102.3534°

GENERAL NOTES

SCOPE OF WORK:

THIS PROJECT CONSISTS OF THE INSTALLATION OF A SOLAR PHOTOVOLTAIC GENERATING FACILITY. THE SOLAR POWER PLANT WILL BE A NEW GROUND-MOUNTED ARRAY ON A SINGLE AXIS TRACKING SYSTEM AND WILL INCLUDE THE INSTALLATION OF PV MODULES, GRID-INTERACTIVE INVERTERS & SINGLE AXIS TRACKERS, TRACKER MOTORS, SCADA, WEATHER STATION, COMMUNICATION SYSTEM AND A COLLECTOR SYSTEM TO SUPPLY POWER DIRECTLY TO THE LOCAL ELECTRIC UTILITY GRID.

PERMISSION TO OPERATE THE PV SYSTEM IS NOT AUTHORIZED UNTIL FINAL INSPECTION, COMMISSIONING AND WITNESS TESTING IS COMPLETED AND PASSED BY THE AUTHORITY HAVING JURISDICTION AND THE ELECTRIC UTILITY SERVICE PROVIDER.

ELECTRIC UTILITY SERVICE PROVIDER:
ARKANSAS RIVER POWER AUTHORITY (ARPA)

CODE ENFORCED:
NATIONAL ELECTRICAL CODE 2023

DESIGN TEMPERATURE:
ASHRAE DERIVED TEMPERATURES FOR **LAMAR, CO**
EXTREME LOW TEMP: -24.0 °C
2% AVERAGE HIGH TEMP: 38.5 °C
10-YR EXTREME HIGH TEMP: 43.0 °C
SOURCE: 2025 ASHRAE HANDBOOK

COLORADO 811

PROJECT DETAILS

SYSTEM SUMMARY
FOOTPRINT AREA: 32.3 ACRES
DC SYSTEM SIZE: 5.85MWDC
AC SYSTEM SIZE: 4.75MWAC
DC/AC RATIO: 1.23

PV MODULES
MANUFACTURER: FIRST SOLAR
MODEL: FS-6445A-P-B-2
DC POWER @ STC: 445 W
MODULES PER STRING: 6
TOTAL STRINGS: 2,192
TOTAL MODULES: 13,152

INVERTERS/PCS
MANUFACTURER: CPS
MODEL: SCH250K-T-US-600-CWB
AC POWER RATING: 250kW
TOTAL INVERTERS: 19
POWER FACTOR: 1.0

RACKING
MANUFACTURER: FTC SOLAR
MODEL: PIONEER TRACKER™
PITCH: 18'-1"
INTER-ROW SPACING: 11'-6"
GCR: 0.37
MAX TRACKER ROTATION: 52°
AZIMUTH: 180

PROJECT CONTACT INFORMATION

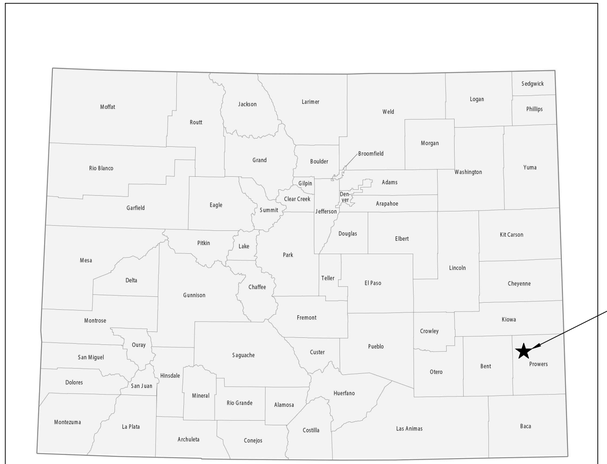
OWNER:
NAME: SANDHILLS ENERGY
ADDRESS 1: 1403 HARNEY ST STE 100
OMAHA, NE 68102
PHONE: 563-542-5725
CONTACT: RAKI GIANNAKOUROS

EPC:
NAME: INTERCONNECTION SYSTEMS, INC
ADDRESS: 1418 18TH RD, CENTRAL CITY, NE 68826
CONTACT: TRENT VARLEY
TRENT@ISI.CONSULTING

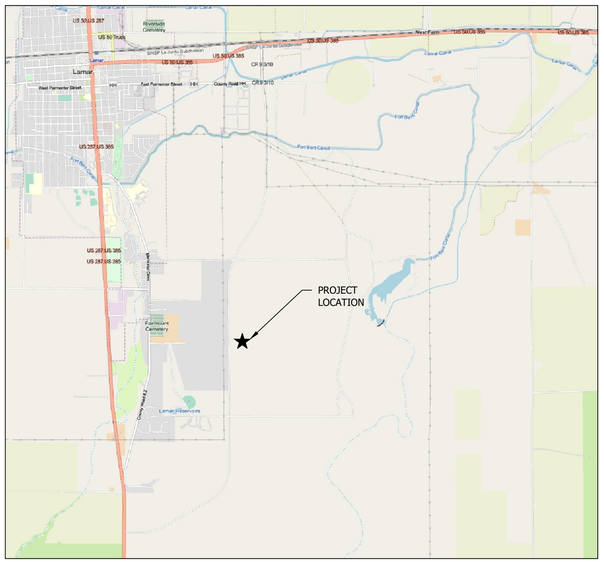
ELECTRICAL ENGINEER :
NAME: POWER SYSTEM ENGINEERING
ADDRESS: 2424 RIMROCK RD, MADISON, WI 53713
PHONE: 608-222-8400
CONTACT: DANIEL GONDERE
GONDERED@POWERSYSTEM.ORG

AUTHORITY HAVING JURISDICTION:
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LOCATION/REGIONAL MAP



SATELLITE MAP



NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
C	30% ELECTRICAL DRAWINGS	MDL	DTG	02/20/2026
D	ISSUED FOR PERMIT	MDL	DTG	05/01/2026

ISSUED FOR PERMIT
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COLORADO LICENSED
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05.01.2026
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PSE PROJECT NUMBER: NE0192512-40

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DRAWN BY:	CHK'D/APPD BY:
MDL	OOI

LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

ELECTRICAL COVER SHEET

DRAWING NUMBER	REVISION
E0.0	D

ABBREVIATIONS

A	AMPERE
A.F.F.	ABOVE FINISHED FLOOR
A.F.G.	ABOVE FINISHED GRADE
AC	ALTERNATING CURRENT
AFCI	ARC FAULT CIRCUIT INTERRUPTER
AIC	AMPERE INTERRUPTING CAPACITY
AL	ALUMINUM
AMP	AMPERE
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX	APPROXIMATELY
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AUX	AUXILAIARY
AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CB	CIRCUIT BREAKER
CB	COMBINER BOX
CKT	CIRCUIT
CR	CORROSION RESISTANT
CT	CURRENT TRANSFORMER
CTR	CENTER
CU	COPPER
DAS	DATA ACQUISITION SYSTEM
DC	DIRECT CURRENT
DEMO	DEMOLITION
DIA	DIAMETER
DISC	DISCONNECT
DWG	DRAWING
EGC	EQUIPMENT GROUNDING CONDUCTOR
ELEC	ELECTRICAL
ELEV	ELEVATION
EM	EMERGENCY
EMT	ELECTRIC METALLIC TUBING
EOR	ENGINEER OF RECORD
F	FUSE
FMC	FLEXIBLE METALLIC CONDUIT
GEC	GROUNDING ELECTRODE CONDUCTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFI	GROUND FAULT INTERRUPTER
GFP	GROUND FAULT PROTECTION
GND	GROUND
GOAB	GANG OPERATED AIR BREAK SWITCH
HP	HORSEPOWER
IMC	INTERMEDIATE METAL CONDUIT
INV	INVERTER
J-BOX/JB	JUNCTION BOX
kV	1,000 VOLT
kVA	1,000 VOLT-AMPERE
kVAR	1,000 VOLT-AMPERE REACTIVE
kW	1,000 WATT
kWH	1,000 WATT HOUR
LSIG	LONG, SHORT, INSTANTANEOUS & GROUND FAULT
MAX	MAXIMUM
MLPE	MODULE LEVEL POWER ELECTRONICS
MW	1,000,000 WATTS
NC	NORMALLY CLOSED
NEMA	NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION
NO	NORMALLY OPEN
OAE	OR APPROVED EQUAL
PF	POWER FACTOR
PNL	PANELBOARD
POCC	POINT OF COMMON COUPLING
POI	POINT OF INTERCONNECTION
PRI	PRIMARY
PVC	POLYVINYL CHLORIDE
RGS	RIGID GALVANIZED STEEL
SAT	SINGLE AXIS TRACKER
SCH 40	SCHEDULE 40
SCH 80	SCHEDULE 80
SEC	SECONDARY
TVSS	TRANSIENT VOLTAGE SUPRESSION
TYP	TYPICAL
UG	UNDERGROUND
UPS	UNINTERRUTIBLE POWER SUPPLY
WP	WEATHER PROOF
XFMR	TRANSFORMER

SYMBOL LEGEND

- PV INVERTER
- TRANSFORMER
- CURRENT TRANSFORMER
- VOLTAGE (POTENTIAL) TRANSFORMER
- WYE-GROUND
- DELTA
- FUSE
- BOLT ON CIRCUIT BREAKER
- DRAW OUT CIRCUIT BREAKER
- TRANSIENT VOLTAGE SUPPRESSION DEVICE
- SHUNT TRIP
- DISCONNECT SWITCH
- GROUND FAULT PROTECTION
- COMBINER BOX
- ANSI TAG
- GROUND
- PV MODULES
- CONTACTOR
- VOLTAGE ARRESTOR DEVICE

SHEET INDEX

SHEET NUMBER	SHEET TITLE	10% ELECTRICAL DRAWINGS 01/13/2026 A	10% ELECTRICAL DRAWINGS 01/21/2026 B	30% ELECTRICAL DRAWINGS 02/20/2026 C	ISSUED FOR PERMIT 05/01/2026 D
E0.0	ELECTRICAL COVER SHEET			X	X
E0.1	ELECTRICAL NOTES			X	X
E0.2	ELECTRICAL SPECIFICATIONS			X	X
E0.3	ELECTRICAL SPECIFICATIONS			X	X
E1.0	ELECTRICAL SITE PLAN	X	X	X	X
E1.1	ELECTRICAL POWER PLAN			X	X
E1.2	STRING WIRING PLAN			X	X
E1.3	ENLARGED STRING WIRING PLAN			X	X
E1.4	GROUNDING PLAN			X	X
E2.0	MV AC ONE-LINE DIAGRAM			X	X
E2.1	AC ONE-LINE DIAGRAM			X	X
E2.2	AC ONE-LINE DIAGRAM			X	X
E2.3	AUX AC ONE-LINE DIAGRAM			X	X
E2.4	DC ONE-LINE DIAGRAM			X	X
E3.0	ELECTRICAL EQUIPMENT LAYOUT - PV SYSTEM 1				X
E3.1	ELECTRICAL EQUIPMENT LAYOUT - PV SYSTEM 2				X
E3.2	EQUIPMENT RACK DETAILS - PV SYSTEM 1				X
E3.3	EQUIPMENT RACK DETAILS - PV SYSTEM 2				X
E3.4	TRENCH DETAILS				X
E3.5	CAB MANAGEMENT DETAILS				X
E3.6	WIRE MANAGEMENT DETAILS				X
E3.7	EQUIPMENT PAD DETAILS				X
E3.8	GROUNDING DETAILS				X
E3.9	GROUNDING DETAILS				X
E3.10	FENCE GROUNDING DETAILS				X
E3.11	GROUNDING CONNECTIONS				X
E3.12	MV POLE BILL OF MATERIALS				X
E3.13	POLE STRUCTURE DETAILS				X
E3.14	POLE STRUCTURE DETAILS				X
E3.15	POLE STRUCTURE DETAILS				X
E3.16	POLE STRUCTURE DETAILS				X
E4.0	DC CABLE SCHEDULE				X
E4.1	AC CABLE SCHEDULE				X
E5.1	PV SYSTEM LABELS & MARKING DETAILS			X	X
E5.2	EQUIPMENT DATASHEETS			X	X
E5.3	EQUIPMENT DATASHEETS			X	X

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ELECTRICAL NOTES

DRAWING NUMBER	REVISION
E0.1	D

1 GENERAL ELECTRICAL REQUIREMENTS

1. WORK INCLUDED IN ELECTRICAL DRAWINGS CONSISTS OF FURNISHING LABOR, EQUIPMENT, SUPPLIES AND MATERIALS UNLESS OTHERWISE INDICATED, AND IN PERFORMING OPERATIONS NECESSARY FOR THE INSTALLATION OF THE COMPLETE ELECTRICAL PHOTOVOLTAIC SYSTEM AS REQUIRED BY THESE SPECIFICATIONS OR SHOWN ON THE DRAWINGS, SUBJECT TO THE TERMS AND CONDITIONS OF THE CONTRACT. THE WORK SHALL ALSO INCLUDE THE COMPLETION OF DETAILS OF THE ELECTRICAL WORK NOT MENTIONED OR SHOWN WHICH ARE NECESSARY FOR THE SUCCESSFUL OPERATION OF ELECTRICAL PHOTOVOLTAIC SYSTEMS INDICATED ON THE DRAWINGS OR SPECIFIED HEREIN.

2. THE INTENT OF THE PLANS AND SPECIFICATIONS ARE FOR THE COMPLETE INSTALLATION OF THE SYSTEM DESCRIBED SO THAT AT THE CONCLUSION OF THE CONSTRUCTION, THE SYSTEMS WILL BE TURNED OVER TO THE OWNER COMPLETE AND READY FOR SAFE, EFFICIENT OPERATION. THE PLANS AND SPECIFICATIONS CANNOT DEAL INDIVIDUALLY WITH THE MANY INCIDENTAL ITEMS WHICH MAY BE REQUIRED BY THE NATURE OF THE SYSTEMS. THE CONTRACTOR SHALL BE OBLIGED TO FURNISH AND INSTALL ALL SUCH ITEMS NORMALLY INCLUDED ON SYSTEMS OF THIS TYPE, WHICH WHILE NOT MENTIONED DIRECTLY IN THE DRAWINGS AND SPECIFICATIONS, ARE OBVIOUSLY ESSENTIAL TO THE INSTALLATION AND OPERATION OF THE SYSTEM AND WHICH ARE NORMALLY FURNISHED ON QUALITY INSTALLATIONS OF THIS TYPE. THE CONTRACTOR SHALL MAKE A THOROUGH INSPECTION OF THE CONDITIONS AND BE FAMILIAR WITH ALL CONDITIONS AFFECTING THE EXTENT OR COST OF THIS WORK. CLAIMS FOR EXTRA PAYMENT AS A RESULT OF FAILURE TO EXAMINE THE CONDITIONS WILL NOT BE ALLOWED.

3. THE ELECTRICAL SYSTEM SHALL BE INSTALLED FOLLOWING THE CONVENTIONS OF THE NATIONAL ELECTRIC CODE AND ALL STATE AND LOCAL CODES AND ORDINANCES APPLYING TO THE WORK INDICATED IN THE DRAWINGS AND SPECIFICATIONS. MAKE APPLICATION FOR, OBTAIN, AND PAY FOR ALL REQUIRED PERMITS AND CERTIFICATES OF INSPECTION FOR THE WORK. IN THE EVENT OF CONFLICT BETWEEN THIS SPECIFICATION AND A GOVERNING CODE OR ORDINANCE, THE HIGHER STANDARD SHALL GOVERN. CONTRACTORS SHALL FAMILIARIZE THEMSELVES WITH LOCAL REGULATIONS WHICH AFFECT THEIR WORK IN ANY WAY. EXTRA PAYMENT WILL NOT BE ALLOWED FOR CHANGES REQUIRED BY LOCAL REGULATIONS. REGULAR INSPECTIONS SHALL BE REQUESTED OF DULY AUTHORIZED INSPECTORS AS REQUIRED BY CODES AND ORDINANCES.

4. EXCEPT AS SPECIFICALLY DIMENSIONED, THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC IN NATURE AND DEPICT, IN THEIR APPROXIMATE LOCATION, SYMBOLS REPRESENTING ELECTRICAL EQUIPMENT, THE EXACT LOCATION OF WHICH SHALL BE SUBJECT TO APPROVAL BY THE OWNER'S AUTHORIZED REPRESENTATIVE. IMMEDIATELY REPORT TO THE ENGINEER DISCREPANCIES DISCOVERED BEFORE OR AFTER WORK HAS STARTED. THE ENGINEER RESERVES THE RIGHT TO MAKE REASONABLE CHANGES IN THE LOCATION OF APPARATUS, OR EQUIPMENT UP TO THE TIME OF ROUGHING-IN OR TO REQUIRE MINOR CHANGES IN THE WORK OF CONTRACTOR TO ELIMINATE DISCREPANCIES WITH NO CHANGE IN CONTRACT COST.

5. PROPOSALS TO THE ENGINEER FROM THE CONTRACTOR FOR SUBSTITUTION OF MATERIAL AND EQUIPMENT LISTED ON THE DRAWINGS AND/OR THESE SPECIFICATIONS SHALL BE SUBMITTED, AND THE ENGINEER'S APPROVAL SHALL BE OBTAINED. FOR SUCH PROPOSALS, MATERIALS AND EQUIPMENT WILL HAVE TO CONFORM IN TYPE, FUNCTION, QUALITY OF MATERIAL AND ASSEMBLY, AND MEET THE REQUIREMENTS INDICATED IN THE DRAWINGS AND SPECIFICATIONS.

6. CONSULT THE CONTRACT DRAWINGS AND SPECIFICATIONS OF ALL OTHER DIVISIONS AND OTHER TRADES FOR CORRELATING INFORMATION AND LAYOUT WORK SO THAT IT WILL NOT INTERFERE WITH OTHER TRADES. VERIFY ALL DIMENSIONS AND CONDITIONS. IF CONFLICTS OCCUR SUCH THAT RESOLUTION IS NOT POSSIBLE BY THE AFFECTED TRADES ON THE JOB, THE ENGINEER SHALL BE NOTIFIED, AND A RESOLUTION WILL BE WORKED OUT.

7. SHOP DRAWINGS: CAREFULLY EXAMINE ALL SHOP DRAWINGS NOTING CAPACITY, ARRANGEMENT AND PHYSICAL DIMENSIONS AND MARK THE DRAWINGS AS BEING REVIEWED AND APPROVED PRIOR TO SUBMITTING TO THE ENGINEER. WHERE CATALOG DATA IS SUBMITTED WHICH INCLUDES ITEMS WHICH DO NOT APPLY TO THIS PROJECT, THOSE ITEMS SHALL BE CLEARLY MARKED OUT OR RELEVANT ITEMS CLEARLY NOTED. ANY DEVIATIONS FROM THE DOCUMENTS SHALL BE SO NOTED BY THE CONTRACTOR OR EQUIPMENT SUPPLIER. THE INTENT AND REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS SHALL BE ADHERED TO AT ALL TIMES AND ARE NOT WAIVED OR SUPERSEDED IN ANY WAY BY THE SHOP DRAWING SUBMITTAL OR REVIEW. SUBMIT A MINIMUM (1) ELECTRONIC COPY OF SHOP DRAWINGS FOR REVIEW AND APPROVAL. CONTRACTOR SHALL RETAIN A FINAL APPROVED COPY FOR INCORPORATION IN THE OPERATION AND MAINTENANCE MANUALS. IF RETURNED SHOP DRAWINGS ARE MARKED "APPROVED", NO ADDITIONAL SUBMITTAL IS REQUIRED. IF MARKED "APPROVED AS NOTED", THE CHANGES NOTED ON THE SHOP DRAWINGS ARE TO BE INCORPORATED, WITH NO FURTHER RESUBMITTAL REQUIRED. IF MARKED "REVISE AND RESUBMIT", CHANGES NOTED ON THE SHOP DRAWINGS ARE TO BE MADE AND THE DRAWINGS RESUBMITTED FOR REVIEW. IF MARKED "REJECTED", THE EQUIPMENT SUBMITTED IS UNACCEPTABLE AND DIFFERENT EQUIPMENT OR MATERIALS NEED TO BE SUBMITTED.

8. RECORD DRAWINGS: AS WORK PROGRESSES, IN A NEAT AND LEGIBLE MANNER, RECORD ALL CHANGES OR DEVIATIONS FROM THE CONTRACT DRAWINGS. SUBMIT RECORD DRAWINGS TO ENGINEER FOR REVIEW AT COMPLETION OF WORK. THE RECORD DRAWINGS WILL BECOME PART OF THE OPERATION AND MAINTENANCE MANUAL PACKAGE SUBMITTED TO THE OWNER AFTER THE COMPLETION OF THE PROJECT.

2 EQUIPMENT & MATERIALS

2.1 GENERAL

1. ALL MATERIALS SHALL BE NEW, AS SPECIFIED OR APPROVED, AND IN ORIGINAL PACKAGING. CATALOG NUMBERS SPECIFIED SHALL BE VERIFIED WITH VENDORS PRIOR TO ORDERING MATERIAL.

2. ALL MATERIALS SHALL BE LISTED BY A NRTL (UL, ETL, ETC.) AND HAVE AN ASSOCIATED LABEL UNLESS SPECIAL FABRICATION OF MATERIAL IS REQUIRED. SPECIAL FABRICATED MATERIAL SHALL BE FABRICATED USING LISTED COMPONENTS AND PROCEDURES.

3. ALL SYSTEM COMPONENTS SHALL BE UL LISTED. ALL OUTDOOR EQUIPMENT SHALL BE NEMA 3R OR NEMA 4 OR AS INDICATED ON THE PLANS.

4. NO ASBESTOS OR PCB CONTAINING MATERIALS OF ANY TYPE SHALL BE USED ON THIS PROJECT EXCEPT IN CASES WHERE ACCEPTABLE SUBSTITUTIONS HAVE NOT BEEN FOUND FOR ASBESTOS MATERIALS AS IN HIGH TEMPERATURE APPLICATIONS.

5. ALL HANGERS AND SUPPORTS SHALL BE SUITABLE IN STRENGTH AND ANCHORAGE TO LOAD IMPOSED. IN ALL AREAS WHERE SUPPORTS AND HANGERS ARE SUBJECTED TO VIBRATION, SPRING TYPE LOCK WASHERS SHALL BE USED.

6. FOR 1500VDC SYSTEMS, MODULE, INVERTER, FUSE, CIRCUIT BREAKER, COMBINER BOX, DISCONNECT, CONNECTION, JUNCTION BOX, LEAD, WIRE AND CABLE SPECIFICATIONS SHALL BE LABELED AS RATED FOR 1500VDC.

2.2 PV MODULES

1. PV MODULES SHALL BE DESIGNED TO PRODUCE ELECTRICITY FOR A MINIMUM OF 25 YEARS UNDER THE ENVIRONMENTAL CONDITIONS OF THE SITE.

2. PV MODULE MANUFACTURER SHALL BE AS AGREED UPON BY CONTRACTOR AND OWNER. MANUFACTURER SHALL HAVE AT LEAST FIVE YEARS OF EXPERIENCE MANUFACTURING PV MODULES AND A CURRENT MINIMUM MANUFACTURING CAPACITY OF AT LEAST 250 MW PER YEAR.

3. PV MODULES SHALL BE PROVIDED WITH DETAILED ELECTRICAL AND MECHANICAL SPECIFICATIONS SHEETS AND ESTIMATED ANNUAL DEGRADATION. ANNUAL DEGRADATION SHALL BE NO GREATER THAN 1.0% AND SHALL BE LIMITED TO 20.0% OVER 25 YEARS.

4. PV MODULE CELL TECHNOLOGY SHALL BE MONO OR POLY CRYSTALLINE SILICON, HETEROJUNCTION SILICON, OR THIN FILM.

5. PV MODULES SHALL BE UL LISTED OR CERTIFIED BY AN OSHA-APPROVED NRTL TO UL 1703. PV MODULE FRAMES SHALL CONFORM TO UL 2703.

6. PV MODULES SHALL BE NEW AND SUPPLIED BY THE SAME MANUFACTURER, WITH THE SAME MODEL NUMBERS AND STC POWER CHARACTERISTICS.

7. PV MODULES SHALL INCLUDE FACTORY INSTALLED POWER CONDUCTORS OF AT LEAST #12 AWG, RATED 1500VDC WITH CLEARLY DEFINED POLARITIES, WEATHER-PROOFED, UV RESISTANT, WITH LOCKING-TYPE PLUG-IN CONNECTORS. ALL PV MODULE CONNECTORS SHALL BE THE SAME MAKE AND MODEL AS THE CONNECTORS USED ON THE MATING HOME RUN CONDUCTORS.

8. CONTRACTOR SHALL PROVIDE ENOUGH SPARES TO PROVIDE 1.0% OF THE PEAK-RATED DC POWER OUTPUT OF THE ARRAY.

9. PV MODULES SHALL RETAIN THE MANUFACTURER PROVIDED SERIAL NUMBER MARKINGS.

2.3 PV MODULE MOUNTING STRUCTURES - GROUND MOUNT

1. PV MODULE MOUNTING STRUCTURES SHALL BE EXPLICITLY APPROVED BY THE PV MODULE MANUFACTURER FOR USE WITH THE SPECIFIC PV MODULE SELECTED FOR THE PROJECT, AND FOR THE ORIENTATION IN WHICH THE MODULE WILL BE MOUNTED.

2. PV MODULE MOUNTING STRUCTURES UNDER NORMAL LOADING, DURING INSTALLATION AND ONCE IN SERVICE, SHALL NOT CAUSE PERMANENT DEFORMATION OF STRUCTURAL MEMBERS.

3. PV MODULE MOUNTING STRUCTURES SHALL BE UL LISTED TO UL 2703.

4. PV MODULE MOUNTING STRUCTURES SHALL BE DESIGNED IN ACCORDANCE WITH APPLICABLE BUILDING CODE REQUIREMENTS AND MAXIMUM LOADING PRESSURE. PV MODULE MOUNTING STRUCTURES SHALL BE DESIGNED TO WITHSTAND WIND AND SNOW LOADING OF LOCAL CONDITIONS OVER ITS OPERATING LIFETIME, WITHOUT COMPROMISING STRUCTURAL INTEGRITY, FOR A MINIMUM OF 25 YEARS.

5. WHEN DETERMINING SNOW-LOADING, THE ASCE 7-10 0.7 FLAT ROOF REDUCTION FACTOR SHALL NOT BE USED FOR GROUND MOUNT STRUCTURES WITH A MINIMUM GROUND CLEARANCE OF LESS THAN 8 FEET ABOVE FINISHED GRADE.

6. PV MODULE MOUNTING STRUCTURES SHALL BE ALUMINUM OR HOT DIPPED GALVANIZED STEEL IN ACCORDANCE WITH ASTM A123. MATERIALS SHALL BE CERTIFIED BY THE MANUFACTURER TO BE SUITABLE FOR USE IN THE CLIMATE AND ATMOSPHERE IN WHICH THE MOUNTING STRUCTURE IS INSTALLED, INCLUDING HARSH CORROSIVE ENVIRONMENTS.

7. FOR ANY COMPONENTS WHERE THE GALVANIZATION IS DISTURBED DUE TO FACTORY PROCESSING AFTER THE GALVANIZATION, THOSE SURFACES SHALL BE REPAIRED IN ACCORDANCE WITH ASTM A780 AND A780M-09.

8. PV MODULE MOUNTING STRUCTURES SHALL BE SUPPLIED WITH INSTALLATION MANUALS, A LIST OF REQUIRED FASTENERS, AND A TORQUE CHART FOR ALL FASTENERS PROVIDING STRUCTURAL SUPPORT.

9. A MINIMUM HEIGHT OF 18 INCHES ABOVE GRADE TO THE LOWEST POINT OF THE PV MODULES SHALL BE ADHERED TO WHEN THE TRACKERS ARE ROTATED TO THEIR LIMITS. IN REGIONS AFFECTED BY STORM WATER RUNOFF, CONTRACTOR SHALL PROVIDE A MINIMUM HEIGHT OF 12 INCHES ABOVE THE 100-YEAR FLOOD ELEVATION TO THE LOWEST POINT OF THE PV MODULES WHEN THE TRACKERS ARE ROTATED TO THEIR LIMITS. THE 100-YEAR FLOOD ELEVATION SHALL BE AS DETERMINED BY THE FINAL HYDROLOGY REPORT PROVIDED BY ENGINEER.

2.4 PV MODULE MOUNTING STRUCTURES - CANOPIES

1. SIGNED/SEALED PE CERTIFICATION LETTER SHALL BE PROVIDED FOR CANOPY STRUCTURES CERTIFYING THE VIABILITY OF CANOPY FOUNDATION DESIGNS FOR THE LIFE OF THE PROJECT. ANY FOUNDATION CALCULATIONS NOT INCLUDED IN THE RACKING ANALYSIS SHALL BE PROVIDED. IMPACT OF CORROSION OVER THE LIFE OF THE SYSTEM SHALL BE ADDRESSED.

2. CARPORT CANOPIES SHALL HAVE A MINIMUM VEHICLE HEIGHT CLEARANCE OF 12 FEET TO ANY OVER-HEAD OBSTRUCTIONS INCLUDING LIGHTING FIXTURES. CLEARANCES MUST BE MARKED CLEARLY ON THE STRUCTURES, AND PROTECTIVE MEASURES SUCH AS BOLLARDS AND CLEARANCE BARS MAY BE REQUIRED BY THE SYSTEM OWNER DURING THE DESIGN REVIEW.

3. CARPORT CANOPIES WHEN BUILT IN AREAS PRONE TO SNOWFALL SHALL UTILIZE SNOW ARRESTOR SYSTEMS OR BE DESIGNED TO SAFELY CONTROL THE SHEDDING OF SNOW AWAY FROM AREAS WHERE VEHICLES OR PEDESTRIANS COULD BE IMPACTED.

4. DRY CANOPIES THAT ARE ENCLOSED BELOW THE PV ARRAYS, OBSTRUCTING DIRECT ACCESS TO THE BOTTOM SIDE OF THE MODULES, SHALL EMPLOY A MODULE-MOUNTING SYSTEM THAT UTILIZES A TOP-DOWN MOUNT.

5. METAL CARPORT STRUCTURES SHALL BE BOLTED DIRECTLY TO EQUIPMENT PADS, SUCH THAT THEY MAY BE REMOVED IF NECESSARY FOR EQUIPMENT REPLACEMENT OR SERVICE.

2.5 DC COMBINER AND DISCONNECT BOXES

1. COMBINER AND DISCONNECT BOXES SHALL BE UL LISTED TO UL 1741.

2. COMBINER AND DISCONNECT BOXES SHALL BE RATED NEMA 3R OR BETTER.

3. COMBINER AND DISCONNECT BOXES SHALL BE EQUIPPED WITH APPROVED MEANS OF DRAINAGE FOR ACCUMULATED MOISTURE WHICH DOES NOT COMPROMISE ENCLOSURE WARRANTY OR ALLOW ENTRANCE OF CONTAMINANTS OR RODENTS INTO THE ENCLOSURE.

4. COMBINER AND DISCONNECT BOXES SHALL HAVE PROVISIONS FOR A PAD LOCK.

5. COMBINER AND DISCONNECT BOXES SHALL BE COMPATIBLE WITH THE INVERTERS.

6. COMBINER AND DISCONNECT BOXES TERMINALS FOR DC OUTPUT CABLES SHALL INCLUDE PROVISIONS TO ACCOMMODATE COMPRESSION RING LUGS, SHALL BE 90ºC, AND SHALL BE RATED FOR COPPER AND ALUMINUM.

7. COMBINER AND DISCONNECT BOXES SHALL PROVIDE FUSED CONNECTIONS FOR ALL UNGROUNDED SOURCE-CIRCUIT CONDUCTORS. OUTPUT CIRCUITS SHALL BE PROVIDED WITH A LOAD-BREAK DISCONNECT SWITCH WITH EXTERIOR LOCKABLE HANDLE, CURRENT-RATED FOR THE MAXIMUM CIRCUIT CURRENT AND AVAILABLE FAULT CURRENT.

8. COMBINER AND DISCONNECT BOXES SHALL HAVE A MAXIMUM DC VOLTAGE RATING OF 1500 VDC.

9. COMBINER AND DISCONNECT BOX STRING FUSE HOLDERS SHALL BE "TOUCH-SAFE" AND RATED ACCORDING TO THE STRING DC CURRENT AND VOLTAGE AND ENVIRONMENTAL CONDITIONS. THE COMBINER BOX SHALL BE EQUIPPED WITH A MECHANICAL GROUND LUG AND BUS, RATED FOR TERMINATIONS WITH COPPER GROUNDING CONDUCTORS.

2.6 INVERTERS

1. INVERTERS SHALL BE UTILITY-INTERACTIVE AND SHALL BE IEEE 1547, UL 1741, AND IEEE 519 COMPLIANT.

2. INVERTERS SHALL MEET INTERCONNECTION UTILITY OPERATION REQUIREMENTS.

3. INVERTERS LOCATED OUTDOORS SHALL BE HOUSED IN ENCLOSURES RATED NEMA 3R OR BETTER. POWER AND CONTROL ELECTRONICS SHALL BE HOUSED IN A PORTION OF THE ENCLOSURE RATED NEMA 4 OR BETTER.

4. INVERTERS SHALL HAVE A MINIMUM CEC-RATED EFFICIENCY OF 97%.

5. INVERTERS SHALL INCLUDE WHEN NECESSARY: DC OVERCURRENT PROTECTION AND DISCONNECT SWITCH(ES), AC OVERCURRENT PROTECTION AND DISCONNECT SWITCH(ES), AND SURGE PROTECTION DEVICES.

6. INVERTERS SHALL HAVE A 3-PHASE AC OUTPUT AT A FREQUENCY OF 60 HZ NOMINAL.

7. INVERTERS SHALL HAVE A MINIMUM OPERATING TEMPERATURE RANGE OF -20ºC TO +45ºC, HUMIDITY RANGE OF 15% TO 95%, AND PRESSURE RANGE OF 0 - 6,500 FT. ELEVATION.

8. INVERTER SHALL BE CAPABLE OF OPERATING WITH A POWER FACTOR OF 0.9 LEADING TO 0.9 LAGGING, UNLESS THE GENERATION INTERCONNECTION AGREEMENT REQUIRES A DIFFERENT POWER FACTOR RANGE.

9. INVERTERS SHALL HAVE A MAXIMUM DC VOLTAGE RATING OF 1500 VDC.

10. INVERTERS SHALL BE CAPABLE OF COMPLETELY AUTOMATIC UNATTENDED OPERATION, INCLUDING WAKE UP, SLEEP MODE, SYNCHRONIZATION AND DISCONNECT.

11. INVERTERS SHALL BE CAPABLE OF COMMUNICATING WITH THE DAS SYSTEM AND ALLOW FOR MONITORING AND CONTROL OF SET POINTS, INCLUDING POWER FACTOR AND MAXIMUM POWER.

12. INVERTERS SHALL BE CAPABLE OF OPERATING AT FULL POWER WITH A DC:AC RATIO UP TO THAT DEFINED IN THE SITE TECHNICAL INFORMATION.

13. INVERTER ELECTRICAL TERMINATIONS FOR THE DC CABLING SHALL ALLOW FOR THE USE OF COMPRESSION RING LUGS.

14. ALL INVERTERS SHALL BE OF IDENTICAL MANUFACTURER AND MODEL NUMBER UNLESS APPROVED BY OWNER.

15. INVERTERS SHALL BE COMPLETELY FACTORY-BUILT, ASSEMBLED, WIRED AND TESTED AS A COMPLETE UNIT. IF IT IS NECESSARY TO DISASSEMBLE THE UNITS FOR EASE OF TRANSPORTATION, ALL MATERIALS AND INSTRUCTIONS SHALL BE PROVIDED FOR FIELD RE-ASSEMBLY.

16. INVERTER WARRANTY SHALL ALLOW FOR UNLIMITED USAGE AT FULL RATED POWER DURING THE TERM OF THE WARRANTY.

17. INVERTERS SHALL BE EQUIPPED WITH REMOTE GROUND FAULT DETECTION.

18. INVERTERS SHALL EMPLOY MAXIMUM POWER POINT TRACKING (MPPT) CIRCUITRY TO OPTIMIZE POWER HARVEST OVER THE ENTIRE RANGE OF PV MODULE-STRING OUTPUT FOR THE GIVEN DESIGN AND ENVIRONMENTAL CONDITIONS.

2.7 PV STEP-UP TRANSFORMERS

1. TRANSFORMERS SHALL BE: THREE-PHASE, PAD-MOUNTED, NON-PCB OIL IMMERSED, SELF-COOLED, 60 HZ, STANDARD IMPEDANCE, SUBTRACTIVE POLARITY, FIVE-LEGGED CORE DESIGN, DESIGNED FOR SOLAR PV STEP-UP OPERATION, CLASS KNAN, LESS FLAMMABLE, NON-MINERAL OIL, FACTORY MUTUAL (FM) APPROVED, DEAD FRONT, PAD-MOUNT, OUTDOOR TAMPERPROOF CONSTRUCTION WITH ANSI DARK GREEN CABINET FINISH AND RUST INHIBITOR APPLIED TO BASE.

2. THE DESIGN, CONSTRUCTION AND TESTING OF THE TRANSFORMERS SHALL BE IN ACCORDANCE WITH THE LATEST ACCEPTED PUBLISHED RUS, ANSI, IEEE, AND NEMA STANDARDS, EXCEPT WHERE IN CONFLICT WITH THE SPECIFIC REQUIREMENTS OF THIS SPECIFICATION.

3. TRANSFORMER PRIMARY CONNECTION SHALL BE BY SIX DEAD-FRONT BUSHING WELLS, CONNECTED FOR LOOP FEED. LOAD-BREAK INSERTS AND STAND-OFF BRACKETS SHALL BE PROVIDED FOR SCREW DOWN TYPE PARKING STANDS.

4. TRANSFORMER PRIMARY OVERCURRENT PROTECTION SHALL BE PROVIDED. PRIMARY FUSING SHALL BE BY MEANS OF BAY-O-NET TYPE, OIL IMMERSED, EXPULSION FUSES ACCESSIBLE THROUGH PRIMARY COMPARTMENT IN SERIES WITH PARTIAL RANGE UNDER-OIL ELSP CURRENT-LIMITING FUSES. THE TRANSFORMER SHALL BE ABLE TO WITHSTAND ALL THROUGH FAULTS. DRIP TROUGHS SHALL BE PROVIDED.

5. TRANSFORMERS SHALL BE EQUIPPED WITH AN UNDER-OIL, LOAD BREAK RATED GANG-OPERATED T- BLADE DISCONNECT SWITCH, CAPABLE OF KEEPING THE LOOP CLOSED WHILE THE TRANSFORMER IS DE- ENERGIZED.

6. TRANSFORMERS SHALL HAVE PRIMARY TAPS: 2 @ 2.5% ABOVE NOMINAL, 2 @ 2.5% BELOW NOMINAL. VOLTAGE CHANGE SHALL BE ACCOMPLISHED BY MEANS OF AN ADJUSTER OPERATED FROM OUTSIDE THE TANK WALL AND LOCATED INSIDE THE TERMINAL COMPARTMENT, MARKED SO THE OPERATING VOLTAGE IS CLEARLY INDICATED.

7. TRANSFORMERS SHALL HAVE A GROUNDED ISOLATION SHIELD BETWEEN THE HIGH- AND LOW- VOLTAGE WINDINGS.

8. TRANSFORMER LOW-VOLTAGE WINDING VOLTAGE SHALL BE SPECIFIED BASED ON SELECTED INVERTER'S NOMINAL AC OUTPUT VOLTAGE.

9. LOW-VOLTAGE CONNECTION SHALL BE BY THREADED, STUD TYPE NEMA SPADES IN A STAGGERED ARRANGEMENT. SPADES SHALL HAVE SUFFICIENT HOLES TO ACCOMMODATE SECONDARY CONDUCTORS.

10. TRANSFORMER NEUTRALS SHALL NOT BE BONDED FROM PRIMARY TO SECONDARY. SECONDARY NEUTRAL TERMINAL SHALL BE INSULATED FROM TANK, WITH EXTERNAL GROUNDING STRAP(S) CONNECTED BETWEEN SECONDARY NEUTRAL TERMINAL AND GROUND PAD ON TANK. PRIMARY NEUTRAL SHALL BE CONNECTED INTERNALLY TO THE TANK WHERE AN EXTERNAL GROUND PAD IS LOCATED. TWO TANK GROUND PADS SHALL BE PROVIDED.

11. TRANSFORMER OIL IS TO CONTAIN NO DETECTABLE TRACE OF POLYCHLORINATED BIPHENYLS AND SHALL BE CERTIFIED AND SO NOTED ON THE TRANSFORMER. IT SHALL BE CLEAR AND FREE OF IMPURITIES, SEDIMENT AND SUSPENDED FOREIGN MATTER AND SHALL NOT CONTAIN ANY RECLAIMED OIL.

12. TRANSFORMERS SHALL HAVE SECONDARY CONTAINMENT.

13. TRANSFORMERS SHALL BE RATED AS 99% OR GREATER EFFICIENCY AT FULL LOAD.

14. TRANSFORMER LOSSES UNDER NO-LOAD CONDITIONS SHALL BE NO GREATER THAN 0.25% OF THE RATED MVA OF THE TRANSFORMER.

15. TRANSFORMERS SHALL BE EQUIPPED WITH STANDARD ANSI ACCESSORIES, ONE-INCH GATE DRAIN VALVE WITH SAMPLING DEVICE, LIFTING LUGS, REGULAR LOCKING PROVISIONS, AND PROVISIONS FOR OWNER'S PADLOCK.

16. TRANSFORMER ACCESS DOORS OR COVER SHALL BE SECURED BY RECESSED, CAPTIVE, PENTAHEAD BOLTS.

17. TRANSFORMERS SHALL BE EQUIPPED WITH THE FOLLOWING ADEQUATE FOR CUSTOMER MONITORING: LIQUID TEMPERATURE GAUGE, LIQUID LEVEL GAUGE, PRESSURE RELIEF DEVICE, PRESSURE VACUUM SWITCH, PRESSURE VACUUM GAUGE WITH BLEEDER, AND TERMINAL BLOCK FOR CONNECTION OF MONITORING CIRCUITS.

3 POWER AND CONTROL WIRING

3.1 GENERAL

1. ALL CONDUCTORS SHALL BE RATED FOR 90ºC IN WET LOCATIONS.

2. THE MINIMUM ALLOWABLE WIRING SIZE SHALL BE #12 AWG. THE ONLY EXCEPTION SHALL BE FOR SIGNAL AND/OR CONTROL WIRING.

3. CABLES USED IN DIRECT BURIAL APPLICATIONS SHALL BE LISTED FOR DIRECT BURIAL. ARMORED DIRECT BURIAL CABLE ASSEMBLY SHALL BE USED ONLY WHERE APPROVED.

4. CONDUCTORS SHALL BE COLORED AS FOLLOWS:
   a. DC CONDUCTORS:
      POSITIVE CONDUCTOR (+) RED
      NEGATIVE CONDUCTOR (-) BLACK
      EQUIPMENT GROUND GREEN/BARE
   b. AC CONDUCTORS:

	600/347V	480/277V	208/120V	< 34500V
PHASE A	BROWN	BROWN	BLACK	BLACK
PHASE B	ORANGE	ORANGE	RED	RED
PHASE C	YELLOW	YELLOW	BLUE	BLUE
GROUNDED	GREY	GREY	WHITE	WHITE
GROUNDING	GREEN/BARE	GREEN/BARE	GREEN/BARE	GREEN/BARE

3.2 DC CABLE AND TERMINATIONS

1. DC MODULE WIRING AND COMBINER BOX OUTPUT CONDUCTORS SHALL HAVE INSULATION AND JACKET MATERIALS ON ALL CONDUCTORS, REGARDLESS OF LOCATION, MADE FROM THERMOSET MATERIALS SUCH AS XLPE. NO THERMOPLASTIC INSULATION OR JACKET MATERIALS ARE PERMITTED FOR INDIVIDUAL CONDUCTORS.

2. DC MODULE WIRING AND COMBINER BOX OUTPUT CONDUCTORS SHALL BE UL LISTED TO UL 845 AND CLASSIFIED AS USE-2 OR UL LISTED TO UL 4703 AND CLASSIFIED AS PV WIRE. INSULATION SHALL BE WET-RATED, SUNLIGHT RESISTANT, 90ºC RATED OR BETTER, AND 1000/2000V RATED AS REQUIRED.

3. ALL PV WIRE CONNECTED TO MOVING PARTS OF TRACKING PV ARRAYS SHALL BE IN ACCORDANCE WITH TABLE 690.31(C)(4) AS FOLLOWS:

18AWG	17 STRANDS
16-10AWG	19 STRANDS
8-4AWG	49 STRANDS
2AWG	130 STRANDS
1AWG-1000MCM	259 STRANDS

3.3 LOW VOLTAGE AC CABLE AND TERMINATIONS (2KV AND LESS)

1. AC CONDUCTORS SHALL HAVE INSULATION AND JACKET MATERIALS ON ALL CONDUCTORS, REGARDLESS OF LOCATION, MADE FROM THERMOSET MATERIALS SUCH AS XLPE. NO THERMOPLASTIC INSULATION OR JACKET MATERIALS ARE PERMITTED FOR INDIVIDUAL CONDUCTORS. INSULATION SHALL BE WET-RATED AND SHALL HAVE A TEMPERATURE RATING OF 90ºC OR BETTER, SUCH AS XHHW-2. INSULATION SHALL BE 600V AND 1000/2000V RATED AS REQUIRED.

2. LOW VOLTAGE AC WIRING INSTALLED BELOW GRADE SHALL BE TYPE XHHW-2, RHW-2, OR USE-2.

3. AC CONDUCTORS SHALL BE 98% COMMERCIALLY PURE COPPER CONDUCTORS OR AA-8000 SERIES ALUMINUM ALLOY COMPACT STRANDED CONDUCTORS.

4. PARALLEL 3-PHASE FEEDER RUNS IN CONDUIT SHALL HAVE ALL THREE PHASE CONDUCTORS (INCLUDING NEUTRAL AND GROUND WHERE REQUIRED) INSTALLED IN EACH CONDUIT. GROUPING A SINGLE PHASE (OR TWO PHASES) IN A SINGLE CONDUIT IS NOT PERMITTED.

3.4 MEDIUM VOLTAGE AC CABLE AND TERMINATIONS (5KV THROUGH 35KV)

1. MV CABLES SHALL BE RATED FOR THE VOLTAGE, MV-105 THREE-SINGLE CONDUCTORS, INSULATED, SHIELDED, AND XLPE JACKETED MV TYPE POWER CABLE WITH 133% INSULATION LEVEL, 105ºC CONTINUOUS OPERATION RATING, 130ºC EMERGENCY RATING, AND 350ºC SHORT CIRCUIT RATING.

2. MV CABLES SHALL HAVE ASTM B-609 ALUMINUM CONDUCTORS WITH CLASS B STRANDING IN ACCORDANCE WITH ASTM B-231, AN EXTRUDED SEMI-CONDUCTING SHIELD LAYER (20 MIL MIN.) OVER THE CONDUCTOR FOR STRESS CONTROL, DIRECT-BURIAL TR-XLPE INSULATION (345 MILS MIN.), A CONCENTRIC COPPER INSULATION SHIELD, AND A MOISTURE/CHEMICAL/OIL/FLAME RESISTANT PVC JACKET.

3. MV CABLES USING BARE COPPER CONCENTRIC NEUTRAL UNDER JACKET SHALL ADHERE TO FULL NEUTRAL FOR SINGLE-PHASE APPLICATIONS, 1/3 NEUTRAL FOR 3-PHASE, 4-WIRE WYE APPLICATIONS, AND TAPE SHIELD OR 1/3 NEUTRAL FOR 3-PHASE DELTA APPLICATIONS.

4. MV CABLES SHALL BE MANUFACTURED BY AETNA, OKONITE, PRYSMIAN, GENERAL CABLE, OR APPROVED EQUAL.

5. MV CABLE TERMINATIONS SHALL BY MANUFACTURED BY 3M, RAYCHEM, RTE, OR APPROVED EQUAL.

6. COMPLETE MV INSTALLATION SHALL BE PER NEC ARTICLES 310 AND 328. MANUFACTURER'S PUBLISHED MAXIMUM PULLING TENSION AND SIDEWALL PRESSURE SHALL NOT BE EXCEEDED. SUFFICIENT SLACK SHALL BE PROVIDED IN CABLE, GROUND AND DRAIN WIRES TO PERMIT ELBOW CONNECTORS TO BE MOVED TO THEIR RESPECTIVE PARKING STANDS.

7. ALL EXPOSED MV CABLES SHALL BE INSTALLED WITH A HALF-LAPPED LAYER OF ARC-PROOFING TAPE 3M SCOTCH 77 OR EQUAL WITH A BINDER OF GLASS FIBER TAPE 3M SCOTCH 69 OR EQUAL.

8. PHASES SHALL BE ARRANGED AT TERMINATION POINTS, A-B-C FROM LEFT TO RIGHT OR TOP TO BOTTOM AS VIEWED FROM THE FRONT.

9. MV CABLES SHALL BE TESTED ACCORDING TO IEEE STANDARD 400. EACH CABLE SHALL BE GIVEN A CONTINUITY AND A DIRECT CURRENT HIGH POTENTIAL TEST OR VLF TEST AFTER INSTALLATION AND AFTER TERMINATIONS HAVING BEEN MADE. ALL SINGLE CONDUCTOR CABLES SHALL BE TESTED BETWEEN CONDUCTORS AND GROUND WITH METALLIC SHIELD AND THE OTHER TWO CONDUCTORS GROUNDED TO THE SAME GROUND. EACH CONDUCTOR SHALL BE SUCCESSIVELY TESTED IN THE SAME MANNER. DIRECT CURRENT VOLTAGES SHALL BE APPLIED WITH NEGATIVE POLARITY TO THE CABLE CONDUCTOR.

3.5 CONTROL, DATA, AND INSTRUMENTATION CABLES

1. CONTROL CABLES SHALL BE NRTL LISTED TYPE THHN/THWN 600V RATED WITH STRANDED, UNCOATED COPPER CONDUCTORS, RATED FOR NORMAL MAXIMUM OPERATING TEMPERATURE OF 90ºC AND 75ºC WET APPLICATIONS, AND CONFORMING TO UL 83.

2. RS485 CABLES SHALL BE SHIELDED TWISTED-P

1 INSTALLATION MEANS & METHODS

1.1 GENERAL

1. THE INSTALLATION CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND FOLLOW ALL DIRECTIONS AND INSTRUCTIONS IN THE ELECTRICAL DESIGN DRAWING PACKAGE, ANY INFORMATION RECEIVED FROM THE CLIENT AND OTHERS, AND ANY INFORMATION CONTAINED IN EQUIPMENT INSTALLATION MANUALS.
2. INSTALL MATERIAL AND EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS, INSTRUCTIONS, AND CURRENT NECA STANDARDS.
3. INSTALL EQUIPMENT AND MATERIALS TO PROVIDE REQUIRED ACCESS FOR SERVICING AND MAINTENANCE.
4. CONTRACTOR SHALL PROVIDE TOOLS, MATERIAL, MANPOWER AND EQUIPMENT TO KEEP PROGRESS WITH THE PROJECT. CONTRACTOR IS RESPONSIBLE FOR ALL OPENINGS, CUTTING, PATCHING AND DRILLING.

1.2 CONDUITS AND RACEWAYS

1. ALL WIRING SHALL BE RUN IN SPECIFIED CONDUIT. THE CONTRACTOR SHALL SEEK APPROVAL FROM THE ENGINEER PRIOR TO CHANGING ANY MATERIAL SPECIFICATIONS. WHERE CONDUIT SIZES ARE NOT SPECIFIED, THE INSTALLATION CONTRACTOR SHALL CONFORM TO NEC SPECIFICATIONS. THE MINIMUM ALLOWABLE CONDUIT SIZE SHALL BE 3/4".
2. SCHEDULE 40 PVC SHALL BE USED FOR ALL UNDERGROUND RACEWAYS WHERE NOT RESTRICTED BY THIS SECTION OR SPECIFICALLY NOTED OTHERWISE.
3. SCHEDULE 80 PVC SHALL BE USED FOR ALL ABOVE GRADE RACEWAYS WHERE NOT RESTRICTED BY THIS SECTION OR SPECIFICALLY NOTED OTHERWISE. SCHEDULE 80 PVC SHALL BE UV RESISTANT TYPE.
4. WHERE NONMETALLIC CONDUIT REQUIRES FIELD BENDING, A HOT-BENDING APPLIANCE SHALL BE UTILIZED. USE OF TORCHES TO BEND CONDUIT IS UNACCEPTABLE.
5. FLEXIBLE LIQUID TIGHT CONDUIT SHALL BE USED ON ALL MOTOR, MOVING, AND VIBRATING EQUIPMENT CONNECTIONS. FLEXIBLE LIQUID TIGHT CONDUIT SHALL BE MINIMUM 1/2" SIZE WITH GROUNDING TYPE FITTINGS AND PROVIDE GROUNDING CONDUCTOR.
6. CONDUIT SHALL NOT BE MOUNTED ON MECHANICAL OR OTHER EQUIPMENT WHICH VIBRATES EXCEPT AT CONNECTION POINTS.
7. CONDUITS SHALL ENTER EQUIPMENT THROUGH PAD CUTOUTS. LOCATIONS, SIZE, AND QUANTITY OF CONDUITS BENEATH SLABS AND PADS SHALL BE COORDINATED IN FIELD PER ELECTRICAL SCHEMATICS AND NEC REQUIREMENTS.
8. WHERE CONDUITS TERMINATE IN HANDHOLES/VAULTS OR IN PAD MOUNTED EQUIPMENT, TERMINATE CONDUITS A MINIMUM OF 4 INCHES ABOVE BEDDING OR SLAB. WHERE ROUTED THROUGH SLABS, PROVIDE SLEEVES TO ALLOW SETTLING/HEAVING OF SLAB. SLEEVE OPENINGS SHALL BE WITH RIGID PIPE AND SET 1" MIN. ABOVE FINISHED GRADE.
9. ALL SWEEPS AND STUB-UPS SHALL BE UV RATED RIGID NONMETALLIC CONDUIT (SCHEDULE 80 PVC). CONDUIT SHALL EXTEND FROM AT LEAST 18 IN. BELOW FINISHED GRADE TO THE ENCLOSURE OR 8 FT. ABOVE GRADE, WHICHEVER IS LESS. EXPANSION FITTINGS SHALL BE PROVIDED WHEN REQUIRED TO COMPENSATE FOR EARTH SETTLING OR MOVEMENT, INCLUDING FROST HEAVE.
10. ANY BENDS IN THE CONDUIT OR RACEWAY SHALL NOT DAMAGE OR SIGNIFICANTLY CHANGE THE INTERNAL DIAMETER (NO KINKS).
11. INSTALLATION CONTRACTOR SHALL ARRANGE CONDUIT IN SUCH A MANNER THAT WILL MAINTAIN HEADROOM IN A NEAT, INCONSPICUOUS MANNER. CONDUIT SHALL BE RUN PARALLEL AND AT RIGHT ANGLES TO STRUCTURAL MEMBERS, WITH BOXES, FITTINGS, AND BENDS FOR CHANGE OF DIRECTION. ALL CONDUITS SHALL BE FASTENED SECURELY IN PLACE.
12. ALL CONDUIT ENDS SHALL BE SEALED.
13. WIREWAYS, AUXILIARY GUTTERS, AND ASSOCIATED FITTINGS SHALL BE PER UL 870. CROSS SECTIONAL AREA SHALL BE 6" X 6" MINIMUM UNLESS OTHERWISE NOTED. RAINTIGHT WIREWAY SHALL BE NEMA 3R CONSTRUCTION WITH GASKETS AND A CORROSION RESISTANT FINISH.
14. CONDUITS FOR CANOPY SYSTEM SHALL BE INSTALLED AS FOLLOWS:
    - LFMC MAY BE USED FOR SHORT RUNS OF LESS THAN 3 FT., TO COMBINER BOXES OR IN SIMILAR APPLICATIONS, AT ELEVATIONS OF GREATER THAN 8 FT. ABOVE FINISHED GRADE.
    - LFNC MAY BE USED FOR LIMITED, SHORT LENGTH APPLICATIONS FOR THE ROUTING AND PROTECTING OF PV SOURCE CIRCUIT CONDUCTORS IN THE FIELD OF THE ARRAY OR WHEN CONNECTING TO STRING INVERTERS.
    - PVC (SCHEDULE 40 OR 80) MAY ONLY BE USED IN HORIZONTAL APPLICATION FOR LIMITED PV SOURCE-CIRCUIT WIRE-MANAGEMENT PURPOSES. THIS APPLICATION IS FOR SHORT RUNS ONLY, LESS THAN 6 FT. IN LENGTH, AT ELEVATIONS OF GREATER THAN 10 FT. ABOVE FINISHED GRADE, SUCH AS WHEN PROVIDING ADDITIONAL UV PROTECTION WHERE GAPS EXIST IN THE ARRAY. BELL-END FITTINGS SHALL BE USED.
    - RISERS SHALL BE GRC OR IMC FROM BELOW GRADE TO 8 FT. ABOVE GRADE. LFMC MAY BE USED TO TRANSITION TO EQUIPMENT.
    - CONDUITS FROM BELOW GRADE MUST TERMINATE AT AN ELECTRICAL ENCLOSURE AT THE CANOPY.

1.3 ENCLOSURES, EQUIPMENT, AND PULL BOXES

1. THE INSTALLATION CONTRACTOR SHALL HAVE ALL COMPONENT SWITCHES IN THE OFF POSITION AND FUSES REMOVED PRIOR TO THE INSTALLATION OF ALL FUSE BEARING SYSTEM COMPONENTS.
2. NO PENETRATIONS ARE PERMITTED ON THE TOP OF EQUIPMENT BOXES OR ENCLOSURES. ALL EQUIPMENT AND WIREWAYS SHALL BE INSTALLED SUCH THAT THEY ARE ARRANGED TO DRAIN. CABLES OR CONDUITS SHALL NOT COLLECT AND DRAIN WATER INTO EQUIPMENT.
3. ELECTRICAL EQUIPMENT ENCLOSURES (SWITCHBOARDS, PANELBOARDS, TRANSFORMERS, RELAY CABINETS, SYSTEMS RACKS/CABINETS, ETC.) SHALL BE VACUUMED AND WIPED CLEAN PRIOR TO ENERGIZING AND AGAIN AT SUBSTANTIAL COMPLETION.
4. FINAL EQUIPMENT LOCATION SHALL BE COORDINATED WITH REQUIRED ACCESS PANELS AND DOORS. AMPLE SPACE SHALL BE PROVIDED FOR REMOVAL OF ALL PARTS THAT REQUIRE REPLACEMENT OR SERVICING.
5. ADEQUATE ROOM FOR WIRING SLACK SHALL BE PROVIDED INSIDE EACH COMBINER BOX, DISCONNECT BOX, AND INVERTER TO ALLOW FOR MODULE STRING WIRING AND PV OUTPUT CABLE VOLTAGE AND CURRENT FIELD MEASUREMENTS.
6. ALL OPENINGS INTO EQUIPMENT SHALL BE SEALED WITH GALVANIZED STEEL PLATES OR SCREENS TO PREVENT ENTRY OF INSECTS AND RODENTS.
7. STRING INVERTERS MOUNTED TO CANOPY SYSTEMS SHALL BE MOUNTED IN LOCATIONS THAT ARE ACCESSIBLE FOR SERVICE AT ALL TIMES.
8. UNDERGROUND PULL BOXES OR HANDHOLES SHALL BE OPEN BOTTOM TYPE WITH 12 IN. MIN. OF CLASS 5 STONE AT THE BASE TO ALLOW FOR DRAINAGE UNLESS OTHERWISE NOTED. PULL BOXES SHALL BE RATED FOR THE MECHANICAL LOAD APPROPRIATE FOR THE INSTALLED LOCATION. EGRESS PIPE TO DRAIN TILE, DOWNGRADE WHEN POSSIBLE FOR HANDHOLES THAT CHANGE >5 FT. ELEVATION.
9. THE INSTALLATION CONTRACTOR SHALL PROVIDE PULL AND JUNCTION BOXES WHERE REQUIRED TO FACILITATE THE INSTALLATION OF WIRING, IN ADDITION TO THOSE THAT MAY BE SHOWN ON THE DRAWINGS. BENDS IN THE CONDUITS BETWEEN THE PULL BOXES SHALL NOT EXCEED THE EQUIVALENT OF FOUR 90° BENDS.

1.4 CIRCUITS AND CONDUCTORS

1. WHERE THE WIRING AND CABLE ROUTING IS NOT SHOWN AND ONLY THE DESTINATION IS INDICATED, THE INSTALLATION CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING THE EXACT ROUTING AND LENGTHS REQUIRED.
2. ALL CALCULATIONS FOR WIRING SIZE ARE BASED ON THE ESTIMATED CONDUIT ROUTING THAT MAY OR MAY NOT BE SHOWN ON THESE DRAWINGS. SHOULD THE CONDUIT LENGTHS INCREASE DUE TO RELOCATION OF THE SOURCE OR REROUTING OF THE CONDUITS, THE WIRING SIZES MAY NEED TO BE INCREASED. ENGINEER SHALL BE CONSULTED WHERE DISTANCES ARE INCREASED BY MORE THAN 50FT.
3. DC VOLTAGE FROM THE ARRAY IS ALWAYS PRESENT AT THE DC COMBINER BOX OR DISCONNECT ENCLOSURE AND AT THE DC TERMINALS OF THE INVERTER DURING DAYLIGHT HOURS. ALL PERSONS WORKING ON OR INVOLVED WITH THIS PV SYSTEM ARE WARNED THAT THE SOLAR MODULES ARE ENERGIZED WHENEVER THEY ARE EXPOSED TO LIGHT.
4. WIRING SHALL BE NEATLY TRIMMED AND LACED INSIDE BOXES, EQUIPMENT, AND PANELBOARDS.
5. CONDUCTOR SURFACES SHALL BE CLEANED BEFORE INSTALLING LUGS AND CONNECTORS.
6. ALUMINUM TERMINATIONS SHALL BE MADE WITH UL LISTED COMPRESSION LUG FITTINGS. ALUMINUM TERMINATIONS SHALL NOT BE MADE WITH MECHANICAL LUG TERMINATIONS. ANTI-OXIDANT COMPOUND SHALL BE USED WITH ALL ALUMINUM LUGS. CLEAN OXIDATION FROM ALUMINUM WIRE STRANDS THOROUGHLY IMMEDIATELY PRIOR TO APPLICATION OF COMPOUND.
7. WHERE REQUIRED, SUITABLE WIRE PULLING LUBRICANT SHALL BE USED FOR BUILDING WIRE #4 AWG AND LARGER.
8. EXPOSED CABLES, RATED FOR EXPOSURE AND SUNLIGHT, SHALL BE FASTENED TO PREVENT PHYSICAL DAMAGE. SPLIT LOOM SHALL BE USED TO PROTECT CONDUCTORS FROM SHARP EDGES AND FROM EXPOSURE TO DIRECT SUNLIGHT.
9. CONDUCTOR BENDING RADIUS SHALL NOT BE LESS THAN THE VALUE RECOMMENDED BY CABLE MANUFACTURER OR NEC.
10. SPLICES, TAPS, AND TERMINATIONS SHALL CARRY FULL AMPACITY OF CONDUCTORS WITH NO PERCEPTIBLE TEMPERATURE RISE. NO SPLICES SHALL BE ALLOWED IN MV CIRCUITS UNLESS SPECIFICALLY NOTED.

1.5 DIRECT BURIAL CIRCUITS

1. DIRECT-BURIED CONDUCTORS SHALL BE OF A TYPE IDENTIFIED FOR SUCH USE.
2. ALL DIRECT-BURIED CONDUCTORS SHALL BE PROTECTED BY CONDUIT FROM THE TRENCH UP TO THE ELECTRICAL ENCLOSURE TERMINATION POINT OR 3 FT. ABOVE GRADE, WHICHEVER IS LOWER. A 90° SWEEP SHALL BE PROVIDED IN THE TRENCH WHERE THE CONDUCTORS TRANSITION FROM DIRECT BURIAL TO CONDUIT.
3. DIRECT-BURIED CABLES ROUTED THROUGH OR UNDER ENCASED CONCRETE SHALL BE INSTALLED IN CONDUIT.
4. FOR ALL DIRECT-BURIED RUNS ENTERING OR EXITING A PAD, A 10 FT. MIN. STARTER CONDUIT SHALL BE PROVIDED AFTER SWEEP EXTENDING AWAY FROM THE PAD. STARTER CONDUIT SHALL EXTEND A MINIMUM OF 3 FT. FROM EDGE OF THE PAD. END OF CONDUIT SHALL BE CAPPED WITH STEEL.

1.6 MODULE WIRING

1. PV SOURCE CIRCUITS AND PV OUTPUT CIRCUITS SHALL NOT BE CONTAINED IN THE SAME RACEWAY OR JUNCTION BOX AS CIRCUITS OF NON-PV SYSTEMS OR INVERTER OUTPUT CIRCUITS UNLESS THE CONDUCTORS OF THE DIFFERENT SYSTEMS ARE SEPARATED BY A PARTITION.
2. MODULE CONNECTIONS SHALL BE ARRANGED SUCH THAT REMOVAL OF A MODULE OR PANEL FROM A PV SOURCE CIRCUIT DOES NOT INTERRUPT A GROUNDING CONDUCTOR CONNECTION TO OTHER PV SOURCE CIRCUITS.
3. NO CANNED AIR OR OTHER LUBRICATIONS SHALL BE USED TO CLEAN OUT THE END OF PANEL PIGTAILS OR WIRING HARNESS ENDS WITHOUT PERMISSION FROM MANUFACTURER.
4. WIRING LOCATED ABOVE GROUND AND SECURED TO THE PV MODULE MOUNTING STRUCTURES SHALL BE SECURED WITH UV-RESISTANT DEVICES SUCH AS CABLE TIES MADE OF POM. WIRING SHALL BE SECURED SUCH THAT NO EXPOSED WIRING IS IN DIRECT CONTACT WITH UNFINISHED METAL EDGES. STAINLESS STEEL ZIP TIES OR WIRE CLIPS WITH PROTECTIVE BACKING MAY BE USED BUT SHALL BE INSTALLED IN A MANNER NOT TO DEFORM OR COMPRESS THE CABLE INSULATION. SPACING BETWEEN SUPPORTS SHALL BE PER NEC REQUIREMENTS.
5. ALL PLUG AND SOCKET CONNECTORS MATED TOGETHER SHALL BE OF THE SAME TYPE AND OF THE SAME MANUFACTURER. "COMPATIBLE" CONNECTORS SHALL NOT BE ACCEPTED. CONNECTORS SHALL BE INSTALLED USING MANUFACTURER APPROVED TOOLS AND METHODS.
6. WHERE PV MODULES ARE MOUNTED IN PORTRAIT ORIENTATION WHERE CONDUCTORS ARE EASILY ACCESSED, SKIP-MODULE STRINGING SHALL BE USED FOR INTER-MODULE CONNECTIONS AND WIRE MANAGEMENT.

1.7 TRENCHES

1. ELECTRICAL CONTRACTOR SHALL ADHERE TO TRENCH SPECIFICATIONS NOT LIMITED TO CONDUIT SPACING AND BURIAL DEPTH. ALL CONDUIT AND CABLES SHALL BE BURIED TO MINIMUM DEPTH SPECIFIED BY NEC AND LOCAL CODES. CONTRACTOR SHALL COORDINATE WITH OTHER UNDERGROUND UTILITIES FOR INTERFERENCES. ELECTRICAL CONTRACTOR SHALL INFORM ENGINEER OF ANY CHANGES OR VARIATIONS AS THIS MAY AFFECT CABLE AMPACITY CALCULATIONS.
2. ELECTRICAL CONTRACTOR SHALL ADHERE TO RECOMMENDATIONS IN THE GEOTECHNICAL REPORT FOR REQUIREMENTS ON FILL MATERIALS AS WELL AS PLACEMENT AND COMPACTION OF FILL AND BACKFILL.
3. DUCT BANKS SHALL BE IDENTIFIED BY 6-INCH WIDE, 4-MIL POLYETHELENE FILM RED TAPE (WITH TRACER) WITH BOLD, BLACK LETTERS. THE TAPE SHALL READ, TOP LINE - "CAUTION CAUTION CAUTION...", BOTTOM LINE -"...BURIED ELECTRIC LINE BELOW...". WARNING TAPE SHALL BE INSTALLED AT LEAST 12", WHERE PRACTICAL, ABOVE TOP OF DUCT BANK. FOR TRENCHES WIDER THAN 24", ONE PIECE OF TAPE SHALL BE LOCATED AT EACH SIDE OF THE TRENCH WITH ADDITIONAL RUNS PROVIDED AS NECESSARY. THE MAXIMUM DISTANCE BETWEEN TAPE RUNS SHALL BE 24" ON CENTER.
4. BACKFILL TO BE NATIVE, CLEAN NON-EXPANSIVE SOIL WITH NO ROCKS LARGER THAN 1/2" TO BE PLACED BACK IN TRENCH. TRENCH SHALL BE A BACKFILLED WITH CLEAN FILL MATERIAL, FREE FROM AGGREGATE, DEBRIS, ORGANIC MATERIAL AND STONES.
5. SOIL SHALL BE PLACED IN LAYERS NOT MORE THAN 12" THICK AND BE COMPACTED TO AT LEAST 85% OF ITS MODIFIED PROCTOR DENSITY (ASTM D1557).
6. BACKFILL SHOULD BE PLACED AT A MOISTURE CONTENT AT OR ABOVE ITS OPTIMUM VALUE TO ENSURE REPRESENTATIVE THERMAL PROPERTIES ARE MAINTAINED.
7. BEDDING OF THE TRENCH SHALL BE SMOOTH, UNDISTURBED EARTH OR SAND. BACKFILL WITHIN 4 IN. OF THE CABLE SHALL NOT BE OF ANY MATERIAL THAT CAN DAMAGE THE UNDERGROUND CABLE.
8. WHERE CONDUITS ARE RUN PARALLEL OR CROSS PERPENDICULAR, SPACING BETWEEN EXTERIOR SURFACES OF ALL UNDERGROUND CONDUITS OR CIRCUITS SHALL BE 2 IN. MIN. SPACING BETWEEN A COMMUNICATIONS CONDUIT AND ANY POWER CONDUIT UNDER 600V SHALL BE 6 IN. MIN. SPACING BETWEEN A COMMUNICATIONS CONDUIT AND ANY POWER CONDUIT 600V OR GREATER SHALL BE 12 IN. MIN. SPACING BETWEEN A MEDIUM VOLTAGE CONDUIT AND ANY OTHER CONDUIT SHALL BE 12 IN. MIN.
9. WHERE SOLID ROCK PREVENTS COMPLIANCE WITH THE COVER DEPTHS SPECIFIED IN THIS TABLE, THE WIRING SHALL BE INSTALLED IN NONMETALLIC RACEWAY PERMITTED FOR DIRECT BURIAL. THE RACEWAY SHALL BE COVERED BY A MINIMUM OF 2 IN. OF CONCRETE EXTENDING DOWN TO ROCK.
10. UNDERGROUND TRENCH SHALL BE INSTALLED TO ALLOW DRAINAGE INTO MANHOLES/HANDHOLES, WITH ELEVATION CHANGE OF 4 IN. MIN. PER 100 FT. OF HORIZONTAL RUN. WHERE CONDUITS OR DUCTS ENTER A MANHOLE, HANDHOLE, OR ABOVE GRADE CABINET, EACH SHALL BE PERMANENTLY IDENTIFIED BY MEANS OF PLASTIC FIBER, LAMINATED PLASTIC OR NON-CORROSIVE METAL TAGS TO INDICATE ORIGINATION POINT.

1.8 MARKING AND LABELING

1. ALL PORTIONS OF THIS ELECTRICAL SYSTEM SHALL BE MARKED CLEARLY IN ACCORDANCE WITH THE NEC.
2. SIGNAGE SHALL BE WEATHER-PROOF, CORROSION-PROOF, UV-STABILIZED, FADE-RESISTANT, AND ATTACHED USING NON-CORROSIVE MATERIALS. EXPOSED LABELS SHALL BE SUITABLE FOR WET LOCATIONS AND RATED FOR UV RESISTANCE.
3. CONTRACTOR SHALL IDENTIFY ALL ELECTRICAL EQUIPMENT WITH ENGRAVED 1/4" WHITE LETTERS ON BLACK NORPLEX-MICARTA PLATES. INSCRIPTIONS SHALL INDICATE THE NAME, VOLTAGE, PHASE WIRES, FEEDER SIZE, FEEDER SOURCE AND LOCATION OF SOURCE, AND THE DEVICE NUMBER.
4. SIGNS SHALL BE POSTED ALONG THE PERIMETER FENCE, IN ACCORDANCE WITH APPLICABLE STANDARDS, REGULATIONS, AND GOOD UTILITY PRACTICE, INDICATING THE PRESENCE OF HIGH VOLTAGE, THE PRESENCE OF MULTIPLE POWER SOURCES, RESTRICTED ENTRY TO AUTHORIZED PERSONNEL ONLY, AND NO TRESPASSING.
5. A SIGN SHALL BE POSTED AT EACH ENTRANCE GATE WITH CONTACT INFORMATION FOR THE OWNER AND OPERATIONS AND MAINTENANCE CONTRACTOR.
6. ALL CONDUCTORS SHALL BEAR PERMANENT CABLE LABELS AT EACH END THAT UNIQUELY IDENTIFY THE CABLES AND ARE TRACEABLE TO THE ELECTRICAL DRAWINGS.
7. IN EVERY PULL BOX AND IN ALL PLACES WHERE WIRES MAY NOT BE READILY IDENTIFIED BY NAMEPLATE MARKINGS ON THE EQUIPMENT TO WHICH THEY CONNECT, THE INSTALLATION CONTRACTOR SHALL IDENTIFY EACH CIRCUIT WITH A PLASTIC LABEL OR TAG.
8. ALL MEDIUM VOLTAGE CABLES SHALL BE LABELED AT EACH END AT AN ACCESSIBLE LOCATION FOR VIEWING. LABEL SHALL INDICATE CIRCUIT, PHASE, AND DESTINATION/ORIGINATION. LABELS SHALL BE BLACK PHENOLIC WITH WHITE LETTERING AND SECURED WITH A MINIMUM OF (2) NYLON UV STABILIZED ZIP TIES OF MAKE HELLERMANN-TYTON OR APPROVED EQUIVALENT.
9. CONTROL WIRING SHALL BE MARKED AT BOTH ENDS AS TO ITS FUNCTION.
10. SPARE CONDUCTORS SHALL BE IDENTIFIED AS SUCH.

1.9 TESTING AND COMMISSIONING

1. PRIOR TO SYSTEM START-UP, THE INSTALLATION CONTRACTOR SHALL ASSIST IN PERFORMING ALL INITIAL HARDWARE CHECKS AND DC WIRING CONDUCTIVITY CHECKS.
2. PRIOR TO FINAL INSPECTION OF ELECTRICAL SYSTEMS, EACH SYSTEM SHALL BE RUN THROUGH ALL OPERATING MODES TO VERIFY PROPER OPERATION.
3. ALL WORK SHALL BE TESTED IN ACCORDANCE WITH INDUSTRY ACCEPTED STANDARDS. BEFORE TESTING, A THOROUGH VISUAL INSPECTION SHALL BE MADE TO DETECT CONNECTION PROBLEMS, DAMAGED COMPONENTS, POOR WORKMANSHIP, INAPPROPRIATE OVERCURRENT PROTECTION, DEBRIS, ETC. TESTING APPARATUS SHALL BE CERTIFIED OR DEMONSTRATED TO BE ACCURATE WITHIN REASONABLE LIMITS. COMPETENT PERSONNEL FAMILIAR WITH THE TEST EQUIPMENT SHALL PERFORM ALL TESTS. IF TESTING PROCEDURES EMPLOYED ARE NOT SATISFACTORY TO THE ENGINEER, OUTSIDE TESTING WILL BE DONE AT THE CONTRACTOR'S EXPENSE.

2 ELECTRICAL GROUNDING

1. PROVIDE COMPLETE GROUNDING SYSTEMS AS DESCRIBED HEREIN AND AS SHOWN ON THE DRAWINGS. GROUNDING DESIGN SHALL COMPLY WITH ALL REQUIREMENTS OF THE NEC AND EQUIPMENT MANUFACTURER REQUIREMENTS.
2. ALL METALLIC, NON-CURRENT CARRYING PARTS OF EQUIPMENT AND STRUCTURES SHALL BE BONDED TO FORM A CONTINUOUS, PERMANENT, AND EFFECTIVE GROUNDED SYSTEM, INCLUDING BUT NOT LIMITED TO MODULE FRAMES, RACKING STRUCTURES, METAL CONDUITS, METAL ENCLOSURES, TRANSFORMERS, AND FENCING.
3. EQUIPMENT GROUNDING CONDUCTORS SHALL BE ROUTED WITH THE ASSOCIATED PHASE CONDUCTORS.
4. HARDWARE UTILIZED IN GROUNDING DESIGN SHALL AVOID RISK OF GALVANIC CORROSION FROM CONTACT OF DISSIMILAR METALS.
5. ALL GROUNDING COMPONENTS SHALL BE UL LISTED FOR THE ENVIRONMENT AND FOR THE PURPOSE INSTALLED. GROUNDING CONNECTIONS TERMINATED BELOW GRADE SHALL BE UL LISTED SPECIFICALLY FOR DIRECT BURIAL APPLICATIONS.
6. PERIMETER FENCING SHALL BE GROUNDED, IF REQUIRED, TO LIMIT TOUCH POTENTIAL TO PERMISSIBLE LEVELS OF IEEE 80.
7. A GROUNDING SYSTEM SHALL BE INSTALLED AT EACH INVERTER STATION AND AT EACH PAD-MOUNT ELECTRICAL ENCLOSURE.
8. THE GROUND SYSTEM MUST BE MEASURED THROUGH THE GROUND FALL OF POTENTIAL TEST AT EACH GROUND CONNECTION TO VERIFY GROUND RESISTANCE IS LESS THAN OR EQUAL TO 25 OHMS.
9. ALL GROUNDING COMPONENTS SHALL BE MANUFACTURED BY AMPACT, BURNDY, CADWELD, ITT BLACKBURN, ILSCO, OR LYNCOLE.
10. GROUND RODS SHALL BE 3/4 IN. DIAMETER BY 10 FT. LONG COPPER CLAD STEEL. CONNECTING CABLES SHALL BE #2/0 AWG STRANDED, COPPER OR AS INDICATED ON DRAWINGS. ALL GROUND CONDUCTORS EXPOSED TO THE ELEMENTS OR IN DIRECT CONTACT WITH THE EARTH SHALL BE TIN COATED COPPER.
11. NEUTRALS SHALL BE GROUNDED ONLY AT THE POINT OF ESTABLISHING UTILITY SERVICE AND WHEN ESTABLISHING A SEPARATELY DERIVED SYSTEM SUCH AS AT THE SECONDARY SIDE OF TRANSFORMERS.
12. ALL GROUNDING ELECTRODE CONNECTIONS SHALL BE EXOTHERMIC TYPE OR IRREVERSIBLE CRIMP TYPE.
13. BOLTED CONNECTIONS TO GROUND BUS BARS SHALL BE MADE USING A TWO-EYELET IRREVERSIBLE CRIMP CONNECTOR ON THE GROUND CONDUCTOR.
14. THE SPECIAL ATTENTION OF THE CONTRACTOR IS CALLED TO METALLIC BUILDING COMPONENTS AND MECHANICAL PIPING WHICH MUST BE GROUNDED IN AN APPROVED MANNER ACCORDING TO THE NEC.
15. A CONTINUOUS GROUNDING CONDUCTOR SHALL BE PROVIDED FOR EACH FEEDER SERVING SEVERAL PANELBOARDS. THIS CONDUCTOR SHALL BE CONNECTED TO EACH RELATED CABINET GROUND BAR.
16. ALL TRANSFORMERS SHALL BE BONDED TO THE GROUNDING ELECTRODE SYSTEM.
17. BOND ALL CABLE TRAY AND EQUIPMENT RACKS TO GROUND WITH A MINIMUM #6 AWG COPPER GROUND CONDUCTOR.
18. CONNECTIONS TO THE PV MODULES SHALL BE INSTALLED SUCH THAT REMOVAL OF A MODULE FROM THE STRING DOES NOT INTERRUPT THE GROUNDED CONDUCTOR TO ANOTHER STRING.

NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
1	30% ELECTRICAL DRAWINGS	MDL	DTG	02/20/2026
2	ISSUED FOR PERMIT	MDL	DTG	05/01/2026

ISSUED FOR PERMIT
NOT FOR CONSTRUCTION

COLORADO LICENSED
PE0064154
05.01.2026
PROFESSIONAL ENGINEER

Sandhills ENERGY

ISI SOLAR

PSE ENGINEERS & CONSULTANTS
2424 Rimrock Rd., Suite 300
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PSE PROJECT NUMBER: NE0192512-40

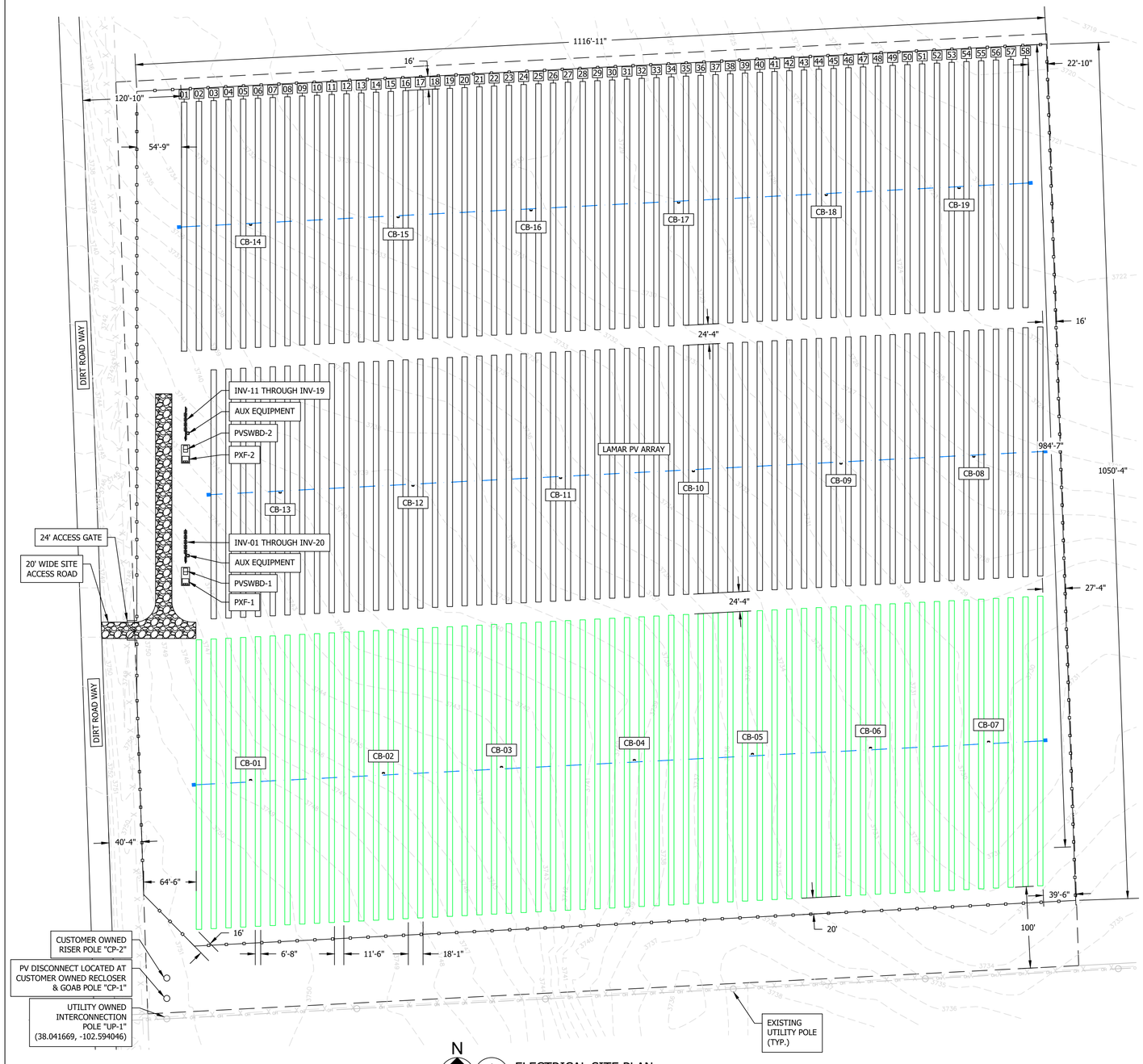
ORIGINAL DATE:	ENGR:
02/20/2026	DTG
DRAWN BY:	CHK'D/APPD BY:
MDL	OOI

LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

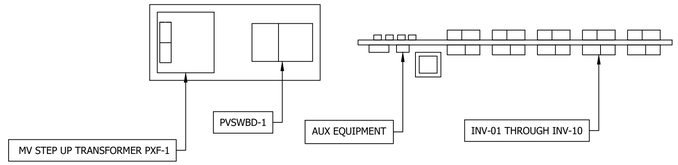
ELECTRICAL SPECIFICATIONS

DRAWING NUMBER	REVISION
E0.3	D

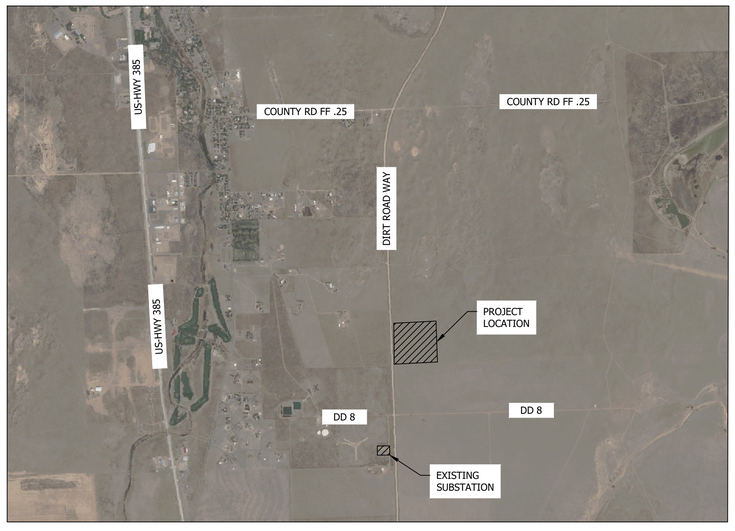
PROJECT SUMMARY	
DC SYSTEM SIZE:	5.85 MWDC
AC SYSTEM SIZE:	4.75 MWAC
DC/AC RATIO:	1.23
PV MODULE MANUFACTURER:	FIRST SOLAR
PV MODULE MODEL:	FS-6445A-P-B-2
MODULE WATTAGE:	445 W
MODULES PER STRING:	6
TOTAL MODULES:	13,152
TOTAL STRINGS:	2,192
INVERTER MANUFACTURER:	CPS
INVERTER MODEL:	CPS SCH250K-T-US-600-CWB
INVERTER RATING:	250 KW
TOTAL INVERTER QUANTITY:	19



N 1 E1.0 ELECTRICAL SITE PLAN
SCALE: 1" = 75'
37'-6" 0 75'-0"



N 3 E1.0 EQUIPMENT PAD LAYOUT
SCALE: 1" = 10'
5'-0" 0 10'-0"



N 2 E1.0 VICINITY MAP
SCALE: 1" = 2000'
1000'-0" 0 2000'-0"

NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
A	10% ELECTRICAL DRAWINGS	BPW	DTG	01/13/2026
B	10% ELECTRICAL DRAWINGS	DTG	DTG	01/21/2026
C	30% ELECTRICAL DRAWINGS	MDL	DTG	02/20/2026
D	ISSUED FOR PERMIT	MDL	DTG	05/01/2026

LEGEND

- (115)12X6 RACKING
- (58)14X6 RACKING
- CAB SYSTEM END PIER
- CAB SYSTEM
- PROJECT BOUNDARY LINE
- PERIMETER FENCE LINE
- EXISTING FENCE LINE
- EXISTING OVERHEAD LINE

ISSUED FOR PERMIT
NOT FOR CONSTRUCTION

COLORADO LICENSED
DAVID T. GEORGE
PE0064154
05.01.2026
PROFESSIONAL ENGINEER

Sandhills ENERGY

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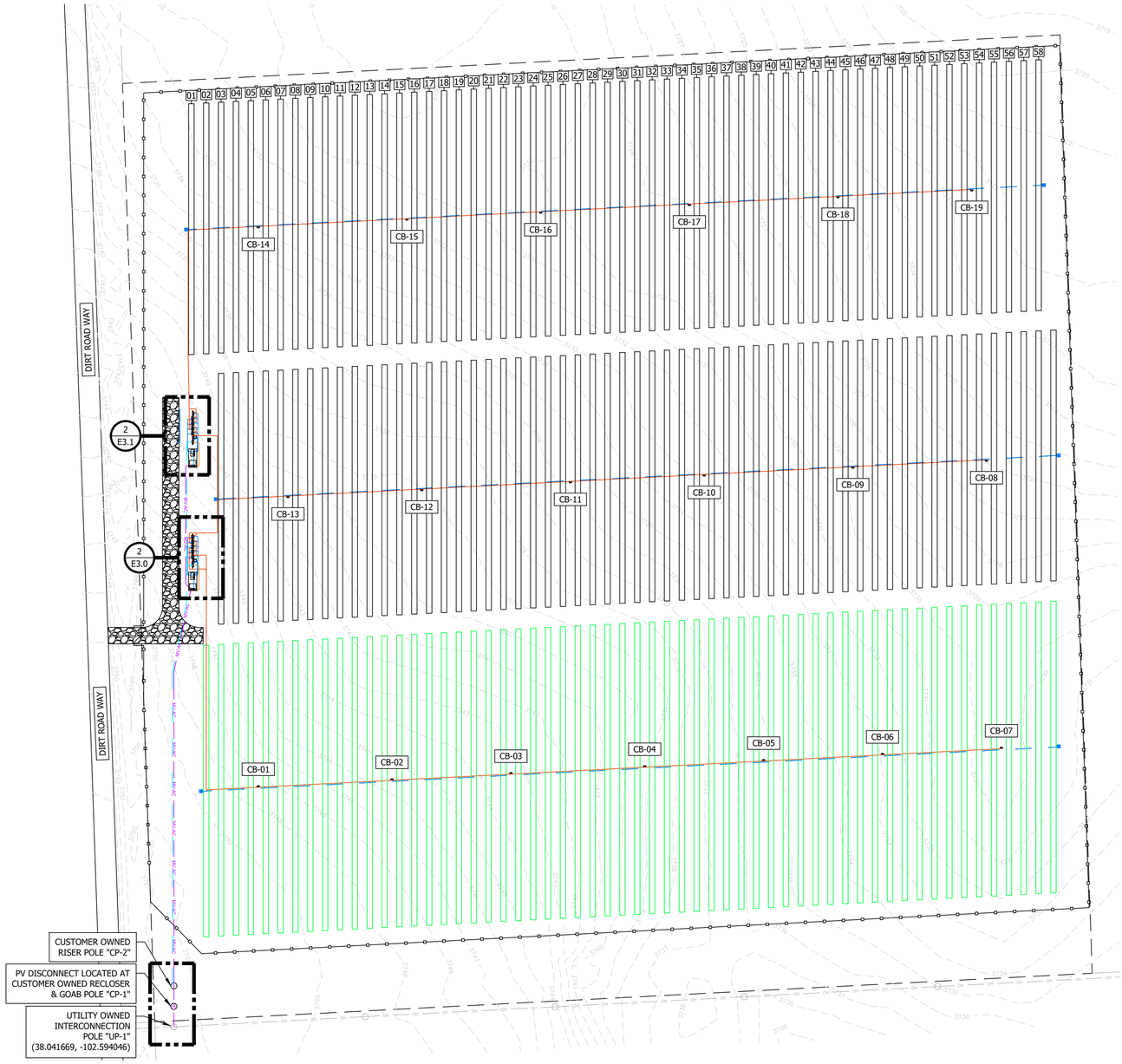
PSE PROJECT NUMBER: NE0192512-40

ORIGINAL DATE:	ENGR:
01/13/2026	DTG
DRAWN BY:	CHK'D/APPD BY:
BPW	OOI

LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

ELECTRICAL SITE PLAN

DRAWING NUMBER	REVISION
E1.0	D

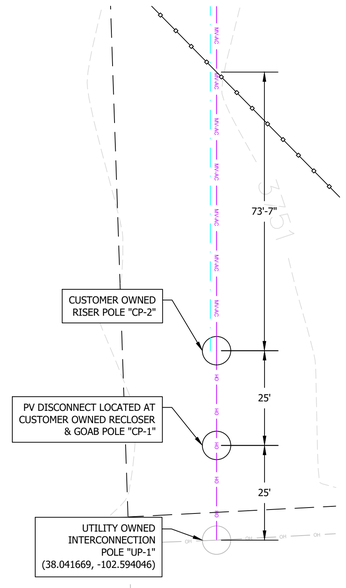


N

1 E1.1 ELECTRICAL POWER PLAN

SCALE: 1" = 80'

40'-0" 0 80'-0"



N

2 E1.1 ENLARGED MV POLE LAYOUT - POI

SCALE: 1" = 20'

10'-0" 0 20'-0"

PROJECT SUMMARY	
DC SYSTEM SIZE:	5.85 MWDC
AC SYSTEM SIZE:	4.75 MWAC
DC/AC RATIO:	1.23
PV MODULE MANUFACTURER:	FIRST SOLAR
PV MODULE MODEL:	FS-6445A-P-B-2
MODULE WATTAGE:	445 W
MODULES PER STRING:	6
TOTAL MODULES:	13,152
TOTAL STRINGS:	2,192
INVERTER MANUFACTURER:	CPS
INVERTER MODEL:	CPS SCH250K-T-US-600-CWB
INVERTER RATING:	250 KW
TOTAL INVERTER QUANTITY:	19

GENERAL NOTES

A ELECTRICAL CONTRACTOR SHALL UTILIZE UV RESISTANT RIGID NONMETALLIC CONDUIT (SCHEDULE 80 PVC) AND LIQUIDTIGHT FLEXIBLE METAL CONDUIT AS PART OF THE ELECTRICAL WIRING SYSTEM FOR OUTDOOR UNDERGROUND AND ABOVE GROUND INSTALLATIONS EXCEPT WHERE OTHERWISE NOT REQUIRED BY PROJECT OWNER. ALL CONNECTIONS TO WEATHERPROOF JUNCTION BOXES SHALL UTILIZE WEATHERPROOF FITTINGS/HUBS. UTILIZE RAIN-TIGHT COUPLINGS FOR ALL EXTERIOR CONDUIT.

B CONDUIT AND/OR DIRECT BURIED CONDUCTOR ROUTING IS DIAGRAMMATIC ONLY. CONTRACTOR SHALL COORDINATE ALL ROUTING TO AVOID EXISTING INTERFERENCES AND IS RESPONSIBLE FOR FIELD CHECKING AND MAKING ALL NECESSARY OFFSETS AS REQUIRED.

C WIRING SHALL BE INSTALLED IN APPROVED RACEWAYS FOR ITS INTENDED USE. ADEQUATELY STRAP AND SUPPORT ALL RACEWAYS. IN GENERAL SUPPORT ALL CONDUIT WITHIN THREE FEET OF OUTLET BOX, PANEL OR ENCLOSURE AND MAXIMUM TEN FEET ON CENTER THEREAFTER. RACEWAYS TO BE LISTED FOR WET LOCATION. ALL CONDUITS AND RACEWAYS SHALL BE SUPPORTED PER NEC CHAPTER 3.

D COORDINATE FINAL LOCATION OF ALL NEW EQUIPMENT WITH GENERAL CONTRACTOR AND OWNER PRIOR TO INSTALLATION. AVOID INTERFERENCE WITH EXISTING EQUIPMENT.

E PROVIDE PULLBOXES AS REQUIRED IN CONDUIT RUNS TO ALLOW NO MORE THAN FOUR 90 DEGREE BENDS IN ANY RUN. PULLBOXES SHALL BE NEMA 4 AND SIZED IN ACCORDANCE WITH THE NEC.

F PV SOURCE CIRCUITS AND PV OUTPUT CIRCUITS SHALL NOT BE CONTAINED IN THE SAME RACEWAY, CABLE TRAY, CABLE, OUTLET BOX, JUNCTION BOX, OR SIMILAR FITTING AS CONDUCTORS, FEEDERS, BRANCH CIRCUITS OF OTHER NON-PV SYSTEMS, OR INVERTER OUTPUT CIRCUITS, UNLESS THE CONDUCTORS OF THE DIFFERENT SYSTEMS ARE SEPARATED BY A PARTITION.

G PV WIRING METHODS SHALL BE PER ARTICLE 690 OF THE NEC.

H INSTALL PANELS, INVERTERS, OTHER MISCELLANEOUS EQUIPMENT AND ALL ASSOCIATED CABLING (INCLUDING GROUNDING) PER THE MANUFACTURERS INSTALLATION INSTRUCTIONS. DO NOT DRILL HOLES OR MODIFY THE FRAMES OF THE MODULES AND INVERTERS AS IT WILL VOID THE WARRANTY.

I PROVIDE CONDUIT EXPANSION, EXPANSION-DEFLECTION, AND DEFLECTION FITTING WHERE NECESSARY TO COMPENSATE FOR THERMAL EXPANSION, DEFLECTION, AND CONTRACTION PER NEC.

J REFER TO CABLE SCHEDULE FOR CONDUIT SIZES AND WIRING INFORMATION.

K ALL UNDERGROUND STUB-UPS SHALL BE UV RATED GALVANIZED RIGID NONMETALLIC CONDUIT (SCHEDULE 80 PVC). CONDUIT SHALL EXTEND FROM AT LEAST 18 INCHES BELOW FINISHED GRADE UP TO THE ENCLOSURE OR 8FT ABOVE GRADE, WHICHEVER IS LESS.

L ELECTRICAL CONTRACTOR SHALL PROVIDE SIGNAGE TO ALL ELECTRICAL BOXES, JUNCTION BOXES, PULL BOXES, DC DISCONNECTS, CONDUIT RUNS, AC DISCONNECTS, SUB PANELS, MAIN SERVICES AND ANY OTHER EQUIPMENT THAT REQUIRES MARKING PER NEC AND THE IFC.

M ALL SWITCHES AND CIRCUIT BREAKERS USED AS SWITCHES SHALL BE LOCATED SUCH THAT THE CENTER OF THE GRIP OF THE OPERATING HANDLE, WHEN IT IS AT ITS HIGHEST POSITION, IS NOT MORE THAN 2.0 M (6 FT 7 IN.) ABOVE THE FLOOR OR WORKING PLATFORM. COORDINATE EQUIPMENT CONFIGURATIONS WITH THE REQUIRED HEIGHT OF CONCRETE PADS, IF ANY, TO ENSURE THAT DEVICE HANDLES DO NOT EXCEED HEIGHT LIMITATIONS.

N ALL PENETRATIONS THROUGH DAMP-PROOFED/WATER-PROOFED SURFACES SHALL BE MADE DAMP-PROOFED/WATER-PROOF BY APPROPRIATE MEANS TO MAINTAIN INTEGRITY OF SYSTEM PENETRATED. PER NEC 312.2, THE ELECTRICAL CONTRACTOR MAY FORE-GO WATERPROOF SEAL IF NOT REQUIRED BY OWNER AND CONTRACTOR VERIFIES THE PENETRATIONS ARE BELOW THE LEVEL OF UNINSULATED LIVE PARTS.

O ALL CONNECTIONS SHALL BE TORQUED PER MANUFACTURER SPECIFICATIONS. PROVIDE PERMANENT TORQUE MARKS ON ALL STRUCTURAL, MECHANICAL, AND ELECTRICAL TERMINATING HARDWARE WITH A PAINT PEN FOR INSPECTION.

P ALL ALUMINUM CABLES SHALL BE TERMINATED WITH HYDRAULIC CRIMPED TERMINATION FITTINGS. NO CABLE SMALLER THAN #4AWG SHALL BE ALUMINUM.

NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
0	ISSUED FOR PERMIT	MDL	DTG	05/01/2026

LEGEND

- (115)12X6 RACKING
- (58)14X6 RACKING
- COMBINER BOX
- CAB SYSTEM END PIER
- CAB SYSTEM
- PROJECT BOUNDARY LINE
- PERIMETER FENCE LINE
- DC FEEDER CIRCUITS
- LV AC FEEDER CIRCUITS
- FIBER OPTIC CIRCUITS
- SIGNAL CIRCUITS
- EXISTING OVERHEAD LINE
- OVERHEAD MV WIRE
- UNDERGROUND MV WIRE

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TYLER THOMSEN GARNER
PE0064154
05.01.2026
PROFESSIONAL ENGINEER

Sandhills ENERGY

ISI SOLAR

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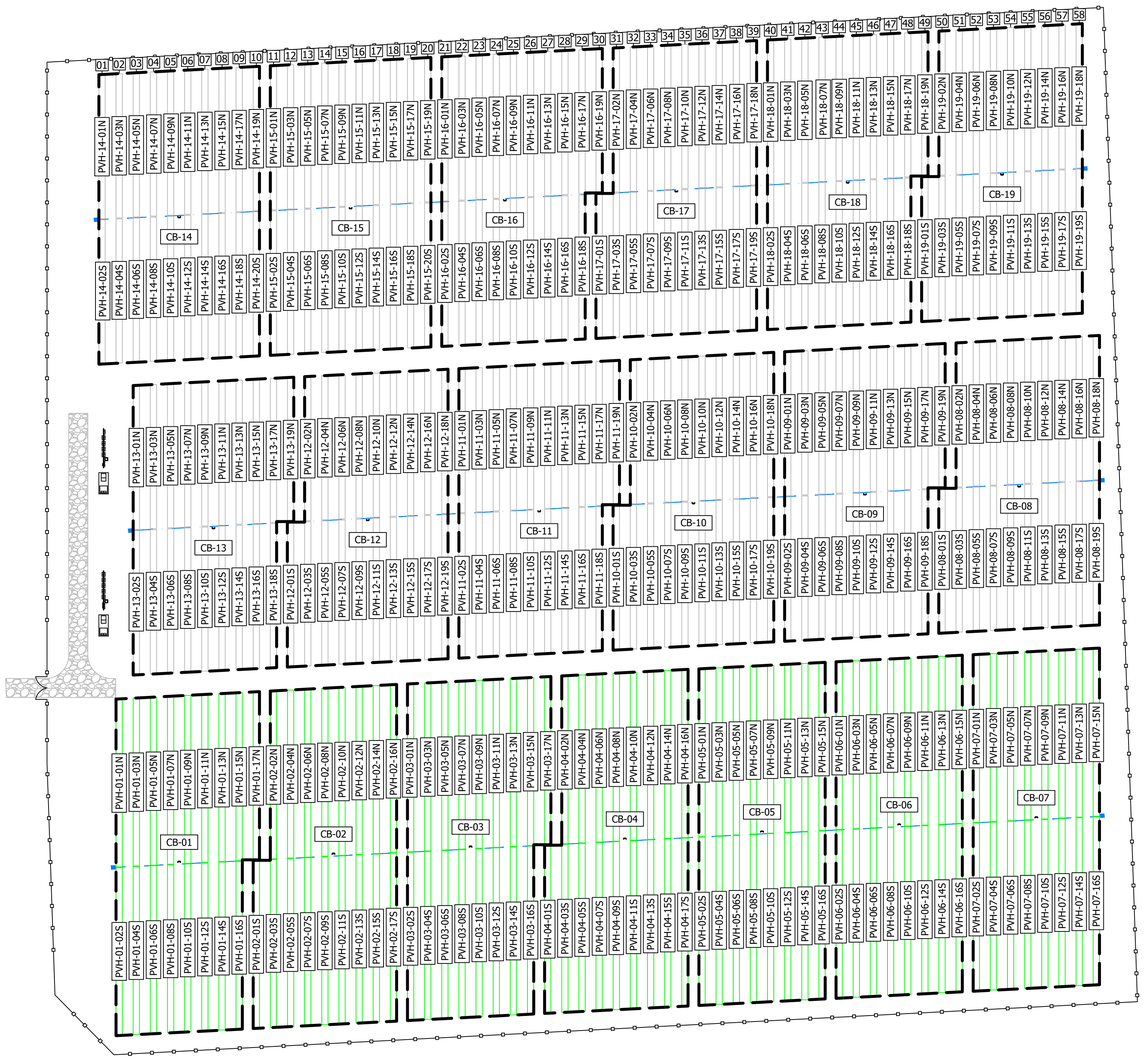
PSE PROJECT NUMBER: NE0192512-40

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05/01/2026	DTG
DRAWN BY:	CHK'D/APPD BY:
MDL	OOI

LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

ELECTRICAL POWER PLAN

DRAWING NUMBER	REVISION
E1.1	D



DC STRING SCHEDULE

TAG	MODULE	CONNECTOR TYPE	6-STR HARNESSES		7-STR HARNESSES		TOTAL HARNESSES	TOTAL STRINGS	TOTAL MODULE QTY	MODULE STC RATING (W)	kWDC	kW AC	DC/AC RATIO
HARNESS RELATIVE POSITION (N/S)			NORTH	SOUTH	NORTH	SOUTH	-	-	-	-	-	-	-
CB-01	FS-6445-P-B-2	MC4			9	8	17	119	714	445	317.73	250	1.27
CB-02	FS-6445-P-B-2	MC4			8	9	17	119	714	445	317.73	250	1.27
CB-03	FS-6445-P-B-2	MC4			9	8	17	119	714	445	317.73	250	1.27
CB-04	FS-6445-P-B-2	MC4			8	9	17	119	714	445	317.73	250	1.27
CB-05	FS-6445-P-B-2	MC4			8	8	16	112	672	445	299.04	250	1.20
CB-06	FS-6445-P-B-2	MC4			8	8	16	112	672	445	299.04	250	1.20
CB-07	FS-6445-P-B-2	MC4			8	8	16	112	672	445	299.04	250	1.20
CB-08	FS-6445-P-B-2	MC4	9	10			19	114	684	445	304.38	250	1.22
CB-09	FS-6445-P-B-2	MC4	10	9			19	114	684	445	304.38	250	1.22
CB-10	FS-6445-P-B-2	MC4	9	10			19	114	684	445	304.38	250	1.22
CB-11	FS-6445-P-B-2	MC4	10	9			19	114	684	445	304.38	250	1.22
CB-12	FS-6445-P-B-2	MC4	9	10			19	114	684	445	304.38	250	1.22
CB-13	FS-6445-P-B-2	MC4	10	9			19	114	684	445	304.38	250	1.22
CB-14	FS-6445-P-B-2	MC4	10	10			20	120	720	445	320.4	250	1.28
CB-15	FS-6445-P-B-2	MC4	10	10			20	120	720	445	320.4	250	1.28
CB-16	FS-6445-P-B-2	MC4	10	9			19	114	684	445	304.38	250	1.22
CB-17	FS-6445-P-B-2	MC4	9	10			19	114	684	445	304.38	250	1.22
CB-18	FS-6445-P-B-2	MC4	10	9			19	114	684	445	304.38	250	1.22
CB-19	FS-6445-P-B-2	MC4	9	10			19	114	684	445	304.38	250	1.22
TOTAL			115	115	58	58	346	2192	13152		5852.64	4750	1.23

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LEGEND

- CAB SYSTEM END PIER
- MESSENGER WIRE
- COMBINER GROUPING
- DC COMBINER BOX
- TYPICAL 6-STRING HARNESS
- TYPICAL 7-STRING HARNESS
- PVH-XX-XXN: HARNESS N-S ORIENTATION, HARNESS NUMBER, INVERTER NUMBER

ISSUED FOR PERMIT
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COLORADO LICENSED POWER SYSTEM DESIGNER
PE0064154
05.01.2026
PROFESSIONAL ENGINEER

Sandhills ENERGY

ISI SOLAR

PSE ENGINEERS & CONSULTANTS
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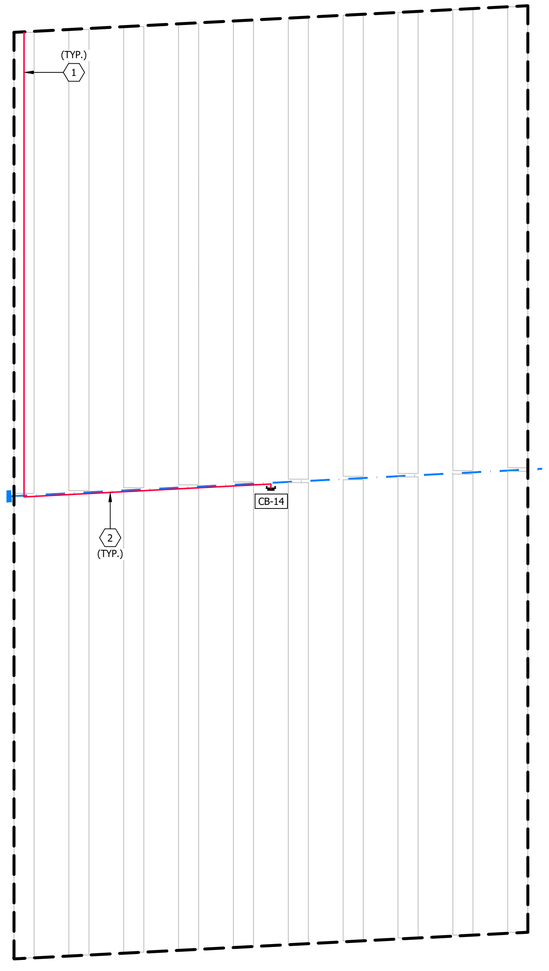
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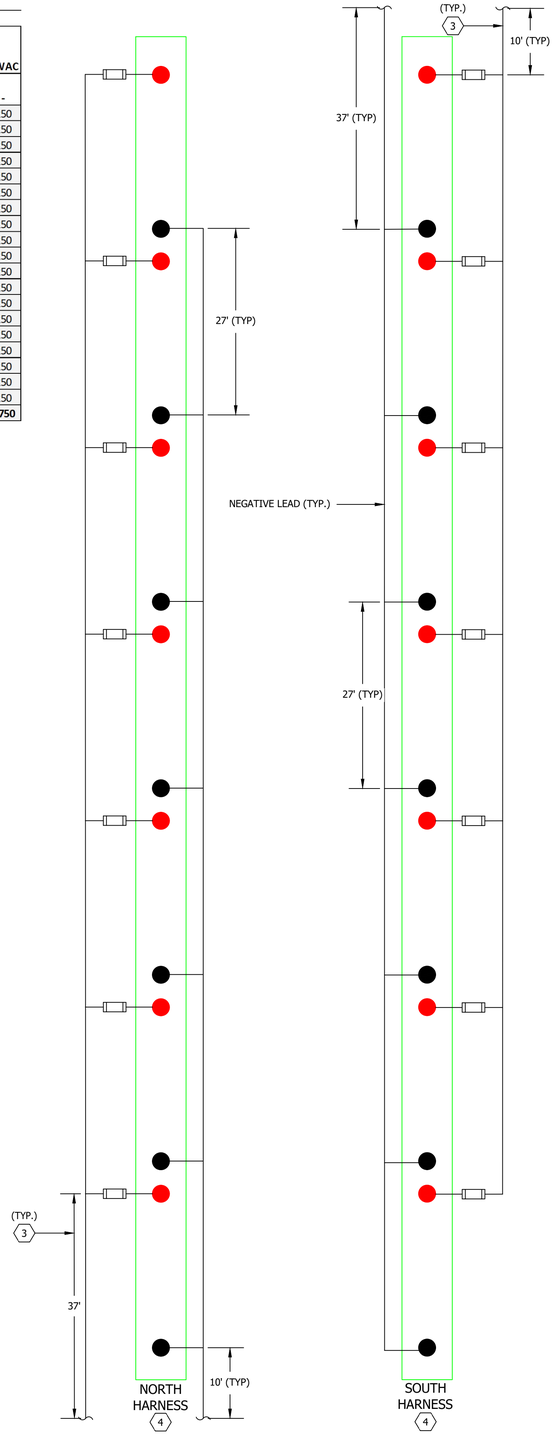
STRING WIRING PLAN

DRAWING NUMBER	REVISION
E1.2	D

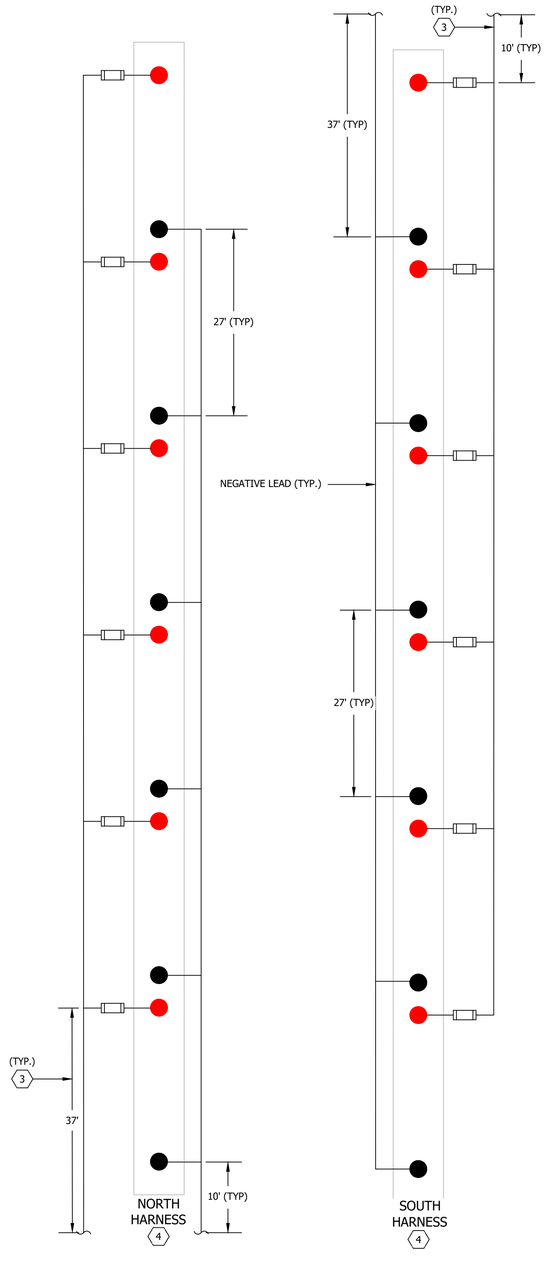
DC STRING SCHEDULE												
TAG	MODULE	CONNECTOR TYPE	6-STR HARNESSES		7-STR HARNESSES		TOTAL HARNESSES	TOTAL STRINGS	TOTAL MODULE QTY	MODULE STC RATING (W)	kWDC	kWAC
HARNESS RELATIVE POSITION (N/S)			NORTH	SOUTH	NORTH	SOUTH	-	-	-	-	-	-
CB-01	FS-6445-P-B-2	MC4			9	8	17	119	714	445	317.73	250
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CB-08	FS-6445-P-B-2	MC4	9	10			19	114	684	445	304.38	250
CB-09	FS-6445-P-B-2	MC4	10	9			19	114	684	445	304.38	250
CB-10	FS-6445-P-B-2	MC4	9	10			19	114	684	445	304.38	250
CB-11	FS-6445-P-B-2	MC4	10	9			19	114	684	445	304.38	250
CB-12	FS-6445-P-B-2	MC4	9	10			19	114	684	445	304.38	250
CB-13	FS-6445-P-B-2	MC4	10	9			19	114	684	445	304.38	250
CB-14	FS-6445-P-B-2	MC4	10	10			20	120	720	445	320.4	250
CB-15	FS-6445-P-B-2	MC4	10	10			20	120	720	445	320.4	250
CB-16	FS-6445-P-B-2	MC4	10	9			19	114	684	445	304.38	250
CB-17	FS-6445-P-B-2	MC4	9	10			19	114	684	445	304.38	250
CB-18	FS-6445-P-B-2	MC4	10	9			19	114	684	445	304.38	250
CB-19	FS-6445-P-B-2	MC4	9	10			19	114	684	445	304.38	250
TOTAL			115	115	58	58	346	2192	13152		5852.64	4750



N 1 E1.3 **TYPICAL HARNESS HOMERUN DETAIL**
SCALE: 1" = 25'
12'-6" 0 25'-0"



N 2 E1.3 **TYPICAL 7-STRING HARNESS**
SCALE: 1" = 10'
5'-0" 0 10'-0"



N 3 E1.3 **TYPICAL 6-STRING HARNESS**
SCALE: 1" = 10'
5'-0" 0 10'-0"

NOTE: DETAILS ON THIS SHEET ARE INTENDED TO SHOW TYPICAL HARNESS DIMENSIONS FOR ILLUSTRATION ONLY. CONTRACTOR SHALL REFER TO HARNESS MANUFACTURER DRAWINGS FOR ACTUAL DIMENSIONS. NOTE THAT HARNESS HOMERUNS TO COMBINER BOX ARE NOT INCLUDED IN HARNESS QUOTATION UNLESS REQUESTED, SO CONTRACTOR WILL NEED TO PROVIDE EXTENSION CABLES TO COMBINER BOX AS SHOWN ON SHEET E4.0 "PV HARNESS CABLE SCHEDULE".

GENERAL NOTES

A. INDICATED STRING NUMBERING FORMAT IS SHOWN FOR CB-14 AND IS TYPICAL OF ALL BLA STRINGS. MAINTAIN STRING GROUPINGS AS SHOWN ON E1 SERIES STRING WIRING PLANS.

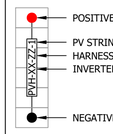
KEYED NOTES

1. RUN HARNESS UNDERNEATH THE ROW IN MANUFACTURER-APPROVED MANNER, BRINGING THE HARNESS TRUNK LEADS (POS, NEG) TO THE CAB LINE.
2. PROVIDE #8 AWG CU, 2KV, PV WIRE, 90°C RATED CABLE FOR EXTENSION TO THE COMBINER BOX.
3. INDICATED DIMENSIONS ARE FIXED BY HARNESS MANUFACTURER. REFER TO HARNESS QUOTATION DRAWINGS FOR ACTUAL DIMENSIONS.
4. NORTH AND SOUTH HARNESSES HAVE DISTINCT LEAD LENGTHS; REFER TO HARNESS SCHEDULE ON THIS SHEET FOR COMPLETE COMPOSITION.

NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
0	ISSUED FOR PERMIT	MDL	DTG	05/01/2026

LEGEND

- TYPICAL 6-STRING HARNESS
- TYPICAL 7-STRING HARNESS
- COMBINER GROUPING
- HARNESS CIRCUIT
- CAB SYSTEM END PIER
- MESSENGER WIRE



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COLORADO LICENSED
PE0064154
05.01.2026
PROFESSIONAL ENGINEER

Sandhills ENERGY

ISI SOLAR

PSE ENGINEERS & CONSULTANTS
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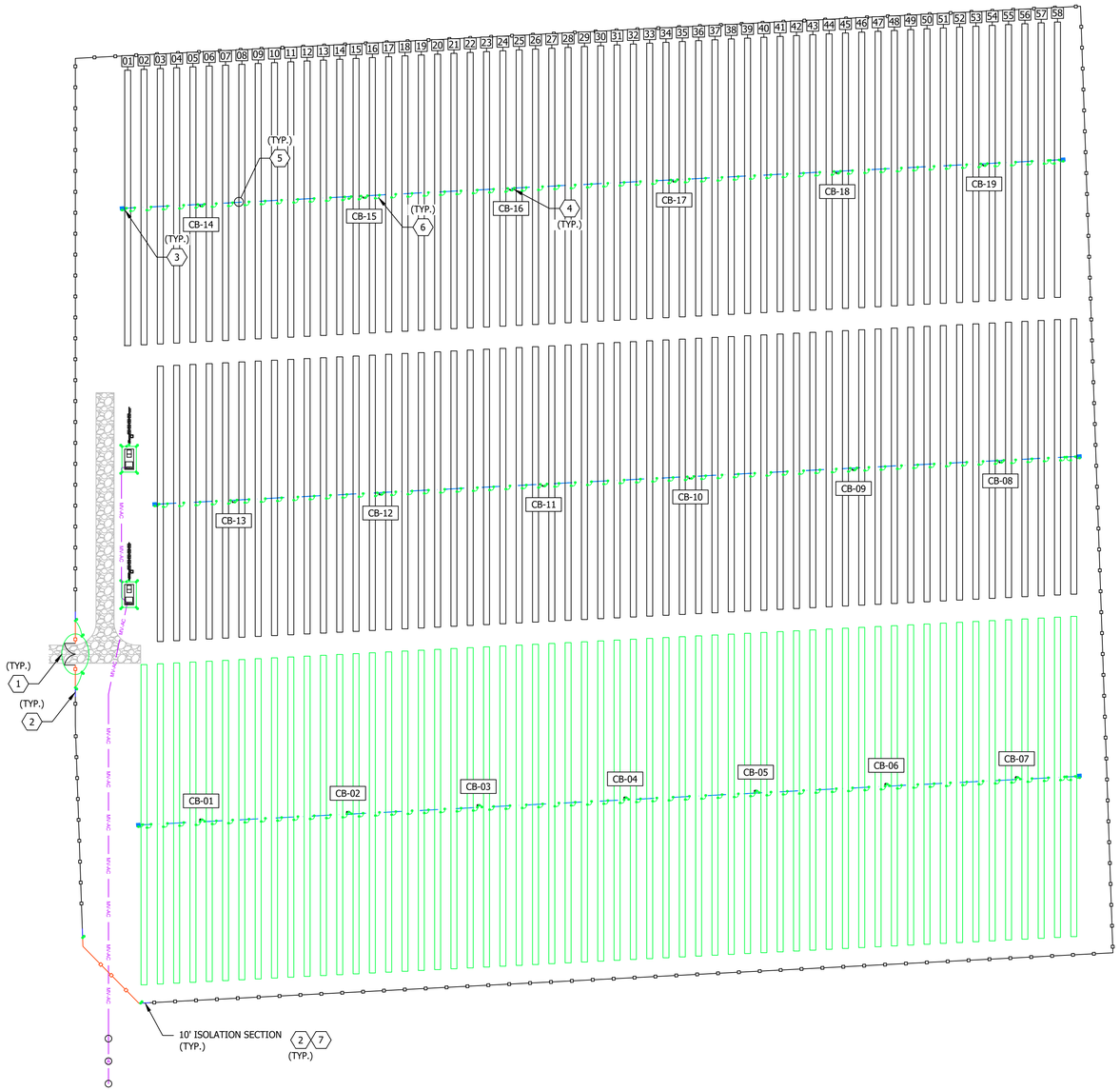
PSE PROJECT NUMBER: NE0192512-40

ORIGINAL DATE:	ENGR:
05/01/2026	DTG
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MDL	OOI

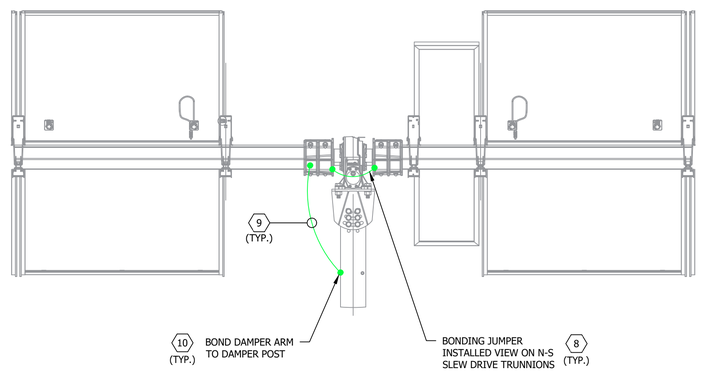
LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

ENLARGED STRING WIRING PLAN

DRAWING NUMBER	REVISION
E1.3	D



1 E1.4 GROUNDING PLAN
SCALE: 1" = 80'
40'-0" 0 80'-0"



2 E1.4 RACKING GROUNDING - MOTOR GAP BONDING
SCALE: NONE

PROJECT SUMMARY	
DC SYSTEM SIZE:	5.85 MWDC
AC SYSTEM SIZE:	4.75 MWAC
DC/AC RATIO:	1.23
PV MODULE MANUFACTURER:	FIRST SOLAR
PV MODULE MODEL:	FS-6445A-P-B-2
MODULE WATTAGE:	445 W
MODULES PER STRING:	6
TOTAL MODULES:	13,152
TOTAL STRINGS:	2,192
INVERTER MANUFACTURER:	CPS
INVERTER MODEL:	CPS SCH250K-T-US-600-CWB
INVERTER RATING:	250 KW
TOTAL INVERTER QUANTITY:	19

GENERAL NOTES

A FTC PIONEER RACKING SYSTEM IS LISTED TO UL 2703 AS AN EQUIPMENT GROUNDING CONDUCTOR. CONTRACTOR TO VERIFY UL LISTING IN FIELD.

B INSTALLER SHALL FOLLOW MANUFACTURERS RECOMMENDATIONS FOR RACKING SYSTEM TO ENSURE A COMPLETE GROUNDING SYSTEM. DISCONTINUOUS METALLIC SECTIONS OF ARRAYS SHALL BE CONNECTED TOGETHER.

C SOLAR PANEL FRAMES SHALL BE SECURELY CONNECTED TO THE RACKING SYSTEM TO ENSURE ADEQUATE GROUNDING CONNECTION.

D ELECTRICAL CONTRACTOR IS TO ENSURE PROPER BONDING OF ALL EQUIPMENT TO ELIMINATE THE POSSIBILITY OF STEP POTENTIAL.

E ALL GROUNDING CONNECTIONS SHOWN ARE DIAGRAMMATIC IN NATURE. CONNECTIONS SHALL BE MADE PER APPLICABLE MANUFACTURER INSTRUCTIONS.

F GROUNDING METHODS SHALL BE PER NEC ARTICLE 250.

KEYED NOTES

1 PROVIDE FENCE GROUNDING AT GATE ENTRANCE PER DETAIL 1/E3.10.

2 PROVIDE 10' ISOLATION FENCE SECTION GROUNDING PER DETAIL 2/E3.10

3 PROVIDE #3 AWG CU TO END PIER WITH UL-LISTED GROUNDING LUGS. REFER TO TYPE D FROM E3.11 BONDING DETAILS.

4 PROVIDE #3 AWG CU BETWEEN EQUIPMENT GROUND BAR IN DC COMBINER BOX AND MESSENGER WIRE. PROVIDE UL LISTED IRREVERSIBLE GROUND CRIMP.

5 CAB SYSTEM MESSENGER WIRE LISTED TO UL2703 AS AN EQUIPMENT GROUND CONDUCTOR.

6 PROVIDE #6AWG CU GROUNDING WIRE FROM CAB MESSENGER TO RACKING POST.

7 COORDINATE ISOLATION SECTION LOCATION WITH UTILITY TO BE LOCATED WITHIN 50' OF THE LOCATION WHERE THE UNDERGROUND MV CIRCUIT CROSSES WITH THE FENCE.

8 PROVIDE #6AWG BONDING JUMPER ACROSS MOTOR GAP BETWEEN THE NORTH AND SOUTH SECTIONS OF THE TRACKER TO COMPLY WITH THE UL2703 LISTING. REFER TO TRACKER INSTALLATION MANUAL FOR ADDITIONAL REQUIREMENTS OF BONDING CONDUCTOR.

9 PROVIDE #6AWG BONDING JUMPER FROM THE DAMPER ARM TO THE DAMPER POST. REFER TO TRACKER INSTALLATION MANUAL FOR ADDITIONAL REQUIREMENTS.

10 ELECTRICAL GROUND BONDING TO DRIVE POST SHALL BE MADE WITH UL APPROVED GROUNDING LUG. REFER TO TRACKER INSTALLATION MANUAL FOR ADDITIONAL REQUIREMENTS.

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LEGEND

- (115)18X6 RACKING
- (58)14X6 RACKING
- COMBINER BOX
- CAB SYSTEM END PIER
- CAB SYSTEM
- GROUNDING ELECTRODE CONDUCTOR
- PERIMETER FENCE LINE
- GROUNDING FENCE
- ISOLATION FENCE
- UG UNDERGROUND MV WIRE

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COLORADO LICENSED POWER SYSTEM ENGINEER
PE0064154
05.01.2026
PROFESSIONAL ENGINEER

Sandhills ENERGY

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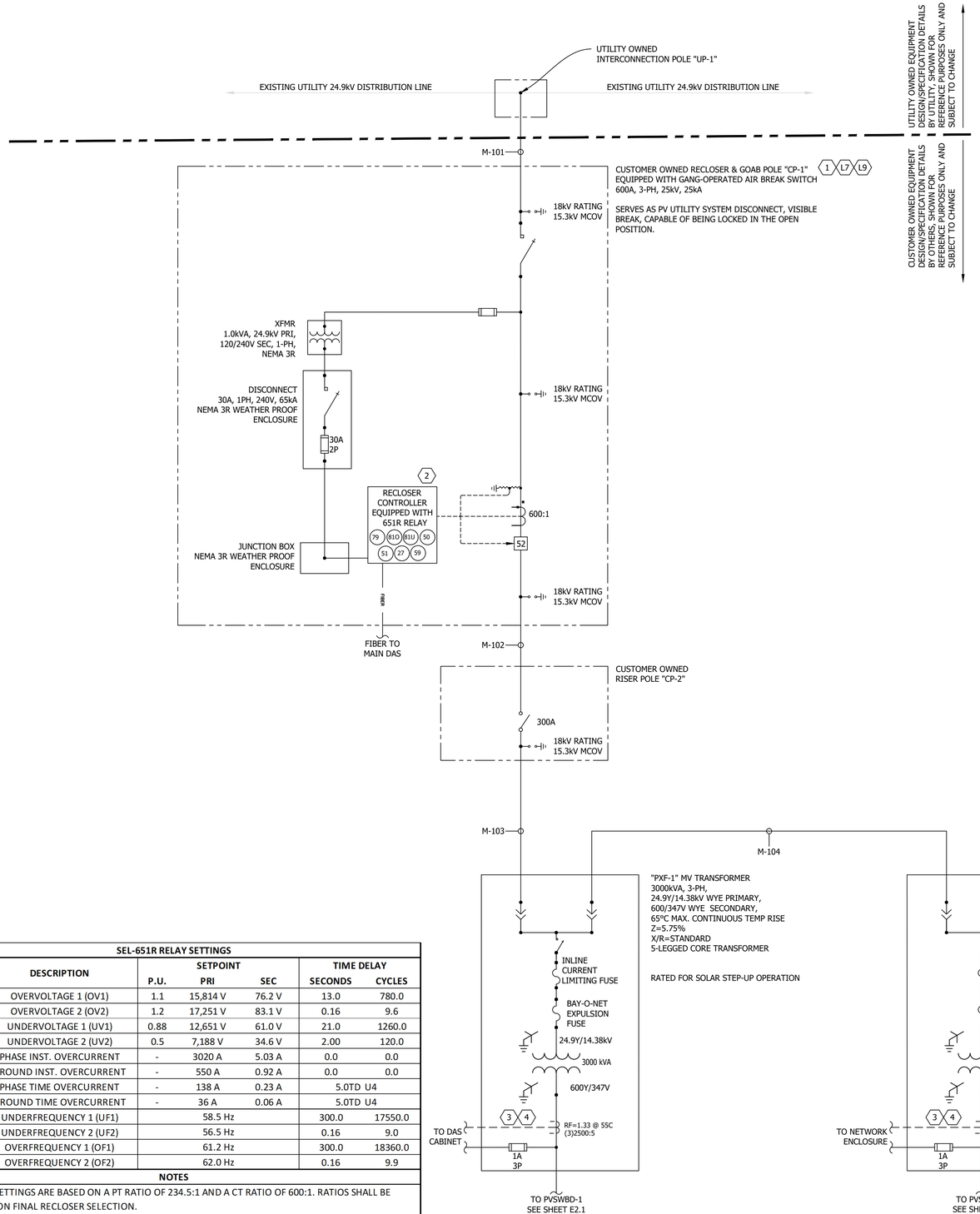
PSE PROJECT NUMBER: NE0192512-40

ORIGINAL DATE:	ENGR:
05/01/2026	DTG
DRAWN BY:	CHK'D/APPD BY:
MDL	OOI

LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

GROUNDING PLAN

DRAWING NUMBER	REVISION
E1.4	D



1 E2.0 MV AC ONE-LINE DIAGRAM
SCALE: NONE

SEL-651R RELAY SETTINGS

ANSI ELEMENT	DESCRIPTION	SETPOINT P.U.	SETPOINT PRI	SETPOINT SEC	TIME DELAY SECONDS	TIME DELAY CYCLES
59	OVERVOLTAGE 1 (OV1)	1.1	15,814 V	76.2 V	13.0	780.0
	OVERVOLTAGE 2 (OV2)	1.2	17,251 V	83.1 V	0.16	9.6
27	UNDERVOLTAGE 1 (UV1)	0.88	12,651 V	61.0 V	21.0	1260.0
	UNDERVOLTAGE 2 (UV2)	0.5	7,188 V	34.6 V	2.00	120.0
50P	PHASE INST. OVERCURRENT	-	3020 A	5.03 A	0.0	0.0
50G	GROUND INST. OVERCURRENT	-	550 A	0.92 A	0.0	0.0
51P	PHASE TIME OVERCURRENT	-	138 A	0.23 A	5.0TD U4	
51G	GROUND TIME OVERCURRENT	-	36 A	0.06 A	5.0TD U4	
81	UNDERFREQUENCY 1 (UF1)		58.5 Hz		300.0	17550.0
	UNDERFREQUENCY 2 (UF2)		56.5 Hz		0.16	9.0
	OVERFREQUENCY 1 (OF1)		61.2 Hz		300.0	18360.0
	OVERFREQUENCY 2 (OF2)		62.0 Hz		0.16	9.9

NOTES

1. SECONDARY SETTINGS ARE BASED ON A PT RATIO OF 234.5:1 AND A CT RATIO OF 600:1. RATIOS SHALL BE CONFIRMED UPON FINAL RECLOSER SELECTION.
2. INDICATED TIME DELAYS ARE THE TOTAL CLEARING TIME, INCLUDING RECLOSER OPENING TIME AND RELAY PROCESSING TIME. RELAY TIME DELAY SETTINGS SHALL BE ADJUSTED TO MEET THESE TOTAL CLEARING TIMES.
3. ALL INDICATED VOLTAGES ARE SHOWN AS L-N VALUES.
4. INDICATED TIME DELAYS IN CYCLES ARE ADJUSTED WHERE FREQUENCY DIFFERS FROM A 60HZ BASE.

PROJECT SUMMARY	
DC SYSTEM SIZE:	5.85 MWDC
AC SYSTEM SIZE:	4.75 MWAC
DC/AC RATIO:	1.23
PV MODULE MANUFACTURER:	FIRST SOLAR
PV MODULE MODEL:	FS-6445A-P-B-2
MODULE WATTAGE:	445 W
MODULES PER STRING:	6
TOTAL MODULES:	13,152
TOTAL STRINGS:	2,192
INVERTER MANUFACTURER:	CPS
INVERTER MODEL:	CPS SCH250K-T-US-600-CWB
INVERTER RATING:	250 KW
TOTAL INVERTER QUANTITY:	19

GENERAL NOTES

A. (LX) INDICATES APPROPRIATE SAFETY LABEL TO BE APPLIED TO EQUIPMENT.

B. THE ENTIRE ELECTRICAL SERVICE AND DISTRIBUTION EQUIPMENT, INCLUDING ALL OVERCURRENT PROTECTIVE DEVICES (OCPD), SHALL BE UL LISTED AS A FULLY RATED SYSTEM. THE MANUFACTURER SHALL PROVIDE THE EQUIPMENT WITH SHORT CIRCUIT CURRENT RATINGS EQUAL TO OR GREATER THAN THE AVAILABLE SHORT CIRCUIT CURRENT.

C. EQUIPMENT SELECTION, PV SYSTEM DESIGN AND INSTALLATION SHALL BE AS PER NEC 2023. THE PROPOSED SYSTEM IS A UTILITY INTERACTIVE SYSTEM AND SHALL BE DESIGNED, INSTALLED AND OPERATED IN COMPLIANCE WITH ALL APPLICABLE STANDARDS.

D. REFER TO CABLE SCHEDULE ON E4 SERIES DRAWINGS FOR CONDUCTOR AND CONDUIT SIZING.

KEYED NOTES:

1. PROVIDE RECLOSER MINIMUM 800A CONTINUOUS, 12.5kA, 110kV BIL, POLE MOUNTED VACUUM RECLOSER TYPICAL OF G&W VIPER OR TAVRIDA. INCLUDE (3) CURRENT TRANSFORMERS AND (6) SOURCE AND LOAD SIDE VOLTAGE SENSORS. RECLOSER SHALL BE EQUIPPED WITH EXTERNAL AUXILIARY TRANSFORMER AS SHOWN. INCLUDE WILDLIFE PROTECTORS.
2. PROVIDE SEL-651-R-2 RECLOSER CONTROL. RECLOSER CONTROL SHALL BE EQUIPPED WITH 120VAC POWER SUPPLY, 12V/40AHr BATTERY, (2) 10/100BASE-T ETHERNET PORTS. PT AND CT INPUTS SHALL BE EQUIPPED WITH TEST SWITCHES.
3. CURRENT TRANSFORMER FURNISHED BY DAS VENDOR AND INSTALLED BY ELECTRICAL CONTRACTOR. CURRENT TRANSFORMER SHALL BE INSTALLED AROUND EACH PHASE BUSHING, X1, X2, AND X3. PROVIDE A MINIMUM OF #10AWG FOR CT SECONDARY LEAD IN 3/4" CONDUIT.
4. PROVIDE FUSEBLOCK WITH (3) 1AMP CLASS J FUSES. FUSEBLOCK SHALL BE MOUNTED TO INSIDE WALL OF TRANSFORMER SECONDARY COMPARTMENT. PROVIDE A MINIMUM OF #10 AWG FOR CT SECONDARY LEAD IN 3/4" CONDUIT.

NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
A	30% ELECTRICAL DRAWINGS	MDL	DTG	02/20/2026
B	ISSUED FOR PERMIT	MDL	DTG	05/01/2026

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COLORADO LICENSED PROFESSIONAL ENGINEER
PE0064154
05.01.2026

Sandhills ENERGY

ISI SOLAR

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PSE PROJECT NUMBER: NE0192512-40

ORIGINAL DATE:	ENGR:
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MDL	OOI

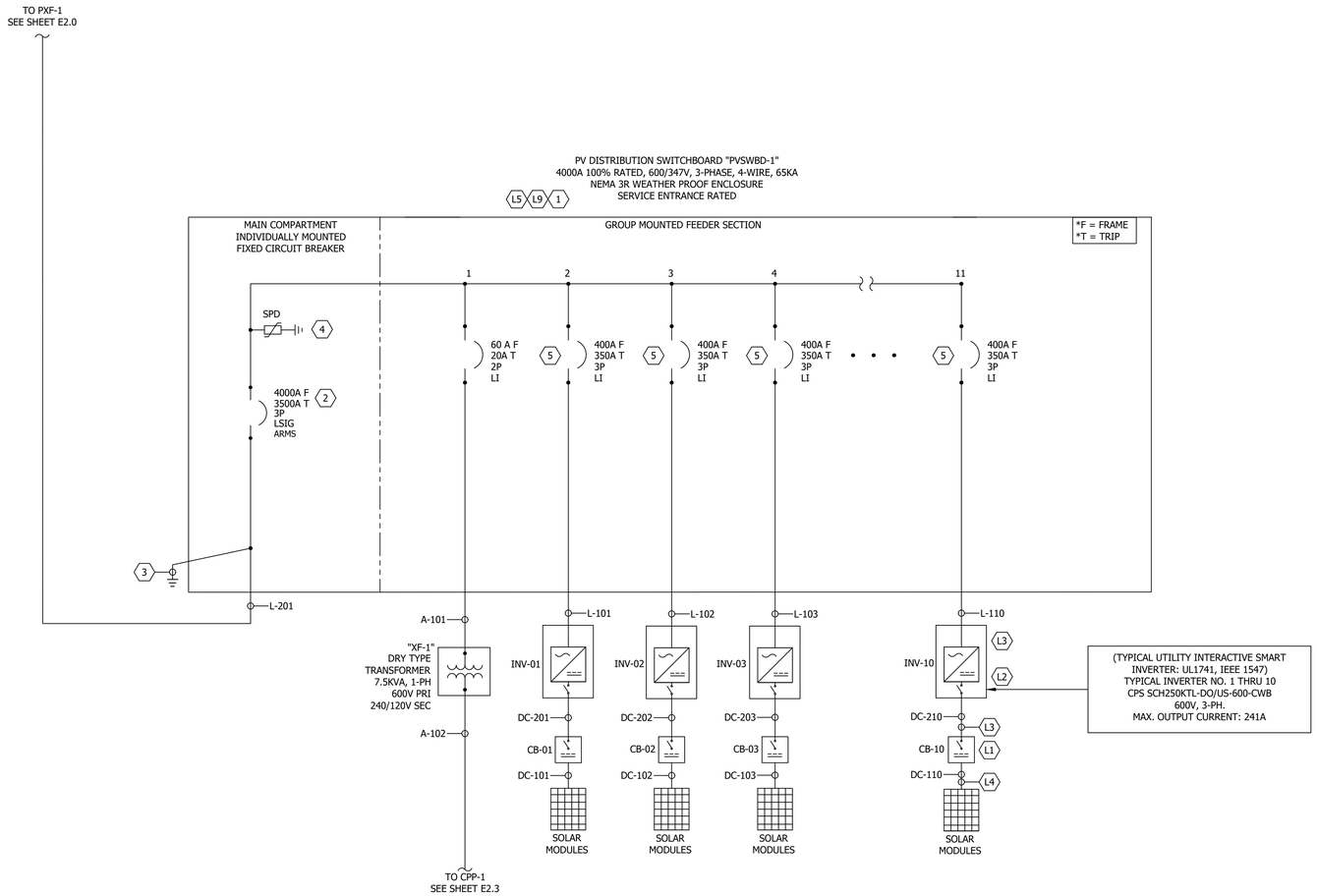
LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

MV AC ONE-LINE DIAGRAM

DRAWING NUMBER	REVISION
E2.0	D

PROPOSED INVERTER SETTINGS			
DEVICE SETTING	PICKUP RANGE	TRIP TIME (SEC)	DESCRIPTION
59-1	V ≥ 660	13.0	OVERVOLTAGE
59-2	V ≥ 720	0.16	
27-1	V ≤ 528	21.0	UNDERVOLTAGE
27-2	V ≤ 300	2.0	
81U-1	F ≤ 58.5	300.0	UNDERFREQUENCY
81U-2	F ≤ 56.5	0.16	
81O-1	F ≥ 61.2	300.0	OVERFREQUENCY
81O-2	F ≥ 62	0.16	

PROJECT SUMMARY	
DC SYSTEM SIZE:	5.85 MWDC
AC SYSTEM SIZE:	4.75 MWAC
DC/AC RATIO:	1.23
PV MODULE MANUFACTURER:	FIRST SOLAR
PV MODULE MODEL:	FS-6445A-P-B-2
MODULE WATTAGE:	445 W
MODULES PER STRING:	6
TOTAL MODULES:	13,152
TOTAL STRINGS:	2,192
INVERTER MANUFACTURER:	CPS
INVERTER MODEL:	CPS SCH250K-T-US-600-CWB
INVERTER RATING:	250 KW
TOTAL INVERTER QUANTITY:	19



1 E2.1 AC ONE-LINE DIAGRAM
SCALE: NONE

GENERAL NOTES

A. LX INDICATES APPROPRIATE SAFETY LABEL TO BE APPLIED TO EQUIPMENT.

B. THE ENTIRE ELECTRICAL SERVICE AND DISTRIBUTION EQUIPMENT, INCLUDING ALL OVERCURRENT PROTECTIVE DEVICES (OCPD), SHALL BE UL LISTED AS A FULLY RATED SYSTEM. THE MANUFACTURER SHALL PROVIDE THE EQUIPMENT WITH SHORT CIRCUIT CURRENT RATINGS EQUAL TO OR GREATER THAN THE AVAILABLE SHORT CIRCUIT CURRENT.

C. EQUIPMENT SELECTION, PV SYSTEM DESIGN AND INSTALLATION SHALL BE AS PER NEC 2023. THE PROPOSED SYSTEM IS A UTILITY INTERACTIVE SYSTEM AND SHALL BE DESIGNED, INSTALLED AND OPERATED IN COMPLIANCE WITH ALL APPLICABLE STANDARDS.

D. REFER TO CABLE SCHEDULE ON E4 SERIES DRAWINGS FOR CONDUCTOR AND CONDUIT SIZING.

KEYED NOTES

1. PV DISTRIBUTION SWITCHBOARD "PVSWBD-1" & "PVSWBD-2" FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. "PVSWBD-1" & "PVSWBD-2" SHALL BE SERVICE ENTRANCE RATED AND SIZED AS INDICATED.
2. INDICATED OVERCURRENT PROTECTIVE DEVICE SHALL BE SERVICE ENTRANCE RATED AND EQUIPPED WITH LONG-TIME, SHORT-TIME, INSTANTANEOUS ADJUSTABLE TRIP, AND GROUND FAULT PROTECTION. OVERCURRENT PROTECTIVE DEVICE SHALL BE EQUIPPED WITH AN ARC FLASH REDUCTION MAINTENANCE SWITCH PER NEC 240.87. INDICATED CIRCUIT BREAKER SHALL BE SUITABLE TO BACK-FEED.
3. PROVIDE GROUNDING FOR SERVICE ENTRANCE EQUIPMENT PER NEC REQUIREMENTS.
4. PROVIDE TRANSIENT VOLTAGE SUPPRESSION UNIT IN "PVSWBD-1" & "PVSWBD-2.
5. INDICATED CIRCUIT BREAKER SHALL BE EQUIPPED WITH LONG-TIME AND INSTANEOUS ADJUSTABLE TAP, AND CAPABLE OF BACK-FEED.

NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
C	30% ELECTRICAL DRAWINGS	MDL	DTG	02/20/2026
D	ISSUED FOR PERMIT	MDL	DTG	05/01/2026

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DAVID T. GREEN
PE0064154
05.01.2026
PROFESSIONAL ENGINEER

Sandhills ENERGY

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PSE PROJECT NUMBER: NE0192512-40

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MDL	OOI

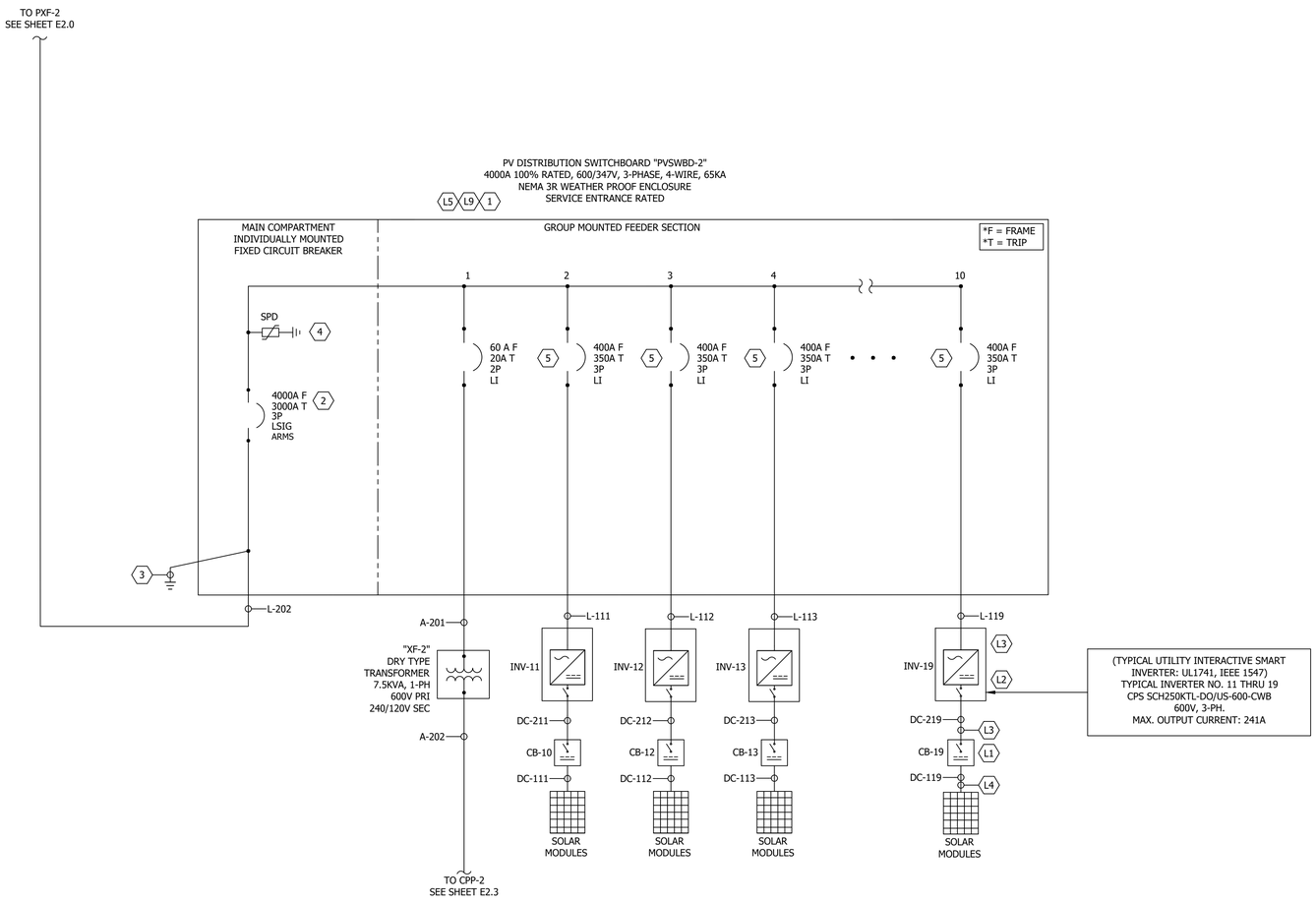
LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

AC ONE-LINE DIAGRAM

DRAWING NUMBER	REVISION
E2.1	D

PROPOSED INVERTER SETTINGS			
DEVICE SETTING	PICKUP RANGE	TRIP TIME (SEC)	DESCRIPTION
59-1	V ≥ 660	13.0	OVERVOLTAGE
59-2	V ≥ 720	0.16	
27-1	V ≤ 528	21.0	UNDERVOLTAGE
27-2	V ≤ 300	2.0	
81U-1	F ≤ 58.5	300.0	UNDERFREQUENCY
81U-2	F ≤ 56.5	0.16	
81O-1	F ≥ 61.2	300.0	OVERFREQUENCY
81O-2	F ≥ 62	0.16	

PROJECT SUMMARY	
DC SYSTEM SIZE:	5.85 MWDC
AC SYSTEM SIZE:	4.75 MWAC
DC/AC RATIO:	1.23
PV MODULE MANUFACTURER:	FIRST SOLAR
PV MODULE MODEL:	FS-6445A-P-B-2
MODULE WATTAGE:	445 W
MODULES PER STRING:	6
TOTAL MODULES:	13,152
TOTAL STRINGS:	2,192
INVERTER MANUFACTURER:	CPS
INVERTER MODEL:	CPS SCH250K-T-US-600-CWB
INVERTER RATING:	250 KW
TOTAL INVERTER QUANTITY:	19



1 / E2.2 AC ONE-LINE DIAGRAM
SCALE: NONE

GENERAL NOTES

A. LX INDICATES APPROPRIATE SAFETY LABEL TO BE APPLIED TO EQUIPMENT.

B. THE ENTIRE ELECTRICAL SERVICE AND DISTRIBUTION EQUIPMENT, INCLUDING ALL OVERCURRENT PROTECTIVE DEVICES (OCPD), SHALL BE UL LISTED AS A FULLY RATED SYSTEM. THE MANUFACTURER SHALL PROVIDE THE EQUIPMENT WITH SHORT CIRCUIT CURRENT RATINGS EQUAL TO OR GREATER THAN THE AVAILABLE SHORT CIRCUIT CURRENT.

C. EQUIPMENT SELECTION, PV SYSTEM DESIGN AND INSTALLATION SHALL BE AS PER NEC 2023. THE PROPOSED SYSTEM IS A UTILITY INTERACTIVE SYSTEM AND SHALL BE DESIGNED, INSTALLED AND OPERATED IN COMPLIANCE WITH ALL APPLICABLE STANDARDS.

D. REFER TO CABLE SCHEDULE ON E4 SERIES DRAWINGS FOR CONDUCTOR AND CONDUIT SIZING.

KEYED NOTES

1. PV DISTRIBUTION SWITCHBOARD "PVSWBD-1" & "PVSWBD-2" FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. "PVSWBD-1" & "PVSWBD-2" SHALL BE SERVICE ENTRANCE RATED AND SIZED AS INDICATED.

2. INDICATED OVERCURRENT PROTECTIVE DEVICE SHALL BE SERVICE ENTRANCE RATED AND EQUIPPED WITH LONG-TIME, SHORT-TIME, INSTANTANEOUS ADJUSTABLE TRIP, AND GROUND FAULT PROTECTION. OVERCURRENT PROTECTIVE DEVICE SHALL BE EQUIPPED WITH AN ARC FLASH REDUCTION MAINTENANCE SWITCH PER NEC 240.87. INDICATED CIRCUIT BREAKER SHALL BE SUITABLE TO BACK-FEED. PROVIDE 120VAC RATED SHUNT TRIP DEVICE SUCH THAT OPENING OF ZIG-ZAG TRANSFORMER CIRCUIT BREAKER SHUNT TRIPS MAIN PV DISCONNECT.

3. PROVIDE GROUNDING FOR SERVICE ENTRANCE EQUIPMENT PER NEC REQUIREMENTS.

4. PROVIDE TRANSIENT VOLTAGE SUPPRESSION UNIT IN "PVSWBD-1" & "PVSWBD-2.

5. INDICATED CIRCUIT BREAKER SHALL BE EQUIPPED WITH LONG-TIME AND INSTANEOUS ADJUSTABLE TAP, AND CAPABLE OF BACK-FEED.

NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
A	30% ELECTRICAL DRAWINGS	MDL	DTG	02/20/2026
B	ISSUED FOR PERMIT	MDL	DTG	05/01/2026

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DAVID TENNESSEN GRUBER
PE0064154
05.01.2026
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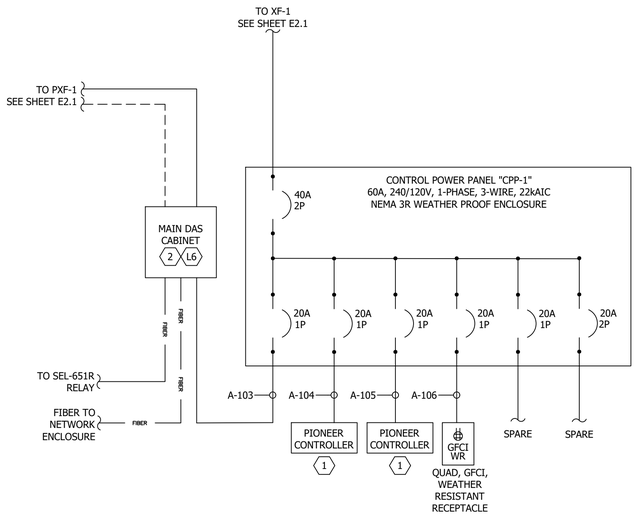
PSE PROJECT NUMBER: NE0192512-40

ORIGINAL DATE:	ENGR:
02/20/2026	DTG
DRAWN BY:	CHK'D/APPD BY:
MDL	OOI

LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

AC ONE-LINE DIAGRAM

DRAWING NUMBER	REVISION
E2.2	D



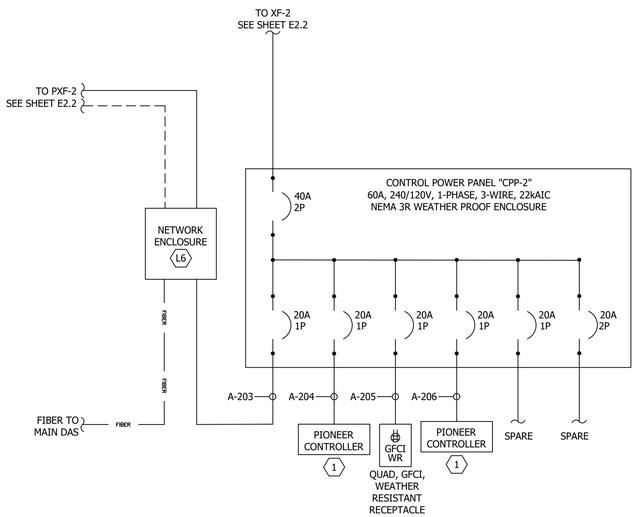
PANEL SCHEDULE: CPP-1

VOLTAGE: 240/120 PHASE: 3, 4-WIRE
BUS SIZE (AMPS): 40A
MAINS:40A MCB

ENCLOSURE: NEMA 3R
MOUNTING: SURFACE
AIC RATING: 22 KAIC.SYM
GROUND BAR

1. PROVIDE POCKET SLIDE-IN TYPED CIRCUIT DIRECTORY
2. PROVIDE COPPER PHASE AND GROUND BUSES
3. PANELBOARD SHALL BE FULLY RATED. NO SERIES RATING
4. PROVIDE BOLT ON CIRCUIT BREAKERS
5. PROVIDE EQUIPMENT GROUND BUS
6. PROVIDE COPPER WIRES FOR ALL 15A/20A CIRCUIT BREAKERS

CIRCUIT DESCRIPTION	LOAD VA	CIRCUIT BREAKER	POLE	CKT	PHASE A	PHASE B	CKT	POLE	CIRCUIT BREAKER	LOAD VA	CIRCUIT DESCRIPTION
PIONEER CONTROLLER	480	20	1	1	1680		2	1	20	1200	MAIN DAS CABINET
PIONEER CONTROLLER	480	20	1	3		480	4	1	20		SPARE
GFCI QUAD RECEPTACLE	360	20	1	5	360		6	2	20		SPARE
SPARE		20	1	7		0	8	-	-		-
SPARE		20	1	9	0		10	2	20		SPARE
SPARE		20	1	11		0	12	-	-		-
SPARE		20	1	13	0		14	2	20		SPARE
SPARE		20	1	15		0	16	-	-		-
SPARE		20	1	17	0		18	2	20		SPARE
SPARE		20	1	19		0	20	-	-		-
SPARE		20	1	21	0		22	2	20		SPARE
SPARE		20	1	23		0	24	-	-		-
SPARE		20	1	25	0		26	2	20		SPARE
SPARE		20	1	27		0	28	-	-		-
SPARE		20	1	29	0		30	-	-		SPACE
		TOTAL VA/PHASE			2040	480					
		TOTAL VA			2520						
		CONNECTED LOAD (AMPS)			11						



PANEL SCHEDULE: CPP-2

VOLTAGE: 240/120 PHASE: 1, 3-WIRE
BUS SIZE (AMPS):40A
MAINS: 40A MCB

ENCLOSURE: NEMA 3R
MOUNTING: SURFACE
AIC RATING: 22 KAIC.SYM
GROUND BAR

1. PROVIDE POCKET SLIDE-IN TYPED CIRCUIT DIRECTORY
2. PROVIDE COPPER PHASE AND GROUND BUSES
3. PANELBOARD SHALL BE FULLY RATED. NO SERIES RATING
4. PROVIDE BOLT ON CIRCUIT BREAKERS
5. PROVIDE EQUIPMENT GROUND BUS
6. PROVIDE COPPER WIRES FOR ALL 15A/20A CIRCUIT BREKERS

CIRCUIT DESCRIPTION	LOAD VA	CIRCUIT BREAKER	POLE	CKT	PHASE A	PHASE B	CKT	POLE	CIRCUIT BREAKER	LOAD VA	CIRCUIT DESCRIPTION
PIONEER CONTROLLER	480	20	1	1	1680		2	1	20	1200	NETWORK ENCLOSURE
PIONEER CONTROLLER	480	20	1	3		480	4	2	20		SPARE
GFCI QUAD RECEPTACLE	360	20	1	5	360		6	-	-		-
SPARE		20	1	7		0	8	2	20		SPARE
SPARE		20	1	9	0		10	-	-		-
SPARE		20	1	11		0	12	2	20		SPARE
SPARE		20	1	13	0		14	-	-		-
SPARE		20	1	15		0	16	2	20		SPARE
SPARE		20	1	17	0		18	-	-		-
SPARE		20	1	19		0	20	2	20		SPARE
SPARE		20	1	21	0		22	-	-		-
SPARE		20	1	23		0	24	2	20		SPARE
SPARE		20	1	25	0		26	-	-		-
SPARE		20	1	27		0	28	2	20		SPARE
SPARE		20	1	29	0		30	-	-		-
		TOTAL VA/PHASE			2040	480					
		TOTAL VA			2520						
		CONNECTED LOAD (AMPS)			11						

1 / E2.3 AUX AC ONE-LINE DIAGRAM
SCALE: NONE

PROJECT SUMMARY	
DC SYSTEM SIZE:	5.85 MWDC
AC SYSTEM SIZE:	4.75 MWAC
DC/AC RATIO:	1.23
PV MODULE MANUFACTURER:	FIRST SOLAR
PV MODULE MODEL:	FS-6445A-P-B-2
MODULE WATTAGE:	445 W
MODULES PER STRING:	6
TOTAL MODULES:	13,152
TOTAL STRINGS:	2,192
INVERTER MANUFACTURER:	CPS
INVERTER MODEL:	CPS SCH250K-T-US-600-CWB
INVERTER RATING:	250 KW
TOTAL INVERTER QUANTITY:	19

GENERAL NOTES

A. (LX) INDICATES APPROPRIATE SAFETY LABEL TO BE APPLIED TO EQUIPMENT.

B. THE ENTIRE ELECTRICAL SERVICE AND DISTRIBUTION EQUIPMENT, INCLUDING ALL OVERCURRENT PROTECTIVE DEVICES (OCPD), SHALL BE UL LISTED AS A FULLY RATED SYSTEM. THE MANUFACTURER SHALL PROVIDE THE EQUIPMENT WITH SHORT CIRCUIT CURRENT RATINGS EQUAL TO OR GREATER THAN THE AVAILABLE SHORT CIRCUIT CURRENT.

C. EQUIPMENT SELECTION, PV SYSTEM DESIGN AND INSTALLATION SHALL BE AS PER NEC 2023. THE PROPOSED SYSTEM IS A UTILITY INTERACTIVE SYSTEM AND SHALL BE DESIGNED, INSTALLED AND OPERATED IN COMPLIANCE WITH ALL APPLICABLE STANDARDS.

D. REFER TO CABLE SCHEDULE ON E4 SERIES DRAWINGS FOR CONDUCTOR AND CONDUIT SIZING.

KEYED NOTES

1. CIRCUIT BETWEEN MOTOR ELECTRONICS ENCLOSURE AND ASSOCIATED TRACKER MOTOR FURNISHED BY EQUIPMENT SUPPLIER AND INSTALLED BY ELECTRICAL CONTRACTOR. COORDINATE WITH EQUIPMENT SUPPLIER FOR MORE INFORMATION.

2. DATA ACQUISITION SYSTEM FURNISHED BY DAS VENDOR AND INSTALLED BY ELECTRICAL CONTRACTOR.

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A	30% ELECTRICAL DRAWINGS	MDL	DTG	02/20/2026
B	ISSUED FOR PERMIT	MDL	DTG	05/01/2026

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DANIEL TENNESSEN GRAEBNER
PE0064154
05.01.2026
PROFESSIONAL ENGINEER

Sandhills ENERGY

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PSE ENGINEERS & CONSULTANTS
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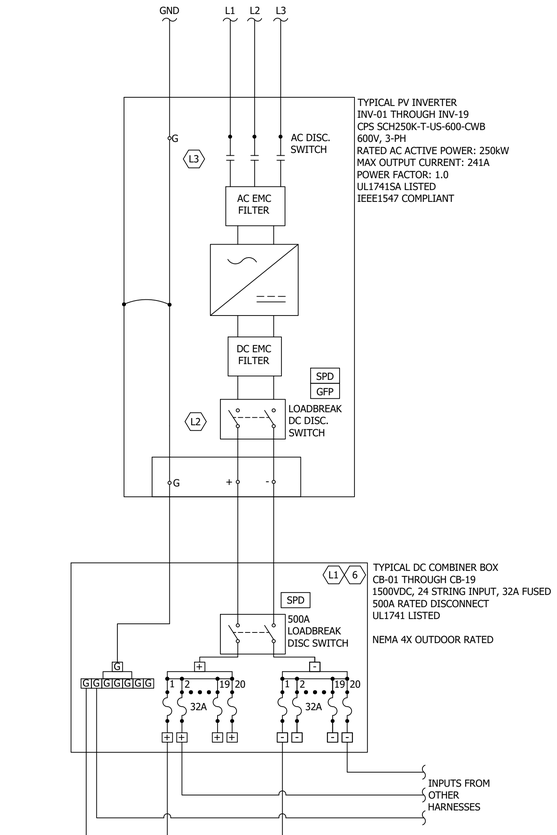
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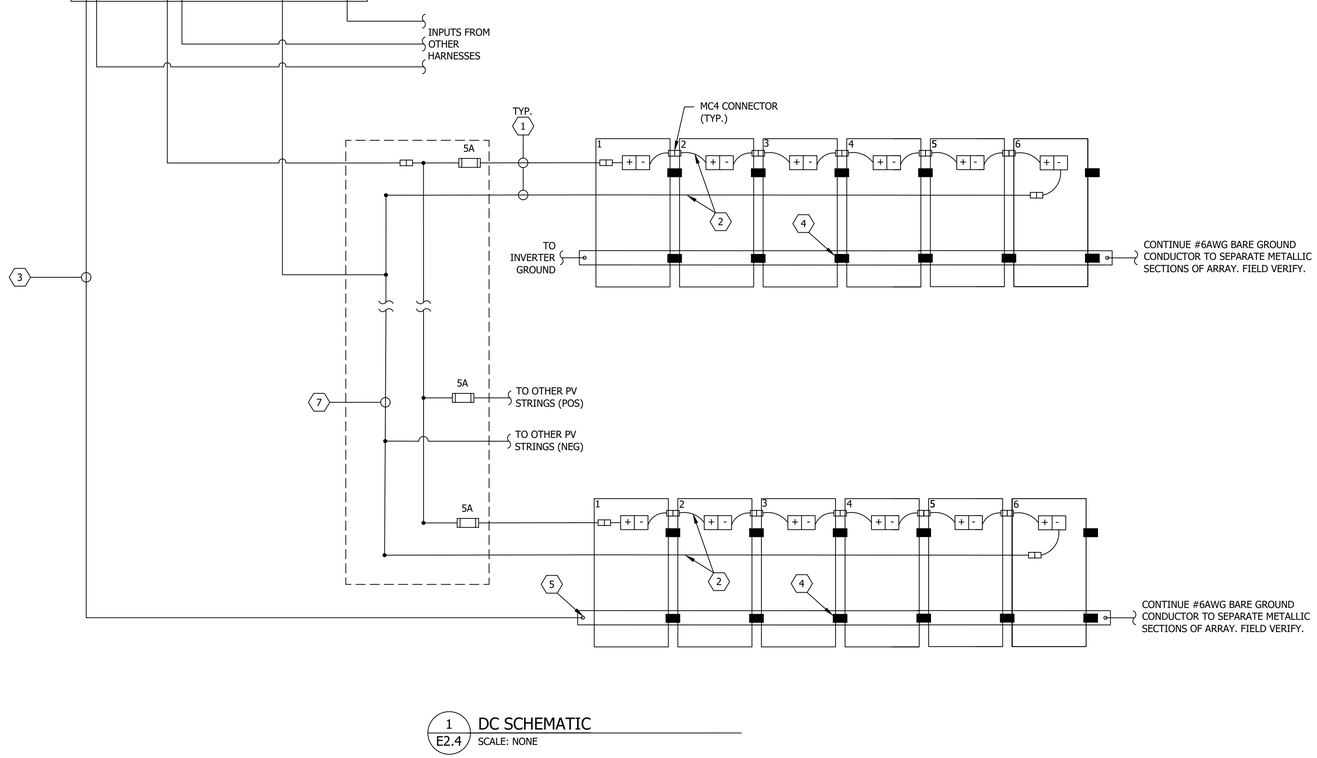
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02/20/2026	DTG
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MDL	OOI

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38.0237°, -102.3534°
LAMAR, CO 81052

AUX AC ONE-LINE DIAGRAM

DRAWING NUMBER	REVISION
E2.3	D





1 E2.4 DC SCHEMATIC
SCALE: NONE

DC STRING SCHEDULE

TAG	MODULE	CONNECTOR TYPE	6-STR HARNESSES		7-STR HARNESSES		TOTAL HARNESSES	TOTAL STRINGS	TOTAL MODULE QTY	MODULE STC RATING (W)	kWDC	kWAC
HARNESS RELATIVE POSITION (N/S)			NORTH	SOUTH	NORTH	SOUTH	-	-	-	-	-	-
CB-01	FS-6445-P-B-2	MC4			9	8	17	119	714	445	317.73	250
CB-02	FS-6445-P-B-2	MC4			8	9	17	119	714	445	317.73	250
CB-03	FS-6445-P-B-2	MC4			9	8	17	119	714	445	317.73	250
CB-04	FS-6445-P-B-2	MC4			8	9	17	119	714	445	317.73	250
CB-05	FS-6445-P-B-2	MC4			8	8	16	112	672	445	299.04	250
CB-06	FS-6445-P-B-2	MC4			8	8	16	112	672	445	299.04	250
CB-07	FS-6445-P-B-2	MC4			8	8	16	112	672	445	299.04	250
CB-08	FS-6445-P-B-2	MC4	9	10			19	114	684	445	304.38	250
CB-09	FS-6445-P-B-2	MC4	10	9			19	114	684	445	304.38	250
CB-10	FS-6445-P-B-2	MC4	9	10			19	114	684	445	304.38	250
CB-11	FS-6445-P-B-2	MC4	10	9			19	114	684	445	304.38	250
CB-12	FS-6445-P-B-2	MC4	9	10			19	114	684	445	304.38	250
CB-13	FS-6445-P-B-2	MC4	10	9			19	114	684	445	304.38	250
CB-14	FS-6445-P-B-2	MC4	10	10			20	120	720	445	320.4	250
CB-15	FS-6445-P-B-2	MC4	10	10			20	120	720	445	320.4	250
CB-16	FS-6445-P-B-2	MC4	10	9			19	114	684	445	304.38	250
CB-17	FS-6445-P-B-2	MC4	9	10			19	114	684	445	304.38	250
CB-18	FS-6445-P-B-2	MC4	10	9			19	114	684	445	304.38	250
CB-19	FS-6445-P-B-2	MC4	9	10			19	114	684	445	304.38	250
TOTAL			115	115	58	58	346	2192	13152		5852.64	4750

PROJECT SUMMARY	
DC SYSTEM SIZE:	5.85 MWDC
AC SYSTEM SIZE:	4.75 MWAC
DC/AC RATIO:	1.23
PV MODULE MANUFACTURER:	FIRST SOLAR
PV MODULE MODEL:	FS-6445A-P-B-2
MODULE WATTAGE:	445 W
MODULES PER STRING:	6
TOTAL MODULES:	13,152
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INVERTER MANUFACTURER:	CPS
INVERTER MODEL:	CPS SCH250K-T-US-600-CWB
INVERTER RATING:	250 KW
TOTAL INVERTER QUANTITY:	19

GENERAL NOTES

A (LX) INDICATES APPROPRIATE SAFETY LABEL TO BE APPLIED TO EQUIPMENT.

B EQUIPMENT SELECTION, PV SYSTEM DESIGN AND INSTALLATION SHALL BE AS PER NEC 2023. THE PROPOSED SYSTEM IS A UTILITY INTERACTIVE SYSTEM AND SHALL BE DESIGNED, INSTALLED AND OPERATED IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF THE LOCAL ELECTRICAL UTILITY COMPANY AND THE LOCAL AUTHORITY HAVING JURISDICTION.

C FOLLOW MANUFACTURER'S SUGGESTED INSTALLATION PRACTICES AND WIRING SPECIFICATIONS.

D MODULE CONNECTORS AND FIELD INSTALLED CONNECTORS MUST BE THE SAME MAKE AND MODEL AND SHARE A COMMON NRTL LISTING. CONNECTORS MUST BE STAUBLI MC4. IF MATING TO A MANUFACTURER INSTALLED CONNECTOR OF ANOTHER TYPE, TESTING DOCUMENTATION SHOWING THAT THE TWO CONNECTOR TYPES ARE FULLY COMPATIBLE AND COMPLY WITH THE LISTING REQUIREMENTS MAY BE ACCEPTED AS AN ALTERNATIVE.

KEYED NOTES

1 PROVIDE CONDUCTOR AS NOTED IN DC CABLE SCHEDULE FOR EACH LEG OF PHOTOVOLTAIC SOURCE CIRCUIT AS SHOWN. BOTH POSITIVE AND NEGATIVE CONDUCTOR ARE UNGROUNDED AND SHALL BE COLOR CODED IN THE FOLLOWING FASHION:

POSITIVE = RED
NEGATIVE = BLACK

2 CONDUCTORS SHALL BE INSTALLED IN ACCORDANCE WITH NEC 690.31 AND ROUTED WITHIN THE RACKING SYSTEM. CONDUCTORS SHALL BE INSTALLED IN A WORKMAN LIKE MANNER, PROTECTED FROM SHARP METALLIC SURFACES, PROPERLY BUNDLED (WITH UV RESISTANT MATERIALS) AND SECURED WITHIN THE RACKING SYSTEM.

3 PROVIDE #6AWG BARE EQUIPMENT GROUNDING CONDUCTOR TO RACKING SYSTEM USING LISTED GROUNDING CONNECTOR KIT PER MANUFACTURER'S REQUIREMENT. RACKING SYSTEM IS LISTED AND IDENTIFIED FOR BONDING PV MODULES. FIELD VERIFY UL RATING OF RACKING SYSTEM. EQUIPMENT GROUNDING CONDUCTOR SHALL BE RUN WITH THE PV ARRAY CIRCUIT CONDUCTORS IN CONDUIT WHEN CIRCUIT CONDUCTORS LEAVE THE VICINITY OF THE PV ARRAY.

4 UL LISTED GROUNDING HARDWARE PROVIDED WITH THE RACKING SYSTEM. THE HARDWARE WILL PROVIDE A SOLID ELECTRICAL CONNECTION OF THE SOLAR PANEL FRAME(S) TO THE INTERNAL RACKING GROUNDING SYSTEM.

5 CONNECT EQUIPMENT GROUNDING CONDUCTOR TO RACKING SYSTEM PER RACKING MANUFACTURER'S RECOMMENDATION USING LISTED GROUNDING CONNECTOR KIT.

6 DC COMBINER BOX SHALL BE NEMA 4X WEATHER PROOF, RATED AT 1500VDC, AND UL 1741 LISTED. COMBINER BOX SHALL BE MOUNTED TO PREVENT SHADING OF THE SOLAR ARRAY AT ALL TIMES. CONTRACTOR SHALL SELECT EXACT MAKE AND MODEL AND SUBMIT TO ENGINEER FOR APPROVAL.

7 INDICATED HARNESS IS TYPICAL AND SHOWS THE MAXIMUM NUMBER OF STRINGS. SEE E1 SERIES FOR ACTUAL HARNESS COMPOSITION.

NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
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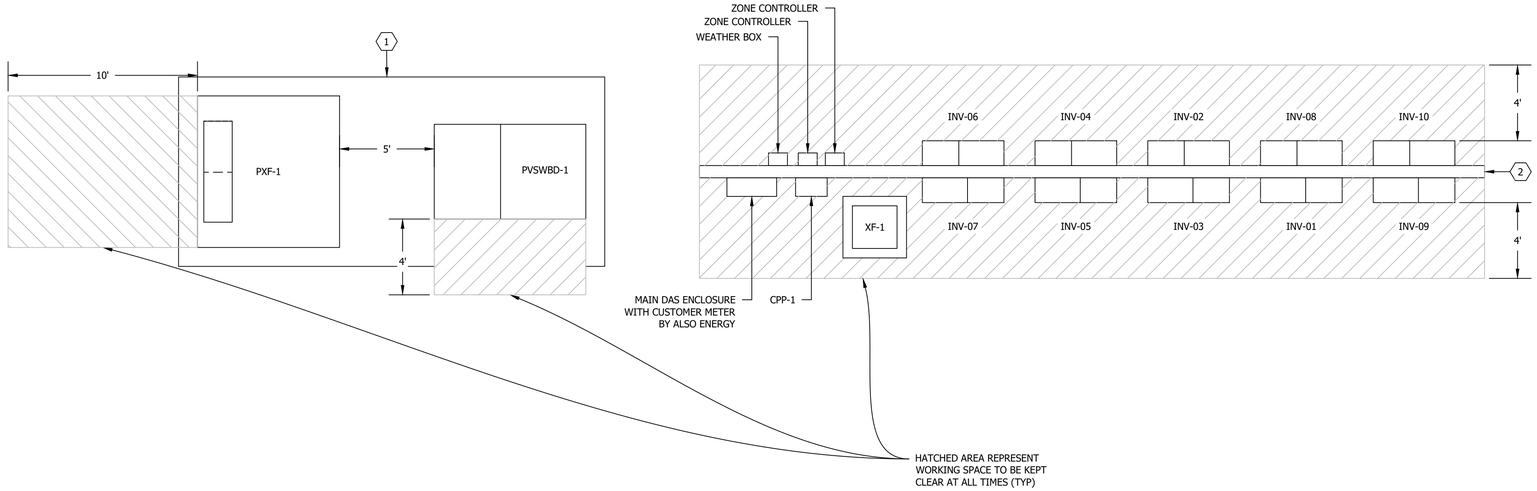
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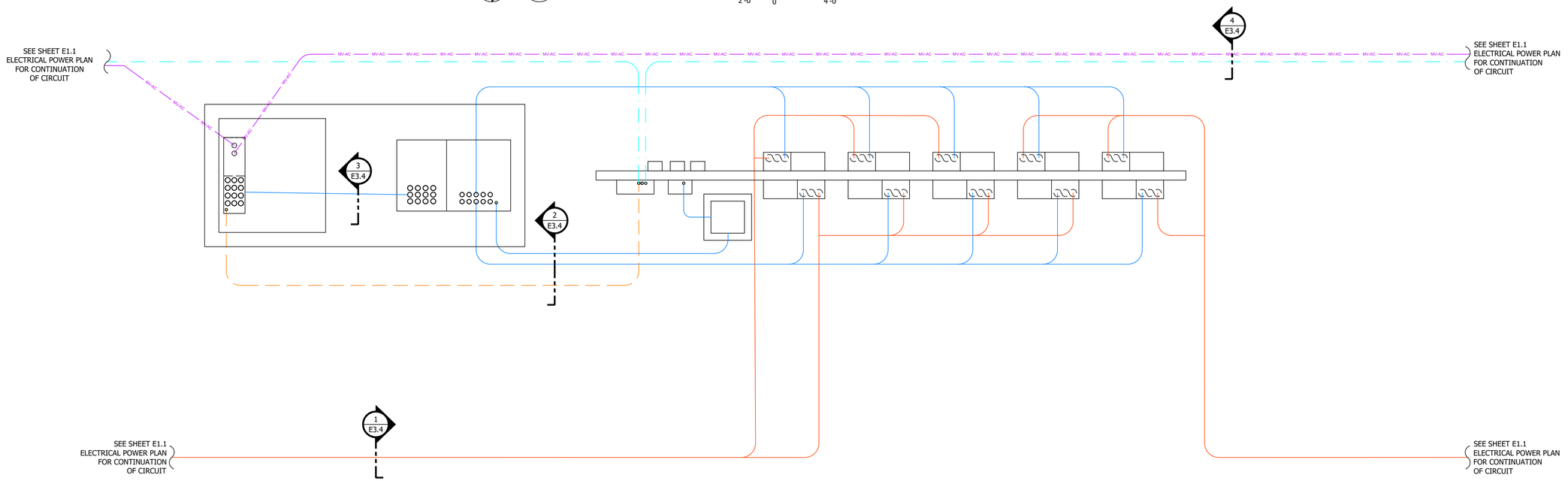
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38.0237°, -102.3534°
LAMAR, CO 81052

DC ONE-LINE DIAGRAM

DRAWING NUMBER	REVISION
E2.4	D



N 1/E3.0 ELECTRICAL EQUIPMENT LAYOUT - PV SYSTEM 1
SCALE: 1/4" = 1'-0"
2'-0" 0 4'-0"



N 1/E3.0 EQUIPMENT WIRING PLAN - PV SYSTEM 1
SCALE: 1/4" = 1'-0"
2'-0" 0 4'-0"

GENERAL NOTES

A DETAILS ON THIS SHEET ARE REPRESENTATIVE DIMENSIONS AND LAYOUTS ARE SUBJECT TO CHANGE. INSTALLER SHALL FIELD VERIFY ALL EQUIPMENT DIMENSIONS AND STUB UP LOCATIONS USING APPROVED EQUIPMENT INSTALLATION DETAILS.

B FIBER OPTIC CABLES SHALL BE RATED FOR OUTDOOR USE, MULTIMODE, AND RUN IN CONDUIT OR INNERDUCT. FACTORY DEFAULT FIBER TERMINATION IS SC TYPE CONNECTORS. LC AND ST TYPE CONNECTORS MAY BE USED WHERE REQUIRED BY SPECIFIC EQUIPMENT. FIELD VERIFY ALL FIBER TERMINATIONS.

C ETHERNET CABLES IN EXTERIOR LOCATIONS OR RUN BETWEEN EXTERIOR EQUIPMENT SHALL BE TYPE STP WITH SHIELDED CONNECTORS. CABLE MAY BE CAT5E OR CAT 6.

D REFER TO STRUCTURAL DESIGN DRAWINGS FOR MORE INFORMATION REGARDING EQUIPMENT PAD INSTALLATION.

KEYED NOTES

1 EQUIPMENT PAD PROVIDED BY CONTRACTOR, CONTRACTOR SHALL FIELD COORDINATE WITH OWNER FOR FINAL LOCATION OF PAD.

2 PROVIDE EQUIPMENT RACK STRUCTURE OF ADEQUATE STRUCTURAL STRENGTH AND SECURELY MOUNTED FOR INDICATED EQUIPMENT AND ASSOCIATED CIRCUITRY. REFER TO SHEET E3.2 FOR MORE INFORMATION.

NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
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LEGEND

- DC FEEDER CIRCUITS
- LV AC FEEDER CIRCUITS
- FIBER OPTIC CIRCUITS
- SIGNAL CIRCUIT
- MV-AC — UNDERGROUND MV WIRE

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DAVID T. GRUSSING
PE0064154
05.01.2026
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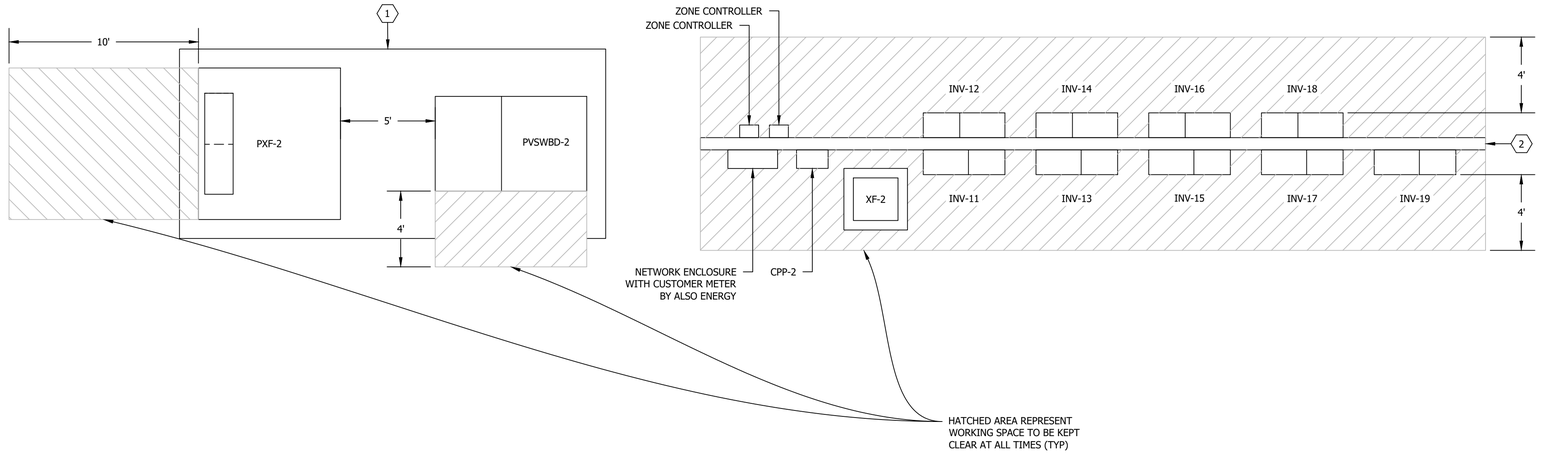
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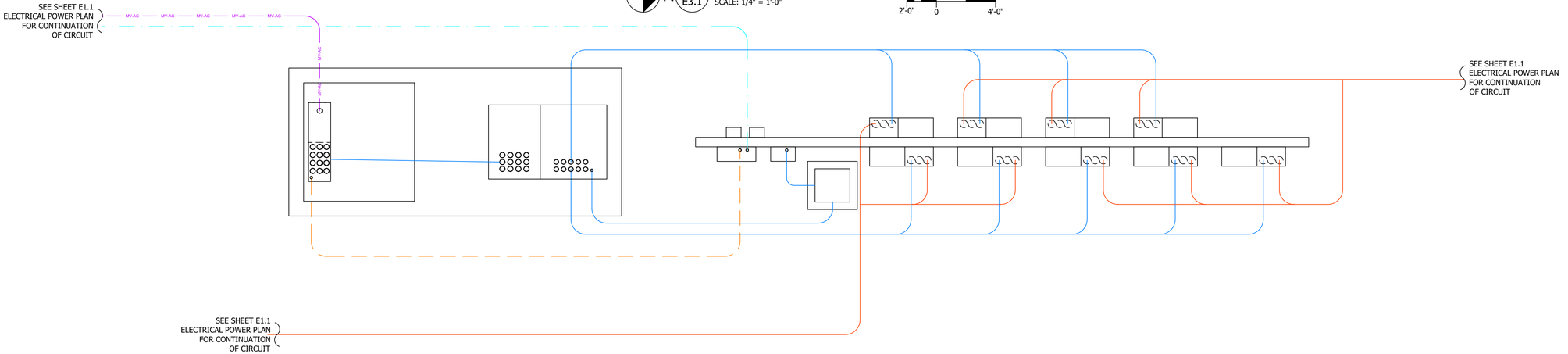
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LAMAR, CO 81052

ELECTRICAL EQUIPMENT LAYOUT - PV SYSTEM 1

DRAWING NUMBER	REVISION
E3.0	D



N 1 E3.1 ELECTRICAL EQUIPMENT LAYOUT - PV SYSTEM 2
SCALE: 1/4" = 1'-0"
2'-0" 0 4'-0"



N 2 E3.1 EQUIPMENT WIRING PLAN - PV SYSTEM 2
SCALE: 1/4" = 1'-0"
2'-0" 0 4'-0"

GENERAL NOTES

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KEYED NOTES

1 EQUIPMENT PAD PROVIDED BY CONTRACTOR, CONTRACTOR SHALL FIELD COORDINATE WITH OWNER FOR FINAL LOCATION OF PAD.

2 PROVIDE EQUIPMENT RACK STRUCTURE OF ADEQUATE STRUCTURAL STRENGTH AND SECURELY MOUNTED FOR INDICATED EQUIPMENT AND ASSOCIATED CIRCUITRY. REFER TO SHEET E3.5 FOR MORE INFORMATION.

NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
0	ISSUED FOR PERMIT	MDL	DTG	05/01/2026

LEGEND

- DC FEEDER CIRCUITS
- LV AC FEEDER CIRCUITS
- FIBER OPTIC CIRCUITS
- SIGNAL CIRCUIT
- MV-AC UNDERGROUND MV WIRE

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DAVID TENNESEN GARDNER
PE0064154
05.01.2026
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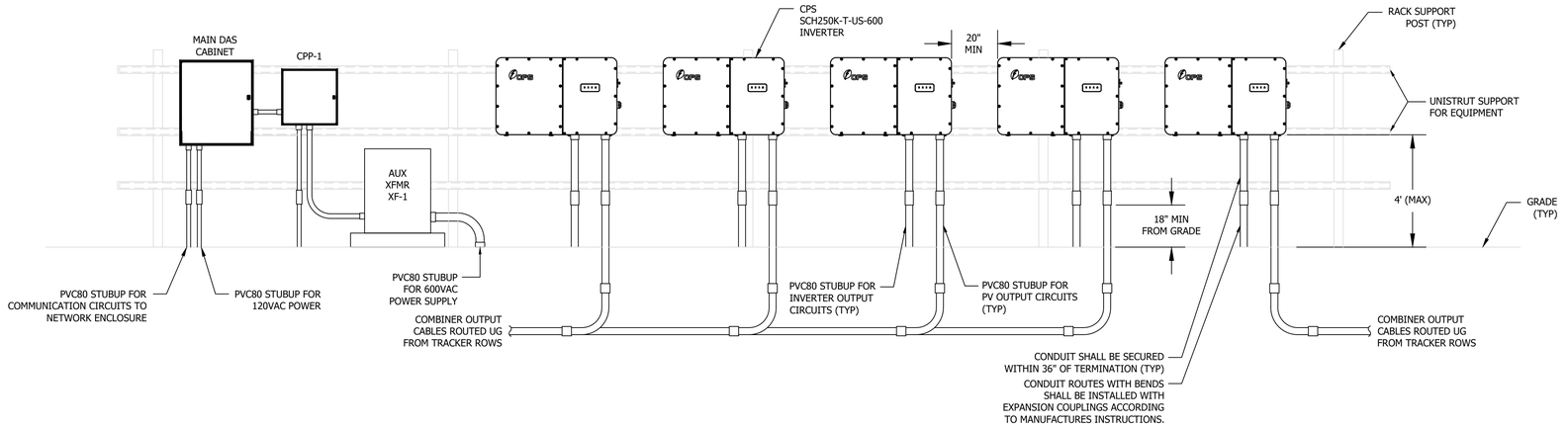
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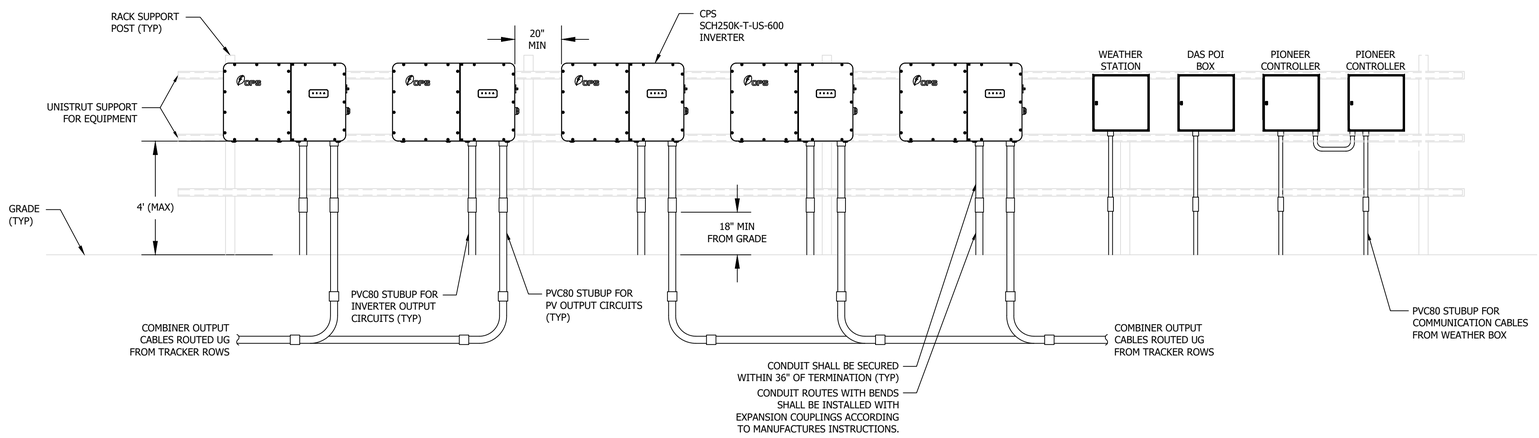
ELECTRICAL EQUIPMENT LAYOUT - PV SYSTEM 2

DRAWING NUMBER	REVISION
E3.1	D

NOTE: DETAILS ON THIS SHEET ARE DIAGRAMMATIC IN NATURE. THEY ARE ONLY MEANT TO SHOW THE INTENT OF THE DESIGN. NOT ALL CIRCUITS CONNECTIONS ARE SHOWN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THEIR MEANS/METHODS MEET THE INTENT OF THE DESIGN.



1 / E3.2 EQUIPMENT RACK #1 WEST ELEVATION
SCALE: 3/8" = 1'-0"
1'-4" 0 2'-8"



2 / E3.2 EQUIPMENT RACK #1 EAST ELEVATION
SCALE: 3/8" = 1'-0"
1'-4" 0 2'-8"

NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
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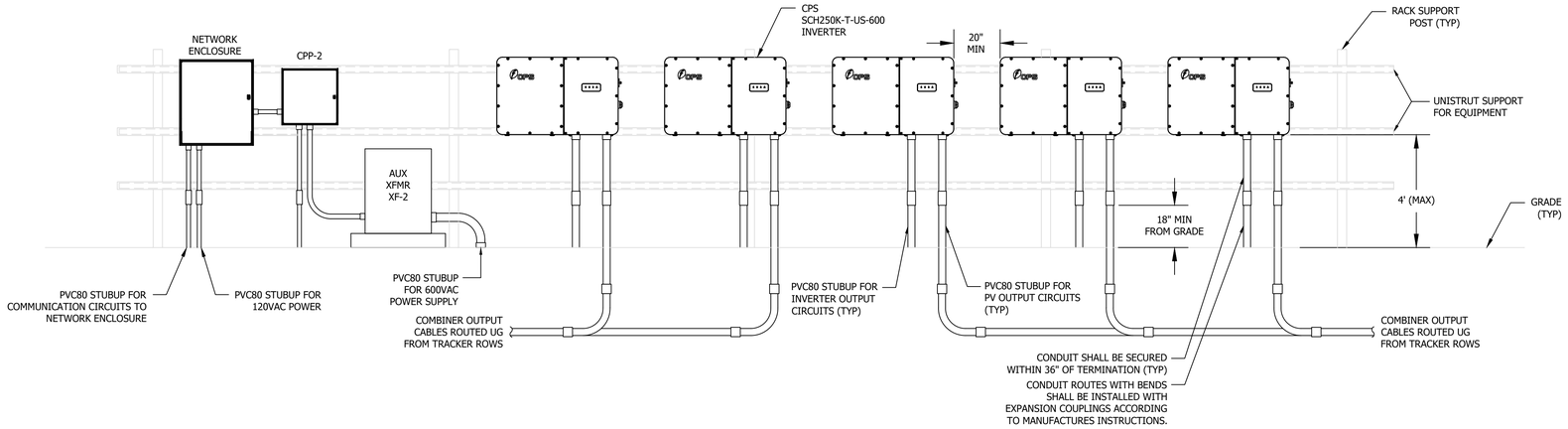
ORIGINAL DATE:	ENGR:
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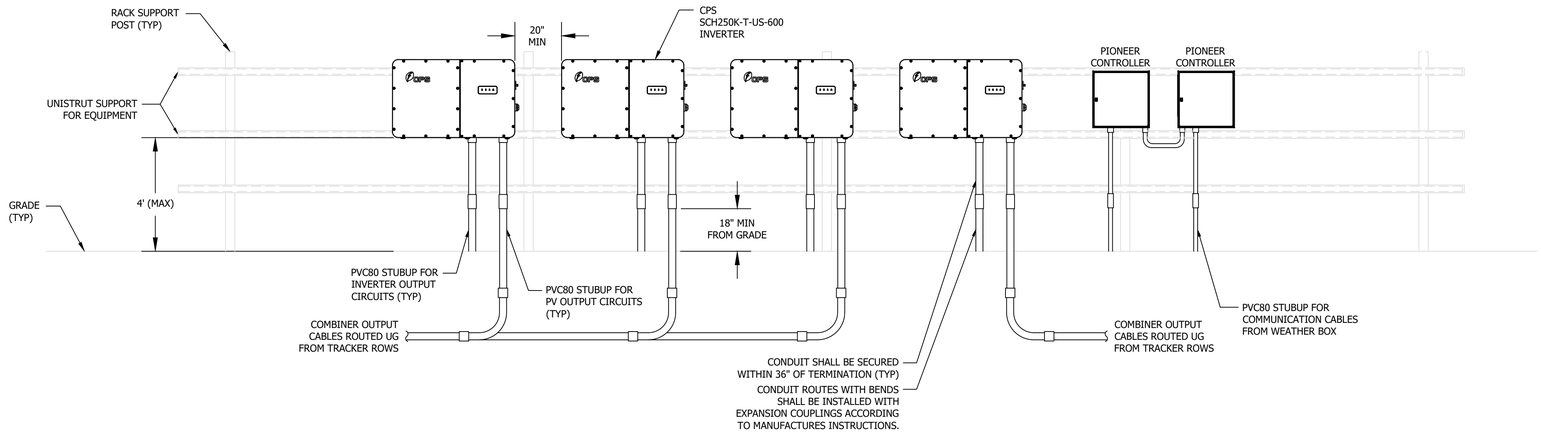
EQUIPMENT RACK DETAILS - PV SYSTEM 1

DRAWING NUMBER	REVISION
E3.2	D

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1 / E3.3 EQUIPMENT RACK #2 WEST ELEVATION
SCALE: 3/8" = 1'-0"
1'-4" 0 2'-8"



2 / E3.3 EQUIPMENT RACK #2 EAST ELEVATION
SCALE: 3/8" = 1'-0"
1'-4" 0 2'-8"

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DAVID T. GREEN
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05.01.2026
PROFESSIONAL ENGINEER

Sandhills ENERGY

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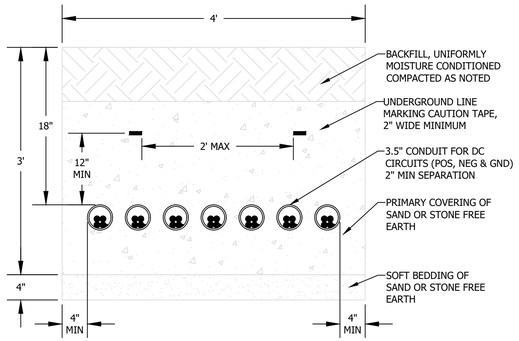
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EQUIPMENT RACK DETAILS - PV SYSTEM 2

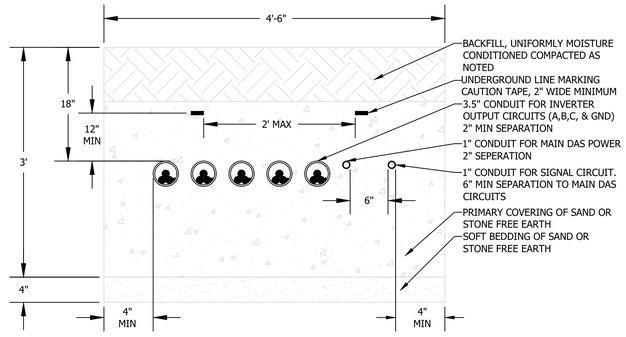
DRAWING NUMBER	REVISION
E3.3	D



1 E3.4 TRENCH SECTION - DC CIRCUITS

SCALE: 1" = 1'-0"

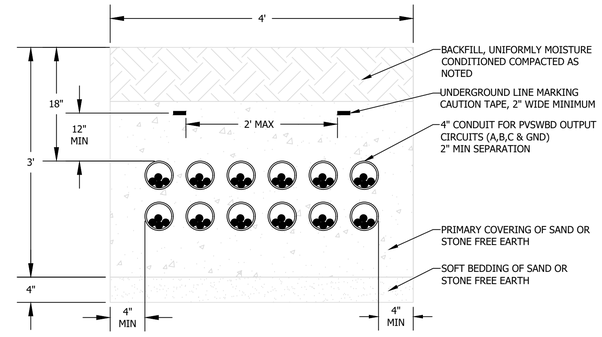
0'-6" 0 1'-0"



2 E3.4 TRENCH SECTION - LVAC CIRCUITS

SCALE: 1" = 1'-0"

0'-6" 0 1'-0"



3 E3.4 TRENCH SECTION - LVAC CIRCUITS

SCALE: 1" = 1'-0"

0'-6" 0 1'-0"

4 E3.4 TRENCH SECTION - MVAC & COMMUNICATION

SCALE: 1" = 1'-0"

0'-6" 0 1'-0"

TRENCH GENERAL NOTES:

A ELECTRICAL CONTRACTOR SHALL ADHERE TO TRENCH SPECIFICATIONS NOT LIMITED TO CONDUIT SPACING AND BURIAL DEPTH. ELECTRICAL CONTRACTOR SHALL INFORM ENGINEER OF ANY CHANGES OR VARIATIONS AS THIS MAY AFFECT CABLE AMPACITY CALCULATIONS.

B ELECTRICAL CONTRACTOR SHALL ADHERE TO RECOMMENDATIONS IN THE GEOTECHNICAL REPORT FOR REQUIREMENTS ON FILL MATERIALS AS WELL AS PLACEMENT AND COMPACTION OF FILL AND BACKFILL.

C DUCT BANK SHALL BE IDENTIFIED BY 2-INCH WIDE, 4-MIL POLYETHELENE FILM RED TAPE (WITH TRACER) WITH BOLD, BLACK LETTERS. THE TAPE SHOULD READ, TOP LINE - "CAUTION CAUTION CAUTION...", BOTTOM LINE - "...BURIED ELECTRIC LINE BELOW...". WARNING TAPE SHALL BE INSTALLED AT LEAST 12", WHERE PRACTICAL ABOVE TOP OF DUCT BANK. FOR TRENCHES WIDER THAN 24" ONE PIECE OF TAPE SHALL BE LOCATED AT EACH SIDE OF THE TRENCH WITH ADDITIONAL RUNS PROVIDED AS NECESSARY. THE MAXIMUM DISTANCE BETWEEN TAPE RUNS SHALL BE 24" ON CENTER.

D TRENCH SHALL BE:
- BACKFILL TO BE NATIVE, CLEAN NON-EXPANSIVE SOIL WITH NO ROCKS LARGER THAN 3/8" TO BE PLACED BACK IN TRENCH. TRENCH SHALL BE A BACKFILLED WITH CLEAN FILL MATERIAL, FREE FROM AGGREGATE, DEBRIS, ORGANIC MATERIAL AND STONES. REFER TO GEOTECHINICAL REPORT FOR RECOMMENDATIONS FOR BACKFILL MATERIAL.
- SOIL SHALL BE PLACED IN LAYERS NOT MORE THAN 12" THICK AND BE COMPACTED TO AT LEAST 90% OF ITS MODIFIED PROCTOR DENSITY (ASTM D1557). REFER TO ADDITIONAL RECOMMENDATIONS WITHIN THE GEOTECHNICAL INVESTIGATION REPORT.
- THE ON-SITE CLAY SHOULD BE SUITABLE FOR USE AS FILL IF BELOW THE FROST DEPTH AND PLACED AND COMPACTED WITHIN THE RANGE OF 2% POINT BELOW TO 3% POINTS ABOVE THE MODIFIED PROCTOR OPTIMUM MOISTURE CONTENT.

E BACKFILL SHOULD BE PLACED AT A MOISTURE CONTENT AT OR ABOVE ITS OPTIMUM VALUE TO ENSURE REPRESENTATIVE THERMAL PROPERTIES ARE MAINTAINED.
RHO VALUE: 95 °C-m/W
OPTIMUM MOISTURE CONTENT: 3.5% PER GEOTECHNICAL REPORT

F TRENCH SHALL BE EQUIPPED WITH 4" OF SAND BEDDING.

G WIRING METHODS SHALL BE PER NEC 300.

H ELECTRICAL CONTRACTOR SHALL COORDINATE WITH OTHER UNDERGROUND UTILITIES FOR INTERFERENCES.

I ALL UNDERGROUND STUB-UPS SHALL BE UV RATED RIGID NONMETALLIC CONDUIT (SCHEDULE 80 PVC). CONDUIT SHALL EXTEND FROM AT LEAST 18 INCHES BELOW FINISHED GRADE UP TO THE ENCLOSURE OR 8FT ABOVE GRADE, WHICHEVER IS LESS.

J ALL CONDUIT AND CABLE UNDER ROADWAYS SHALL BE BURIED TO MINIMUM DEPTH SPECIFIED BY NEC AND LOCAL CODES.

K MEDIUM VOLTAGE CONDUIT MIN. 1' HORIZONTAL SEPARATION FROM DC FEEDERS.

L COMMUNICATION CONDUIT MIN 1' HORIZONTAL SEPARATION FROM ALL AC & DC FEEDERS.

M CONDUIT ENTRANCE DETAILS ARE FOR DIAGRAMMATIC PURPOSES ONLY.

N LOCATIONS, SIZE, AND QUANTITY OF CONDUITS BENEATH SLABS AND PADS SHALL BE COORDINATED IN FIELD PER ELECTRICAL SCHEMATICS AND NEC REQUIREMENTS.

TRENCH GENERAL NOTES CONTINUED:

O ALL CONDUIT ENDS SHALL BE SEALED.

P CONDUITS SHALL ENTER EQUIPMENT THROUGH PAD CUTOUTS.

Q DEPTH OF DIRECT-BURIED CABLE INSTALLATION SHALL BE IN ACCORDANCE WITH NEC 300.50.

R WHERE SOLID ROCK PREVENTS COMPLIANCE WITH THE COVER DEPTHS SPECIFIED IN THIS TABLE, THE WIRING SHALL BE INSTALLED NONMETALLIC RACEWAY PERMITTED FOR DIRECT BURIAL. THE RACEWAY SHALL BE COVERED BY A MINIMUM OF 50MM (2IN.) OF CONCRETE EXTENDING DOWN TO ROCK.

S BOTTOM OF THE TRENCH SHALL BE SMOOTH, UNDISTURBED EARTH OR SAND. BACKFILL WITHIN 4IN OF THE CABLE SHALL NOT BE OF ANY MATERIAL THAT CAN DAMAGE THE UNDERGROUND CABLE.

T DIRECT-BURIED CABLES ENTERING THE GROUND OR STUBBING UP INTO ELECTRICAL EQUIPMENT SHALL BE INSTALLED IN THE CONDUIT. REFER TO PLANS FOR CONDUIT TYPE AND SIZE.

U ALL SWEEPS AND STUB UPS TO BE PVC UNLESS OTHERWISE NOTED WHERE TRENCH DEVIATES FROM PLANS.

V NATIVE OR SAND BACKFILL TO BE USED AT THE PROJECT MANAGER'S DISCRETION. NATIVE BACKFILL FREE OF TOPSOIL, ROOTS, OR OTHER ORGANIC MATTER AND CONTAINING NO ROCKS LARGER THAN 3/8". IF HEAVY CLAY IS ENCOUNTERED, THE NATIVE BACKFILL MUST BE MIXED WITH IMPORTED SAND.

W WHERE TRENCH DEVIATES FROM PLANS, SUB-CONTRACTOR IS TO PROVIDE REDLINE INDICATING NEW TRENCH LOCATION.

X FOR THE UPPER BACKFILL, THE AREA NOT SURROUNDING THE CONDUCTORS AT THE TOP OF THE TRENCH, THE NATIVE BACKFILL SHALL BE FREE TO TOPSOIL, ROOTS, OR OTHER ORGANIC MATTER AND CONTAINING NO ROCKS LARGER THAN 3".

Y WHEN THE SCREENING FOR NATIVE BACKFILL CANNOT BE MET, THE DIRECT BURIED CONDUCTORS SHALL BE SAND CASED.

Z PER NEC 310.10(E), CONDUCTORS FOR DIRECT-BURIAL APPLICATIONS SHALL BE OF A TYPE IDENTIFIED FOR SUCH USE.

Z1 ELECTRICAL CONTRACTOR SHALL ADHERE TO THE BURIAL DEPTH REQUIREMENTS FOR ALL TRENCHES LISTED IN THE STATE OF ILLINOIS STANDARD SOLAR AGRICULTURAL IMPACT MITIGATION AGREEMENT (AIMA).

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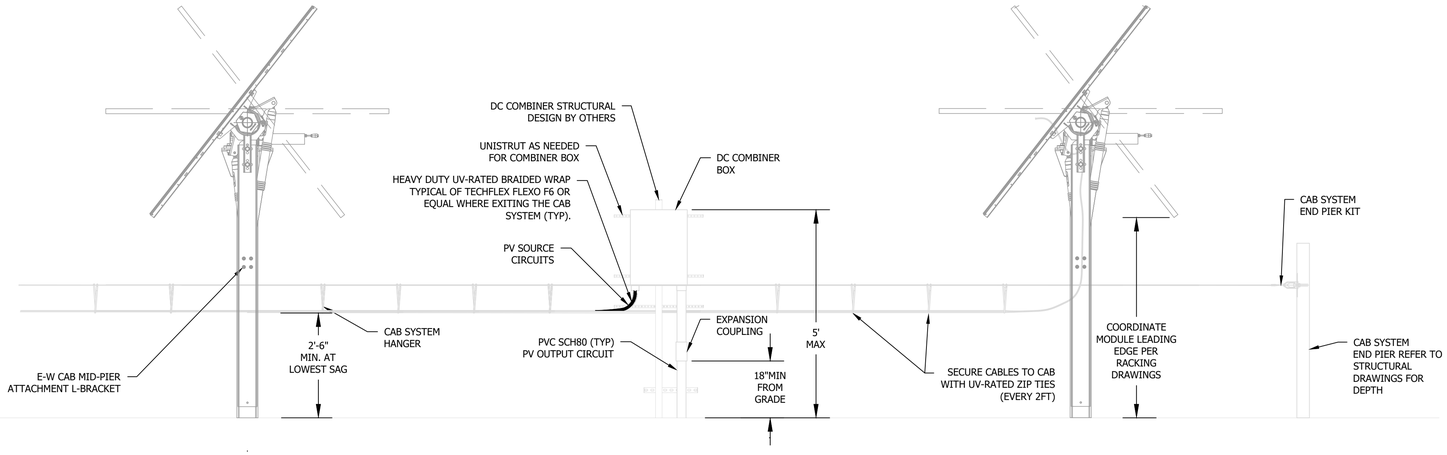
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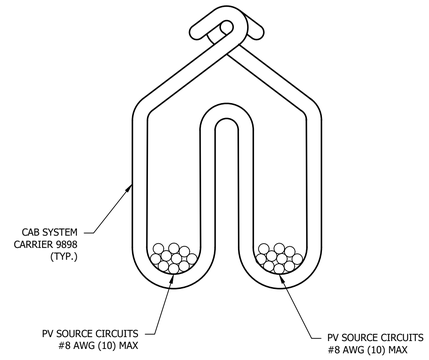
TRENCH DETAILS

DRAWING NUMBER	REVISION
E3.4	D



1 E3.5 COMBINER ROW WIRE MANAGEMENT - SIDE VIEW
SCALE: NONE

NOTE THAT HANGER DETAIL IS TYPICAL AND MAY NOT BE REPRESENTATIVE OF THE ACTUAL HANGER USED ON THIS PROJECT



2 E3.5 HANGER CROSS SECTION DETAIL
SCALE: NONE

GENERAL NOTES

A ALL CAB HANGERS SHALL BE COATED WITH A DURABLE NON-CONDUCTIVE COATING DESIGNED TO PREVENT DAMAGE TO CABLE.

B ELECTRICAL CONTRACTOR TO VERIFY THAT CAB SYSTEM LOCATIONS AND END PIER LOCATIONS WILL NOT INTERFERE WITH TRACKER RANGE OF MOTION.

C ELECTRICAL CONTRACTOR TO VERIFY WHERE PV CONDUCTORS TRANSITION FROM MODULE TO MESSENGER WIRE, CONDUCTORS SHALL BE ORIENTED SUCH THAT THEY ARE NOT PINCHED AND BENDING RADII ARE NOT VIOLATED IN ANY POSSIBLE TRACKER POSITION.

D ELECTRICAL CONTRACTOR SHALL REFER TO CAB SYSTEM INSTALLATION MANUAL FOR MORE INFORMATION INCLUDING APPROPRIATE WEIGHT-LOADING REQUIREMENTS OF HANGERS, L-BRACKETS, AS WELL AS TENSION AND SAG REQUIREMENTS OF MESSENGER WIRE.

E ELECTRICAL CONTRACTOR SHALL REFER TO STRUCTURAL ENGINEERING DRAWINGS FOR MORE INFORMATION ON PIER EMBEDMENT AND WEIGHT LOADING INFORMATION.

F CLEARANCES SHOWN ON CAB SYSTEM DETAILS SHALL BE VERIFIED WITH CAB SYSTEM MANUFACTURER AND RACKING SYSTEM MANUFACTURER.

G PV WIRE AND OTHER FREE AIR CONDUCTORS SHALL BE SUPPORTED WITHIN 12" OF A BOX OR CONNECTOR, AND AS REQUIRED PER NEC 690.31(C) OR AHJ APPROVED ALTERNATIVE METHOD.

H ALL CABLES NOT LABELED UV RESISTANT SHALL BE PROTECTED FROM DIRECT SUNLIGHT WITH SPLIT LOOM SLEEVING OR EQUAL.

I BEND RADIUS SHALL COMPLY WITH NEC 300.34, WITH A MINIMUM BEND RADIUS OF 8 TIMES THE OVERALL CABLE DIAMETER OR AS DIRECTED BY THE CABLE MANUFACTURER. CABLES SHALL BE FREE OF TENSION BETWEEN SUPPORTS.

J WHERE CABLES PASS OVER OR AROUND RACKING STRUCTURES, SHARP EDGES MUST BE GUARDED WITH RUBBER EDGEGUARD OR A SIMILAR MATERIAL TO PREVENT ABRASION.

K CLIPS AND CLAMPS SUPPORTING CABLES MUST BE STAINLESS STEEL AND FREE FROM SHARP EDGES THAT MAY CUT OR GOUGE CABLE INSULATION. EDGE PROTECTION MAY BE PROVIDED WITH PLASTIC OR RUBBER COATINGS OR THROUGH FORMED EDGE ROUNDING.

L NYLON CABLE TIES ARE NOT PERMITTED FOR EXTERIOR CABLE SUPPORT. POLYACETAL (POM) TIES OR STRAPS MAY BE USED FOR BUNDLING AND CABLE MANAGEMENT, BUT SHOULD NOT BE THE PRIMARY SUPPORT FOR A GROUP OF 2 OR MORE CABLES.

M NYLON CABLE TIES SHALL BE UV RESISTANT AND EXTRA HEAVY DUTY RATED OR PLASTIC COATED STEEL.

N REFER TO TRACKER INSTALLATION MANUAL AND MECHANICAL DRAWINGS FOR ADDITIONAL DETAILS REGARDING TRACKER WIRE MANAGEMENT REQUIREMENTS.

O REFER TO CIVIL ENGINEERING DRAWINGS FOR EQUIPMENT MINIMUM INSTALLATION HEIGHT FROM GRADE TO ENSURE HEIGHT IS A MINIMUM OF 2' ABOVE 100 YEAR FLOODPLAIN LEVEL.

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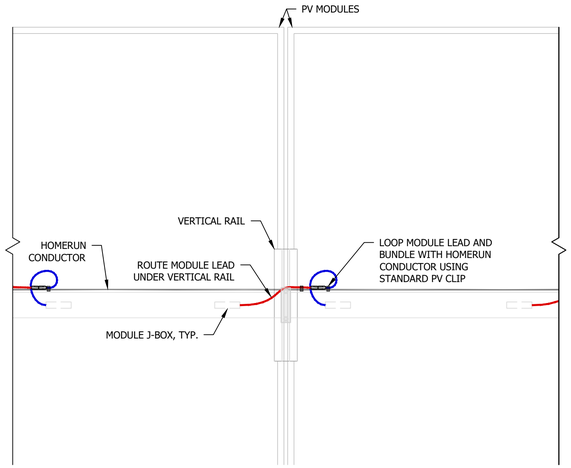
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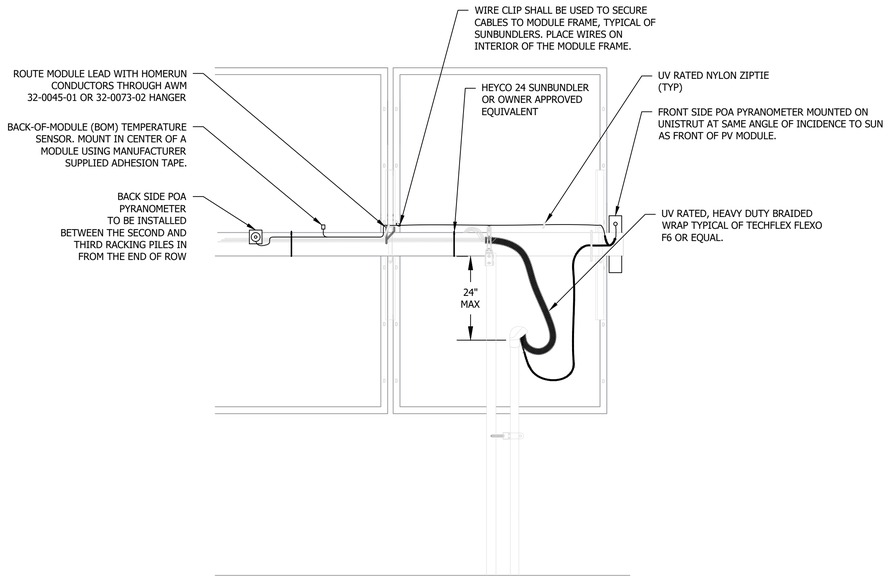
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CAB MANAGEMENT DETAILS

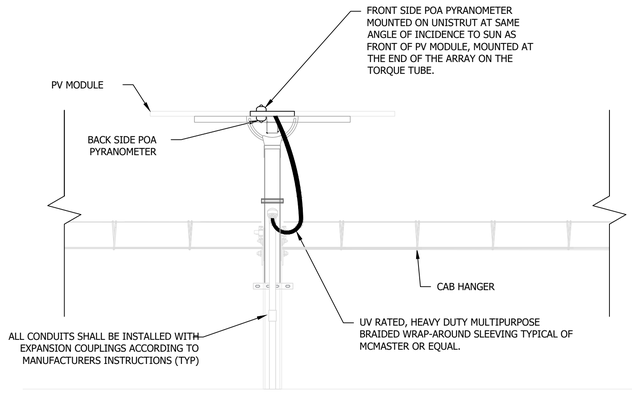
DRAWING NUMBER	REVISION
E3.5	D



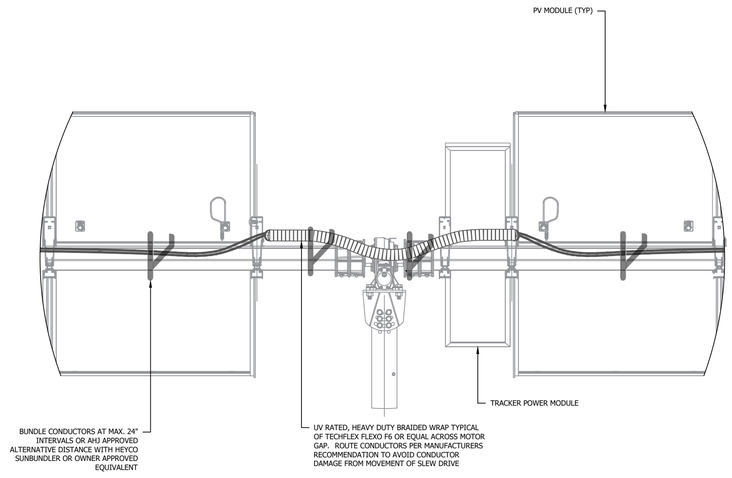
1 E3.6 STRING WIRING DETAIL - MODULE LEADS
SCALE: NONE



2 E3.6 WEATHER STATION COMPONENTS MOUNTING DETAILS
SCALE: NONE



3 E3.6 WEATHER STATION COMPONENT MOUNTING DETAILS
SCALE: NONE



4 E3.6 POWER MODULE DETAIL
SCALE: NONE

GENERAL NOTES

A. PV WIRE AND OTHER FREE AIR CONDUCTORS SHALL BE SUPPORTED WITHIN 12" OF A BOX OR CONNECTOR, AND EVERY 36" THEREAFTER.

B. ALL CABLES NOT LABELED UV RESISTANT SHALL BE PROTECTED FROM DIRECT SUNLIGHT WITH SPLIT LOOM SLEEVING OR EQUAL.

C. BEND RADIUS SHALL BE A MINIMUM OF 8 TIMES THE OVERALL CABLE DIAMETER OR AS DIRECTED BY THE CABLE MANUFACTURER. CABLES SHALL BE FREE OF TENSION BETWEEN SUPPORTS.

D. WHERE CABLES PASS OVER OR AROUND RACKING STRUCTURES, SHARP EDGES MUST BE GUARDED WITH RUBBER EDGEGUARD OR A SIMILAR MATERIAL TO PREVENT ABRASION.

E. CLIPS AND CLAMPS SUPPORTING CABLES MUST BE STAINLESS STEEL AND FREE FROM SHARP EDGES THAT MAY CUT OR GOUGE CABLE INSULATION. EDGE PROTECTION MAY BE PROVIDED WITH PLASTIC OR RUBBER COATINGS OR THROUGH FORMED EDGE ROUNDING.

F. NYLON CABLE TIES ARE NOT PERMITTED FOR EXTERIOR CABLE SUPPORT. POLYACETAL (POM) TIES OR STRAPS MAY BE USED FOR BUNDLING AND CABLE MANAGEMENT, BUT SHOULD NOT BE THE PRIMARY SUPPORT.

G. REFER TO RACKING INSTALLATION MANUAL AND MECHANICAL DRAWINGS FOR ADDITIONAL DETAILS REGARDING RACKING WIRE MANAGEMENT REQUIREMENTS.

H. DETAILS ARE DIAGRAMMATIC GUIDELINES. CONTRACTOR IS RESPONSIBLE FOR ENSURING COMPATIBILITY WITH ON SITE CONDITIONS.

I. CONDUCTORS SHALL BE SECURED, SUPPORTED, ARRANGED, AND PROTECTED TO AVOID ABRASION, PINCHING, OR OTHER DAMAGE.

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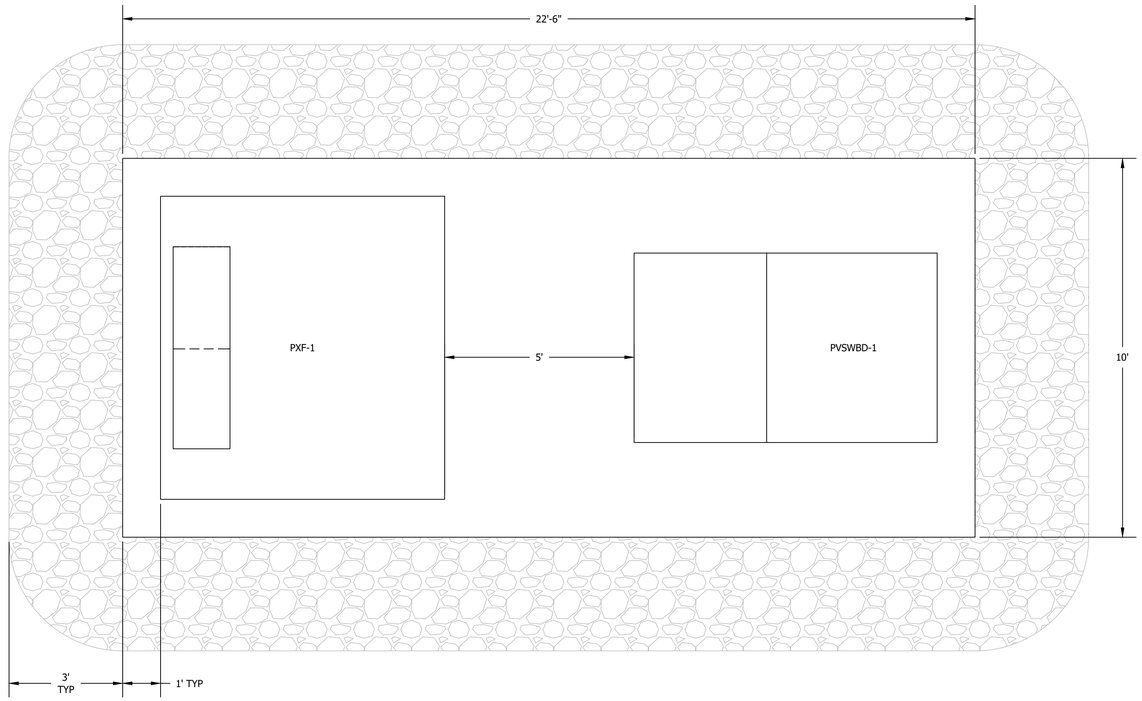
WIRE MANAGEMENT DETAILS

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E3.6	D

GENERAL NOTES

A. EQUIPMENT PAD PROVIDED BY CONTRACTOR PER CIVIL/STRUCTURAL DESIGN. REFER TO SUCH DESIGN FOR EXACT REQUIREMENTS.

B. DETAILS ON THIS SHEET ARE REPRESENTATIVE DIMENSIONS AND LAYOUTS ARE SUBJECT TO CHANGE. INSTALLER SHALL FIELD VERIFY ALL EQUIPMENT DIMENSIONS AND STUB UP LOCATIONS USING APPROVED EQUIPMENT INSTALLATION DETAILS.



N 1/E3.7 EQUIPMENT PAD LAYOUT (TYP)
SCALE: 1/2" = 1'-0"
2'-0" 0 4'-0"

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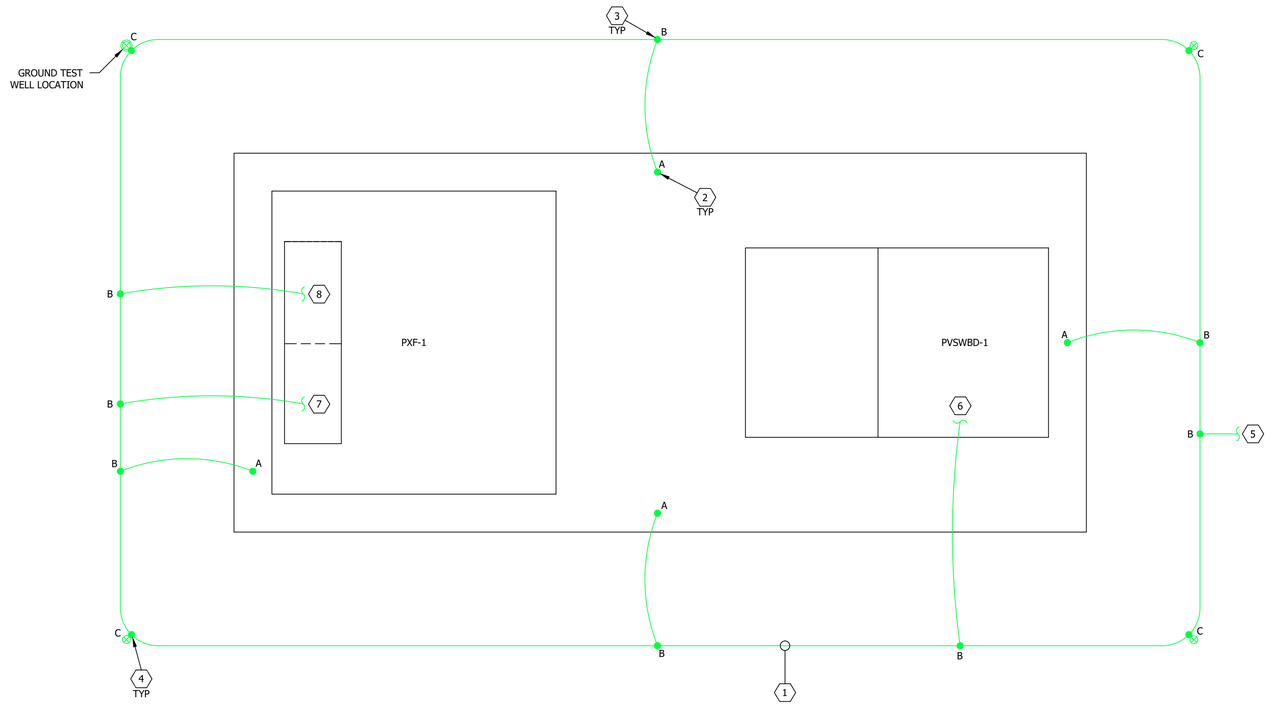
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EQUIPMENT PAD DETAILS

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E3.7	D



N 1 / E3.8 EQUIPMENT PAD GROUNDING (TYP)
SCALE: 1/2" = 1'-0"
2'-0" 0 4'-0"

GENERAL NOTES

A ELECTRICAL CONTRACTOR SHALL ENSURE PROPER BONDING OF ALL EQUIPMENT TO ELIMINATE THE POSSIBILITY OF STEP POTENTIAL.

B ALL GROUNDING CONNECTIONS SHOWN ARE DIAGRAMMATIC IN NATURE. CONNECTIONS SHALL BE MADE AS SHOWN IN DETAILS ON SHEET E3.11.

C PROVIDE #2/0AWG BARE COPPER CONDUCTORS FOR GROUND WIRE UNLESS SPECIFICALLY NOTED OTHERWISE. GROUND WIRE SHALL BE IN 1" SCHEDULE 80 PVC CONDUIT TO PROTECT IT FROM PHYSICAL DAMAGE WHERE GROUND WIRE IS EXPOSED ABOVE GRADE.

D GROUNDING METHODS SHALL BE PER NEC ARTICLE 250

KEYED NOTES

1 PROVIDE #2/0AWG BARE COPPER GROUND CONDUCTOR BELOW FINISHED GRADE AROUND EQUIPMENT PAD. GROUND RING SHALL BE INSTALLED PER NEC 250 REQUIREMENTS AND SHALL BE INSTALLED NOT LESS THAN 36" BELOW THE SURFACE OF THE EARTH.

2 PROVIDE TYPE 'A' CONNECTION (WIRE TO REBAR) TO LOWEST HORIZONTAL REBAR IN CONCRETE PAD. SEE SHEET E3.11 FOR MORE INFORMATION.

3 PROVIDE TYPE 'B' CONNECTION (WIRE TO WIRE). SEE SHEET E3.11 FOR MORE INFORMATION.

4 PROVIDE TYPE 'C' CONNECTION (WIRE TO GROUND ROD). SEE SHEET 3.11 FOR MORE INFORMATION.

5 PROVIDE #6AWG COPPER GROUND WIRE TO EQUIPMENT RACK.

6 PROVIDE GROUNDING ELECTRODE CONDUCTOR TO GROUND PAD IN EQUIPMENT. REFER TO SHEET E3.9 FOR MORE INFORMATION.

7 PROVIDE CONNECTION TO TRANSFORMER GROUND PAD IN SECONDARY COMPARTMENT. REFER TO SHEET E3.9 FOR MORE INFORMATION.

8 PROVIDE CONNECTION TO TRANSFORMER GROUND PAD IN PRIMARY COMPARTMENT. REFER TO SHEET E3.9 FOR MORE INFORMATION.

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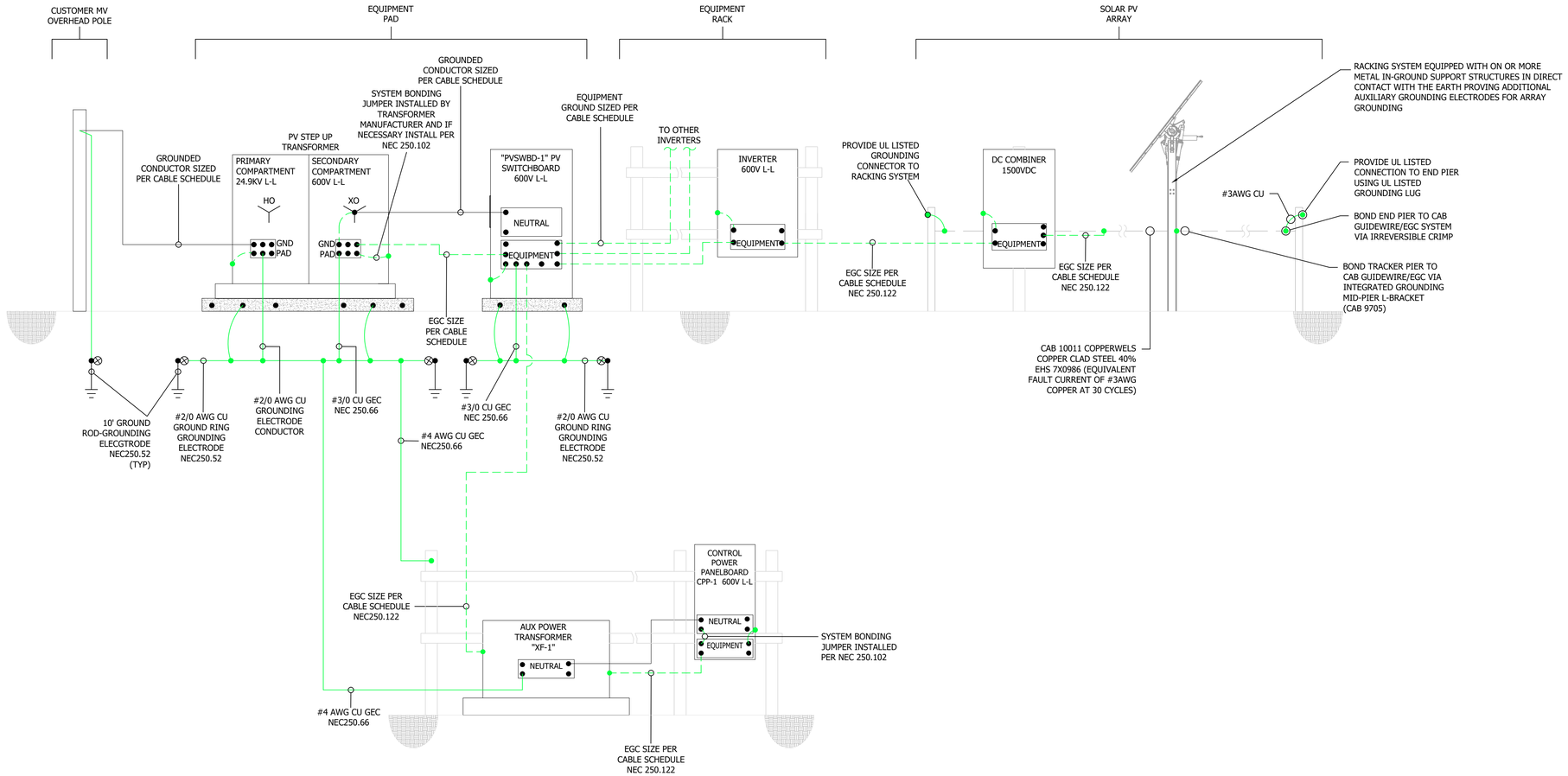
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GROUNDING DETAILS

DRAWING NUMBER	REVISION
E3.8	D

NOTE: EQUIPMENT GROUNDING SCHEMATICS ARE TYPICAL IN NATURE.
PXF-2 GROUNDING DETAILS ARE SIMILAR TO PXF-1.



1 E3.9 GROUNDING SYSTEM SCHEMATIC
SCALE: NONE

GENERAL NOTES

A ELECTRICAL CONTRACTOR SHALL ENSURE PROPER BONDING OF ALL EQUIPMENT TO ELIMINATE THE POSSIBILITY OF STEP POTENTIAL.

B ALL GROUNDING CONNECTIONS SHOWN ARE DIAGRAMMATIC IN NATURE. CONNECTIONS SHALL BE MADE AS SHOWN IN DETAILS ON SHEET E3.11.

C PROVIDE #2/0AWG BARE COPPER CONDUCTORS FOR GROUND WIRE UNLESS SPECIFICALLY NOTED OTHERWISE. GROUND WIRE SHALL BE IN 1" SCHEDULE 80 PVC CONDUIT TO PROTECT IT FROM PHYSICAL DAMAGE WHERE GROUND WIRE IS EXPOSED ABOVE GRADE.

D GROUNDING METHODS SHALL BE PER NEC ARTICLE 250

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LEGEND:

- GROUNDING ELECTRODE CONDUCTOR
- EQUIPMENT GROUND CONDUCTOR
- MESSENGER WIRE
- GROUNDED CONDUCTOR (NEUTRAL)

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NOT FOR CONSTRUCTION

COLORADO LICENSED PROFESSIONAL ENGINEER
PE0064154
05.01.2026

Sandhills ENERGY

ISI SOLAR

PSE ENGINEERS & CONSULTANTS
2424 Rimrock Rd., Suite 300
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Tel: 866.825.8895 www.powersystem.org

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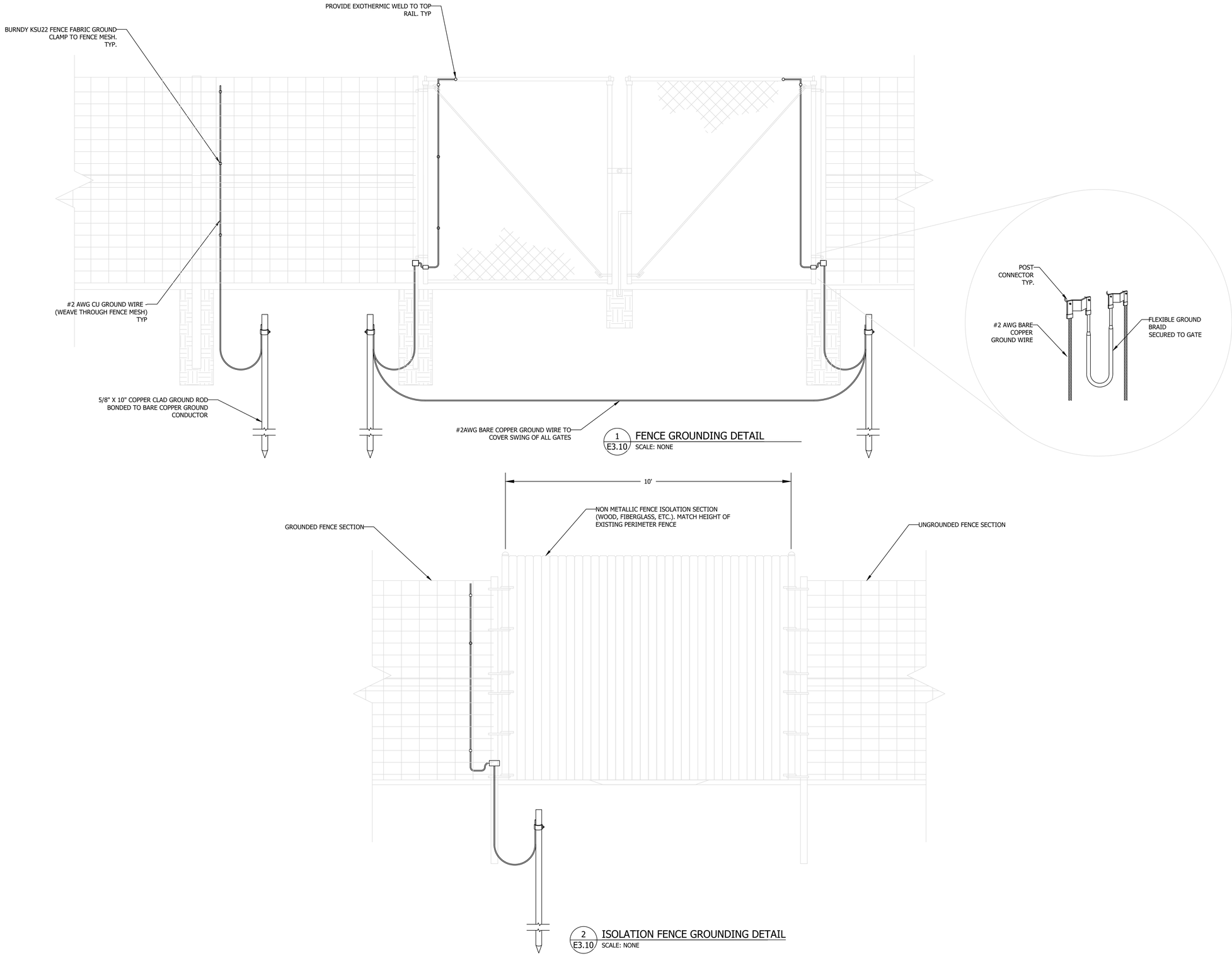
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LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

GROUNDING DETAILS

DRAWING NUMBER	REVISION
E3.9	D



1 E3.10 FENCE GROUNDING DETAIL
SCALE: NONE

2 E3.10 ISOLATION FENCE GROUNDING DETAIL
SCALE: NONE

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COLORADO LICENSED
DAVID T. GRUSSER
PE0064154
05.01.2026
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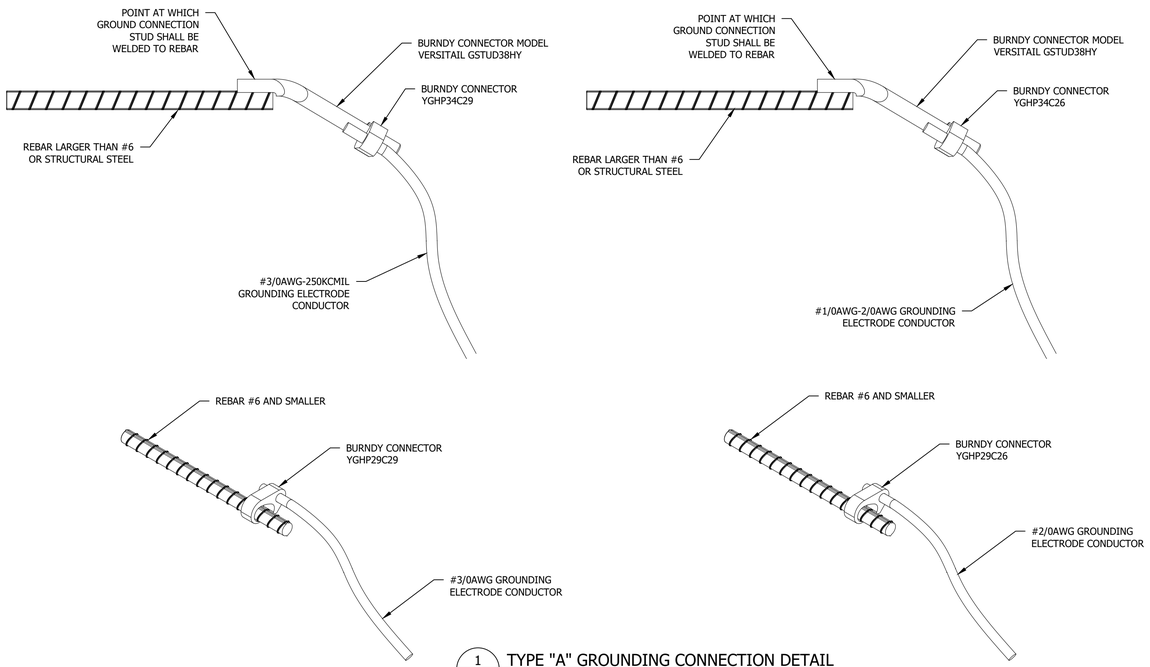
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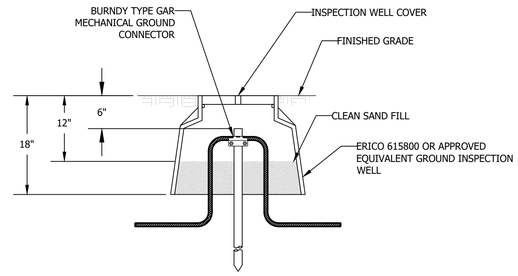
FENCE GROUNDING DETAILS

DRAWING NUMBER	REVISION
E3.10	D

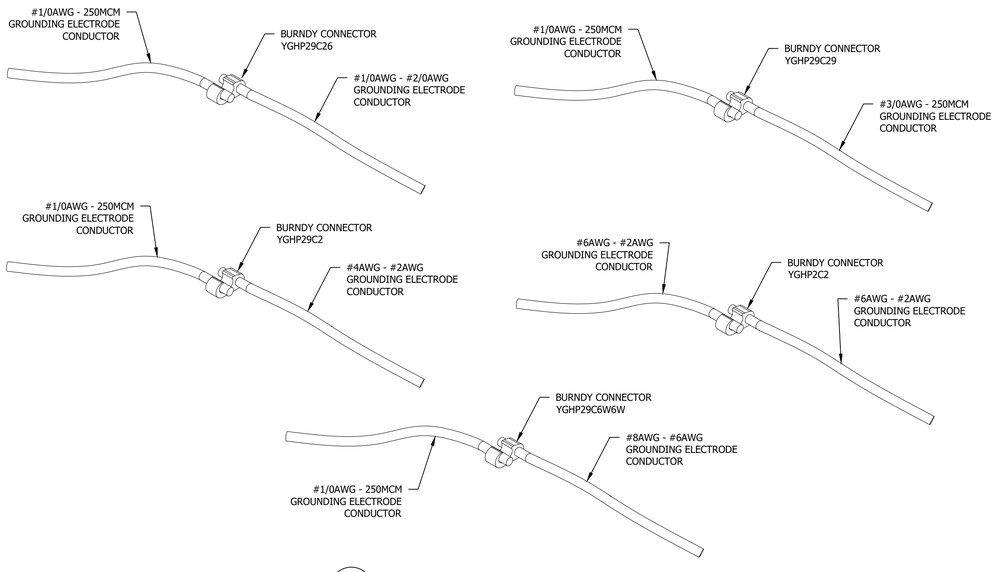
ELECTRICAL CONTRACTOR HAS THE OPTION TO USE EXOTHERMIC WELD CONNECTIONS IF DESIRED.



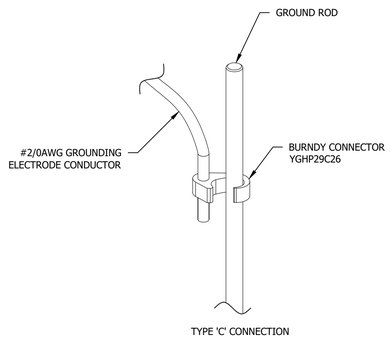
1 E3.11 TYPE "A" GROUNDING CONNECTION DETAIL
SCALE: NONE



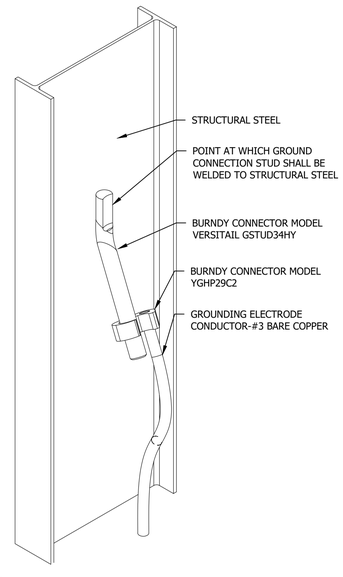
2 E3.11 GROUND ROD TEST WELL DATA
SCALE: NONE



3 E3.11 TYPE "B" GROUNDING CONNECTION DETAIL
SCALE: NONE



4 E3.11 TYPE "C" GROUNDING CONNECTION DETAIL
SCALE: NONE



5 E3.11 TYPE "D" GROUNDING CONNECTION DETAIL
SCALE: NONE

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LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

GROUNDING CONNECTIONS

DRAWING NUMBER	REVISION
E3.11	D

DISTRIBUTION LINE STRUCTURE STAKING SHEET

PRIMARY CONDUCTOR: 1/0 ACSR (6/1) "RAVEN"
SHIELD WIRE:
GUY WIRE: 3/8" HS

STAKING SHEET: 1 **OF** 1

STRUCTURE NUMBER	BACK SPAN	PRIMARY CONDUCTOR	LINE ANGLE	POLE HEIGHT & CLASS	PRIMARY ASSEMBLY	GROUND ASSEMBLY	GUY ASSEMBLY	ANCHOR ASSEMBLY	CONSTRUCTION NOTES & REMARKS
CP-2	25'	(3) 1/0 ACSR		45-3	E3.13	E3.16 DETAIL 1	E3.15 DETAIL 1	E3.15 DETAIL 2	OH CONDUCTOR DEAD-END, UNDERGROUND CABLE RISER. INSTALL ONE DOWN-GUY TO ONE ANCHOR @ 10' LEAD.
CP-1	25'	(3) 1/0 ACSR		45-3	E3.14	E3.16 DETAIL 2			RECLOSER AND GOAB SWITCH POLE

1 / E3.12 DISTRIBUTION STAKING SHEET
SCALE: NONE

24.9kV POLE LINEUP BILL OF MAJOR MATERIALS

Item No.	Item	Est. Qty Req'd	Information*
1	Recloser, 27 kV, 600A	1	G&W Viper ST, with Auxiliary Transformer
2	GOAB Switch, 25kV	1	S&C Omni-Rupter
3	Arrester, Normal Duty, 15.3 kV MCOV	12	Ohio Brass PDV-65 #213265 or equal
4	10' Dead-end Arm Assembly	3	Pupi DA3000120E2B9X2 or equal
5	1/0 ACSR (6/1) Raven	As Req'd	General Cable
6	Cable, Underground, 1/0 AWG AL	As Req'd	25kV 1/0 AL UD cable, 220 mil insul., 1/3 conc. neutral, General Cable
7	Cable Terminators for 1/0 AWG AL	3	3M #5646-1/0 -MB4 with #40137 lug or equal
8	Arrester, Riser Class, 15.3 kV MCOV	3	Ohio Brass PDR-100 # 221615 or equal
9	Bracket, Combination, 3 Ph. Term./Arr.	2	Aluma-Form #WT3CA-48
10	Grip, Underground Cable on Riser	3	Preformed Line Products #RCS-0421
11	Poly Dead-end Insulator, 25kV	15	MacLean #DS-25M
12	Dead-end Clamp	20	MacLean #HDSO-88
13	45'-3 Wood Pole	3	SYP, Penta or DCOI treated
14	3/8" HS Guy Wire	As Req'd	American Wire Group
15	Guy Strain Insulator, 24", Clevis-Roller, 25k	2	Maclean #GCC15-24R2
16	Anchor, single helix,12"	1	Maclean # D114-6
17	Anchor extension shaft, 3.5'	As Req'd	Maclean # D7531/2C
18	Anchor, rod, twineye 3/4" x 7'	1	Maclean # D75D
19	Fused cutout switch witch 300A solid state	3	Hubbell #CP710233PB or equal
20	Pin, Insulator	As Req'd	MacLean # J206Z
21	Insulator, Pin 15kV	As Req'd	PPC #380-S

*MANUFACTURER AND CATALOG NUMBERS ARE FOR REFERENCE ONLY. ENGINEER AND OWNER APPROVED EQUALS WILL BE ACCEPTED

2 / E3.12 STRUCTURE MATERIAL SUMMARY
SCALE: NONE

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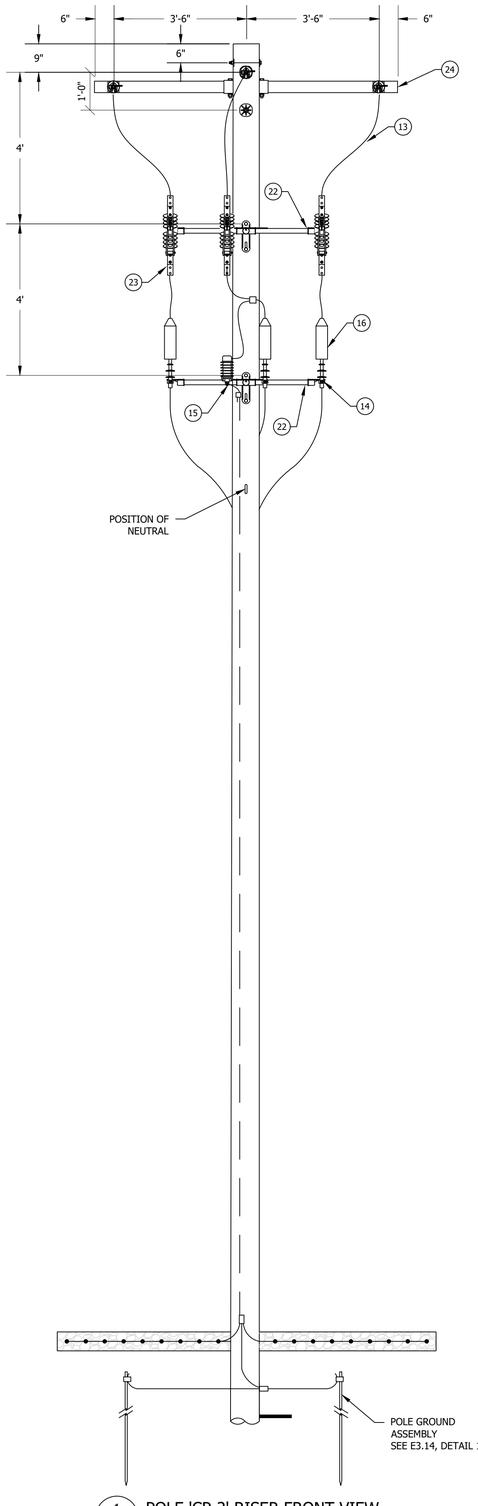
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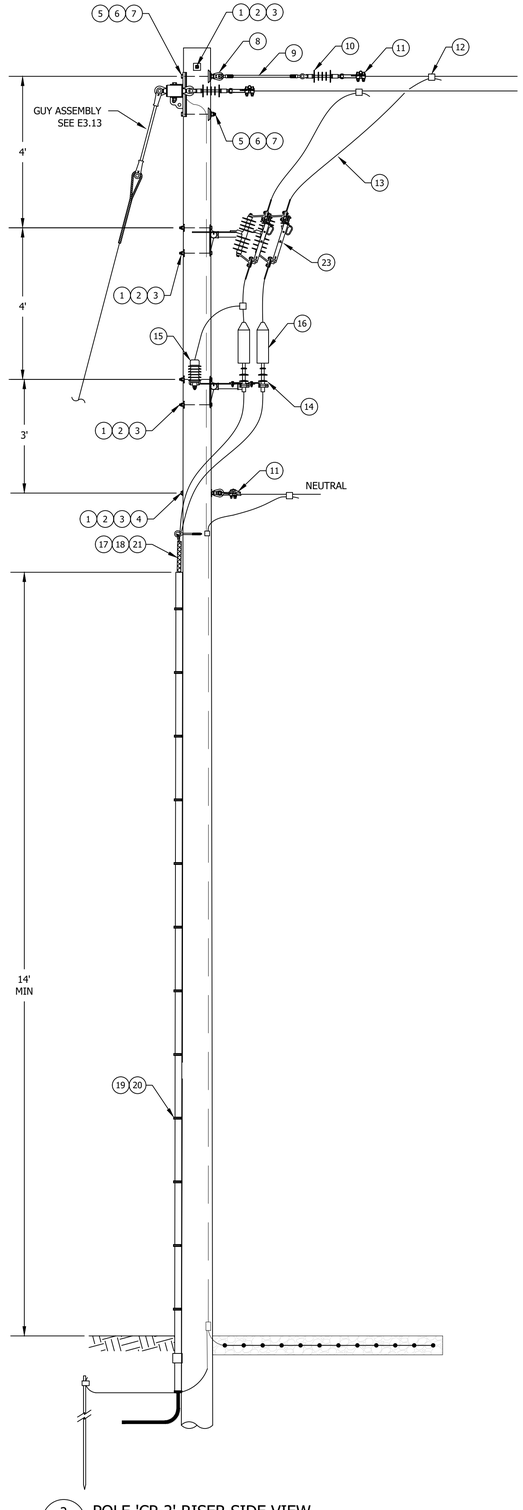
LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

MV POLE BILL OF MATERIALS

DRAWING NUMBER	REVISION
E3.12	D



1 E3.13 POLE 'CP-2' RISER FRONT VIEW
SCALE: NONE



2 E3.13 POLE 'CP-2' RISER SIDE VIEW
SCALE: NONE

ITEM	NO.	MATERIAL
1	6	BOLT, MACHINE, 5/8" X REQ'D LENGTH
2	8	WASHER, SQUARE, 2-1/4" FLAT, 5/8" BOLT
3	6	LOCKNUTS, 5/8"
4	1	EYENUT, 5/8"
5	1	BOLT, MACHINE, 3/4" X REQ'D LENGTH
6	2	WASHER, SQUARE, 4" CURVED, 3/4" BOLT
7	2	LOCKNUTS, 3/4"
8	1	EYENUT, 3/4"
9	1	LINK, FIBERGLASS 18"
10	3	INSULATOR, POLYMER, DEADEND
11	4	CLAMP, DEADEND
12	-	CONNECTORS, AS REQ'D
13	-	JUMPERS, AS REQ'D
14	3	TERMINATION, OUTDOOR, WITH BRACKET
15	3	SURGE ARRESTER, RISER CLASS, 15.3kV MCOV
16	3	WILDLIFE GUARD, RISER, AS REQ'D
17	1	SCREW, EYE, ELLIPTICAL OR DRIVE HOOK
18	3	SHACKLE, ANCHOR (DO NOT USE IF DRIVE HOOK USED)
19	-	CABLE RISER SHIELD, LENGTH AS REQ'D
20	-	SCREW, LAG, 1/2" X 4", AS REQ'D
21	3	POSITIONER, CABLE
22	2	BRACKET, COMBINATION
23	3	CUTOUT, DIST. OPEN (25kV), 300A SOLID BLADE
24	1	CROSSARM ASSEMBLY, FIBERGLASS, 8'-0"

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DAVID T. GREGORY
PE0064154
05.01.2026
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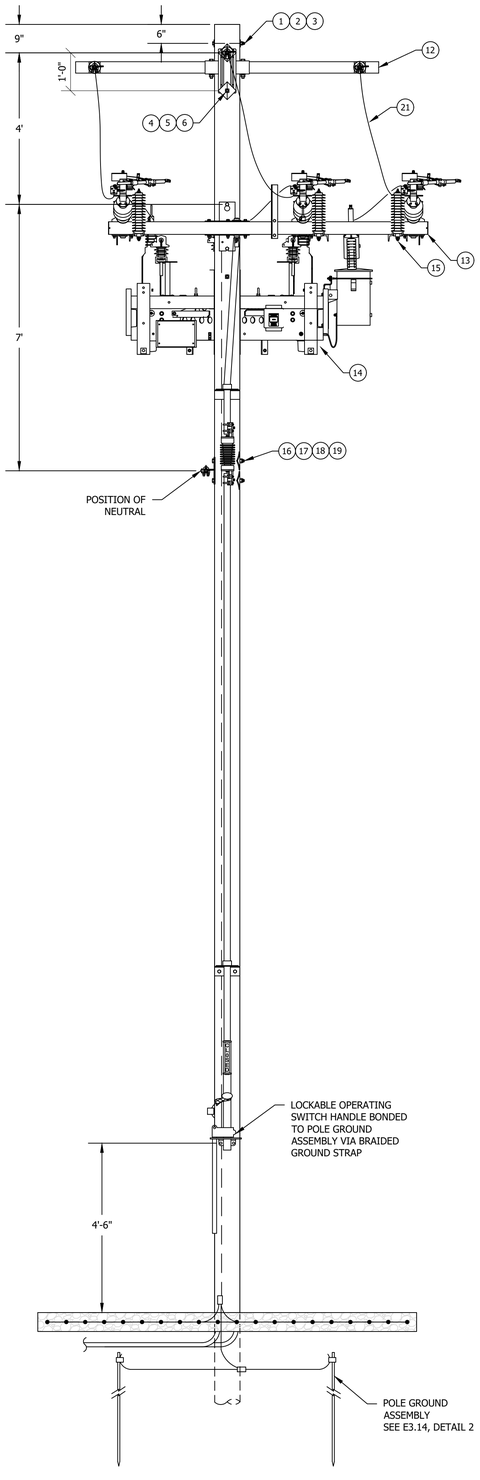
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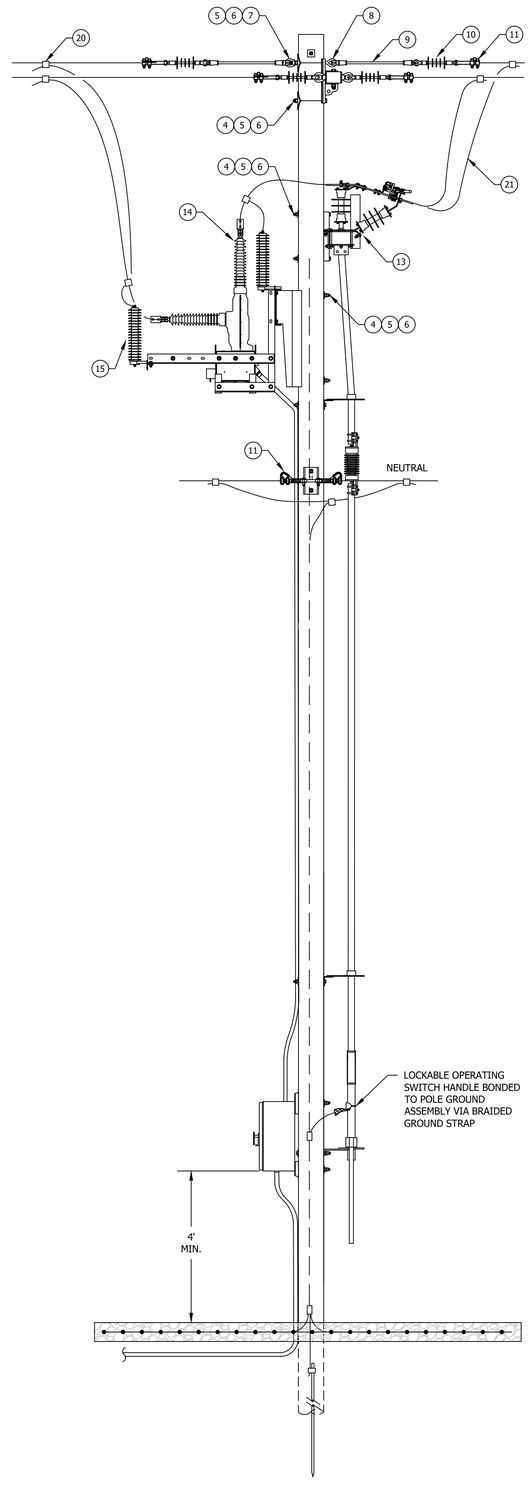
LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

POLE STRUCTURE DETAILS

DRAWING NUMBER	REVISION
E3.13	D



1 E3.14 POLE 'CP-1' RECLOSER FRONT VIEW
SCALE: NONE



2 E3.14 POLE 'CP-1' RECLOSER SIDE VIEW
SCALE: NONE

ITEM	NO.	MATERIAL
1	3	BOLT, MACHINE, 5/8" X REQ'D LENGTH
2	4	WASHER, SQUARE, 2-1/4" FLAT, 5/8" BOLT
3	3	LOCKNUTS, 5/8"
4	5	BOLT, MACHINE, 3/4" X REQ'D LENGTH
5	6	WASHER, SQUARE, 4" CURVED, 3/4" BOLT
6	5	LOCKNUTS, 3/4"
7	1	EYEBOLT, OVAL, 3/4" X REQ'D LENGTH
8	1	EYENUT, OVAL, 3/4"
9	2	LINK, FIBERGLASS 18"
10	6	INSULATOR, POLYMER, DEADEND
11	8	CLAMP, DEADEND
12	1	CROSSARM ASSEMBLY, FIBERGLASS, 8'-0"
13	1	SWITCH, AIR BREAK, GROUP OPERATED, 25kV WITH OPERATING MECHANISM
14	1	RECLOSER, VACUUM INTERRUPTION WITH SURGE ARRESTER MOUNTS AND MOUNTING HARDWARE
15	9	SURGE ARRESTER, 15.3kV MCOV
16	1	BRACKET, DOUBLE DEADEND
17	2	BOLT, MACHINE, 7/8" X REQ'D LENGTH
18	2	WASHER, SQUARE, 4" CURVED, 7/8" BOLT
19	2	LOCKNUTS, 7/8"
20	-	CONNECTORS, AS REQ'D
21	-	JUMPERS, AS REQ'D

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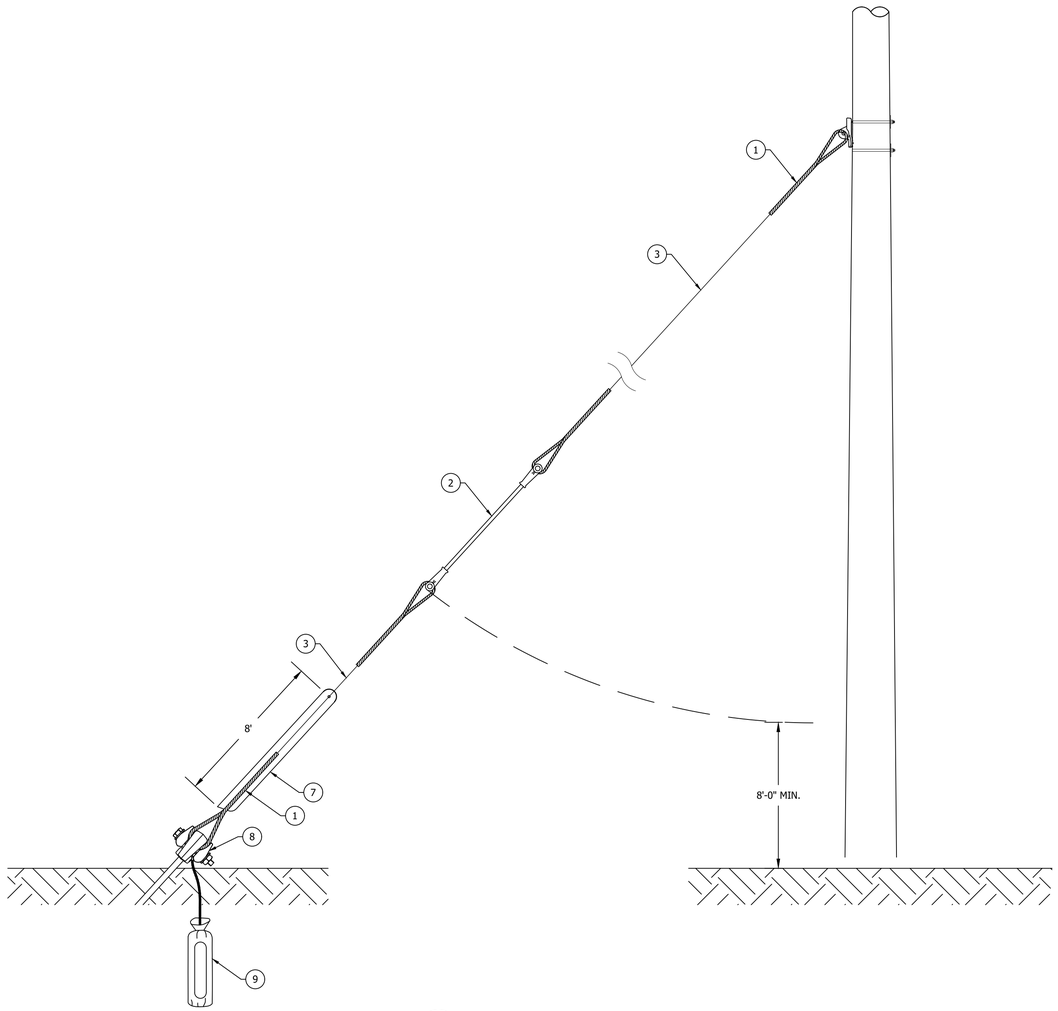
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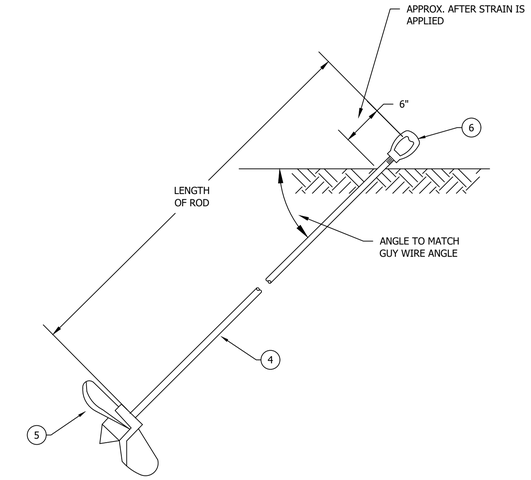
LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

POLE STRUCTURE DETAILS

DRAWING NUMBER	REVISION
E3.14	D



1 E3.15 SINGLE DOWN GUY ASSEMBLY
SCALE: NONE



2 E3.15 GUY ANCHOR ASSEMBLY
SCALE: NONE

ITEM	NO.	MATERIAL
1	4	DEADEND, GUY WIRE (FORMED)
2	2	INSULATOR, GUY STRAIN, FIBERGLASS, 24"
3	-	GUY WIRE, 3/8" EHS
4	1	ROD, ANCHOR, 3/4" X 7'-0"
5	1	ANCHOR, SCREW TYPE, 12"
6	1	EYENUT, TWINEYE, 3/4"
7	1	GUY MARKER, 8', YELLOW
8	1	ANCHOR ROD BONDING CLAMP
9	1	SACRIFICIAL ANODE

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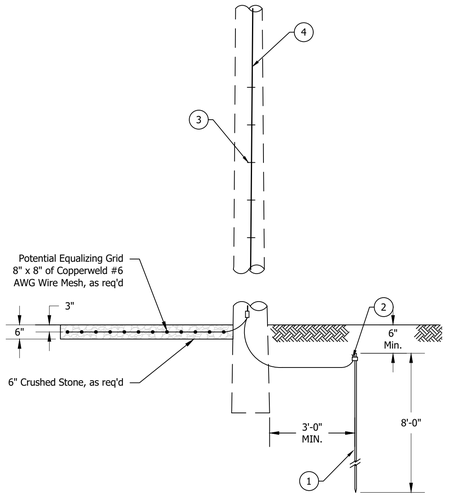
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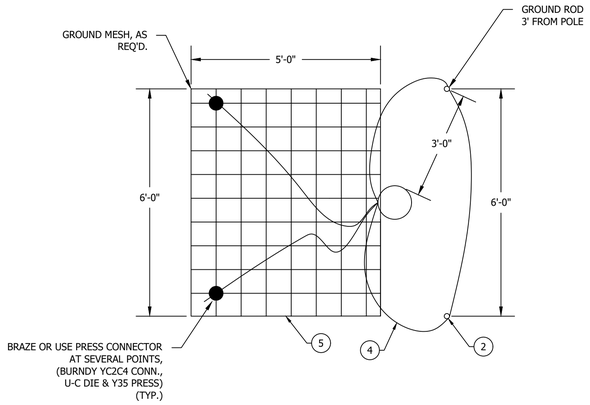
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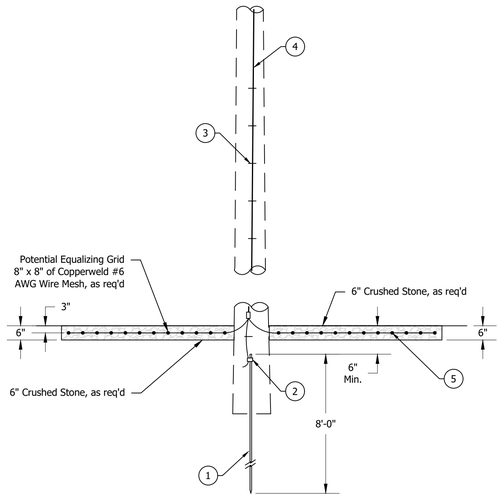
POLE STRUCTURE DETAILS

DRAWING NUMBER	REVISION
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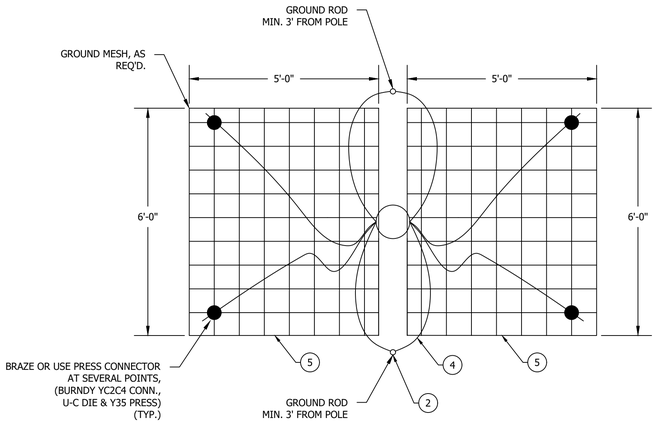


1 E3.16 TYPICAL GROUNDING ASSEMBLY
SCALE: NONE





2 E3.16 RECLOSER GROUNDING ASSEMBLY
SCALE: NONE



ITEM	MATERIAL
1	ROD, GROUND, 5/8" DIA. X 8'-0"
2	CLAMP, GROUND ROD, 5/8"
3	STAPLE, COPPER, 2" X 1/2", AS REQ'D
4	#4AWG GROUND WIRE, COPPER, AS REQ'D
5	#6 CU, 8" X 8" MESH GROUNDING MAT, 5'-0" X 6'-0"

GENERAL NOTES

A. ALL GROUNDING MATERIAL SHALL BE LISTED FOR THE INTENDED PURPOSE.

B. ALL GROUNDING AND BONDING SHALL BE PERFORMED IN ACCORDANCE WITH THE C2-2023 NATIONAL ELECTRICAL SAFETY CODE, OR MOST RECENT APPLICABLE VERSION, AS WELL AS ALL OTHER APPLICABLE STATE OR LOCAL CODES AND STANDARDS.

C. REFER TO CIVIL/STRUCTURAL DRAWINGS FOR FOUNDATION DETAILS.

D. MANUFACTURERS AND CATALOG NUMBERS ARE FOR REFERENCE ONLY. ENGINEER APPROVED EQUALS WILL BE ACCEPTABLE.

E. GROUND RODS SHALL BE INSTALLED A MINIMUM OF 6 FEET FROM EACH OTHER AND A MINIMUM OF 3 FEET FROM UTILITY POLES.

F. GROUND MATS SHALL BE BURIED A MINIMUM OF 3" BELOW GRADE.

G. ALL GROUND RINGS SHALL BE CONNECTED SUCH THAT THEY COLLECTIVELY FORM A SINGLE GROUND REFERENCE.

H. GROUND RODS SHALL BE BURIED A MINIMUM OF 6 INCHES BELOW GRADE.

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LAMAR, CO 81052

POLE STRUCTURE DETAILS

DRAWING NUMBER	REVISION
E3.16	D

MODULE 1 NAMEPLATE INFORMATION	
MANUFACTURER	FIRST SOLAR
MODEL	FS-6445A-P-B-2
MAXIMUM POWER @ STC	445 W
MAXIMUM POWER VOLTAGE (VMP)	181.6 V
MAXIMUM POWER CURRENT (IMP)	2.45 A
OPEN-CIRCUIT VOLTAGE (VOC)	228.7 V
SHORT CIRCUIT CURRENT (ISC)	2.66 A
MAXIMUM SYSTEM VOLTAGE	1500 V
MAXIMUM SERIES FUSE RATING	5 A
PMAX COEFFICIENT	-0.23 %/C
VOC COEFFICIENT	-0.22 %/C
ISC COEFFICIENT	0.04 %/C
CELLS IN SERIES (Ns)	268
DIODE IDEALITY FACTOR (n_diode)	1.4

INVERTER 1 NAMEPLATE INFORMATION	
MANUFACTURER	CPS
MODEL	SCH250K-T-US-600-CWB
MAX DC INPUT POWER	425 kW
MIN MPPT VOLTAGE	900 Vdc
MAX MPPT VOLTAGE	1300 Vdc
MIN DC INPUT VOLTAGE	860 Vdc
MAX DC INPUT VOLTAGE	1500 Vdc
MAX DC SHORT CIRCUIT CURRENT	450 Adc
RATED AC OUTPUT ACTIVE POWER	250 kW
MAXIMUM AC OUTPUT POWER	264 kVA
AC OUTPUT CURRENT	241.0 A
AC OUTPUT VOLTAGE NOMINAL	600 Vac
MIN AC OUTPUT VOLTAGE	528 Vac
MAX AC OUTPUT VOLTAGE	660 Vac
CEC EFFICIENCY	98.4 %

STRING MAXIMUM CURRENT - MODULE 1	
MODULE	FS-6445A-P-B-2
SAFETY FACTOR	3.45 %
MAX CURRENT	3.13 A

PER NEC 690.8(A)(1)(2), THE CALCULATED MAXIMUM CURRENT OF THE PV SYSTEM WAS CALCULATED USING SAND 2004-3535 PHOTOVOLTAIC ARRAY PERFORMANCE MODEL (SAM 2025.4.16). THE ANALYSIS USES SITE-SPECIFIC SATELITE WEATHER DATA TO DETERMINE THE MAXIMUM 3-HOUR AVERAGE SHORT CIRCUIT CURRENT ALSO TAKING INTO ACCOUNT FRONT AND BACK SIDE IRRADIANCE FOR BIFACIAL MODULES. THERE IS LITTLE IN THE LITERATURE ABOUT CURRENT SAFETY FACTORS. WE USE THE SAME SAFETY FACTOR AS SUGGESTED FOR VOLTAGE BY KARIN AND JAIN IN "PHOTOVOLTAIC STRING SIZING USING SITE SPECIFIC MODELING," AS THIS IS AN UPPER BOUND FOR THE CURRENT SAFETY FACTOR.

STRING MAXIMUM VOLTAGE - MODULE 1	
MODULE	FS-6445A-P-B-2
STRING LENGTH	6
SAFETY FACTOR	3.452 %
MAX VOLTAGE	1471.2 V

PER NEC 690.7(A)(3), THE MAXIMUM VOLTAGE OF THE PV SYSTEM WAS CALCULATED USING SAND 2004-3535 PHOTOVOLTAIC ARRAY PERFORMANCE MODEL (SAM 2025.4.16). THE ANALYSIS USES SITE-SPECIFIC SATELITE WEATHER DATA TO DETERMINE THE MAXIMUM OPEN-CIRCUIT VOLTAGE. THE SAFETY FACTOR IS CALCULATED PER THE RECOMMENDATIONS OF THE KARIN AND JAIN IEEE ARTICLE "PHOTOVOLTAIC STRING SIZING USING SITE SPECIFIC MODELING"

DC SOURCE CIRCUITS CABLE SCHEDULE

ID	CIRCUIT DETAILS (FROM)	(TO)	SETS	CONDUCTOR	EGC	INSTALLATION METHOD	FUSE	LENGTH (ONE-WAY) AVG (ft)	MAX (ft)	VOLTAGE DROP AVG	MAX
DC-101	PV-01-XX	PVH-01-XX	1	(2) #10 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	5 A	5	10	0.002%	0.004%

DESIGN ASSUMPTIONS: **(20) Max Conductors per Messenger Bay**

TYPICAL HARNESS TRUNK SCHEDULE

ID	CIRCUIT DETAILS (FROM)	(TO)	SETS	CONDUCTOR	EGC	INSTALLATION METHOD	FUSE	LENGTH (ONE-WAY) AVG (ft)	MAX (ft)	VOLTAGE DROP AVG	MAX
PVH-01-01	PV-01-XX	PVH-01-XX	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	-	180	200	0.35%	0.39%

NOTE: THIS TABLE IS USED SOLELY FOR VOLTAGE DROP CALCULATIONS, NOT HARNESS DESIGN OR ORDERING PURPOSES.

WEATHER STATION DATA	
LAMAR, CO, USA (WMO: 724636)	
2% DRY BULB TEMP - JUNE 2021	37.7 °C
2% DRY BULB TEMP - JULY 2021	38.4 °C
2% DRY BULB TEMP - AUGUST 2021	37.0 °C
2% DRY BULB TEMP - JUNE 2025	38.3 °C
2% DRY BULB TEMP - JULY 2025	38.5 °C
2% DRY BULB TEMP - AUGUST 2025	37.4 °C
EXTREME ANNUAL LOW TEMP	-24.0 °C

THE MAXIMUM AND MINIMUM AMBIENT TEMPERATURES ARE DERIVED USING DATA FROM THE ASHRAE WEATHER DATA SETS.
http://ashrae-meteo.info/v2.0/

PV HARNESS CABLE SCHEDULE

ID	CIRCUIT DETAILS (FROM)	(TO)	SETS	CONDUCTOR	EGC	INSTALLATION METHOD	FUSE	LENGTH (ONE-WAY) AVG (ft)	MAX (ft)	VOLTAGE DROP AVG	MAX
DC-101	PVH-01-XX	CB-01	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	60	100	0.12%	0.19%
DC-102	PVH-02-XX	CB-02	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	60	100	0.12%	0.19%
DC-103	PVH-03-XX	CB-03	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	60	100	0.12%	0.19%
DC-104	PVH-04-XX	CB-04	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	60	100	0.12%	0.19%
DC-105	PVH-05-XX	CB-05	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	50	80	0.10%	0.16%
DC-106	PVH-06-XX	CB-06	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	50	80	0.10%	0.16%
DC-107	PVH-07-XX	CB-07	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	50	80	0.10%	0.16%
DC-108	PVH-08-XX	CB-08	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	60	100	0.12%	0.19%
DC-109	PVH-09-XX	CB-09	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	60	100	0.12%	0.19%
DC-110	PVH-10-XX	CB-10	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	60	100	0.12%	0.19%
DC-111	PVH-11-XX	CB-11	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	60	100	0.12%	0.19%
DC-112	PVH-12-XX	CB-12	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	60	100	0.12%	0.19%
DC-113	PVH-13-XX	CB-13	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	60	100	0.12%	0.19%
DC-114	PVH-14-XX	CB-14	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	60	100	0.12%	0.19%
DC-115	PVH-15-XX	CB-15	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	60	100	0.12%	0.19%
DC-116	PVH-16-XX	CB-16	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	60	100	0.12%	0.19%
DC-117	PVH-17-XX	CB-17	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	60	100	0.12%	0.19%
DC-118	PVH-18-XX	CB-18	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	60	100	0.12%	0.19%
DC-119	PVH-19-XX	CB-19	1	(2) #8 AWG CU 2KV PV WIRE 90°C	#6 AWG CU	OPEN AIR	32 A	60	100	0.12%	0.19%

(20) Max Conductors per Messenger Bay

NOTE : CONDUCTOR AND CONDUIT SIZE VARY FOR DC-214 THROUGH DC-216

INVERTER DC CABLE SCHEDULE

ID	CIRCUIT DETAILS (FROM)	(TO)	SETS	CONDUCTOR	EGC	RACEWAY	INSTALLATION METHOD	FUSE	LENGTH (ONE-WAY) AVG (ft)	MAX (ft)	VOLTAGE DROP AVG	MAX
DC-201	CB-01	INV-01	2	(2) 350 MCM AL 2KV PV WIRE 90°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	-	400	400	0.67%	0.67%
DC-202	CB-02	INV-02	2	(2) 350 MCM AL 2KV PV WIRE 90°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	-	560	560	0.93%	0.93%
DC-203	CB-03	INV-03	2	(2) 350 MCM AL 2KV PV WIRE 90°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	-	700	700	1.17%	1.17%
DC-204	CB-04	INV-04	2	(2) 350 MCM AL 2KV PV WIRE 90°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	-	860	860	1.43%	1.43%
DC-205	CB-05	INV-05	2	(2) 350 MCM AL 2KV PV WIRE 90°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	-	1010	1010	1.59%	1.59%
DC-206	CB-06	INV-06	2	(2) 350 MCM AL 2KV PV WIRE 90°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	-	1140	1140	1.80%	1.80%
DC-207	CB-07	INV-07	2	(2) 350 MCM AL 2KV PV WIRE 90°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	-	1270	1270	2.00%	2.00%
DC-208	CB-08	INV-08	2	(2) 350 MCM AL 2KV PV WIRE 90°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	-	1050	1050	1.95%	1.95%
DC-209	CB-09	INV-09	2	(2) 350 MCM AL 2KV PV WIRE 90°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	-	870	870	1.61%	1.61%
DC-210	CB-10	INV-10	2	(2) 350 MCM AL 2KV PV WIRE 90°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	-	700	700	1.30%	1.30%
DC-211	CB-11	INV-11	2	(2) 350 MCM AL 2KV PV WIRE 90°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	-	560	560	1.04%	1.04%
DC-212	CB-12	INV-12	2	(2) 350 MCM AL 2KV PV WIRE 90°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	-	380	380	0.70%	0.70%
DC-213	CB-13	INV-13	2	(2) 350 MCM AL 2KV PV WIRE 90°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	-	220	220	0.41%	0.41%
DC-214	**CB-14**	**INV-14**	**2**	**(2) 500 MCM AL 2KV PV WIRE 90°C**	**#3 AWG CU**	**(1) 4" PVC 80**	**RACEWAY**	**-**	**350**	**350**	**0.48%**	**0.48%**
DC-215	**CB-15**	**INV-15**	**2**	**(2) 500 MCM AL 2KV PV WIRE 90°C**	**#3 AWG CU**	**(1) 4" PVC 80**	**RACEWAY**	**-**	**520**	**520**	**0.71%**	**0.71%**
DC-216	**CB-16**	**INV-16**	**2**	**(2) 500 MCM AL 2KV PV WIRE 90°C**	**#3 AWG CU**	**(1) 4" PVC 80**	**RACEWAY**	**-**	**690**	**690**	**0.94%**	**0.94%**
DC-217	CB-17	INV-17	2	(2) 350 MCM AL 2KV PV WIRE 90°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	-	860	860	1.59%	1.59%
DC-218	CB-18	INV-18	2	(2) 350 MCM AL 2KV PV WIRE 90°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	-	1040	1040	1.93%	1.93%
DC-219	CB-19	INV-19	2	(2) 350 MCM AL 2KV PV WIRE 90°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	-	1200	1200	2.22%	2.22%

DESIGN ASSUMPTIONS: **(4) Max Conductor(s) per Conduit**

DC VOLTAGE DROP SUMMARY	AVG %VD	MAX %VD
DC SOURCE CIRCUITS	0.002%	0.004%
HARNESS TRUNKS	0.35%	0.39%
HARNESS HOMERUNS TO COMBINER	0.11%	0.19%
COMBINER TO INVERTER	1.29%	2.22%
TOTAL DC VOLTAGE DROP	**1.40%**	**2.42%**
CONTRACT VD%	**2.00%**	-
VD% MET	**YES**	**N/A**

NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
0	ISSUED FOR PERMIT	MDL	DTG	05/01/2026

ISSUED FOR PERMIT
NOT FOR CONSTRUCTION

COLORADO LICENSED PROFESSIONAL ENGINEER
PE0064154
05.01.2026

Sandhills ENERGY

ISI SOLAR

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PSE PROJECT NUMBER: NE0192512-40

ORIGINAL DATE:	ENGR:
05/01/2026	DTG
DRAWN BY:	CHK'D/APPD BY:
MDL	OOI

LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

DC CABLE SCHEDULE

DRAWING NUMBER	REVISION
E4.0	D

LV AC CABLE SCHEDULE

ID	CIRCUIT DETAILS (FROM)	(TO)	SETS	CONDUCTOR	EGC	RACEWAY	INSTALLATION METHOD	OCPD	LENGTH	VOLTAGE DROP
L-101	INV-01	PVSWBD-1	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	55	0.16%
L-102	INV-02	PVSWBD-1	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	50	0.15%
L-103	INV-03	PVSWBD-1	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	50	0.15%
L-104	INV-04	PVSWBD-1	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	45	0.13%
L-105	INV-05	PVSWBD-1	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	45	0.13%
L-106	INV-06	PVSWBD-1	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	40	0.12%
L-107	INV-07	PVSWBD-1	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	40	0.12%
L-108	INV-08	PVSWBD-1	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	55	0.16%
L-109	INV-09	PVSWBD-1	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	60	0.18%
L-110	INV-10	PVSWBD-1	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	60	0.18%
L-111	INV-11	PVSWBD-2	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	40	0.12%
L-112	INV-12	PVSWBD-2	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	40	0.12%
L-113	INV-13	PVSWBD-2	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	45	0.13%
L-114	INV-14	PVSWBD-2	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	45	0.13%
L-115	INV-15	PVSWBD-2	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	50	0.15%
L-116	INV-16	PVSWBD-2	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	50	0.15%
L-117	INV-17	PVSWBD-2	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	55	0.16%
L-118	INV-18	PVSWBD-2	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	55	0.16%
L-119	INV-19	PVSWBD-2	1	(3) 500 MCM AL 600V XHHW-2 75°C	#3 AWG CU	(1) 3-1/2" PVC 80	RACEWAY	350 A	60	0.18%

LV AC CABLE SCHEDULE - PV SWITCHBOARD OUTPUT CIRCUITS

ID	CIRCUIT DETAILS (FROM)	(TO)	SETS	CONDUCTOR	EGC	RACEWAY	INSTALLATION METHOD	OCPD	LENGTH	VOLTAGE DROP
L-201	PVSWBD-1	PXF-1	12	(3) 500 MCM AL 600V XHHW-2 75°C	500 MCM CU	(12) 4" PVC 80	RACEWAY	3500 A	30	0.07%
L-202	PVSWBD-2	PXF-2	12	(3) 500 MCM AL 600V XHHW-2 75°C	500 MCM CU	(12) 4" PVC 80	RACEWAY	3000 A	30	0.08%

MV AC CABLE SCHEDULE

ID	CIRCUIT DETAILS (FROM)	(TO)	SETS	CONDUCTOR	NEUTRAL	RACEWAY	INSTALLATION METHOD	LENGTH	VOLTAGE DROP
M-101	UP-1	CP-1	1	(3) 1/0 AWG ACSR 25kV RAVEN	RAVEN	N/A	OPEN AIR	45	0.01%
M-102	CP-1	CP-2	1	(3) 1/0 AWG ACSR 25kV RAVEN	RAVEN	N/A	OPEN AIR	45	0.01%
M-103	CP-2	PXF-1	1	(3) 1/0 AWG AL 25kV XLPE 1/C 133% MV-90	1/3 CONCENTRIC	(1) 5" PVC 80	RACEWAY	510	0.10%
M-104	PXF-1	PXF-2	1	(3) 1/0 AWG AL 25kV XLPE 1/C 133% MV-90	1/3 CONCENTRIC	(1) 5" PVC 80	RACEWAY	170	0.03%

AC VOLTAGE DROP SUMMARY	AVG %VD	MAX %VD
AC INVERTER TO AC SWITCHBOARD	0.15%	0.18%
AC SWITCHBOARD TO STEP-UP XFMR	0.08%	0.08%
STEP-UP XFMR TO POCC	0.14%	0.14%
TOTAL AC VOLTAGE DROP	**0.37%**	**0.40%**
CONTRACT VD%	**2.00%**	**1.50%**
CONTRACT VD% MET	**YES**	**YES**

AUXILIARY CABLE SCHEDULE - SYSTEM 1

ID	CIRCUIT DETAILS (FROM)	(TO)	SETS	CONDUCTOR	NEUTRAL	EGC	RACEWAY	INSTALLATION METHOD	OCPD	LENGTH	VOLTAGE DROP
A-101	PVSWBD-1	XF-1	1	(2) #10 AWG CU 600V XHHW-2 75°C	-	#12 AWG CU	(1) 1" PVC 80	RACEWAY	20 A	30	0.18%
A-102	XF-1	CPP-1	1	(2) #8 AWG CU 600V XHHW-2 75°C	(1) #8 AWG CU	#8 AWG CU	(1) 1" PVC 80	RACEWAY	40 A	15	0.10%
A-103	CPP-1	MAIN DAS CABINET	1	(1) #12 AWG CU 600V XHHW-2 75°C	(1) #12 AWG CU	#12 AWG CU	(1) 1" PVC 80	RACEWAY	20 A	5	0.17%
A-104	CPP-1	PIONEER CONTROLLER	1	(1) #12 AWG CU 600V XHHW-2 75°C	(1) #12 AWG CU	#12 AWG CU	(1) 1" PVC 80	RACEWAY	20 A	15	0.50%
A-105	CPP-1	PIONEER CONTROLLER	1	(1) #12 AWG CU 600V XHHW-2 75°C	(1) #12 AWG CU	#12 AWG CU	(1) 1" PVC 80	RACEWAY	20 A	15	0.50%
A-106	CPP-1	GFCI	1	(1) #12 AWG CU 600V XHHW-2 75°C	(1) #12 AWG CU	#12 AWG CU	(1) 1" PVC 80	RACEWAY	20 A	15	0.15%

AUXILIARY CABLE SCHEDULE - SYSTEM 2

ID	CIRCUIT DETAILS (FROM)	(TO)	SETS	CONDUCTOR	NEUTRAL	EGC	RACEWAY	INSTALLATION METHOD	OCPD	LENGTH	VOLTAGE DROP
A-201	PVSWBD-2	XF-2	1	(2) #10 AWG CU 600V XHHW-2 75°C	-	#12 AWG CU	(1) 1" PVC 80	RACEWAY	20 A	30	0.27%
A-202	XF-2	CPP-2	1	(2) #8 AWG CU 600V XHHW-2 75°C	(1) #8 AWG CU	#8 AWG CU	(1) 1" PVC 80	RACEWAY	40 A	15	0.15%
A-203	CPP-2	NETWORK ENCLOSURE	1	(1) #12 AWG CU 600V XHHW-2 75°C	(1) #12 AWG CU	#12 AWG CU	(1) 1" PVC 80	RACEWAY	20 A	5	0.07%
A-204	CPP-2	PIONEER CONTROLLER	1	(1) #12 AWG CU 600V XHHW-2 75°C	(1) #12 AWG CU	#12 AWG CU	(1) 1" PVC 80	RACEWAY	20 A	15	0.50%
A-205	CPP-2	PIONEER CONTROLLER	1	(1) #12 AWG CU 600V XHHW-2 75°C	(1) #12 AWG CU	#12 AWG CU	(1) 1" PVC 80	RACEWAY	20 A	15	0.50%
A-206	CPP-2	GFCI	1	(1) #12 AWG CU 600V XHHW-2 75°C	(1) #12 AWG CU	#12 AWG CU	(1) 1" PVC 80	RACEWAY	20 A	15	0.15%

NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
1	ISSUED FOR PERMIT	MDL	DTG	05/01/2026

ISSUED FOR PERMIT
NOT FOR CONSTRUCTION

COLORADO LICENSED PROFESSIONAL ENGINEER
PE0064154
05.01.2026

Sandhills ENERGY

ISI SOLAR

PSE ENGINEERS & CONSULTANTS
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PSE PROJECT NUMBER: NE0192512-40

ORIGINAL DATE:	ENGR:
05/01/2026	DTG
DRAWN BY:	**CHK'D/APPD BY:**
MDL	OOI

LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

AC CABLE SCHEDULE

DRAWING NUMBER	REVISION
E4.1	D

L1 DC COMBINER BOXES

WARNING

ELECTRIC SHOCK HAZARD

DO NOT TOUCH TERMINALS TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

DC VOLTAGE IS ALWAYS PRESENT WHEN SOLAR MODULES ARE EXPOSED TO SUNLIGHT

PER NEC 690.13(B)

MAXIMUM DC VOLTAGE
1472 V
OF PV SYSTEM

PER NEC 690.7(D)

PROVIDE AT CB-1 THROUGH CB-19

PHOTOVOLTAIC
DISCONNECT #
DC DISCONNECT

PER NEC 690.13(B)

REPLACE '#' IN LABEL ABOVE WITH ASSOCIATED DISCONNECT NUMBER
PROVIDE AT ALL DC DISCONNECT BOXES

L2 INVERTER DC DISCONNECTS

WARNING

ELECTRIC SHOCK HAZARD

DO NOT TOUCH TERMINALS TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION

PER NEC 690.13(B)

MAXIMUM DC VOLTAGE
1472 V
OF PV SYSTEM

PER NEC 690.7(D)

PROVIDE AT INV-01 THROUGH INV-19

PHOTOVOLTAIC
INV #
DC DISCONNECT

PER NEC 690.13(B)
REPLACE '#' IN LABEL ABOVE WITH ASSOCIATED INVERTER NUMBER
PROVIDE AT ALL INVERTERS

L3 INVERTER AC DISCONNECT

PHOTOVOLTAIC
INV #
AC DISCONNECT

PER NEC 690.13(B)
REPLACE '#' IN LABEL ABOVE WITH ASSOCIATED INVERTER NUMBER
PROVIDE AT ALL INVERTERS

L4 PV RACEWAYS

SOLAR PV DC CIRCUIT

PER NEC 690.31(D)(2)
PLACE ON CONDUITS FOR PV SOURCE CIRCUITS AT INTERVALS NOT EXCEEDING 10 FT.

L5 PV SWITCHBOARDS

WARNING

TURN OFF PHOTOVOLTAIC AC DISCONNECT PRIOR TO WORKING INSIDE PANEL

PER NEC 110.27(C)

WARNING

DUAL POWER SOURCE

SECOND SOURCE IS A PHOTOVOLTAIC SYSTEM

PER NEC 705.30(C)

WARNING

ARC FLASH & SHOCK HAZARD
APPROPRIATE PPE REQUIRED

MAXIMUM AVAILABLE FAULT CURRENT:
53,200 A
DATE: **05/01/2026**

PER NEC 110.24(A)

L6 UTILITY BILLING METER

UTILITY BILLING METER

L7 MAIN SERVICE DISCONNECT AT THE GOAB POLE

PHOTOVOLTAIC
UTILITY AC
DISCONNECT

PER NEC 690.13(B)

WARNING

DUAL POWER SOURCE

SECOND SOURCE IS A PHOTOVOLTAIC SYSTEM

PER NEC 705.30(C)

L8 SITE FENCING

DANGER

HIGH VOLTAGE
KEEP OUT

INSTALL AT ALL FENCE GATES AND AT INTERVALS OF 500 FT ALONG THE FENCE, NEXT TO NO TRESPASSING SIGNS

PRIVATE PROPERTY

NO TRESPASSING

INSTALL AT ALL FENCE GATES AND AT INTERVALS OF 500 FT ALONG THE FENCE, NEXT TO HIGH VOLTAGE SIGNS

THE FOLLOWING ARE TYPICAL OF ARC FLASH/SHOCK HAZARD LABEL TO BE PROVIDED AS PART OF THE FACILITY ARC FLASH STUDY. ACTUAL LABELS WILL BE PROVIDED TO INSTALLATION CONTRACTOR TO AFFIX TO EQUIPMENT.

INDICATED LABELS SHALL BE AFFIXED TO ALL ELECTRICAL EQUIPMENT LIKELY TO REQUIRE EXAMINATION, SERVICING, OR MAINTENANCE WHILE ENERGIZED.

WARNING

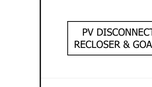
Arc Flash and Shock Hazard Present
Appropriate PPE Required
Nominal System Voltage [1]480 VAC

[1]Arc Flash Boundary	1 ft 10 in	PPE Requirements Based on Latest Edition of NFPA 70E
[2]Incident Energy	1.66 cal/cm^2	
[3]Working Distance	1 ft 6 in	
[1]Limited Approach Boundary	3 ft 6 in	WARNING: Changes in equipment settings or system configuration will invalidate the calculated values and PPE requirements.
[2]Restricted Approach Boundary	1 ft	
[1]Insulating Glove Class	00	

[4]Equipment ID: MCC-11 — Power System Engineering, Inc. (320) 979-9922
[5]Available Fault Current: 34.71 kA — [6]Revision Date: Feb 19, 2018

DANGER

ELECTRICAL ARC FLASH HAZARD



Will cause severe injury or death.
Turn OFF ALL power before opening. Follow ALL requirements in NFPA 70E for safe work practices and for Personal Protective Equipment.

GENERAL NOTES

A. ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL LABELS REQUIRED BY THE NATIONAL ELECTRIC CODE AND AUTHORITY HAVING JURISDICTION. THIS MAY INCLUDE LABELS THAT ARE NOT SHOWN ON THIS SHEET.

B. UNLESS NOTED OTHERWISE, ALL LABELS SHALL MEET ANSI Z535.1. LABELS SHALL BE WHITE WITH BLACK LETTERING. THE HEADER BACKGROUND COLOR IS ASSOCIATED WITH TYPE OF LABEL AND SHALL BE COLORED AS FOLLOWS:

DANGER: SAFETY RED - PANTONE 485 C
WARNING: SAFETY ORANGE - PANTONE 152 C
CAUTION: SAFETY YELLOW - PANTONE 109 C

C. LABELS REQUIRED BY THE INTERNATIONAL FIRE CODE ARE TO BE RED WITH REFLECTIVE LETTERING AND ARE NOTED AS SUCH.

D. ALL LABELS SHALL BE COMPLIANT WITH NEC 690 2023 EDITION

E. LABELS WITH NEC REQUIRED SAFETY LABELS MUST BE ENGRAVED IN PLASTIC.

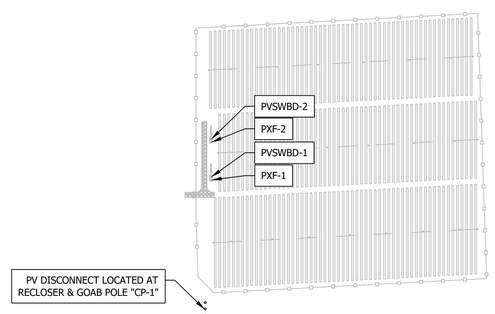
F. SUPPLY LABELS IDENTIFYING ALL COMBINER BOXES, COMMUNICATIONS ENCLOSER, INVERTERS, TRANSFORMERS, AND DISCONNECTS, USING THE NAMING CONVENTION FROM THE DESIGN DOCUMENTS.

L9 PERMANENT PLAQUE/DIRECTORY TO BE PLACED AT EACH SERVICE LOCATION AND AT THE LOCATION(S) OF THE SYSTEM DISCONNECT(S) FOR ALL ELECTRIC POWER PRODUCTION SOURCES

CAUTION:

MULTIPLE SOURCES OF POWER

POWER TO THIS FACILITY IS ALSO SUPPLIED FROM THE FOLLOWING SOURCES WITH DISCONNECTS LOCATED AS SHOWN



EMERGENCY CONTACT
(563) 542-5725
SANDHILLS ENERGY

PER NEC 690.56, NEC 705.10
PLACE AT EACH SERVICE EQUIPMENT LOCATION AND AT THE LOCATION(S) OF THE SYSTEM DISCONNECT(S) FOR ALL ELECTRIC POWER PRODUCTION SOURCES

NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
A	30% ELECTRICAL DRAWINGS	MDL	DTG	02/20/2026
B	ISSUED FOR PERMIT	MDL	DTG	05/01/2026

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POWER SYSTEM ENGINEER
PE0064154
05.01.2026
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PSE ENGINEERS & CONSULTANTS
2424 Rimrock Rd., Suite 300
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PSE PROJECT NUMBER: NE0192512-40

ORIGINAL DATE:	ENGR:
02/20/2026	DTG
DRAWN BY:	CHK'D/APPD BY:
MDL	OOI

LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

PV SYSTEM LABELS & MARKING DETAILS

DRAWING NUMBER	REVISION
E5.1	D

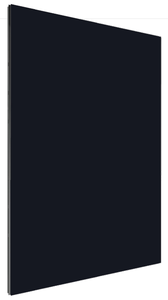
U.S. MODULE DATASHEET

First Solar

Series 6 *Plus* V2.

420-450 Watt Thin Film Solar Module

Series 6 *Plus* V2 incorporates CuRe technology, First Solar's latest groundbreaking semiconductor innovation that virtually eliminates long-term degradation and delivers more lifetime energy per nameplate watt. Built on the field-tested Series 6 *Plus* platform, the advanced design also provides reduced balance of system, shipping, and operating costs.



More Lifetime Energy per Nameplate Watt

- Industry's best (0.1%) warranted degradation rate
- Superior temperature coefficient, spectral, and shading response
- No power loss from LID or LeTID
- Anti-reflective coated glass enhances energy production
- Added bifacial energy yield

Innovative Module Design

- Under-mount frame provides the cleaning and snowshedding benefits of a frameless module while protecting edges against breakage
- Innovative SpeedSlot mounting feature delivers the industry's fastest installation times and lowest mounting hardware costs
- Dual junction box design reduces wire management complexity and cost

Unmatched Quality and Reliability

- End-to-end manufacturing process for globally consistent quality
- Tested and certified to IEC standards and beyond
- Durable glass/glass construction
- Immune to and warranted against power loss from cell cracking
- 12-year Limited Product Warranty

Industry's Most Eco-efficient PV Solution

- Industry leading carbon footprint, water footprint and energy payback time
- Globally available PV module recycling services

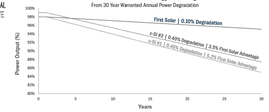
17.9% HIGH BIN EFFICIENCY

30YR LINEAR PERFORMANCE WARRANTY[1]

98% WARRANTY START POINT

0.1% WARRANTED ANNUAL DEGRADATION RATE[1]

First Solar Lifetime Energy Advantage
From 30 Year Warranted Annual Power Degradation



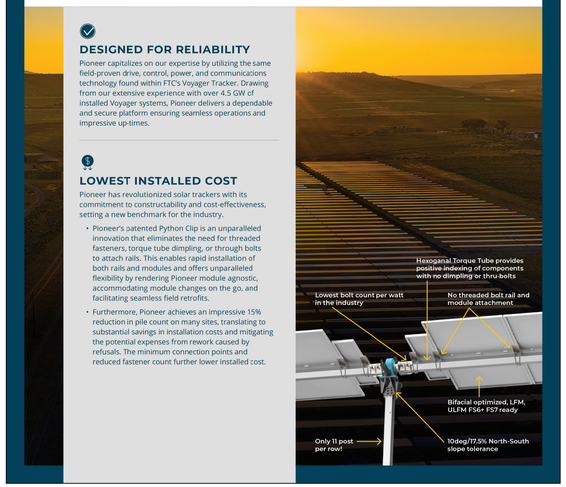
Learn more about First Solar and Series 6 *Plus* V2 at firstsolar.com/S6

Datasheet

FTC PIONEER 1P TRACKER™

PIONEER TRACKER™

FTC's differentiated 1P single axis-tracker — a simple and elegant solution that reduces construction costs while maximizing long-term reliability and electricity yield.



DESIGNED FOR RELIABILITY

Pioneer capitalizes on our expertise by utilizing the same field-proven drive, control, power, and communications technology found within FTC's Voyager Tracker. Drawing from our extensive experience with over 4.5 GW of installed Voyager systems, Pioneer delivers a dependable and secure platform ensuring seamless operations and impressive up-times.

LOWEST INSTALLED COST

Pioneer has revolutionized solar trackers with its commitment to constructability and cost-effectiveness, setting a new benchmark for the industry.

- Pioneer's patented Python Clip is an unparalleled innovation that eliminates the need for threaded fasteners, torque tube dimpling, or through bolts to attach rails. This enables rapid installation of both rails and modules and offers unparalleled flexibility by rendering Pioneer module agnostic, accommodating module changes on the go, and facilitating seamless field retrofits.
- Furthermore, Pioneer achieves an impressive 15% reduction in pile count on many sites, translating to substantial savings in installation costs and mitigating the potential expenses from rework caused by refusals. The minimum connection points and reduced fastener count further lower installed cost.

CPS

Datasheet

250 kW-600 V, 1500 Vdc String Inverters for North America



CPS SCH250K-T-US-600

The new CPS 250 kW-600 V three-phase string inverters are designed for ground mount applications. The units are high performance, advanced, and reliable inverters designed specifically for the North American environment and grid. High efficiency at 98.83% peak and 98.4% CEC, wide operating voltages, broad temperature ranges, and a NEMA Type 4X enclosure enable this inverter platform to operate at high performance across many applications. The CPS 250 kW-600 V products ship with the Distributed or Centralized Wire Box, each fully integrated and separable with AC and DC disconnect switches. Enhanced DC wire boxes allow DC disconnection under short circuit conditions. The CPS FlexOM Gateway enables communication, controls, and remote product upgrades.

Key Features

- UL 1741-SA/SB and IEEE1547-20!8 certified
- Touch-safe DC Fuse holders add convenience and safety
- CPS FlexOM Gateway enables remote firmware upgrades
- Integrated AC and DC disconnect switches
- Enhanced DC wire boxes
- Copper- and aluminum-compatible AC connections
- NEMA Type 4X outdoor rated enclosure
- Advanced Smart-Grid features
- kVA headroom yields 250 kW @ 0.95 PF
- PID mitigation function
- Separable wire box design for fast service
- Distributed or Centralized wire box options



250 kW-600 V Distributed Wire Box



250 kW-600 V Centralized Wire Box

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Chint Power Systems America
1380 Presidential Drive, Suite 100, Richardson, TX 75081
Tel:855-584-7168 Mail: AmericaSales@chintpowersystems.com Web: www.chintpowersystems.com

Series 6 *Plus* V2.

Electrical Specifications

First Solar — LEADING THE WORLD'S SUSTAINABLE ENERGY FUTURE

RATINGS AT STANDARD TEST CONDITIONS (1000W/m², AM 1.5, 25°C)[2]

SERIES 6 PLUS V2 MODEL TYPE: FS-6XXA.B-S-2 (XXX = NOMINAL POWER)

Nominal Power[3] (-0/+5%)	P_{MAX} (W)	420		425		430		435		440		445		450	
		STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI
Nominal Power	P_{MAX} (W)	420	429	425	434	430	439	435	444	440	449	445	454	450	459
Voltage at P_{MAX}	V_{MAX} (V)	176.5	176.5	177.5	177.5	178.5	178.5	179.6	179.6	180.6	180.6	181.6	181.6	182.6	182.6
Current at P_{MAX}	I_{MAX} (A)	2.38	2.43	2.39	2.44	2.41	2.46	2.42	2.47	2.44	2.49	2.45	2.50	2.46	2.51
Open Circuit Voltage	V_{OC} (V)	225.5	225.5	226.1	226.1	226.8	226.8	227.4	227.4	228.1	228.1	228.7	228.7	229.4	229.4
Short Circuit Current	I_{SC} (A)	2.64	2.69	2.64	2.70	2.65	2.70	2.65	2.71	2.66	2.71	2.66	2.72	2.67	2.72
Efficiency (%)	%	16.7		16.9		17.1		17.3		17.5		17.7		17.9	
Maximum System Voltage	V_{SYS} (V)	1500[4]													
Limiting Reverse Current	I_R (A)	5.0													
Maximum Series Fuse	I_{CF} (A)	5.0													

TEMPERATURE CHARACTERISTICS

Module Operating Temperature Range	(°C)	-40 to +85
Temperature Coefficient of P_{MAX}	$T_K(P_{MAX})$	-0.23%/°C (Temperature Range: 15°C to 75°C)
Temperature Coefficient of V_{OC}	$T_K(V_{OC})$	-0.22%/°C
Temperature Coefficient of I_{SC}	$T_K(I_{SC})$	+0.04%/°C
Nominal Operating Cell Temperature	(°C)	43
Bifaciality Factor	%	15±5%

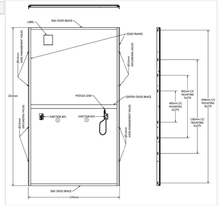
PACKAGING INFORMATION

Model Type	Modules Per Pack	Packs per 40' Container
FS-6XXA.A-B-2	28	18

MECHANICAL DESCRIPTION

Module/Glass Length	2024mm/2016mm
Module/Glass Width	1245mm/1216mm
Module/Glass Area	2.52m²/2.45m²
Module Weight	34.0kg
Leeches[5]	2.5mm², 733mm (+) & Bulkhead (-)
Connectors	TE Connectivity PV4-S or alternate
Junction Box	IP68 Rated
Bypass Diode	N/A
Cell Type	Thin film CdTe semiconductor, up to 268 cells
Frame Material	Anodized Aluminum
Front Glass	Heat strengthened
Back Glass	Heat strengthened
Encapsulation	Laminate material with edge seal
Frame to Glass Adhesive	Silicone
Load Rating	+/- 2400Pa

Mechanical Specifications



Certifications & Tests[6]

CERTIFICATIONS AND LISTINGS	EXTENDED DURABILITY TESTS	QUALITY & EHS
IEC 61215:2021 & IEC61730-1:2023[7,8]	IEC TS 63209-1 Extended-Stress Test	ISO 9001:2015
IEC 61701 Salt Mist Corrosion	Long-Term Sequential	ISO 14001:2015
IEC 60068-2-68 Dust and Sand Resistance	Thresher Test	ISO 45001:2018
IEC 62716 Ammonia Corrosion	PID Resistant	ISO 14064-3:2006
UL 61730 1500V Listed		EPEAT Silver Registered

IEC · UL LISTED · CE

Disclaimer

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Install in portrait only

1. Limited power output and product warranties subject to warranty terms and conditions
2. All ratings ±10%, unless specified otherwise. Specifications subject to change without notice.
3. Measurement uncertainty applies
4. Frontside electrical ratings
5. Bifacial Name Plate Irradiance, as per IEC 61215:2021
6. IEC 61730-1: 2016 Class II
7. Leadwire length from junction box exit to connector mating surface
8. Testing Certificates/Listings pending



PIONEER TRACKER DESIGN SPECIFICATIONS

Wind Speed Configurations	Up to 120mph as per ASCE7 (higher wind speed capability available upon request)
Module Architecture	1 module in portrait orientation
Modules Supported	All framed Mono, Poly, Bifacial, FSLR6, FSLR6+, FSLR7
Module Attachment	4 locking cinch clips
String Architecture	1500V systems:3 strings per row, up to 30 modules per string 1000V systems: 4 strings per row up to 20 modules per string
Power	Two Power Modules; Onboard Lithium-ion Battery; DC self powered drive system with up to 3-day battery backup* AC power (Optional)
Drive Type	Slew Drives
Posts per Row (typical)	11 posts per row (1 drive, 10 non-drive)
Post Size	W6
Post Type	Driven (primary) with alternative foundation options available
Range of Motion	+/- 52° (+/-60° Optional)
Stow Conditions	Wind Stow (0°) Optional Snow Stow (50°) Optional Flood Stow (0°) Optional Hail Stow (50° back to wind)
Backtracking	Individual Row Level (standard), Terrain-Based Backtracking (included with SunPath)
Diffuse Light Capture	Available with optional SunPath
Ground Clearance	300mm (minimum)
Ground Coverage	25%–60% GCR supported
Slope Tolerances	10° (17.5%) – North-South; Unlimited – East-West
Snow Load	0psf – 60psf (Higher available upon request)
Operating Temperature	0°C to +60°C (Std), -20°C to +60°C (Opt), -40°C to +60°C (Opt w/AC Power)
Sensor Package	Wind (Std), Snow and Flood Optional
Communication Architecture	Wireless Zigbee Mesh network Row to Row; One Zone Controller for up to 99 rows. Connection to SCADA/DAS through Modbus TCP/IP interface
Certifications	UL 2703, 3703 and IEC 62817, CE Declarations and FCC
Warranty	5 yr drive and control + 10 yr structure standard Additional warranty options available

* Under standard test conditions using Rover 3 standard variant (12ah)

Conforms to UL Standard 3703 · Certified to CSA Standard C22.2 No. 3703 · Intertek

FTCSOLAR

FTC Solar integrates engineering, software, and lean construction to lower installation costs and deploy reliable solar tracking solutions to advanced projects around the world.

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06-07-DS-001 F

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Middle East & North Africa
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CPS

Technical Data

Model Name	CPS SCH250K-T-US-600
DC Input	
Max. PV power	425 kW
Max. DC input voltage	1500 V
Operating DC input voltage range	860-1450 Vdc
Start-up DC input voltage / power	900 V / 250 W
Number of MPP trackers	1
MPPT voltage range for Pnom[1]	900-1300 Vdc
Max. PV short-circuit current[2]	450 A
Number of DC inputs	Distributed Wire Box: 30 PV source circuits, fused Centralized Wire Box: 1 input circuit, 1-2 terminations per pole, non-fused
DC disconnection type	Distributed Wire box: Enhanced DC switches Centralized Wire Box: Enhanced DC disconnect
DC surge protection	Type II MOV
AC Output	
Rated AC output power	250 kW
Max. AC apparent power (selectable[3])	250 kVA / 264 kVA (@ PF >0.95)
Rated output voltage	600 Vac
Output voltage range[4]	528-660 Vac
Grid connection type[5]	3Ø / PE / N (neutral optional)
Max. AC output current @ 600 Vac	241 A (@ 250 kVA) / 254 A (@ 264 kVA)
Rated output frequency	60 Hz
Output frequency range[4]	57-63 Hz
Power factor	>0.99 (±0.8 adjustable)
Current TRD	< 3%
Max. OCPD rating	400 A
AC disconnection type	Load-rated AC switch
AC surge protection	Type II MOV
System	
Topology	Transformerless
Max. efficiency	98.83%
CEC efficiency	98.4%
Standby / night consumption	< 30 W
Environment	
Enclosure protection degree	NEMA Type 4X
Cooling method	Variable speed cooling fans
Operating temperature range	-22°F to 140°F / -30°C to 60°C (derating from 108°F / 42°C)
Non-operating temperature range[6]	-40°F to 158°F / -40°C to 70°C
Operating humidity	0-95%
Operating altitude	6562 ft / 2000 m (no derating)
Audible noise	< 80 dBA @ 1 m and 77°F (25°C)
Display and Communication	
User interface and display	LED indicators; Bluetooth and app
Inverter monitoring	Modbus RS485
Site-level monitoring	CPS FlexOM Gateway (1 per 32 inverters)
Modbus data mapping	SunSpec / CPS
Remote diagnostics / firmware upgrade functions	Standard / (with FlexOM Gateway)
Mechanical	
Dimensions (W × H × D)	Powerhead: 28.46 × 33 × 13.98 in (723 × 840 × 355 mm) Wire Box: 23.11 × 33 × 13.98 in (587 × 840 × 355 mm)
Weight (approximate)	Powerhead: 175 lb (79.5 kg) Wire Box: 106 lb (48 kg)
Mounting / installation angle	Vertical
AC termination	M12 stud type terminal [3Ø] (wire range: 500 kcmil-750 kcmil CU/AL; lugs not supplied) Screw clamp terminal block [N] (#12-1/0 AWG CU/AL)
DC termination	Distributed Wire Box: Screw clamp fuse holder (wire range: #14-#8 AWG CU) Centralized Wire Box: Busbar (<600 kcmil CU/AL [2 terminations per pole]; lugs not supplied)
Fused string inputs	Distributed Wire Boxes: 30 A fuses provided
Safety	
Certifications and standards	UL 1741-SA/SB Ed. 3, CSA-C22.2 NO.107.1-01, IEEE 1547-2018, FCC Part 15, UL 1699B[7]
Selectable grid standard	IEEE 1547a-2014, IEEE 1547-2018, CA Rule 21, ISO-NE
Smart-grid features	Volt-RideThru, Freq-RideThru, Ramp-Rate, Specified-PF, Volt-VAR, Freq-Watt, Vol-Watt
Warranty	
Standard	5 years
Extended terms	10, 15, and 20 years

1) See user manual for further information regarding MPPT voltage range when operating at non-unity PF.
2) The sum of parallel-connected PV module short-circuit currents.
3) Inverter is factory set to 250 kVA by default. Contact CPS to enable the 264 kVA setting.
4) The "output voltage range" and "output frequency range" may differ according to the specific grid standard.
5) Delta configurations must not be corner-grounded.
6) See user manual for further requirements regarding non-operating conditions.
7) AFCI function available for Distributed wire boxes only.

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PE0064154
05.01.2026

Sandhills ENERGY

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PSE PROJECT NUMBER: NE0192512-40

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DRAWN BY:	CHK'D/APPD BY:
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LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

EQUIPMENT DATASHEETS

DRAWING NUMBER	REVISION
E5.2	D

NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
A	30% ELECTRICAL DRAWINGS	MDL	DTG	02/20/2026
B	ISSUED FOR PERMIT	MDL	DTG	05/01/2026

shoals

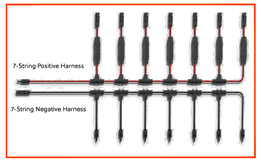
INTERCONNECT SYSTEM™

FIRST SOLAR SERIES 6

ABOUT

Shoals™ patented Interconnect System™ reduces the specialized labor required in your installation, making the integration of solar panels a breeze. With harnesses custom manufactured for your specific site, both labor and material costs are significantly reduced. The simplified design and robust construction also increases reliability, making the Interconnect System a perfect solution for any project.





FEATURES

- UV/sunlight resistant
- Resistance welded joints
- Custom manufactured to the installation
- Standard 5-year warranty on all models
- Patented chemically bonded and hermetically sealed two part molding process
- ETL certified to UL9703 for 600 VDC, 1000 VDC, and 1500 VDC systems
- ETL certified to CSA C22.2#182.5 for PV Connectors
- ETL certified to CSA C22.2#271 for PV Cables
- ETL certified to CSA C22.2#198.2 for Sealed Wire Connector Systems

OPTIONS

- Available in 7, 6, 5, 4, and 3-string configurations
- 12 AWG, 10 AWG, and 8 AWG available
- All certified PV connectors available
- Cable available in standard colors
- Standard fuse sizes up to 32A

TECHNICAL INFORMATION	INTERCONNECT SYSTEM™
Voltage Rating	600 VDC / 1000 VDC / 1500 VDC
Max. DC Current	32A (12 AWG) / 45A (10 AWG) / 65A (8 AWG)
Max. Input Overcurrent Protection	5A*
Max. Operating Temp.	90°C
Wet Hi-Pot Leakage Current	< 1 µA

*Max Input Overcurrent Protection per First Solar's technical bulletin received 3/27/2020. consult your sales representative for more information.
Plastic over-mold material is suitable for outdoor use with respect to exposure to UV light, Water Exposure and Immersion in accordance with UL 746C.
Product design and specification subject to change or modification without notice.

MADE IN THE USA | 5 YEAR WARRANTY | Intertek

Rev. G - 7/9/2024 | Proprietary and Confidential

shoals



Item pictured is STG.DCB.xx.C400BCG.BSAN

1500V STANDARD COMBINER

ABOUT

The Shoals™ 1500V Combiner series is compliant with NEC 2023 and is utilized to combine one or more strings per circuit when the fuse size does not exceed 32A.

Lab-proven under full load during static heating sequence test with fuses installed, the Shoals 1500V Combiner series is designed for maximum durability and years of uninterrupted, real-world service.

FEATURES

- Finger-safe fuse holders
- Up to 500A, 1500V disconnect, 100% load-break rated
- Plated bus bars rated for 90°C, Cu/Al
- 2-hole NEMA 1/2" x 1-3/4" mounting configuration
- Breather vent reduces internal condensation
- Safety shield covers all live components
- Designed for ease of cable installation
- Surge protection device, Type I
- NEMA 4X pad-lockable enclosure
- Standard 5-year warranty
- Compliant with NEC 2023
- ETL certified to UL1741

OPTIONS

- Pre-terminated whips with connectors
- Pre-punched conduit knockouts
- Pre-installed NEMA 4X glands
- Pre-installed HDG uni-strut
- Pre-installed HDG mounting kits
- Pre-installed drain vent

TECHNICAL INFORMATION	STG.DCB.xx.C400DCG.BesN[a]	STG.DCB.xx.C400DCC.BesN[a]	STG.DCB.xx.CaaadCB.BesN[a]	STG.DCB.xx.C600DCO.BesN[a]
Max. System Voltage	1500 VDC	1500 VDC	1500 VDC	1500 VDC
Rated Output Current	400A	400A	400A or 500A	400A
Max. Short Circuit Current (Isc)	20.5A	20.5A	20.5A	20.5A
Max. Overcurrent Protection	32A	32A	32A	32A
Number of Input Circuits	Up to 18	Up to 18	Up to 24	Up to 32
Positive Input Wire Size	6-14 AWG	6-14 AWG	6-14 AWG	6-14 AWG
Negative Input Wire Size	4-14 AWG	4-14 AWG	4-14 AWG	4-14 AWG
Positive Output Wire Size	Up to (1) 600 MCM or (2) 500 MCM	Up to (1) 800 MCM or (2) 700 MCM	Up to (1) 900 MCM or (2) 750 MCM	Up to (1) 1000 MCM or (2) 800 MCM
Negative Output Wire Size	Up to (1) 600 MCM or (2) 500 MCM	Up to (1) 800 MCM or (2) 700 MCM	Up to (1) 900 MCM or (2) 750 MCM	Up to (1) 1000 MCM or (2) 800 MCM
Ground Wire Size	2/0-14 AWG	2/0-14 AWG	2/0-14 AWG	2/0-14 AWG
Enclosure Rating	Type 4X	Type 4X	Type 4X	Type 4X
Max. Ambient Temp Rating	50°C	50°C	50°C	50°C
Enclosure Size (H x W x D)	24" x 24" x 10"[b]	30" x 24" x 10"[b]	24" x 30" x 10"[b]	30" x 36" x 10"[b]
Approximate Weight	70 lbs	75 lbs	80 lbs	110 lbs

(a) xx = number of inputs (01-32)
aaa = output current (800 or 900)
d = disconnect type ("B" for ABB or "S" for Socomec)
e = enclosure type ("A" for Allied or "S" for Stahlin)
s = surge type ("A" for ABB, "C" for Citel, "D" for Delta, or "M" for Mersen)
(b) Dimension refers to trade size. See project drawings for exact dimensions.
Product design and specification subject to change or modification without notice.

MADE IN THE USA | 5 YEAR WARRANTY | Intertek

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NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
C	30% ELECTRICAL DRAWINGS	MDL	DTG	02/20/2026
D	ISSUED FOR PERMIT	MDL	DTG	05/01/2026

ISSUED FOR PERMIT
NOT FOR CONSTRUCTION

COLORADO LICENSED
PE0064154
05.01.2026
PROFESSIONAL ENGINEER

Sandhills ENERGY

ISI SOLAR

PSE ENGINEERS & CONSULTANTS
2424 Rimrock Rd., Suite 300
Madison, WI 53713
Tel: 866.825.8895 www.powersystem.org

NOTICE:
THIS DRAWING IS DISTRIBUTED UPON THE CONDITION THAT IT IS NOT TO BE REPRODUCED OR BE COPIED, IN WHOLE OR IN PART WITHOUT THE EXPRESSED WRITTEN CONSENT OF POWER SYSTEM ENGINEERING, INC.

PSE PROJECT NUMBER: NE0192512-40

ORIGINAL DATE:	ENGR:
02/20/2026	DTG
DRAWN BY:	CHK'D/APPD BY:
MDL	OOI

LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

EQUIPMENT DATASHEETS

DRAWING NUMBER	REVISION
E5.3	D

EXHIBIT B - PROOF OF LIABILITY INSURANCE

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 2/17/2026

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Marsh & McLennan Agency, LLC 6160 Golden Hills Dr Minneapolis MN 55416-1020	**CONTACT NAME:** Becca Dingwell **PHONE (A/C, No, Ext):** **FAX (A/C, No):** **E-MAIL ADDRESS:** becca.dingwell@marshmma.com
INSURED SANDENE-01 Clay Creek Energy LLC Sandhills Energy, LLC 1403 Harney St #200 Omaha NE 68102-2205	**INSURER(S) AFFORDING COVERAGE** / **NAIC #** **INSURER A :** Axis Surplus Insurance Company / 26620 **INSURER B :** HARTFORD CASUALTY INSURANCE CO / 29424 **INSURER C :** ACCIDENT FUND INSURANCE COMPAN / 10166 **INSURER D :** **INSURER E :** **INSURER F :**

COVERAGES **CERTIFICATE NUMBER:** 256579336 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X **COMMERCIAL GENERAL LIABILITY** [ ] CLAIMS-MADE [X] OCCUR X 10,000 GEN'L AGGREGATE LIMIT APPLIES PER: [ ] POLICY [ ] PRO-JECT [ ] LOC [ ] OTHER:			3962240225ES	4/28/2025	4/28/2026	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG $	$ 1,000,000 $ 100,000 $ 10,000 $ 1,000,000 $ 2,000,000 $ 2,000,000 $
A B	**AUTOMOBILE LIABILITY** [ ] ANY AUTO [ ] OWNED AUTOS ONLY [X] SCHEDULED AUTOS X HIRED AUTOS ONLY [X] NON-OWNED AUTOS ONLY			3962240225ES 91UECEN2778	4/28/2025 3/19/2025	4/28/2026 3/19/2026	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident) $	$ 1,000,000 $ $ $ $
A	[ ] **UMBRELLA LIAB** [X] OCCUR X **EXCESS LIAB** [ ] CLAIMS-MADE [ ] DED [ ] RETENTION $			3962240325ES	4/28/2025	4/28/2026	EACH OCCURRENCE AGGREGATE $	$ 10,000,000 $ $
C	**WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? [ ] **(Mandatory in NH)** If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		AFWCP100132732	4/17/2025	4/17/2026	X PER STATUTE [ ] OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	 $ 1,000,000 $ 1,000,000 $ 1,000,000
B	Management Liability Retention: $25,000			LHXM175332	10/6/2025	10/6/2026	Aggregate	$5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Sites include:
Lamar, CO
Trinidad, CO
La Junta, CO
Fort Lyon, CO

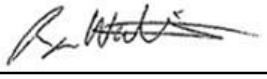
CERTIFICATE HOLDER

For Information Only

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE



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EXHIBIT C - LEASE AGREEMENT

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STATE OF COLORADO
STATE BOARD OF LAND
COMMISSIONERS

SOLAR ENERGY PRODUCTION LEASE NO. 117537

1. PARTIES

THIS LEASE is entered into on 08/01/2025 (the "Effective Date") by and between the State of Colorado, acting through its State Board of Land Commissioners ("State Land Board"), whose address is 1127 Sherman Street, Suite 300, Denver, CO 80203, and CLAY CREEK ENERGY LLC a wholly owned subsidiary of Sandhills Energy, LLC (""Lessee," whether one or more") whose address is:

1403 HANEY ST
#200
OMAHA NE 68102

Notwithstanding any rights established under an applicable Planning lease (Planning Lease No. 116699) between Lessee and the State Land Board, Lessee shall have no rights to possession of the Leased Premises (defined below in §4) or other rights under this Lease until it is approved and signed by the State Land Board. The State Land Board and Lessee ("Parties") agree to the following terms and conditions:

2. CONSIDERATION

The Parties acknowledge that the mutual promises and covenants contained in this Lease and other good and valuable consideration are sufficient and adequate to support this Lease.

3. LEASE DEFINITION

"Lease" means this Lease, its terms and conditions, attached exhibits, documents incorporated by reference under the terms of the Lease, amendments, riders, and any future modifying agreements, exhibits, attachments or references incorporated in this Lease pursuant to Colorado State Law, Fiscal Rules, State Controller Policies, and State Land Board policies, directives and schedules.

4. DESCRIPTION OF THE LEASED PREMISES

The State Land Board leases to Lessee and Lessee leases from the State Land Board the surface use of Trust lands situated in the County of Prowers, State of Colorado, more particularly described in **Exhibit "A"** attached and made apart hereof ("Leased Premises") along with all easements for access and interconnection of utilities as shown on **Exhibit "B"** attached hereto. Subject however, to all existing leases, easements, rights-of-ways, and other interest whether or not visible on the ground, and further subject to the terms, conditions, and agreements set out in this Lease. The State Land Board represents that all of the leases, rights-of-way, and agreements in effect on the Leased Premises as of the Effective Date are listed on **Exhibit "C"**.

5. USE OF THE LEASED PREMISES

Lessee may access, occupy, and use the Leased Premises solely and exclusively for solar energy

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development and production. Lessee has the right and privilege to pursue development of a 4.98 megawatt (MW) Solar Facility with production capabilities noted in Solar Rewards Community Reservation Letter, signed by a bona fide power purchaser, a memorandum of which is attached hereto as **Exhibit "D"** and may combine the Leased Premises with other adjacent lands to form a solar energy development and production project area ("Project Area").

For purposes of this Lease, "Solar Energy Development and Production" means converting solar energy into electrical energy, and collecting and transmitting the electrical energy so converted, together with any and all activities directly related thereto, including, (a) determining the feasibility of solar energy conversion to electrical energy on the Leased Premises, including studies of solar insolation, meteorological data, and extracting soil samples; (b) constructing, installing, using, replacing, relocating, removing, maintaining, and operating solar energy collection and electrical generating equipment of all types including any such equipment utilizing photovoltaic and/or solar thermal technology ("Solar Power Generating Facilities"), overhead and underground electrical transmission and communications lines, electric transformers, electric inverters, energy storage facilities, telecommunications equipment, power generation facilities to be operated in conjunction with large solar energy producing installations, roads, weather monitoring equipment, meteorological towers and solar measurement equipment, support structures, control buildings, maintenance yards, and related facilities and equipment (collectively "Solar Power Facilities") on the Leased Premises; and (c) undertaking any other activities that Lessee reasonably determines are necessary, useful or appropriate to accomplish any of the foregoing, including the right of ingress to and egress from Solar Power Facilities over and across the Leased Premises by means of roads and lanes thereon if existing, or otherwise by such route or routes as Lessee may construct from time to time, provided however that Solar Power Facilities and rights to construct such facilities do not include the right to construct electrical substations or transmission lines of greater than 115 kV.

6. TERM

The initial term of this Lease is for a term of 26 years beginning on the Effective Date and ending 26 years thereafter, on the 26th anniversary of the Effective Date (the "Term").

A. Construction Period. (Reserved)

B. Extension. The State Land Board shall grant Lessee a preferential right to extend the Term of this Lease or to receive a new lease under the following conditions:

1) An extension of this Lease would, as determined in the sole discretion of the State Land Board, be in the best interest of the Trust administered by the State Land Board;

2) Lessee shall furnish to the State Land Board satisfactory evidence of plans for continued generation of electric power during the term of the extension or during the term of a new lease;

3) Lessee shall furnish adequate marketing and engineering evidence to the State Land Board that the acreage subject to the extended or new lease is in fact an integral part of the Project;

4) Six months prior to the end of the term for this Lease, Lessee shall provide notice to the State Land Board of its intention to extend this Lease or seek a new lease for an additional term of a minimum of five years, and

5) Lessee and the State Land Board commence exclusive negotiations to extend or renew this Lease and that negotiations include, but not be limited to, annual production payments, rental rates, Bonus Payments, extension term, additional fees, and methodology for increasing the payments over time.

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If negotiations do not result in agreement between the Parties by the end of the term of this Lease, then the State Land Board reserves the right to withhold granting of an extension of this Lease or the issuance of a new lease, and reserves the right to seek other parties qualified to lease the Leased Premises.

7. RENT

All payments shall be made by cash, check, certified check or money order. Payments shall commence on the Effective Date of this Lease. Payments having restrictions, qualifications, or encumbrances of any kind shall not be binding upon the State Land Board. Lessee shall pay the State Land Board the following amounts:

A. Installation Fee. A fee of $7,470.00 shall be paid in full at the time of lease execution ("Installation Fee"). Installation Fee is nonrefundable..

B. Construction Fee. (Reserved)

C. Annual Production Payment. Lessee shall pay the State Land Board an annual production payment ("Production Payment") as adjusted below. The Production Payment shall be a minimum of $23,400.00. The Production Payment is based off of $780.00 per acre.

Lessee shall pay the Production Payment for the First Production Lease Year (defined below) in full at the time of execution ("First Annual Production Payment"). Following the First Annual Production Payment, all subsequent Production Payments shall be paid on the Anniversary Date each year until the expiration or termination of this Lease.

1) Definitions.

1. The "First Production Lease Year" is period from the Effective Date and 12 months thereafter. Every subsequent 12-month period thereafter, shall be known as a "Production Lease Year". The month and day of the Effective Date shall be known as the "Anniversary Date".

2. Annual Production Payment Adjustment. After the First Annual Production Payment, the Production Payment shall increase by 2% each year.

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8. EASEMENTS AND RIGHT-OF-WAYS

All new roads created by lessee in existence after initial construction that are not required to operate and maintain Solar Power Generating Facilities shall be reclaimed pursuant to Section 27 of this Lease. New and existing roads required to operate and maintain Solar Power Generating Facilities after the Effective Date shall not exceed sixteen (16) feet in width, except as necessary to maintain turning areas and proper drainage, and shall be reclaimed pursuant to Section 27 of this Lease.

9. METEOROLOGICAL ("MET") TOWER SITE EASEMENT AND MET TOWER ACESS EASEMENTS

(Reserved)

10. COMPENSATION ADJUSTMENT

(Reserved)

11. NO REPRESENTATION

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Lessee makes no representation or warranty as to the likelihood that the Solar Power Generating Facilities will generate sufficient electricity, or that any purchase or sales agreement for such electricity will provide adequate revenues, so as to create any entitlement to the State Land Board of Production Payments during any period of time. The State Land Board acknowledges that the operation of the Solar Power Generating Facilities is subject to adverse weather, lack of sunlight, equipment failures and other events beyond the control of Lessee which may interrupt or prevent electricity generation, and that receipts for electricity generated may also be affected by the terms of any relevant purchase or sale agreement and performance by any buyer. Any representation by Lessee to the State Land Board as to the expected production from the Solar Power Generating Facilities or the amount of expected Production Payments is purely an estimate based on the information available to Lessee at the time and is not a guarantee that any such production will occur or that such an amount of Production Payment will become due to the State Land Board at any time. Lessee makes no covenant, representation, or warranty that any number of solar panels will be installed on the Leased Premises or on any other property that is part of the Project Area. Nothing in this Section shall limit the Minimum Production Payment due under Section 7.B if Solar Power Generating Facilities are installed on the Leased Premises.

12. ASSESSMENTS, TAXES, UTILITIES, AND COSTS

Lessee must pay, when due, all assessments, taxes, fees, water and utility charges, if any, levied or accruing against the Leased Premises, improvements, appurtenances, uses or activities of Lessee, including those that could otherwise result in a lien being placed against the Leased Premises.

It is understood and agreed that all taxes, assessments, insurance, utilities, and other operating costs and the costs of all repairs, remodeling, renovations, alterations, and improvements, and all other direct costs, charges and expenses of any kind whatsoever respecting the Leased Premises shall be borne by the Lessee and not by the State Land Board so that the Rent, Production Payment, Bonus Payments, or other consideration to be paid to the State Land Board shall not be reduced, offset, or diminished directly or indirectly by any cost or charge, nor subject to suspension or termination for any cause.

13. PENALTY AND INTEREST

Both a penalty and interest fee will be imposed for, but not limited to, late payments, improper or partial payments, violation of any covenant of this Lease, or false statements made to the State Land Board. Penalty and interest shall be calculated based on the State Land Board's "Fees and Payment Considerations" schedule at the time the penalty and interest is imposed. "Fees and Payment Considerations" schedules, as adopted by the State Land Board, are effective upon approval by the State Land Board. A current "Fees and Payment Considerations" schedule is available on-line through the State Land Board's official website and through any of the State Land Board's offices.

14. WAIVER OF COVENANTS REGARDING CONDITION OF LAND

Lessee leases the Leased Premises in its "as is" condition with all faults, including the environmental condition of the land, based on Lessee's own inspection of and judgment regarding the land. The State Land Board makes and Lessee affirms that the State Land Board has made no representations or warranties of any kind whatsoever with regard to the condition of the land or its fitness or suitability for any particular use. Lessee acknowledges that it is solely responsible for performing its own due diligence and for becoming fully familiar with the condition of the Leased Premises and any applicable rights, reservations, restrictions, uses, or other conditions that might affect its development or use for a particular purpose.

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15. ASSIGNMENT

Lessee, with written approval of the State Land Board that shall not be unreasonably withheld, may assign all or part of Lessee's leasehold interest in the Leased Premises. However, Lessee may not make a partial assignment of tracts of less than approximately 40 acres or Governmental lots corresponding to a quarter-quarter section. For approval of such assignment the State Land Board may charge an assignment consideration in an amount specified herein. Notwithstanding the foregoing, Lessee may assign this Lease (i) to an affiliated company or (ii) as collateral to an entity or entities providing financing for the construction and/or operation of the Solar Power Generating Facilities ("Collateral Assignment"), in either case without the need for the State Land Board's consent. In the case of a Collateral Assignment per subhead (ii), Lessee shall not be relieved of its obligations under the Lease following such assignment.

If an assignment of a part of this Lease is approved, a new lease designated as an assignment lease will be issued to the assignee covering the lands assigned for the balance of the term of this Lease on the Solar Energy Production Lease form in use at the time of assignment and limited to the Term of this Lease. The assignor will be released and discharged from all future obligations for such lands assigned. An assignment shall not relieve Lessee from any liability that arose prior to the assignment.

No assignment or transfer of this Lease requiring consent pursuant to the foregoing provisions of this Section will be held valid by the State Land Board unless made with its consent in writing, on the assignment forms in use by the State Land Board, and duly entered in the books or records of the State Land Board.

16. ASSIGNMENT CONSIDERATION

No assignment consideration will be charged if the assignment is made to a company affiliated with Lessee or is a Collateral Assignment. For any other assignment, the consideration to be paid by Lessee to the State Land Board upon approval of the assignment by the State Land Board shall be $1,000.00 per acre assigned. An assignment does not constitute a new lease, but is a continuation of this Lease. Any attempt to withhold information regarding an assignment or Lessee's failure to inform the State Land Board of any and all assignments shall be construed as an attempt to defraud the State of Colorado and may render this Lease null, void, and nonexistent, and all monies paid to the State Land Board shall be forfeited to the State Land Board. In addition, the statutory fees in effect at the time of the assignment will be paid at the time the assignment record form is submitted by Lessee to the State Land Board.

17. FINANCING

A. Right to Mortgage. Lessee may, upon written notice to the State Land Board, mortgage or otherwise encumber and grant security interests in all or any part of its interest in this Lease and the Solar Power Generating Facilities. These various security interests in all or a part of the Lease and the Solar Power Generating Facilities are collectively referred to as Mortgages and the holders of the Mortgages, their assigns and designees are referred to as Mortgagees. Mortgagees which are of record with the State Land Board through written notice by Lessee shall use the Leased Premises only for the uses permitted in this Lease. Mortgagees shall have all rights and remedies allowed them under then existing laws, provided that under no circumstances shall any Mortgagee have any greater rights of ownership or use of the Leased Premises than the rights granted to Lessee in this Lease (except for the extended cure rights in Section 17.d.).

B. State Land Board Obligations. The State Land Board agrees to consent in writing to financing documents as may reasonably be required by Mortgagees. As a precondition to exercising any rights or remedies related to any alleged default by Lessee under this agreement, the State Land Board shall give written notice of the default to each Mortgagee that is of record with the State Land Board, at the same time it delivers notice of default to Lessee, specifying the alleged event of default and the

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required remedy. Each Mortgagee shall have the same amount of time to cure the default as to Lessee's entire interest or its partial interest in the Solar Power Generating Facilities as is given to Lessee and the same right as Lessee to cure any default or to remove any property of Lessee or Mortgagee located on the Leased Premises. The cure period for each Mortgagee shall begin to run at the end of the cure period given to Lessee in this agreement, but in no case shall the cure period for any Mortgagee be less than one hundred twenty (120) days after receipt of default notice. Failure of the State Land Board to give Mortgagee notice shall not diminish the State Land Board's rights against Lessee, but shall preserve all rights of the Mortgagee to cure any default and to remove any property of Lessee or the Mortgagee located on the Leased Premises.

C. Mortgagee Obligations. Any Mortgagee that does not directly hold an interest in the Solar Power Generating Facilities, or whose interest is held solely for security purposes, shall have no obligation or liability under this agreement until such time as such Mortgagee acquires Lessee's interest subject to the lien of its Mortgage by foreclosure or otherwise assumes the obligations of, or succeeds to absolute title to, Lessee's interest.

D. Right to Cure Defaults / Notice of Defaults / Right to New Lease. To prevent termination of this Lease, the Mortgagee shall have the right, but not the obligation, at any time to perform any act necessary to cure any default and to prevent the termination of this Lease or any interest in the Solar Power Generating Facilities. In the event of an uncured default by the holder of Lessee's entire interest in this Lease, or in the event of a termination of this agreement by agreement, by operation of law or otherwise, each Mortgagee that is not in default of its obligations, shall have the right to have the State Land Board either recognize the Mortgagee's interest or grant a new lease substantially identical to this Lease. Under the new lease, the Mortgagee shall be entitled to, and the State Land Board shall not disturb Mortgagee's continued use and enjoyment for the remainder of the Lease Term.

E. Extended Cure Period. If any default by Lessee under this Lease cannot be cured without obtaining possession of all or part of the Solar Power Generating Facilities, then any such default shall be deemed remedied if a Mortgagee (a) within one hundred twenty (120) days of receiving notice from the State Land Board as set forth in Section 23. acquires possession of all or part of the Solar Power Generating Facilities, or begins appropriate judicial or non-judicial proceedings to obtain the same; (b) diligently prosecutes any such proceedings to completion; and (c) after gaining possession of all or part of the Solar Power Generating Facilities performs all other obligations as and when the same are due in accordance with the terms of this Lease provided, however, that upon obtaining possession the Mortgagee shall have a one hundred twenty (120) day cure period in the event of prior default of Lessee and further provided that (i) such cure period may be extended with the express written consent of the State Land Board or
(ii) may be extended for the amount of time reasonably necessary, as determined by the State Land Board, to cure such default provided efforts to cure such default are initiated within one hundred twenty
(120) days and are thereafter continued until cure has been effected.

18. MORTGAGEE PROTECTION

Any Mortgagee, upon delivery to the State Land Board of notice of its name and address, for so long as Mortgagee's Mortgage is in existence shall be entitled to the following protections which shall be in addition to those granted elsewhere in this agreement:

A. Mortgagee's Right to Possession, Right to Acquire and Right to Assign. A Mortgagee shall have the absolute right to: (a) assign its Mortgage; (b) enforce its lien and acquire title to all or any portion of

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the Solar Power Generating Facilities by lawful means; (c) take possession of and operate all or any portion of the Solar Power Generating Facilities and to perform all obligations to be performed by Lessee under this Lease, or to cause a receiver to be appointed to do so; and (d) acquire all or any portion of the Solar Power Generating Facilities by foreclosure or by an assignment in lieu of foreclosure and thereafter, assign or transfer all or any portion of the Solar Power Facilities to a third party. Not withstanding the foregoing, any right by the Mortgagee to assign or transfer any portion of the solar power facilities to a third party shall be subject to Section 15 of this lease.

B. Opportunity to Cure.

1) During any period of possession of the Leased Premises by a Mortgagee (or a receiver requested by Mortgagee) or while any foreclosure proceedings instituted by a Mortgagee are pending, the Mortgagee shall pay or cause to be paid the fees and all other monetary charges payable by Lessee under this Lease which have accrued and are unpaid at the commencement of the period and those which accrue thereafter during the period. Following acquisition of all or a portion of the Solar Power Facilities by the Mortgagee as a result of either foreclosure or acceptance of an assignment in lieu of foreclosure, or by a purchaser at a foreclosure sale, this agreement shall continue in full force and effect and the Mortgagee or party acquiring title to this Lease shall, as promptly as reasonably possible, commence the cure of all defaults under this Lease and thereafter diligently process such cure to completion, whereupon the State Land Board's right to terminate this agreement based upon such defaults shall be deemed waived.

2) Any Mortgagee or other party who acquires Lessee's interest in the Solar Power Generating Facilities and this Lease pursuant to foreclosure or assignment in lieu of foreclosure shall not be liable to perform these obligations imposed on Lessee by this Lease incurred or accruing after the party no longer has ownership in possession of the Solar Power Generating Facilities or leasehold interest in this Lease.

3) Neither the bankruptcy nor the insolvency of Lessee shall be grounds for terminating this Lease as long as all payments and fees and all other monetary charges payable by Lessee under this Lease are paid by Mortgagee in accordance with the terms of this Lease.

C. New Lease.

1) If this Lease terminates because of Lessee's default, or if this Lease is rejected or disaffirmed pursuant to bankruptcy law or other law affecting creditor's rights and, within ninety (90) days after such event, Lessee or any Mortgagee, or Assignee shall have arranged to the reasonable satisfaction of the State Land Board for the payment of all fees and other charges due and payable by Lessee as of the date of such event and has cured any other defaults or damages under the Lease, then the State Land Board shall execute and deliver to Lessee or such Mortgagee or Assignee or to a designee of one of these parties, as the case may be, a new lease covering the Leased Premises which (a) shall be for a term equal to the remainder of the Term before giving effect to such rejection or termination; (b) shall contain the same covenants, agreements, terms, provisions, and limitations as this Lease (except for any requirements that have been fulfilled by Lessee or any Mortgagee or assignee prior to rejection or termination of this Lease); and (c) shall enjoy the same priority as this Lease over any lien, encumbrance, or other interest created by the State Land Board; and (d) shall include that portion of the Solar Power Generating Facilities in which Lessee or Mortgagee or Assignee had an interest on the date of rejection or termination.

2) After the termination, rejection, or disaffirmation of this Lease and during the period thereafter during which any Mortgagee shall be entitled to enter into a new lease for the Leased Premises,

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State Land Board will not terminate the rights of any Assignee unless in default under its assignment and after the provision of all required notices and the expiration of all applicable cure periods.

3) If more than one Mortgagee makes a written request for a new lease pursuant to this provision, the new lease shall be delivered to the Mortgagee requesting such new lease whose Mortgage is prior in lien and the written request of any other Mortgagee whose lien is subordinate shall be void and of no further force or effect.

4) The provisions of this Section shall survive the termination, rejection, or disaffirmation of this Lease and shall continue in full force and effect thereafter to the same extent as if this Section was a separate and independent contract made by the State Land Board, Lessee, and each Mortgagee, and, from the effective date of such termination, rejection, or disaffirmation of this Lease to the date of execution and delivery of a new lease, such Mortgagee may use and enjoy the Leased Premises without hindrance by the State Land Board or any person claiming by, through, or under the State Land Board, provided that all of the conditions for a new lease as set forth above are complied with.

D. Limitations. Nothing in this Section shall limit the obligations of Lessee under this Lease or the rights of the State Land Board under this Lease to seek remedies or damages against Lessee, including but not limited to, non-curable defaults; provided, however, this paragraph shall not be interpreted to affect the Parties notice obligations and cur rights under this Lease.

E. Mortgagee's Consent to Amendment, Termination, or Surrender. Notwithstanding any provision of this Lease to the contrary, the Parties agree that so long as there exists an unpaid Mortgagee, and the State Land Board has been informed of the existence of such unpaid Mortgagee by certified mail, this Lease shall not be modified or amended, and the State Land Board shall not accept a surrender, cancellation, or release of all or any part of the Solar Power Generating Facilities from Lessee, prior to expiration of the Lease Term without prior written consent of Mortgagee. This provision is for the express benefit of and shall be enforceable by each Mortgagee as if it were a party named in this Lease.

F. Further Amendments. At Lessee's request, the State Land Board may amend this Lease to include any provision which may reasonably be requested by a proposed Mortgagee, provided however, that such amendment does not impair any of the State Land Board's rights under this Lease or substantially increase the burdens or obligations of the State Land Board under this Lease. Upon request of any Mortgagee, the State Land Board shall execute any additional instruments reasonably required to evidence such Mortgagee's rights under this Lease.

19. ANCILLARY AGREEMENTS

No assignment of undivided interests or retention or reservation of overriding interests will be recognized or approved by the State Land Board; and the effect, if any, of any such assignments or reservations will be strictly and only as between the parties thereto, and outside the terms of this Lease, and no dispute between parties to any such assignment or reservation shall operate to relieve Lessee from performance of any terms or conditions hereof or to postpone the time therefore. The State Land Board shall at all times be entitled to look solely to Lessee or its assignee shown on the State Land Board's books as being the sole lessee hereof, and for the sending of all notices required by this Lease and for the performance of all terms and conditions hereof.

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20. REPORTS AND RECORDS

Lessee shall keep true, accurate and complete books, records, accounts, contracts and data sufficient to support and verify the calculation of all amounts due under this Lease. The State Land Board shall have the right at all reasonable times and upon reasonable notice, to inspect the books, accounts, contracts, records, and any other relevant data, in the possession or control of Lessee and pertaining to the production, transportation or sale of electricity produced from the Leased Premises or the Project Area, including, without limitation, statements, documents, records or other data, from third parties which verify price, value or quantity of electricity generated on the Leased Premises or the Project Area. Books and records relating to payments as herein described shall be retained by Lessee and made available in Colorado to the State Land Board for a period of not less than five (5) years. If any such examination shall reveal, or if either Lessee or the State Land Board shall discover, any error or inaccuracy in its own or the other's statement, payment, calculation, or determination, then proper adjustment or correction thereof shall be made as promptly as practicable thereafter.

Without limiting the foregoing, no more than once a year and upon thirty (30) days notice to Lessee, Lessee shall provide the State Land Board with information that enables the State Land Board to confirm that all amounts payable under this Lease have been properly paid since the last time any such information was provided to the State Land Board.

Lessee shall submit, if reasonably required by the State Land Board, such additional reports, records, or documents regarding Lessee's operations on the Leased Premises or on adjoining properties as necessary for the purpose of determining compliance with Lease provisions including lease documents covering operations on adjoining properties which documentation shall be held confidential for the term of this Lease plus five (5) years to the extent allowed pursuant to the Colorado Open Records Act, Section 24-72-201 et seq., C.R.S.

All payments by Lessee must be accompanied by information and documentation that properly identifies the payment, including but not limited to the lease number, type of payment (Production Payment, Bonus Payment, Easement, etc.), the time period to which the payment applies, and additional information adequate for the State Land Board to identify and determine the nature of the payment and how the payment was calculated. Lessee must complete and submit the State Land Board's Solar Energy Production Report form in conjunction with all Production Payment payments. Lessee agrees to pay a fee as per the State Land Boards current publicized "Fees and Payment Considerations", per each occurrence for all unidentified payments or payments that do not include information and documentation as specified in this paragraph. The fee shall be calculated based on the State Land Boards current "Fees and Payment Considerations" schedule at the time the fee is imposed. "Fees and Payment Considerations" schedules, as adopted by the State Land Board, are effective immediately after approval. A current "Fees and Payment Considerations" schedule is available on-line through the State Land Board's official website and through any office of the State Land Board.

21. OPERATIONS

A. No more of the surface of the Leased Premises shall be disturbed than is reasonably necessary for the purpose for which this Lease is issued.

B. Lessee shall be responsible for the control and eradication of noxious weeds on the Leased Premises insofar as the presence of such noxious weeds is the result of Lessee's actions. Lessee shall cooperate with other existing or future lessees or permittees to control and eradicate noxious weeds on the Leased Premises, including cost sharing in weed control and eradication for up to one year after this Lease is terminated. Said cost sharing will be at the sole discretion of the State Land Board.

C. Lessee is to provide drainage and erosion control structures, fences, gates, cattle guards, or any

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other facilities reasonably necessary to protect the Leased Premises.

D. Excavations and improvements shall be maintained in a safe condition to prevent injury to persons, livestock, and wildlife.

E. All operations of the Lessee shall be conducted in a workmanlike and reasonable manner, and all necessary precautions shall be taken to avoid damage to the Leased Premises. Any costs incurred by the State Land Board as a result of any unintended and unplanned damage done by Lessee to Leased Premises, native grass or timer, or state-owned improvements, shall be paid for by Lessee to the State Land Board.

F. No refuse, waste, or litter of any kind shall be left on the Leased Premises by Lessee.

G. No minerals of any kind, including but not limited to sand, gravel, or stone, found on the Leased Premises, shall be sold by the Lessee unless purchased from the State Land Board.

H. Disturbing, dislodging, damaging, defacing, destroying, or removing historical archaeological, paleontological, or cultural sites or artifacts is prohibited.

I. Disturbing, dislodging, damaging, defacing, destroying, or removing any improvement, fixture, item, object or thing placed or located in, under or upon the Leased Premises, except the Solar Power Generating Facilitates is prohibited. Lessee shall keep the Leased Premises and improvements in good order, condition, and repair, including without limitations, all repairs to the exterior or interior of the improvements and all repairs of a structural nature. All repairs shall be at the expense of Lessee, except repairs caused by the willful conduct of the State Land Board. The State Land Board shall not be obligated to make any repairs, replacements or renewals of any kind whatsoever.

J. This Lease does not grant a right to enter State Trust Lands outside the Leased Premises to which there is no public access.

K. Any uses or activities not within the scope of this Lease are not allowed unless prior written approval from the State Land Board is granted.

L. There shall be no disposal of sewage, liquid, or solid waste on the Leased Premises by Lessee, unless approved by the State Land Board. Any project plans of Lessee that require disposal of sewage on the Leased Premises shall comply with applicable laws and regulations and be approved by the State Land Board prior to being filed with any Local Government or other entity.

M. Storage of materials, product, equipment, or personal property that is not directly related to the Lessee's operations on the Leased Premises is prohibited.

N. Any plans that Lessee submits to the Public Utility Commission or other permitting authority must be based on "Best Management Practices," outlined in **Exhibit D** attached hereto, and provide for reclamation, protection of waters, native grasses, and wildlife, as well as other environmental considerations.

22. <u>OTHER STATE AGENCIES</u>

Instruments and documents required by other State agencies may satisfy certain requirements of this Lease. In the event that Lessee is required to file instruments and documents with other State agencies, such as the Public Utilities Commission and the Colorado Division of Parks and Wildlife, Lessee shall notify the State Land Board of said filing and the State Land Board reserves the right to request and obtain copies of such instruments and documents from Lessee.

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23. NOTICES

Any notice required to be given to Lessee or Mortgagee under the provisions of this Lease shall be sent by certified mail to the address set forth at the beginning of this Lease or to such other address as Lessee may indicate in writing to the State Land Board, and such service by mail shall be deemed sufficient and in full compliance with the terms of this Lease as of the date it is postmarked. Notice to the State Land Board shall be given in like manner, addressed to the Colorado State Board of Land Commissioners, 1127 Sherman Street, Suite 300, Denver, Colorado, 80203-2206, or to such other address as the State Land Board may indicate in writing to Lessee.

24. PROTECTION AGAINST SURFACE DAMAGE

Lessee has the right to utilize as much of the surface of the Leased Premises as is reasonably necessary for solar energy development and production activities; however, Lessee shall be liable and agrees to pay the State Land Board or the State Land Board's surface lessee for damage to native grassland or crops lost or destroyed by Lessee. This obligation shall not be interpreted to create a third-party beneficiary rights in favor of such surface lessee.

Lessee shall provide a noxious weed management plan for disturbed areas which shall include the requirement that Lessee is responsible for the management and eradication of noxious weeds until the reseeding has been completely established.

In the case of native grassland damaged by Lessee, its employees, contractors and subcontractors during the performance of the Solar Power Generating Facilities removal obligations under this Lease, the damaged areas will be reseeded with grass seeds recommended either by the Natural Resources Conservation Service ("NRCS") office located in the County in which the Lease Premises is located, or the Colorado State University Extension Office ("CSU") located in the County in which the Leased Premises is located. Such reseeding shall occur at such time or times as recommended by NRCS or CSU, at no cost to the State Land Board, and reseeding shall continue until the damaged native grass area has been fully reseeded and reclaimed. Notwithstanding the foregoing, Lessee's obligation to continue reseeding shall expire five (5) years from the date of the complete or partial removal of physical material pertaining to the Solar Power Generating Facilities from the Leased Premises.

In the event of damage to or destruction of the Leased Premises or any part thereof, resulting from the Lessee's use, Lessee shall give or cause to be given to the State Land Board prompt notice of such occurrence and shall promptly proceed with due diligence to repair, restore, replace, or rebuild so as to make the condition of the Leased Premises reasonably similar to its condition as of the Effective Date, or restore the same to such modified plans as shall be previously approved in writing by the State Land Board. These obligations shall not terminate upon the termination or expiration of the Lease, but shall continue until all damage to the surface has been restored. During the Term, these obligations shall not apply to solar panel sites and roads used solely by and for the benefit of the project.

25. HAZARDOUS SUBSTANCES

A. Lessee shall not use, store, dispose of, or release on the Leased Premises or cause or permit to exist or be used, stored, disposed of, or released on the Leased Premises as a result of Lessee's operations, any Hazardous Substances, except in such quantities as may be required in its normal business operations and only if such use does not have an adverse impact on the State Land Board or the use of the Leased Premises by the State Land Board pursuant to the terms hereof and is in full compliance with all applicable laws. Lessee shall indemnify the State Land Board against liability and expense arising from any violation by Lessee of any federal, state, or local law, ordinance, or regulation relating to the generation, manufacture, production, use, storage, release or threatened

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release, discharge, disposal, transportation or presence of any Hazardous Substances on or under the Leased Premises. If any Hazardous Substances are required for construction, operation, maintenance and/or decommissioning of Lessee's improvements, Lessee shall provide to the State Land Board prior to construction of any improvements, and shall thereafter periodically update, a list of the Hazardous Substances required. Lessee shall only be able to store or use on the Leased Premises the Hazardous Substances named on the most recent list of Hazardous Substances provided to the State Land Board. Lessee shall not cause or permit any Release of a Hazardous Substance on, about, or beneath the Leased Premises, whether affecting surface water or groundwater, air, the surface or subsurface environment.

B. The Lessee is also prohibited from storing any gasoline or other fuel on the Leased Premises without the State Land Board's prior written permission, except for gasoline or fuel in such quantities as are reasonably necessary for Lessee's operations as authorized by this Lease.

C. The Lessee shall immediately notify the State Land Board of all spills, releases, inspections, correspondence, orders, citations, notices, fines, response and/or cleanup actions, and violation of laws, regulation or ordinance which affect the Leased Premises.

D. Lessee shall be solely liable for all liability, damages, costs or claims, including attorneys' fees arising from or in connection with activities related to Hazardous Substances on the Leased Premises to the extent caused or permitted by the Lessee, or to the extent caused by Lessee's contractors, employees, invitees, or permittees which Lessee knew or should have reasonably known about, but excluding pre- existing environmental conditions or Hazardous Substances on or under the Leased Premises as of the Effective Date of this Lease, and hereby indemnifies the State Land Board against the same.

E. In the event any unlawful Release of a Hazardous Substance to the environment occurs on, about or beneath the Leased Premises as a result of any act or omission of Lessee or any affiliates, contractors, consultants, agents, employees, officers or invitees of Lessee, Lessee shall promptly undertake all remedial measures required to clean up and abate or otherwise respond to the unlawful Release in accordance with applicable Environmental Laws at Lessee's sole cost, and Lessee shall, indemnify, defend, protect and hold the State Land Board harmless from and against any and all claims, losses, first and third party damages, liabilities and costs, including without limitation reasonable consultants' and attorneys' fees and costs, arising out of or relating to the presence of Hazardous Substances on or about the Leased Premises as a result of any act or omission of Lessee or Lessee's agents. Nothing in this Lease is intended to release any party from any liability it may have under the Comprehensive Environmental Response Compensation and Liability Act. These provisions shall survive termination or surrender of this Lease.

F. "Hazardous Substances" shall mean any substance: (A) that now or in the future is regulated or governed by, requires investigation or remediation under, or is defined as a hazardous waste, hazardous substance, pollutant or contaminant under any federal, state or local laws, regulations or permits (the "Laws") and any amendments thereto, including, for example only and without limitation, the Comprehensive Environmental Response Compensation and Liability Act, 42 U.S.C. § 9601 et seq., and the Resource Conservation and Recovery Act, 42 U.S.C. § 6901 et seq., or (B) that is toxic, explosive, corrosive, flammable, radioactive, carcinogenic, dangerous or otherwise hazardous, including, for example only and without limitation, gasoline, diesel, petroleum hydrocarbons, polychlorinated biphenyls (PCBs), asbestos, radon and urea formaldehyde foam insulation.

G. "Environmental Laws" shall mean all present and future Laws, permits, licenses, approvals,

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authorizations and other requirements of any kind applicable to Hazardous Materials.

H. "Release" shall mean any accidental or intentional spilling, leaking, pumping, pouring, emitting, emptying, discharging, injection, escaping, leaching, migrating, dumping or disposing into the air, land, surface water, ground water or the environment.

I. Lessee shall use Best Management Practices, as set forth in **Exhibit D** of this Lease, when using oils or molten salts in any concentrating solar power system.

26. ENVIRONMENTAL ANALYSIS

Prior to any construction on the Leased Premises, Lessee must perform environmental analyses that are required by any state or federal agency or regulation, including proposed mitigation to any impacts, and submit such analyses to the State Land Board for review. Upon the request of the State Land Board, Lessee shall provide a summary of information obtained by such analyses, in presentation format, to the State Land Board. The Lessee shall abide by all measures designed to mitigate the environmental impacts of its operations under this Lease set forth by local, state, or federal agencies or any environmental studies required to be completed prior to the consideration and approval of exploratory and developmental activities. Lessee further agrees to implement the Best Management Practices set forth in **Exhibit D** of this Lease. Lessee will keep the State Land Board updated from time to time upon request of the State Land Board regarding Lessee's efforts to work cooperatively with and resolve issues and concerns raised by the Colorado Division of Parks and Wildlife.

27. RECLAMATION

A. Intermediate Reclamation. Upon the completion of the construction of the Solar Power Generating Facilities, all Leased Premises disturbed by Lessee, its agents, contractors, and/or employees, and not required for continuing operations of the Solar Power Generating Facilities, including areas directly under the solar panels, shall be restored to a condition and forage density reasonably similar to its original condition and forage density, consistent with the continued use of the Leased Premises pursuant to this Lease. Reclamation shall include, as reasonably required and to the extent caused by the operations of Lessee under this Lease, leveling, terracing, seeding, revegetation, mulching and other reasonably necessary steps to prevent soil erosion, to ensure the establishment of suitable grasses and forbs, and to control noxious weeds and pests.

B. Final Reclamation. Upon the expiration or termination of this Lease, Lessee shall commence, within six months, and then thereafter diligently prosecute to satisfactorily accomplish each of the following items:

1) Remove from the Leased Premises all above-ground and below-ground Solar Power Generating Facilities, equipment, and other personal property in a manner that minimizes injury to the Leased Premises, including, without limitation to:

   a) removal and disposal in a lawful manner of all concrete footings, foundations, and other fixtures to a depth of not less than four (4) feet below the surface grade;

2) Reclaim and surrender the Leased Premises in a condition at least as good as the condition in existence on the Effective Date, including, without limitation:

   a) filling in of all excavations;

   b) reseeding any disturbed soil surface with suitable flora and restoring the terrain and soil surface to as close as reasonably practicable to their original condition;

   c) restoring all Leased Premises disturbed by Lessee, or any permitted sublessees or assignees to

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a condition and forage density reasonably similar to its original condition and forage density, consistent with the uses permitted by this Lease;

d) returning the surface to the original contour as nearly as practicable; and

e) completing, as reasonably required, all leveling, terracing, seeding, mulching, and other reasonably necessary steps to prevent soil erosion, to ensure the establishment of suitable grasses and forbs, and to control noxious weeds and pests, as approved by the State Land Board's district manager.

Upon the request of the State Land Board, Lessee shall provide the State Land Board with copies of any plans for restoration and reclamation which are required to be submitted to the County or other governmental entity. If Lessee fails to remove from the Leased Premises the Solar Power Generating Facilities, equipment, or any other personal property within eighteen (18) months from the termination or expiration of this Lease, the State Land Board may do so, in which case Lessee shall reimburse the State Land Board for all reasonable costs of removal and restoration incurred by the State Land Board. Lessee agrees and acknowledges that in the event it fails to remove the Solar Power Generating Facilities and any other Lessee installed improvements, equipment, or personal property from the Leased Premises within eighteen (18) months from the termination or expiration of this Lease, then, at sole discretion of the State Land Board, Lessee shall forfeit ownership of the Solar Power Generating Facilities and any other Lessee installed improvements, equipment, and personal property, in which case Lessee shall not be entitled to any portion of the proceeds the State Land Board may realize from the sale of such Solar Power Generating Facilities, improvements, equipment, or personal property. After termination of this Lease, and as required for Lessee to satisfy its final reclamation and decommissioning obligations, Lessee shall have a right of access to the Leased Premises for the purpose of satisfying its final reclamation and decommissioning obligations, all within the period prescribed by this Lease.

28. APPROVALS

When approval or consent by one of the parties is required or contemplated by this Lease, such approval or consent must be in writing and shall not be unreasonably withheld, conditioned or delayed.

29. STATE LAND BOARD'S DISCRETION

Whenever the State Land Board's approval, consent or authorization is sought by the Lessee under this Lease, the State Land Board may withhold such approval, consent or authorization in its sole and absolute discretion and shall not be unreasonably withheld, conditioned or delayed.

30. EXISTING LEASES

If this lease is issued subject to any existing leases, Lessee's use of the Leased Premises is subordinate to and must be compatible with the rights and privileges granted to the existing lessees and must not interfere with such rights. No oil and gas reserves are to be stranded by Lessee's use of the surface and Lessee is prohibited from taking an assignment of the oil and gas lease.

If applicable, Lessee must have in place a surface use agreement with the State Land Board's oil and gas lessee prior to installing any Solar Power Facilities on the Leased Premises. Any surface use agreement or similar agreement between Lessee and the State Land Board's oil and gas lessee must be approved in writing by the State Land Board.

31. BOND ($25,000 base plus additional $25,000 per megawatt)

The Lessee shall execute a bond (or other sureties as may be approved by the State Land Board) at the time

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this Lease is executed by the parties, in the amount of $150,000.00. The State Land Board reserves the right to grant relief from or increase the foregoing bond requirements. The State Land Board may require the bond to be held in full force and effect for up to two (2) years after cessation of operations for which the bond was intended. The bond amount will be reviewed every five (5) years and increased as necessary. Should the 5-year review indicate an increase is warranted in response to increased costs for remediation activities covered by said bonds or due to increased rent, the bond amount may be increased proportionate to the rise in costs. The Bond can be used to satisfy any Lessee obligation under this Lease, including but not limited to, payments owed under the Lease, the removal of all Lessee Improvements, and reclamation as required in Section 27.

32. GOVERNMENTAL IMMUNITY

Liability for claims or injuries to persons or property arising from the negligence of the State of Colorado, its departments, institutions, agencies, boards, officials, and employees is controlled and limited by the provisions of the Governmental Immunity Act, C.R.S. § 24-10-101 et seq., and the risk management statues, C.R.S. § 24- 30-1501 et seq., as amended. No term or condition of this Lease will be construed or interpreted as a waiver, express or implied, of any of the immunities, rights, benefits, protections, or other provisions, of the Governmental Immunity Act as applicable now or hereafter amended.

33. INDEMNIFICATION

Lessee assumes all liability arising from the use, occupation or control of the Leased Premises by Lessee under this Lease. This assumption includes, but is not limited to, liability for all personal injuries (including death) and environmental and property damage and destruction. Lessee agrees to defend, indemnify and hold harmless the State Land Board from and against any and all liabilities, losses, damages, liens, expenses, claims, demands, debts, obligations, fines, penalties, suits or actions, judgments, and costs of any kind whatsoever arising from the use, occupation or control of the Leased Premises, caused by any act, omission or neglect of Lessee, or Lessee's employees, agents, guests, invitees, contractors or assigns. Lessee further agrees to indemnify the State Land Board for any costs, including costs of suit and fees for consultants, experts, and attorneys, incurred by the State Land Board in terminating or canceling, enforcing obligations or defending itself against any matter arising under this Lease caused or permitted by Lessee or Lessee's employees, agents, guests, invitees, contractors or assigns. This provision shall survive termination, cancellation or relinquishment of this Lease and any cause of action by the State Land Board to enforce it shall not be deemed to accrue until the State Land Board's actual discovery of said liability, claim, loss, damage, or exposure. This indemnity is in addition to any other indemnity provided for in this Lease. Lessee will not be responsible for any liability caused by persons granted other uses of the Leased Premises by the State Land Board.

34. INSURANCE

Lessee, at its sole cost and expense, shall during the entire term of this Lease procure, pay for and keep in full force and effect an occurrence based general liability insurance policy from an insurance carrier licensed to do business in Colorado, in an amount not less than two million dollars ($2,000,000) per occurrence and four million dollars ($4,000,000) aggregate before the Installation Date, and three million dollars ($3,000,000) per occurrence and six million dollars ($6,000,000) aggregate thereafter, whichever is greater. Lessee, at its sole cost and expense, shall during the entire term of this Lease procure, pay for and keep in full force and effect a property insurance policy from an insurance carrier licensed to do business in Colorado covering all insurable improvements owned by the State Land Board located on the Premises in an amount not less than necessary to cover the replacement cost. All policies shall name the State Land Board as an additional insured, shall provide that the coverage is primary and noncontributory

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over any other insurance coverage available to the State Land Board, its agents and employees and shall include a clause waiving all rights of recovery, under subrogation or otherwise against the State Land Board, its agents and employees. Failure to buy and maintain the required insurance is a default of this Lease. Before starting work under this Lease, Lessee shall, at the State Land Board's request, furnish a certificate of liability insurance, referencing the lease number and reflecting the above requirements. The State Land Board may alter any requirements of this section to meet the requirements of the Colorado Governmental Immunity Act or any requirements determined by the Colorado Office of Risk Management.

35. LIENS AND CLAIMS

Lessee shall not suffer or permit to be enforced against the Leased Premises, or any part thereof, or any improvements thereon, any liens arising from, or any claim for damage growing out of the work of any Lessee requested work or any Lessee-related construction, repair, restoration, replacement, or improvement, or any like claims or demand howsoever the same may arise. Lessee shall pay or cause to be paid all of said liens, claims, or demands before any action is brought to enforce the same against the Leased Premises or improvements. Lessee agrees to defend, indemnify, and hold the State Land Board and the Leased Premises free and harmless from all liability for any and all such liens, claims, demands, and actions together with reasonable attorney fees and all costs and expenses in connection therewith.

Lessee shall, upon commencing construction of any improvements or facilities, prepare a Notice, pursuant to
C.R.S. §38-22-105 and cause the same to be posted for the purpose of protecting the State Land Board against any liens or encumbrances upon the Leased Premises by reason of work, labor, services, or materials contracted for or supplied to Lessee.

36. SURRENDER AND RELINQUISHMENT

Lessee may, at any time, by paying to Lessor all amounts due for the entire term as per Section 7 of this Lease, surrender and cancel this Lease by providing 30 days written notice.

This surrender clause and option herein reserved to Lessee shall cease and become absolutely inoperative immediately and concurrently with the institution of any suit in any court of law by Lessee, the State Land Board or any assignee of either to enforce this Lease, or any of its terms, express or implied, but in no case shall surrender be effective until Lessee shall have made complete restoration, reclamation and protection of the surface rights of the Leased Premises as may be determined by the State Land Board in accord with the terms of this Lease. However, as long as there exists an unpaid Mortgagee, the Lessee shall not seek surrender, cancellation, or release this Lease without obtaining prior written consent from Mortgagee.

Notwithstanding the foregoing, no surrender and relinquishment of this Lease shall be effective unless and until all reports, documents, and information of any kind required to be submitted to the State Land Board under this Lease (e.g. reports, documents, and information required by the State Land Board for the purpose of calculating amounts due from Lessee to the State Land Board under this Lease), or to such state agencies as provided in this Lease, have been submitted to the State Land Board or such state agency. Lessee's surrender and relinquishment shall not release or excuse Lessee from any liability: (i) for known or unknown waste or damage to the leasehold, including environmental damage which arose from, or in connection with Lessee's use or occupancy of the Leased Premises; (ii) to the State Land Board, including all Rent and Production Payments owed, as per Section 7 of this Lease, including future payments; (iii) from the obligation to maintain improvements; or (iv) from any other requirement of this Lease that by its nature is intended to survive the termination of this Lease.

37. HOLDING OVER

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Lessee agrees to surrender possession and occupancy of the Leased Premises peaceably at the termination of the Lease (by expiration or otherwise). If Lessee remains in possession or makes use of the Leased Premises in any way after the termination of this Lease, Lessee will be liable for damages in a minimum amount based on a pro-rated amount of the last year's rental during such holdover possession. The amount of damages will not be less than the rate agreed upon in this Lease, and the State Land Board may set damages that Lessee must be pay during continued occupancy. At the State Land Board's option, the Lessee will be deemed to be in possession of the Leased Premises and to be occupying the same so long as Lessee uses the Leased Premises, or so long as any of Lessee's authorized or unauthorized improvements or personal effects remain on the Leased Premises. Continued occupancy will be a tenancy at sufferance, and will not establish a new or extended lease term or other right, no matter how long maintained and regardless of the State Land Board's knowledge thereof.

38. CONDEMNATION

If the entire Leased Premises shall be taken by a third party in any condemnation proceeding, this Lease shall automatically terminate as of the date of taking. The award for such condemnation shall be paid to the State Land Board, except for any specific award(s) paid to Lessee for its Solar Power Generating Facilities. If only a portion of the Leased Premises is taken by condemnation, Lessee may, at its option, terminate this Lease or terminate only that portion of the Lease so taken.

39. STATE LAND BOARD POLICIES, DIRECTIVES, AND SCHEDULES

This Lease incorporates and Lessee must comply with all applicable policies, directives and schedules, as adopted by the State Land Board as of the Effective Date. Such policies, directives and schedules are available on-line through the State Land Board's official website and through any office of the State Land Board. Lessee is responsible to stay fully informed of all applicable policies, directives and schedules. Lack of actual notice or knowledge of applicable policies, directives and schedules will not provide a defense for any failure to comply. Lessee acknowledges that the State Land Board meets publicly on a monthly basis and at such public meetings may amend or change existing policies, directives and schedules and/or adopt new policies, directives and schedules.

40. BOARD'S AUTHORITY

This Lease is entered into pursuant to the authority granted to the State Land Board by Colorado law.

41. COMPLIANCE WITH LAW

Lessee shall comply with all applicable federal, state or local laws, rules, regulations, permits, codes and ordinances, including without limitation to all federal, state and local environmental, health, safety laws, rules, regulations, permits, codes and ordinances, and Lessee further agrees that competent operational methods shall be used at all times so long as said methods are consistent within the law.

42. RESERVATIONS TO THE STATE LAND BOARD

The State Land Board hereby reserves:

A. Access.

1) The right to access, inspect, and monitor the Leased Premises at all reasonable times by the State Land Board, its employees, agents, lessees, licensees, permittees, contractors or assigns. Lessee hereby grants to the State Land Board, its employees, agents, or contractors a non-revocable license for access on, over, across or through Lessee's other lands during the term of this Lease for access to the Leased Premises.

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2) The State Land Board may access, inspect, and monitor the Leased Premises utilizing all reasonable means and methods, including but not limited to gate counters, game cameras, and Unmanned Aerial Systems (UAS). The use of UAS will be in accordance with applicable Federal Aviation Administration (FAA) rules and regulations. Lessee will cooperate and not interfere with all reasonable means and methods of access, inspection and monitoring including taking actions necessary to comply with FAA rules and regulations.

B. Additional Uses.

1) Minerals: The right to lease all or any portion of the Leased Premises to other persons for the purposes of exploring, producing, mining, extracting, removing all minerals or minerals resources as defined in C.R.S. §§36-1-100.3 and 125 and geothermal resources described in C.R.S. §36-1-147. Any new leases, after the effective date, must be compatible with the rights and privileges granted to Lessee herein.

2) Rights-of-Ways: The right at any time to grant a right-of-way upon, over, under, through, or across all or any part of the Leased Premises for any ditch, reservoir, railroad, communication system, electric power line, pipeline, schoolhouse, or other lawful purpose. Such subsequent grants after the effective date must be compatible with the rights and privileges granted to Lessee herein, and shall be subordinate to the rights of Lessee. Any such subsequent grant of easement or right-of-way upon, over, or across the Leased Premises shall include provisions requiring that any and all damages caused to any structures or Lessee Improvements placed upon the surface of the Leased Premises subsequent to the date hereof shall be repaired by and at the expense of the party to whom the easement or right-of-way was granted.

Together with reasonable and adequate rights of access and surface rights necessary for the convenient exercise of the above reserved rights.

C. Disposition. The right to sell, exchange, or otherwise dispose of all or any portion of the Leased Premises during the term of this Lease subject to the requirements of C.R.S. §36-1-118 (4a)(b) and subject to the this Lease.

D. Reversion. The right to reversion of all interests in the Leased Premises upon termination of this lease.

E. Water Rights. The State Land Board reserves title to all water rights associated or appurtenant to the Premises. In addition, no water, ditch, reservoir, well, spring, seepage or other right, permit, or use of any kind ("Water Right") may be initiated, established, appropriated or adjudicated (for use on or off the Premises) by Lessee without the prior written approval of the Board. All applications and documents pertaining to any such Water Right must be made in the name of the Board, and the Board reserves the right to make or convert any related applications or documents in or to its own name. Any such Water Right, approved or unapproved is the sole and absolute Property of the Board without cost to the Board.

F. Historical, Prehistorical, and Archeological Resources. Title to all historical, prehistorical, and archaeological resources in all lands, rivers, lakes, reservoirs, and other areas owned by the state. Historical, prehistorical, and archaeological resources include all deposits, structures, or objects which provide information pertaining to the historical or prehistorical culture of people within the boundaries of the state of Colorado, as well as fossils and other remains of animals, plants, insects, and other objects of natural history within such boundaries, and in addition to the specific site or deposit, rights-of-way access on state-owned land from a maintained public road for the exploration, protection, preservation, interpretation, and enhancement of the site or deposit proper.

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G. Other. The State Land Board reserves all rights and privileges of every kind and nature not specifically granted to lessee by this Lease.

43. DEFAULT AND FORFEITURE

Subject to the rights of Mortgagee pursuant to Sections 18 of this Lease, the occurrence of any one of the following shall constitute a default and breach of this Lease by Lessee. Notices given under this Section shall specify the alleged default and the applicable Lease provisions, and shall demand that Lessee perform the provisions of this Lease or make payment that is in arrears, as the case may be, within the applicable time period. The occurrence of any of the following shall constitute a default and breach of this Lease by Lessee:

A. Failure to Pay Rent. Any failure of Lessee to pay rent or any other required payments, where the failure continues for a period of thirty (30) days after written notice from the State Land Board to Lessee. Such notice shall not be deemed to be the notice required under Section 23; the State Land Board must separately provide such notice.

B. Failure to Observe Other Provisions. A failure by Lessee to observe or perform any other material provision of this Lease to be observed or performed by Lessee (excluding those not susceptible of cure), where the failure continues for ninety (90) days after written notice by the State Land Board to Lessee. However, if the nature of Lessee's default is such that it cannot reasonably be cured within the ninety (90) day period, Lessee shall not be in default if Lessee commences the cure within the ninety (90) day period and thereafter diligently prosecutes the cure to completion.

C. Other Events of Default. Lessee will be in default if Lessee becomes insolvent or makes any fraudulent transfer against the State Land Board's interest, makes an Assignment without the State Land Board's approval (excluding any assignment authorized by this Lease), abandons the Project, or if a receiver or trustee is appointed for the Lessee.

The State Land Board's rights and remedies, including those not specifically described, shall be cumulative, and the State Land Board may pursue any or all of such rights and remedies, at the same time or separately. Upon the occurrence of a default, the State Land Board shall have the right to terminate this Lease subject to the notice obligations and cure rights set forth in this Lease and to enter onto the Leased Premises or any part thereof, either with or without process of law, and to expel, remove, and put out Lessee or any person occupying the Leased Premises, using such force as may be necessary to do so. In the event of the termination of this Lease by reason of default, Lessee shall surrender and peaceably deliver to the State Land Board the Leased Premises in accordance with the requirements of this Lease. In the event of a default, the State Land Board shall be entitled to recover from Lessee the unpaid fees, rent, Annual Production Payments, royalties, penalties and interest which have accrued up until the time of termination together with interest, and, any other amount necessary to compensate the State Land Board for the Lessee's failure to perform its obligations under this Lease, including, but not limited to the cost of recovering possession of the Leased Premises, the costs of removal of any facilities or temporary improvements; the costs of necessary repairs, renovations, and alterations of the Leased Premises, including the costs to restore the surface to its original condition; reasonable attorney's fees; and any other reasonable costs caused by Lessee's default.

If, upon termination of this Lease for any reason, whether by surrender, forfeiture, or expiration of Term or otherwise, Lessee does not fully comply with the removal and restoration obligations of this Lease, the State Land Board shall hold and retain possession of the Leased Premises, Solar Power Generating Facilities, improvements, equipment and personal property of Lessee as security unto the State Land Board for payment obligations due it, or to protect it against liens, or to indemnify it against any loss or damage sustained by it by reason of the default of Lessee, for which purpose the State Land Board is hereby given a lien upon all such

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Solar Power Generating Facilities, improvements, and equipment, and personal property which lien shall attach as the same are placed upon the Leased Premises. In the event the State Land Board shall foreclose the lien in this article given to it by Lessee, the State Land Board may itself be a purchaser at any sale thereof under such foreclosure.

Upon the termination of this lease for any cause, if Lessee shall remain in possession of the Leased Premises beyond the period required for removal and restoration, as set forth herein, Lessee shall be guilty of an unlawful detainer under the statutes in such case made and provided, and shall be subject to all the conditions and provisions thereof and to eviction and removal, forcibly or otherwise, with or without process of law, as above provided. The reasonable rental of the Leased Premises during the period of the unlawful detainer shall be two
(2) times the current payments to be made by the Lessee under this Lease.

Nothing in this section relieves Lessee of any responsibility for the final restoration and reclamation of the Leased Premises pursuant to the terms of this Lease.

44. TERMINATION

Upon termination, surrender or cancellation of this Lease, Lessee must pay all rental amounts accrued as well as any accrued penalty and interest, must immediately vacate the Leased Premises, must remove all improvements and restore the Leased Premises as directed by State Land Board and required under this Lease.

45. CONDITION OF TERMINATION

At the termination of this Lease at the end of the Lease term or for any other reason, Lessee must surrender and deliver the Leased Premises in as substantially good order and condition as it existed at the beginning of this Lease, except loss by fire, inevitable accident, act of God, damage or neglect not attributable to the Lessee, and ordinary wear and tear. Any personal property remaining upon the Leased Premises after final reclamation in accordance with Section 27.B shall be deemed abandoned. At the State Land Board's option, abandoned personal property may be removed and/or disposed of by the State Land Board at the Lessee's expense, retained by the State Land Board for use by subsequent lessees, sold by the State Land Board with all proceeds going to the State Land Board. The State Land Board may seek reimbursement from the Lessee for all costs associated with removal or disposal of any abandoned personal property. This right to recover costs shall remain in effect after the termination or expiration of this Lease.

46. HEIRS AND SUCCESSORS IN INTEREST

This Lease and all easements and rights granted herein shall burden the property comprising the Leased Premises and shall run with said property. The benefits, terms, and obligations of this Lease shall extend to and be binding upon the heirs, executors, administrators, successors, or assigns of the respective parties hereto.

47. HUNTING

Under no circumstances shall Lessee or any of Lessee's invitees, agents, or contractors hunt on the Leased Premises. The State Land Board expressly reserves the right to hunt or to allow its invitees and licensees to hunt on the Leased Premises, so long as such hunting is done in a safe manner and does not interfere with Lessee's use of the Leased Premises, damage any Solar Power Generating Facilities, or endanger or injure any of Lessee's personnel, business invitees, agents, contractors, or property belonging to Lessee, Lessee's invitees, agents, or contractors. If the State Land Board authorizes any such hunting, the State Land Board shall indemnify Lessee from any such interference, damage, or injury caused by hunting authorized by the State

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Land Board, but not otherwise. Notwithstanding the foregoing, the State Land Board shall not permit any hunting during periods when Lessee's or Lessee's contractors' construction personnel are present on the Leased Premises during construction, decommissioning, or repair of Solar Power Generating Facilities. Such prohibition shall apply to the State Land Board and its employees, invitees, and licensees, and the State Land Board shall include such prohibition in all agreements granting hunting rights on the Leased Premises. The provisions of this Section shall survive termination of this Lease.

48. GENERAL PROVISIONS

A. Historical, Prehistorical, and Archaeological Resources. Under no circumstances may any person destroy, disturb, mar, collect, remove or alter any historical, prehistorical, or archaeological resources of any kind on state lands as provided by law. In the event of discovery of anything of any historical, prehistorical, or archaeological nature, the Lessee must notify the State Land Board immediately.

B. Captions and Headings. The captions and headings in this Lease are for convenience of reference only, and must not be used to interpret, define, or limit its provisions.

C. Representation. This Lease is a legal document with binding obligations. Lessee has had the opportunity to engage legal counsel to review this Lease.

D. Construction Against the Drafter. In the event of an ambiguity in this Lease the rule of construction that ambiguities will be construed against the drafter does not apply and the Parties hereto will be treated as equals and no Party will be treated with favor or disfavor.

E. Counterparts. This Lease may be executed in any number of multiple, identical, original counterparts, each of which shall be deemed to be an original, but all of which taken together shall constitute one and the same agreement.

F. Signatures. Signatures required in this Lease shall be either original "wet" handwritten signatures or digital signatures in accordance with the Colorado State Controller Contract, Grant and Purchase Order Policies regarding the use of digital signatures issued under the State Fiscal Rules. If any signatory signs this Lease using a digital signature in accordance with the Colorado State Controller Contract, Grant and Purchase Order Policies regarding the use of digital signatures issued under the State Fiscal Rules, then any agreement or consent to use digital signatures within the electronic system through which that signatory signed shall be incorporated into this Lease by reference.

G. Entire Agreement. This Lease and all documents incorporated herein by reference represent the entire agreement between the parties hereto. No oral agreement or implied covenant shall be held to vary the provisions hereof.

H. Extinguishment and Replacement. This Lease extinguishes and replaces any prior leases between the Parties related to the Leased Premises upon the Effective Date of this Lease.

I. Insolvency of Lessee. If the Lessee becomes insolvent, bankrupt, or has a receiver appointed, the State Land Board may terminate this Lease. Insolvency as used in this Lease will mean the inability of the Lessee to meet obligations as they come due.

J. Jurisdiction and Venue. The exclusive jurisdiction for all suits, actions, or proceedings related to this Lease will be in the State of Colorado and the exclusive venue will be in the City and County of Denver.

K. Modification.

1) By the Parties: Modifications of this Lease are not effective unless agreed to in writing and signed by both Parties in an amendment to this Lease that is properly executed and approved in accordance with applicable Colorado State law. No waiver, modification, amendment, discharge or change of this

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Lease will be valid unless the same is in writing and signed by the State Land Board. The staff of the State Land Board does not have authority, actual or apparent, to waive, modify, amend, discharge or change any provision of this Lease, except in writing and explicitly authorized by statute, board order or board policy.

2) By Operation of Law: This Lease is subject to such modifications as may be required by changes in Federal or Colorado State law, or their implementing regulations. Any such required modification will be incorporated into and be part of this Lease automatically on the effective date of such change.

L. Notification of State Land Board Meetings. The State Land Board meets monthly with meeting agendas posted on the State Land Board's official website. Meetings are open to the public. All parties are granted an opportunity to speak during the open comment period of each meeting.

M. Severability. If any term or provision of this Lease proves to be invalid, unenforceable, void, or illegal, the remainder of this Lease will not be affected thereby, and will be valid and be enforced as written.

N. Survival of Terms, Conditions, Restrictions, Reservations, and Covenants. Any term, condition, restriction, reservation or covenant that gives rise to any rights or claims of the State Land Board against Lessee shall be deemed to survive the Termination, relinquishment, or abandonment of this Lease until all claims have been settled or resolved.

O. Third Party Beneficiaries. Enforcement of this Lease and all rights and obligations under this Lease are reserved solely to the Parties, and not to any third party. Any services or benefits which third parties receive as a result of this Lease are incidental to the Lease, and do not create any rights for such third parties.

P. False Statements. Any false certification or statement by the Lessee in the application, public disclosure statement or qualification of financial responsibility statement required to be submitted with the application for the Lease, or in any other document or report required to be submitted under this Lease, shall at the discretion of the State Land Board, result in termination of this Lease and an action for damages.

Q. Lessee's Authority. If the Lessee is an entity other than an individual, each individual executing this Lease on behalf of said entity represents and warrants that he or she is duly authorized to execute and deliver this Lease on behalf of said entity and that this Lease is binding upon said entity in accordance with its terms. The Lessee shall deliver a certified copy of the appropriate document evidencing authorization for such execution.

R. Amendments. This Lease shall not be amended or ratified except by written document executed by the parties hereto.

S. Time is of the Essence. Time is of the essence in the performance of this Lease. Unless the context clearly implies otherwise, each and every act to be performed or obligation to be fulfilled by the Lessee under this Lease shall be performed or fulfilled at the Lessee's sole cost and expense. Lessee's failure to perform any of its obligations under this Lease in a timely manner shall be a breach of this Lease.

T. Waiver. Waiver of any breach of a term, provision, or requirement of this Lease or any right or remedy under this Lease, whether explicitly or by lack of enforcement, will not be construed or deemed as a waiver of any subsequent breach of such term, provision or requirement, or of any other term, provision, or requirement. No employee or agent of the State Land Board has the power, the right, or authority to orally waive any conditions, covenants or agreements of this Lease, and no waiver

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by the State Land Board of them shall be effective unless in writing The acceptance of performance, rent, or any other sum owing by the State Land Board following a breach by the Lessee of any provision of this Lease, will not constitute a waiver of any right of the State Land Board with respect to such breach. The State Land Board will be deemed to have waived any right only if the State Land Board expressly does so in writing.

U. Executed by the State Land Board. No failure by either party to exercise and no delay in exercising any right, power or privilege hereunder will operate as a waiver hereof, nor will any single or partial exercise of any right or privilege hereunder preclude further exercise of the same right or the exercise of any right hereunder.

V. No Joint Venture – The State Land Board is not and will not be construed to be a partner, joint venturer or associate of Lessee in the conduct of the business of Lessee. the State Land Board shall not be liable for any debts incurred by Lessee in the conduct of Lessee's business.

W. No Other Covenants, Representations, or Warranties. The parties make no covenants, representations, or warranties, except as expressly set forth in this Lease.

X. Colorado Open Records Act ("CORA") Disclosure

To the extent not prohibited by federal law, this lease and the performance measures if any, are subject to release through CORA, C.R.S. § 24-72-200.0 et seq.

49. ADDITIONAL CONDITIONS

None

[Signature Page Follows]

IN WITNESS WHEREOF, the Lessor and the Lessee, by their signatures below, agree to the terms of this Lease:

CLAY CREEK ENERGY LLC, a wholly owned subsidiary of Sandhills Energy, LLC

Signed by:
By: Eric Johnson
E9A8B1819DFA440...
Signature

10/1/2025
Date

Eric Johnson
Printed Name

President
Title

STATE OF COLORADO BY THE
STATE BOARD OF LAND COMMISSIONERS

DocuSigned by:
By: David Rodenberg
E3F886F5513E421...
David S. Rodenberg,
Renewable Energy Program Manager

Date: 10/1/2025

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EXHIBIT A
SOLAR ENERGY PRODUCTION LEASE NO. 117537

THE LEASED PREMISES

Meridian	Township	Range	Section	Description of Land	Acres	Type	County
6	23S	46W	16	portion of the SW	30	Surface	Prowers

Containing 30 acres, more or less

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EXHIBIT A
Leased Premises-Legal Description

A tract of land lying in the SW1/4SW1/4 of Sec. 16, T.23S., R.46W. of the 6th P.M. being more particularly described as follows:

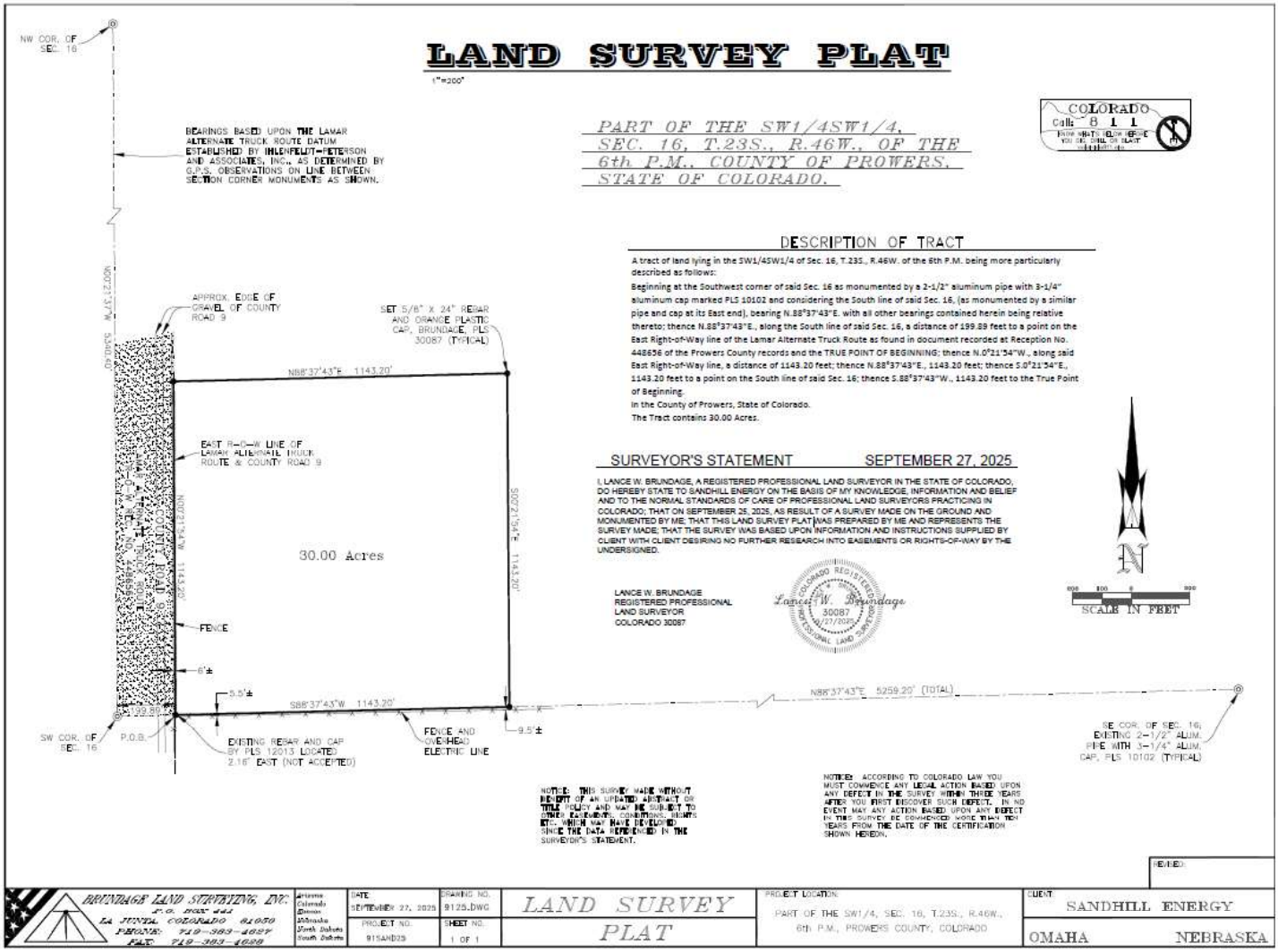
Beginning at the Southwest corner of said Sec. 16 as monumented by a 2-1/2" aluminum pipe with 3-1/4" aluminum cap marked PLS 10102 and considering the South line of said Sec. 16, (as monumented by a similar pipe and cap at its East end), bearing N.88°37'43"E. with all other bearings contained herein being relative thereto; thence N.88°37'43"E., along the South line of said Sec. 16, a distance of 199.89 feet to a point on the East Right-of-Way line of the Lamar Alternate Truck Route as found in document recorded at Reception No. 448656 of the Prowers County records and the TRUE POINT OF BEGINNING;

thence N.0°21'54"W., along said East Right-of-Way line, a distance of 1143.20 feet;
thence N.88°37'43"E., 1143.20 feet;
thence S.0°21'54"E., 1143.20 feet to a point on the South line of said Sec. 16; thence S.88°37'43"W., 1143.20 feet to the True Point of Beginning. In the County of Prowers, State of Colorado.

The Tract contains 30.00 Acres.

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EXHIBIT A
Leased Premises-Survey
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EXHIBIT B
(Reserved)

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EXHIBIT B
(Reserved)

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EXHIBIT C
Leases and Rights-of-way on Leased Premises

Leases and ROW: Current			
Lease No.	**Type**	**Lessee**	**Description**
116784	Agricultu	Rex Hiner	Grazing

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EXHIBIT D
Best Management Practices

To ensure the responsible development of renewable energy on state trust land, the Colorado State Board of Land Commissioners (the "Board") requires renewable energy developers ("Lessee") to incorporate Best Management Practices into the development of proposed projects. The outcomes that the Board is interested in achieving include:

1. A clear understanding of existing conditions and the developer's plans to avoid/mitigate impacts to wildlife and other sensitive natural resources on Trust assets.
2. Review and input by local authorities and other applicable regulatory agencies at the appropriate time in the process.
3. Minimize conflicts with other Board lessees.
4. Appropriate and successful site restoration at the end of construction activity and again at the end of the project life.

Requirements:

1. Avoiding/Minimizing Impacts - In selecting sites for construction, the lessee will focus on options that avoid critical wildlife habitats, over the use of mitigation strategies.
2. Wildlife Protection - The lessee completed a habitat assessment on 11/11/2024. The report did not identify any species that are considered Protected, Threatened and/or Endangered Species that may be in or near the project area. The lessee will continue to work with Colorado Parks and Wildlife (CPW) United States Fish and Wildlife Service and all other agencies with appropriate regulatory authority to avoid, minimize or mitigate impacts if identified. Additionally, the lessee completed a section 106 review. The State Historic Preservation Office did not find any historic properties.
    - In the event there are siting or operational conflicts with the wildlife recommendations made by CPW or contained in these Best Management Practices, and the recommendations cannot be followed, lessee shall contact CPW to initiate further discussion between CPW, State Land Board staff and the lessee to identify appropriate mitigation measures.
    - Coordinate with the County to determine noxious weed management requirements. Should management of List B and C noxious weed populations be required, the Lessee shall submit a Project Noxious Weed Management Plan detailing methods of integrated management and control within the Property.
3. Wildlife Study Protocols - The lessee will implement a plan to conduct appropriate wildlife studies and monitoring if required Colorado Department of Parks and Wildlife recommendations and protocols. Similar methods should be used for all required studies so that valid comparisons can be made over time. If requested, all research data (observed, written, recorded, GPS files, etc.) collected by the lessee or its consultants and contractors will be made available for Board review.
4. Stipulations and Conditions to Production Permits - Conditions and recommendations made in the local review and approval process will become required conditions of Board Production Lease approval and attached to leases as exhibits.
5. Construction and Operational Considerations - The lessee will prepare and submit to the Board an operations plan that generally describes the steps that will be taken to minimize operational impacts on the property and minimize conflicts with the operations of any other Board lessees on the property.
6. Reclamation and Decommissioning - The lessee will provide to the Board a long-term decommissioning and reclamation plan that describes the actions that will be taken when lessee decommissions any infrastructure included in the facility. Decommissioning plans should include timing to decommission individual or project wide infrastructure and plans to reclaim areas back to pre-construction conditions.

EXHIBIT D - GEOTECHNICAL REPORT

GEOTILL Inc.

Geotechnical Engineering • Subsurface Exploration • Construction Testing and Material Engineering

GEOTECHNICAL ENGINEERING INVESTIGATION
Proposed Lamar Clay Creek Energy
(38.043839°, -102.593004°)
Lamar, CO
GEOTILL Project No. 112449706

Prepared For:

Sandhills Energy
1403 Harney Street #100
Omaha, NE 68102

Attn: Mr. Marco Giannakouros
Director, Procurement & Permitting

February 12, 2025

GEOTILL ENGINEERING, INC.
Headquarter: 7732 Loma Court
Fishers, IN 46038
Ph. 317-449-0033 Fax 317- 285-0609 (info@geotill.com)

Geotechnical and Construction Materials Testing Professionals

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GEOTILL
ENGINEERING, INC.

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Fax 317.285.0609
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Geotechnical Engineering • Subsurface Exploration • Construction Testing and Material Engineering

February 12, 2025

Sandhills Energy
1403 Harney Street #100
Omaha, NE 68102

Attention: Mr. Marco Giannakouros
Director, Procurement and Permitting

Re: Geotechnical Engineering Investigation
Proposed Lamar Clay Creek Energy
(38.043839°, -102.593004°)
Lamar, CO
GEOTILL Project No. 112449706

Gentlemen:

Submitted herewith is the report of our geotechnical engineering investigation for the referenced project. This study was authorized in accordance with GEOTILL Proposal PE-07201124 dated July 23, 2024.

This report contains the results of our field and laboratory testing program, an engineering interpretation of this data with respect to the available project characteristics and recommendations to aid design and construction of foundations and other earth-connected phases of this project. We wish to remind you that we will store the samples for 30 days after which time they will be discarded unless you request otherwise.

We appreciate the opportunity to be of service to you on this project. If we can be of any further assistance, or if you have any questions regarding this report, please do not hesitate to contact either of the undersigned.

Sincerely,

GEOTILL INC.



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GEOTECHNICAL ENGINEERING INVESTIGATION
Proposed Lamar Clay Creek Energy
(38.043839°, -102.593004°)
Lamar, CO
GEOTILL Project No. 112449706

1.0 PURPOSE AND SCOPE

The purpose of this study was to determine the general subsurface conditions at the project site by drilling five (5) soil test borings, classifying and collecting soil samples from the soil borings for laboratory testing, and evaluate this data with respect to foundation concept and design for the Proposed Lamar Clay Creek Energy project in Lamar, CO. Also included is an evaluation of the site with respect to potential construction problems and recommendations dealing with earthwork and quality control during construction.

2.0 PROJECT CHARACTERISTICS

It is our understanding that Sandhills Energy is planning the construction of a new solar project located at coordinates (38.043839°, -102.593004°) in Lamar, CO. The location of the proposed construction site is shown on Figure 1 in the Appendix. The ground surface at the site is characterized as relatively sloping east and grass covered.

The general soil test boring layout of the project is shown on Figure 2 in the Appendix. The proposed structures will be solar arrays, various equipment structures, and access roads. We understand the solar structures will be supported by driven steel piles. Equipment structures will be supported by mat foundations, or possibly on a structural frame supported by similar driven steel piles.

It is our understanding that the proposed finish elevation is not provided at this time; however, we anticipate finished grade will be within 2 feet of existing grade on each parcel.

The project will have service access roads that have low-volume of traffic, and it only needs to be aggregate-surfaced with native or chemically stabilized soil subgrades.

Details regarding structural loads are not available at this time; however, for the purpose of this study it has been assumed based on similar projects using single axis tracking rack systems:

- Downward: 1½ to 4 kips
- Lateral 1 to 3½ kips
- Uplift: 1½ kips (exclusive of frost heave loads)

No unusual loading conditions or settlement restrictions have been specified.

3.0 GENERAL SUBSURFACE CONDITIONS

3.1 Subsurface Soil Conditions

The general subsurface conditions were investigated by proposing to drill five (5) soil test borings (B-1 through B-5) to a depth of twenty (20.0) feet within the area of the proposed site as shown in the Boring Plan (Figure 2 in the Appendix). However, all soil test borings met early auger refusal; (B-1) at a depth of 12 ft, (B-2) at a depth of 13.5 ft, (B-3) at a depth of 13ft, (B-4) at a depth of 12.5 ft, and (B-5) at a depth of 14 ft. The subsurface conditions disclosed by the field investigation are summarized in the following paragraphs. Detailed descriptions of the subsurface conditions encountered in each test boring are presented on the test boring logs in the Appendix. The letters in parentheses following the soil descriptions are the soil classifications in general accordance with the Unified Soil Classification System. It should be noted that the stratification lines shown on the soil boring logs represent approximate transitions between material types. In-situ stratum changes could occur gradually or at slightly different depths.

Soil test borings B-2 had 1.0 inch of topsoil. Soil test borings B-2, B-3, B-4 and B-5 had layers of very lose to medium dense fine Sand (SP) from depths of 0.0 ft to 7.0 ft, and ended with very stiff to hard silty Clay (CL) to termination at 12.5, 13.5 ft and 14 ft. Soil test boring B-1 had a layer of stiff sandy Clay (CL) from depths of 0.0 to 4.5 ft, and ended with very stiff to hard silty Clay (CL) to termination at 12 ft. Soil test borings B-2, B-03, B-04, and B-5 had layers of very loose or loose soil which are an area of concern. The consistency of the cohesive soils and the density of the cohesionless soils were estimated based upon the results of the standard penetration test (ASTM D-1586).

Zones of very loose or loose soil encountered at the site are summarized in the table shown below:

Very Loose or Loose Soils

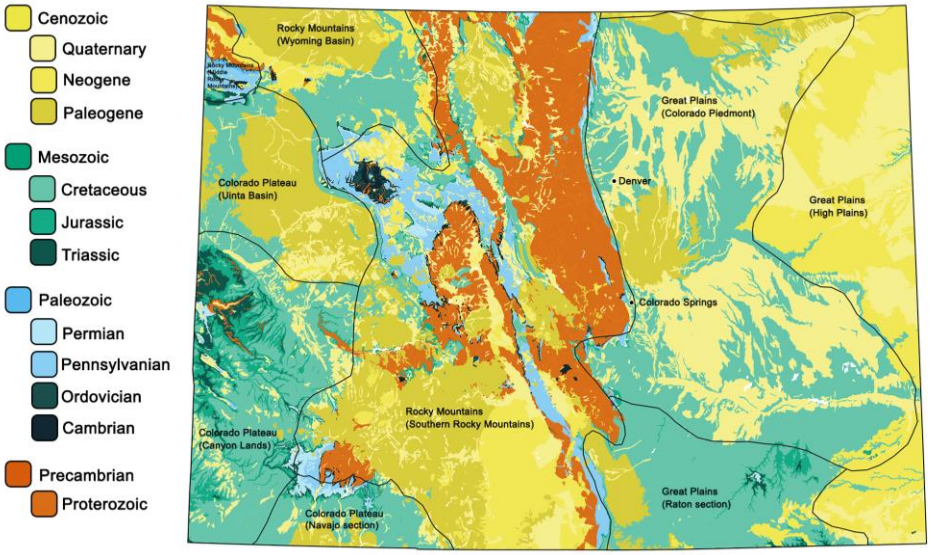
Boring No.	Soil Type	Depth, ft	Density/ Consistency
B-2	fine Sand (SP)	0.0 – 4.5	Loose
B-3, B-4, B-5	fine Sand (SP)	0.0 – 4.5	Very Loose
B-3, B-4, B-5	silty Sand (SM)	4.5 – 7.0	Loose

3.2 Groundwater

Ground water observations are made during the drilling operations by noting the depth of water on the drilling tools and in the open boreholes following withdrawal of the drilling augers. No free ground water was noted in test borings upon completion and on tooling during drilling activities. It should be noted that short-term ground water readings in the test borings are not usually a reliable indication of the actual ground water level and that fluctuations in the level of the ground water should be expected due to variations in rainfall and other factors.

3.3 Regional Geology

Lamar, Colorado, is situated in the High Plains region, characterized by flat to gently rolling terrain composed primarily of Quaternary alluvial deposits and eolian (windblown) sediments. The area lies within the Great Plains physiographic province, with underlying bedrock formations from the Cretaceous period, such as the Dakota Sandstone and the Graneros Shale, occasionally exposed in nearby areas. These formations are associated with ancient shallow seas that once covered the region. The surface geology includes sand dunes, loess deposits, and river terraces formed by the Arkansas River, which has played a significant role in shaping the local landscape over time.



Geologic Maps of Colorado

3.4 Site Seismic Class

Based on geologic mapping, the results of the test borings, it is our opinion that the subsurface conditions at this site meet the criteria for Site Class C based on the International Building Code (Chapter 20 of ASCE 7-16 "Minimum Design Loads for Buildings and Other Structures"). The basic seismic parameters are summarized in the following table:

Basic Parameters

Name	Value	Description
S_S	0.105	MCE_R ground motion (period=0.2s)
S_1	0.04	MCE_R ground motion (period=1.0s)
S_{MS}	0.136	Site-modified spectral acceleration value
S_{M1}	0.06	Site-modified spectral acceleration value
S_{DS}	0.091	Numeric seismic design value at 0.2s SA
S_{D1}	0.04	Numeric seismic design value at 1.0s SA

3.5 Thermal Resistivity Test Results

Geotill performed the laboratory thermal resistivity testing on samples obtained from the upper 4 feet bgs at one location (B-5). One sample was remolded to 90% of the maximum standard Proctor dry density and an undisturbed sample was tested for thermal resistivity.

We recommend that the thermal resistivity results be discussed with an electrical design team to determine the influence on cable type and backfill materials. The test results are presented in the Appendix.

4.0 SUMMARY OF FINDINGS AND RECOMMENDATIONS

The following findings and recommendations have been developed on the basis of the previously described project characteristics (Section 2.0) and subsurface conditions (Section 3.0). If there is any change in these project criteria, including project location on the site, a review should be made by this office.

4.1 Frost Considerations

The typical frost depth in this area for foundation design frost considerations is 32 inches below final grades. Critical foundations and pipes should be placed below the frost depth or on non-frost susceptible soil extending to the frost depth for protection against frost, unless they are designed to accommodate the effects of frost heave. Based on the provided information, the solar arrays for this project are anticipated to be supported by deep foundations. The deep foundations should be designed to resist design loads including compression, uplift, and lateral forces, as well as forces that can be induced by frost heave action. Frozen soil contact on deep foundations in this zone can cause significant upward loading. If the anchorage of the foundations and the deadweight of the structure is not sufficient to resist these forces, it can cause uplift to structures. Based on our review of soil samples and published soil maps of the area, we recommend that an adfreeze stress (frost heave) of 1,500 psf acting along the pile/shaft perimeter within a reduced 1 foot frost depth.

4.2 Spread Footing and Mat Foundations

It is our opinion that the proposed electrical equipment on the project can be supported on spread footings provided that any unsuitable materials, any uncontrolled fill material, or soft or organics soil are first removed at the proposed footing locations and replaced with engineered fill. Any loose sandy soil shall be compacted under the foundation. Footings that bear on firm natural soil (or on well-compacted engineered fill that is placed over firm natural soil) can be designed for a net allowable soil pressure of 2,500 lbs/sq.ft. for both column (square type) and wall (strip type) footings. It is important that the soil at the base of each footing excavation be carefully inspected as described in Section 5.3 to ensure that pockets of soft natural soils and any unsuitable materials are identified and removed from beneath the footings and that the footings will bear on suitable materials.

Mat foundations are considered suitable for the support of inverters, transformers, and other ground mounted equipment on the project. The mat foundation can be designed for a net allowable soil pressure of 3,000 lbs/sq.ft. A vertical modulus of subgrade reaction of 125 pounds per cubic inch (pci) may be used for mat foundations bearing on 1 foot of compacted structural fill and 1 foot of compacted native soils. If 12 inches of additional engineered structural fill is placed below the slab, this value may be increased by 50 pci.

In using net pressure, the weight of the footing and backfill over the footing need not be considered; hence, only loads applied at or above the finished area need to be used for dimensioning the footings. Isolated footings should be at least 2 ft. wide and continuous footings should be at least 1.5 ft. wide for bearing capacity considerations.

Provided that the footings are designed as prescribed herein and inspected as outlined in Section 5.3, it is estimated that the total and differential foundation settlements should not exceed about 1 in. and 0.75 in., respectively. Careful field control will contribute substantially to minimizing the settlements.

Lateral forces on a shallow spread footing can be resisted by the passive lateral earth pressure against the side of the footing and by friction between the subgrade soil and the base of the footing. An allowable passive pressure of 500 lbs./sq.ft can be used for that portion of the footing that is below a depth of 2.5 ft. below the final exterior grade (no portion of the footing above this depth should be used for lateral resistance). An allowable coefficient of friction (between the base of the footing and the underlying soil) of 0.3 can be used in conjunction with the minimum downward load on the base of the footing.

Uplift forces on the footings can be resisted by the weight of the footings and the soil material that is placed over the footings. It is recommended that the soil weight be limited

to that immediately above and within the perimeter of the footings (unless a much higher factor of safety is used). A total soil unit weight of 110 lbs./cu. ft. can be used for the backfill material above the footings, provided it is compacted as recommended in Section 5.2. It is also recommended that a factor of safety of at least 1.3 be used for calculating uplift resistance from the footings (provided only the weight of the footing, and the soil immediately above it, is used to resist uplift forces).

4.3 Deep Foundations

The following sections contain parameters that may be used for deep foundation analysis.

4.3.1 Driven Pile Foundation

It is expected that PV modules will be supported by steel racking systems mounted on shallow steel wide-flange (W-section) piles. Consideration should also be given to scour potential due to surface water runoff, in particular where grubbing activities have disturbed the ground surface and where topographic relief is steep.

For solar farm projects, W-sections (Wide Flange Beams) used for piles (foundations) are typically chosen based on structural requirements, soil conditions, and load-bearing capacity. The most common W-section steel beams used for solar farm piles are:

1- W6x9, W6x12, W6x15
   - These are lightweight and cost-effective for standard soil conditions.
   - Typically used in smaller solar farms or areas with moderate wind loads.

2- W8x10, W8x13, W8x15, W8x18
   - More robust than W6 sections, offering greater bending resistance.
   - Preferred for larger solar projects or higher wind load areas.

3- W10x12, W10x15, W10x17
   - Used in softer soil conditions where deeper embedment is needed.

- Offers increased structural capacity.

The axial and lateral capacity recommendations provided in this section are based on correlations to field and laboratory data, as well as Geotill's experience with similar sites in the region. The recommendations provided should be considered preliminary and should be re-evaluated after a comprehensive pile load testing program has been performed. The discussion and recommendations may also be used for preliminary design of W-section pile foundations.

4.3.1.1 Pile Constructability

No pile load testing program was performed as a part of this investigation. Based on the conditions encountered during geotechnical drilling, it appears feasible to successfully drive piles throughout the project site. Significant shallow pile refusals are unlikely to occur on site. The constructability of driven piles should be evaluated as a part of a comprehensive pile load testing program.

4.3.1.2 Pile Axial Capacity

Deep foundations will develop their capacity through a combination of skin friction and end bearing when in compression and skin friction alone when in uplift. The Table below provides recommended skin friction and end bearing values for preliminary design of the driven pile foundations. These recommendations should be re-evaluated following a comprehensive pile load testing program. Skin friction and end bearing values provided below are ultimate and can be interpolated between provided depths, additionally, they do not include a safety factor. A safety factor of 2.0 is recommended when determining load bearing and uplift capacity.

Depth (ft)	Ultimate Skin Friction (psf)	Ultimate End Bearing (psf)
0-1		
1-6.5	20-200	neglect
6.5-10	200-300	1000-3200
10-Rock Rock Depth (12 to 14 ft)	300-2500	3200-5000

Consideration should be given to neglecting skin friction within at least the upper 12 inches of embedment to account for the potential for erosion/scour; additionally, the skin friction should be ignored when analyzing frost heave uplift. Skin friction should be applied to the surface area of a wide-flange beam based on the "rectangular" perimeter of the pile, taken as twice the sum of the flange width and web depth. End bearing should be applied to the full "rectangular" area at the bottom of piles in compression (i.e. flange width times web depth).

4.3.1.3 Pile Lateral Capacity

The lateral capacity of driven pile foundations was evaluated using correlations to field and laboratory data, as well as Geotill's experience with similar sites in the region. A comprehensive pile load testing program should be completed prior to pile design. The lateral response of the piles may be modeled using the software program LPile. The recommended LPile soil model input parameters for preliminary design of driven wide-flange beam foundations are provided in the Table below. Shallower embedment depths may be acceptable provided the piles meet practical refusal and pass production pile load testing, although this should be confirmed during the pile load testing program.

Depth (ft)	LPile Soil Model	Effective Unit Weight (pcf)	Undrained Shear Strength (psf)	Friction Angle (deg)
0-1				
1-7	Sand	115	-	28
7-Rock	Clay	120	5000	-

4.4 Pavement

Based on the results of classification tests and our experience with similar soils, a California Bearing Ratio (CBR) value of 3 has been estimated for use in pavement design for the untreated subgrade soils encountered at this site, however for the treated compacted soil a California Bearing Ratio (CBR) value of 8 can be used. The subgrade soils should be prepared and inspected as described in Sections 5.1 and 5.2 of this report.

Details regarding site grading in pavement areas are not available at this time; however, depending upon grading requirements and seasonal conditions, it is likely that the pavement subgrade in some areas will be wet, soft, or yielding at the time of construction. If at the time of construction, the subgrade is found to be excessively wet, soft, or yielding, it is recommended that the subgrade soils be stabilized by disking, aerating and recompacting. However, if it is not possible to improve the subgrade soils in this manner because of weather conditions, scheduling, or other conditions (which is often the case), it is recommended that the subgrade soils be stabilized / modified either by using hydrated lime, by using a geogrid with additional crushed stone placed over the subgrade, or by removal and replacement of the unstable soils. The best method for stabilizing the pavement subgrade should be determined in the field at the time of construction based upon the actual field conditions in conjunction

with the specific soil type encountered at the locations requiring stabilization, the size of the areas requiring stabilization and the construction schedule.

The pavement subgrade surface should be uniformly sloped to facilitate drainage through the granular base and to avoid any ponding of water beneath the pavement. The storm water catch basins in pavement areas should be designed to allow water to drain from the aggregate base into the catch basins. At a minimum, subsurface trench drains should be included that extend out at least 20 ft. from the catch basins.

The following report sections outline recommendations for asphalt and concrete pavements for automobile parking areas and truck zones. It is important to note that the recommendations for the automobile parking areas are based on the assumption that these areas will not be subject to any heavy truck traffic. Therefore, in areas where truck traffic cannot be controlled (i.e., driveways), it is suggested that the thicker pavement section be utilized.

4.4.1 Asphalt Pavement

Based on a CBR value of 3 (untreated) and 8 (treated), a design period of 20 years, normal traffic for this type of facility and the conditions encountered at the site, the following asphalt pavement sections are recommended:

Automobile Parking Areas	3 in. of asphaltic concrete over 6 in. of granular base.
Driveway Areas and Truck Zones	4.5 in. of asphaltic concrete over 10 in. of granular base.

The base should be a well-graded crushed stone with a maximum of 10 percent (by weight) finer than the No. 200 sieve.

4.4.2 Concrete Pavement

Concrete pavement thicknesses were determined from methods developed by the Portland Cement Association (PCA), the American Association of State Highway and Transportation Officials (AASHTO), and the American Concrete Institute (ACI). These methods assume that the subgrade is firm, well-compacted, and non-pumping and that all joints are properly designed, located, and sealed to minimize moisture inflow to the subgrade. It is also important to ensure that proper concrete curing practices will be employed and that traffic will not be allowed until the concrete has had sufficient time to cure.

For design calculation purposes, the compressive strength of the concrete was assumed to be 4,000 lbs./sq.in. (or a modulus of rupture of about 625 lbs./sq.in.). The modulus of subgrade reaction (k_{30}) was estimated to be 125 lbs./cu.in.

Based on the above information, the following concrete pavement sections were determined:

Automobile Parking Areas	5 in. of concrete over a well-compacted, non-pumping subgrade.
Driveway Areas and Truck Zones	8 in. of concrete over a well-compacted, non-pumping subgrade.

The performance of the concrete paving section is highly dependent on controlling the pumping of the subgrade soils. Although no wet surface soils were noted at the time of this study, it is important that surface drainage be controlled to prevent water from ponding in pavement areas.

4.4.3 Gravel Pavement and Access Roadways

Aggregate thickness designs for the project can be performed in accordance with the "Department of the Army, Technical Manual 5-822-12, Design of Aggregate Surfaced Roads and Airfields".

Based on a review of pertinent project data, the following recommendations are offered:

- Slope ground away from the gravely paved areas. Avoid forming pockets that will collect and retain the free flow of surface water. In grading the sub-grade, divert surface water to the sides. For satisfactory drainage, a minimum gradient of 1.0 percent in the direction of drainage is recommended.
- Sub-grade shall be free of ruts, depressions, and irregularities.
- Proofroll the sub-grade.
- Remove and undercut any unsuitable material, found, as directed by the geotechnical engineer.
- Place and compact 6 inch of AASHTO stone No. 3 aggregate base.
- Place and compact 12 inch of the existing aggregate or AASHTO No. 56 aggregate.
- For the granular layers, the material will be compacted to 100 percent of the maximum standard proctor density.
- Test and inspect subgrades and each fill layer. Proceed with subsequent earthwork only after test results for previously completed work complies with requirements and approved by the geotechnical representative. At subgrade and at each compacted fill layer. At least one test for every 2000 sq. ft. or less of aggregate area, but in no case fewer than three tests.

Stone # 3 and # 56 can have graduation as shown on the table below:

2 1/2 in. (63 mm)	100									
2 in. (50 mm)	80 - 100									
1 1/2 in. (37.5 mm)		100					100		100	
1 in. (25 mm)	0 - 25	85 - 98	100				70 - 90	100	80 - 100	100
3/4 in. (19 mm)	0 - 10	60 - 85	75 - 95	100			50 - 70		70 - 90	90 - 100
1/2 in. (12.5 mm)	0 - 7	30 - 60	40 - 70	60 - 85	100	100	35 - 50		55 - 80	60 - 90
3/8 in. (9.5 mm)		15 - 45	20 - 50	30 - 60	75 - 95	95 - 100				
No. 4 (4.75 mm)		0 - 15	0 - 15	0 - 15	10 - 30	50 - 80	20 - 40		35 - 60	35 - 60
No. 8 (2.36 mm)		0 - 10	0 - 10	0 - 10	0 - 10	0 - 35	15 - 35		25 - 50	
No. 30 (600 um)						0 - 4	5 - 20		12 - 30	12 - 30
No. 200 (75 um)[2]							0 - 6.0		5.0 - 10.0[4]	5.0 - 12.0
Decant (PCC)[3]		0 - 1.5	0 - 1.5	0 - 1.5	0 - 1.5	0 - 1.5		0 - 1.5		
Decant (Non-PCC)	0 - 2.5	0 - 2.5	0 - 3.0	0 - 2.5	0 - 2.5	0 - 2.0		0 - 2.5		

The aggregate roadways or parking lots can be permanent, if periodic maintenance carried out. The two primary causes of deterioration of aggregate surfaced roads or parking lots requiring frequent maintenance are the environment and traffic. Rain or water flow will wash fines from the aggregate surface and reduce cohesion, while traffic action causes displacement of surface materials. The frequency of maintenance will be high for the first few years of use but will decrease over time to a constant value. The majority of the maintenance will consist of periodic grading to remove the ruts and potholes that will inevitably be created by the environment and traffic and to replace fines. Occasionally during the lifetime of the aggregate roadways or parking lots, the surface layer may have to be scarified, additional aggregate added to increase the thickness back to that originally required, and the wearing surface re-compacted to the specified density.

4.5 Site Grading

Adequate drainage should be provided at the site to minimize any increase in moisture content of the foundation soils. The exterior grade should be sloped away from the structure to prevent ponding of water.

5.0 GENERAL CONSTRUCTION PROCEDURES AND RECOMMENDATIONS

Since this investigation identified actual subsurface conditions only at the test boring locations, it was necessary for our geotechnical engineers to extrapolate these conditions in order to characterize the entire project site. Even under the best of circumstances, the conditions encountered during construction can be expected to vary somewhat from the test boring results and may, in the extreme case, differ to the extent that modifications to the foundation recommendations become necessary. Therefore, we recommend that GEOTILL be retained as geotechnical consultant through the earth-related phases of this project to correlate actual soil conditions with test boring data, identify variations, conduct additional tests that may be needed and recommend solutions to earth-related problems that may develop.

5.1 Site Preparation

All areas that will support pavements or slabs or pads should be properly prepared. After rough grade has been established in cut areas and prior to placement of fill in all fill areas, the exposed subgrade should be carefully inspected by the geotechnical engineer or a qualified soils technician by probing and testing as needed. All old pavement, organic material, frozen, wet, soft or loose soil and other undesirable materials should be removed and replaced with well compacted engineered fill. The exposed subgrade should furthermore be inspected by proofrolling with suitable equipment to check for pockets of soft material hidden beneath a thin crust of better soil. Any unsuitable materials thus exposed should be removed and replaced with well-compacted, engineered fill as outlined in Section 5.2.

Care should be exercised during the grading operations at the site. Due to the nature of the near surface soils, the traffic of construction equipment may create pumping and general

deterioration of the shallower soils, especially if excess surface water is present. The grading, therefore, should be done during a dry season, if at all possible.

5.2 Fill Compaction

All engineered fill beneath slabs, pads, footings and pavements should be compacted to a dry density of at least 98 percent of the standard Proctor maximum dry density (ASTM D-698). The compaction should be accomplished by placing the fill in about 8 in. (or less) loose lifts and mechanically compacting each lift to at least the specified minimum dry density. Field density tests should be performed on each lift as necessary to ensure that adequate moisture conditioning and compaction is being achieved.

Compaction of any fill by flooding is not considered acceptable. This method will generally not achieve the desired compaction and the large quantities of water will tend to soften the foundation soils.

All natural soils encountered in the test borings made at this site are considered suitable as general fill material except any soils that has more than 4 % organics. While only well-graded granular material (such as sand and gravel or crushed stone) should be used for fill under footing (see Figure 3), any old fill material (provided it does not contain large amounts of debris) and clayey/silty soil may be used under floor slabs and pavements. The need for some aeration of the more clayey soils should be expected before they can be placed and compacted to the specified density. Old fill containing more than trace amounts of debris should not be re-used.

5.3 Foundation Excavations

As noted in Section 4.2, it is essential that all fill and loose sand be removed at footing locations and that the footings bear on the medium dense to very dense sand and gravel

after removal of the unsuitable materials. Recommended procedures for undercutting unsuitable materials along footing lines are provided in Section 4.2. All foundation excavations must be inspected by the geotechnical engineer or a qualified soils technician to ensure that these unsuitable materials are identified and removed at footing locations and that the foundations will bear on satisfactory material. At the time of such inspection, it will be necessary to make hand auger borings or dig test pits in the base of the foundation excavation to ensure that the soils below the base are satisfactory for foundation support. The necessary depth of penetration will be established during inspection based on the depth of medium dense to dense sand and gravel.

After undercutting unsuitable materials, the proposed footing elevation may be reestablished by backfilling after all undesirable materials have been removed. The undercut excavation beneath each footing should extend to suitable bearing soils. The dimensions of the excavation base should be determined by imaginary planes extending outward and downward on a 2 (vertical) to 1 (horizontal) slope from the base perimeter of the footing (see Figure 3 in the Appendix). The entire excavation should then be refilled with compiled fill as shown in Figure 3. The engineered fill below the footing should be limited to lean concrete. Special care should be exercised to remove any sloughed, loose or soft materials near the base of the excavation slopes. In addition, special care should be taken to "tie-in" the compacted fill with the excavation slopes with benches as necessary. This is to ensure that no pockets of loose or soft materials will be left in place along the excavation slopes below the foundation bearing level.

Depending on the relative depths and locations of the footings and the need to remove unsuitable soils at footing locations, bracing or underpinning may be needed to protect the existing facilities. Where an open cut is possible, it is recommended that the side slopes

of excavations deeper than 5 ft be made not steeper than 1.5 horizontal to 1 vertical. All federal, state and local safety regulations should be followed in this regard.

Soils exposed in the bases of all satisfactory foundation excavations should be protected against any detrimental change in condition such as from disturbance, rain and freezing. Surface run-off water should be drained away from the excavation and not allowed to pond. If possible, all footing concrete should be placed the same day the excavation is made. If this is not practical, the footing excavations should be adequately protected.

5.4 Construction Dewatering

No serious dewatering problems are anticipated unless it becomes necessary to excavate below the ground water level. At the time of our investigation, the ground water level appeared to be below the anticipated spread footing excavation depths. However, depending on the seasonal conditions, some seepage into shallow excavations may be experienced. It is anticipated that any such seepage into shallow excavation will percolate downward through the granular subsurface soils or can be handled by conventional dewatering methods such as by pumping from sumps located outside the zone of influence of the footings. This method, however, will not be effective for any excavation that extends below the actual ground water level. In this case, it would be necessary to pump from wells or well points in order to depress the ground water level.

5.5 Construction Monitoring

We recommend that geotechnical engineer or designee be retained to continuously evaluate and test the subgrade and footing excavations before forming and placing steel or concrete. If the soils upon which the footings are to be constructed become soft or disturbed, or if unsuitable materials are encountered, these materials should be removed and replaced with acceptable structural fill or as directed by the engineer.

Concrete strength and consistency tests should also be carried out, in accordance with the project specifications.

6.0 FIELD INVESTIGATION

Five soil test borings were drilled at the locations shown on the Boring Plan (Figure 2 in the Appendix). The borings were supposed to be extended to a depth of 20 ft. However, due to auger refusal they were extended to a depth range of 12 to 14 ft below the existing site grade. Split-spoon samples (ASTM D-1586) were obtained at 2.5 ft intervals to a depth of 15 ft below the existing ground and at 5.0 ft intervals elsewhere.

Logs of the borings showing visual descriptions of all soil strata encountered using the Unified Soil Classification System are included in the Appendix. Ground water observations, sampling information, and other pertinent field data and observations are also included. In addition, a sheet defining the terms and symbols used on the logs and explaining the standard penetration test procedure is provided immediately following the boring logs.

7.0 LABORATORY INVESTIGATION

The disturbed samples were inspected and classified in accordance with the Unified Soil Classification System and the boring logs were edited as necessary. To aid in classifying the soils and to determine general soil characteristics, natural moisture content tests were performed on selected samples. The results of these tests are included on the boring logs.

8.0 LIMITATIONS OF STUDY

An inherent limitation of any geotechnical engineering study is that conclusions must be drawn on the basis of data collected at a limited number of discrete locations. The recommendations provided in this report were developed from the information obtained from the test borings that depict subsurface conditions only at these specific locations and at the particular time designated on the logs. Soil conditions at other locations may differ from conditions occurring at these boring locations. The nature and extent of variations between the borings may not become evident until the course of construction. If variations then appear evident, it will be necessary to re-evaluate the recommendations of this report after performing on-site observations during the excavation period and noting the characteristics of any variation.

Our professional services have been performed, our findings obtained and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This warranty is in lieu of all other warranties either expressed or implied. This company is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploration and laboratory test data presented in this report.

The scope of our services does not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in the soil, ground water or surface water within or beyond the site studied.

APPENDIX

Figure 1 - Vicinity Map (a-b)

Figure 2 - Boring Plan (a-c)

Figure 3 - Design Illustration - Footings in Undercut Areas

Test Boring Logs

Thermal Resistivity Test Results

"Field Classification System for Soil Exploration"



FIGURE NO. 1 a – VICINITY MAP

Project: **Proposed Lamar Clay Creek Energy**
(38.043839°, -102.593004°)
Lamar, CO

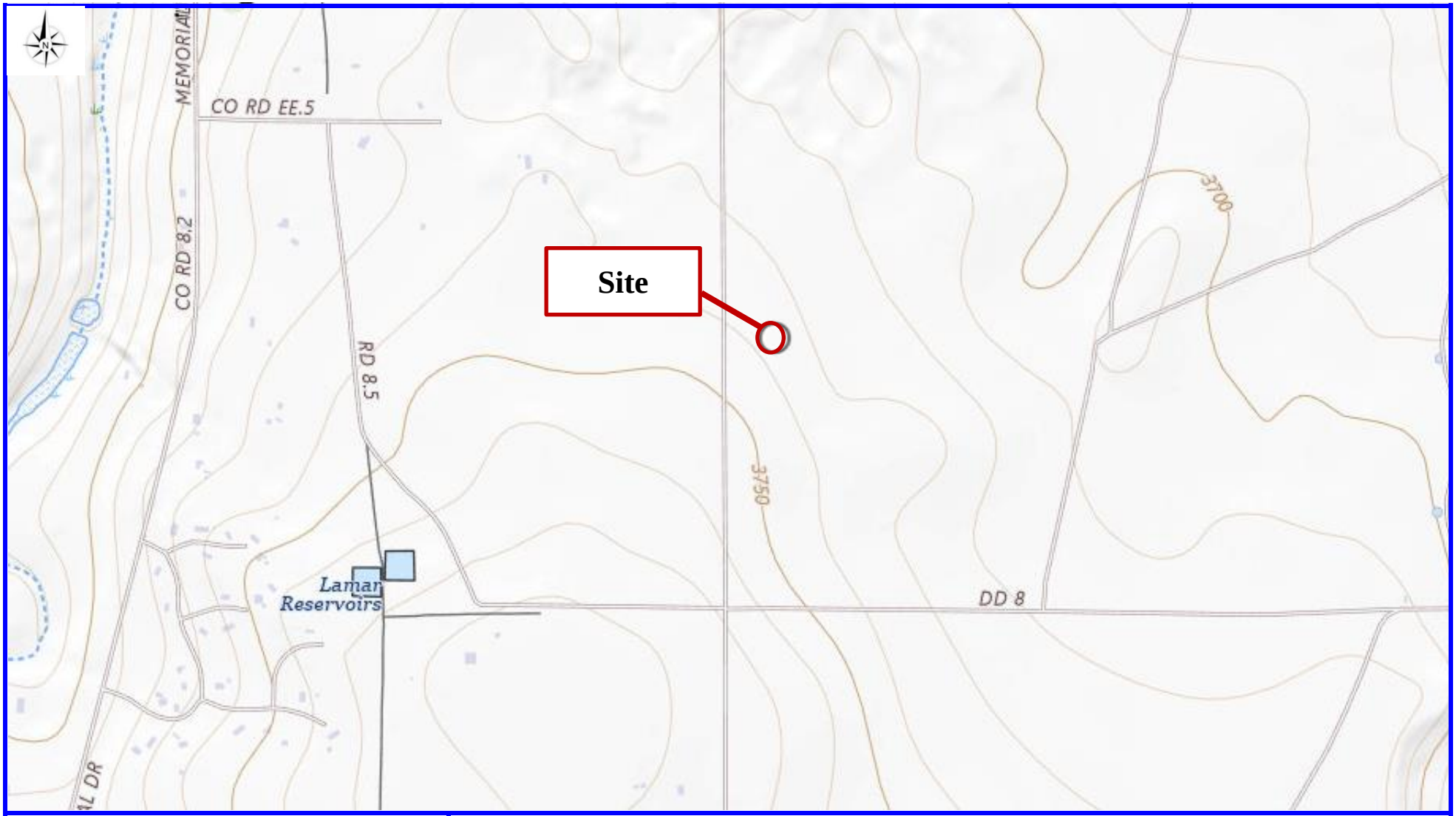
Scale: **NTS**

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DATE: **February 12, 2025**

CLIENT: **Sandhills Energy**



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FIGURE NO. 1 b – VICINITY MAP

Project: **Proposed Lamar Clay Creek Energy**
(38.043839°, -102.593004°)
Lamar, CO

Scale: **NTS**

GEOTILL PROJECT # 112449706	DATE: February 12, 2025	CLIENT: Sandhills Energy

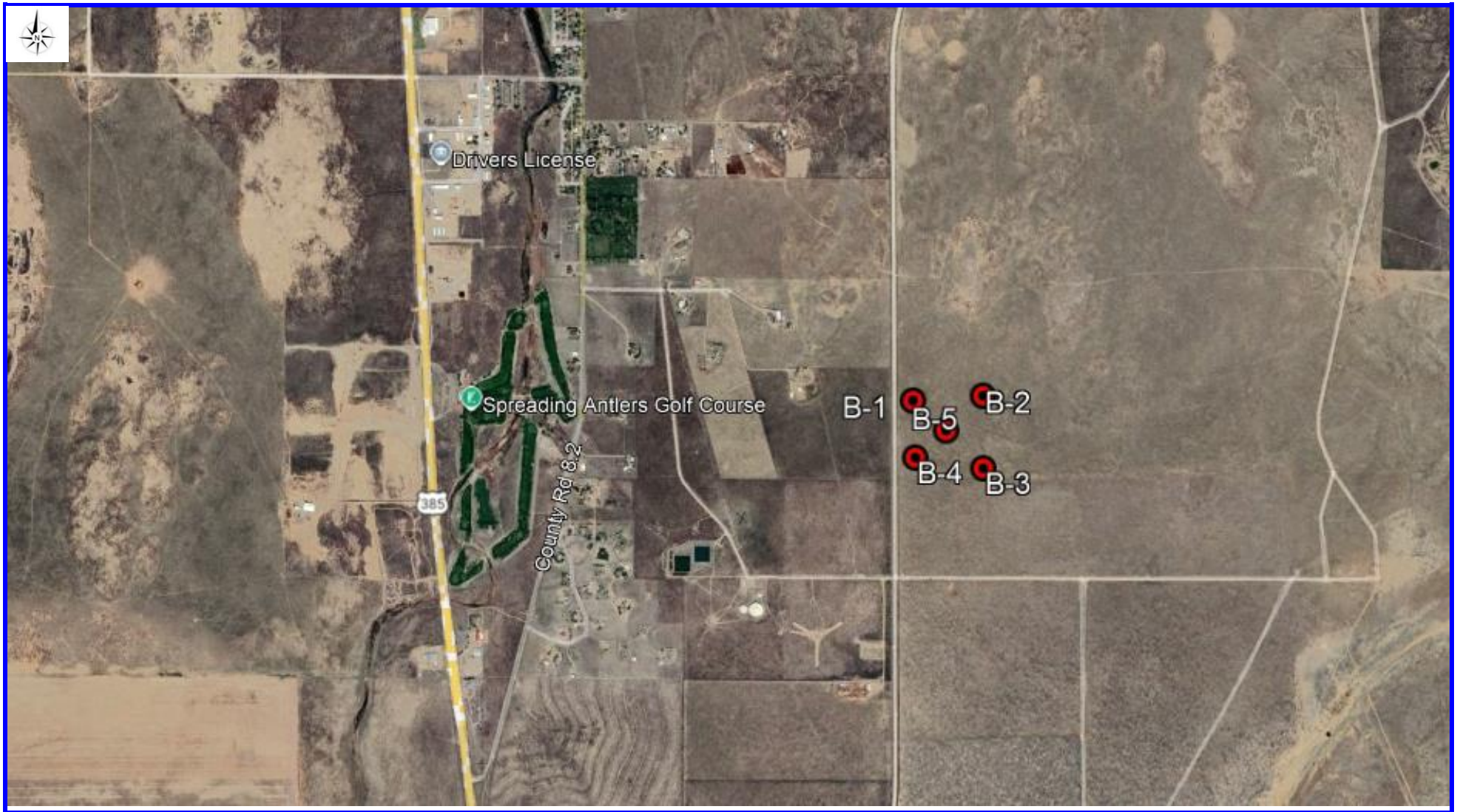


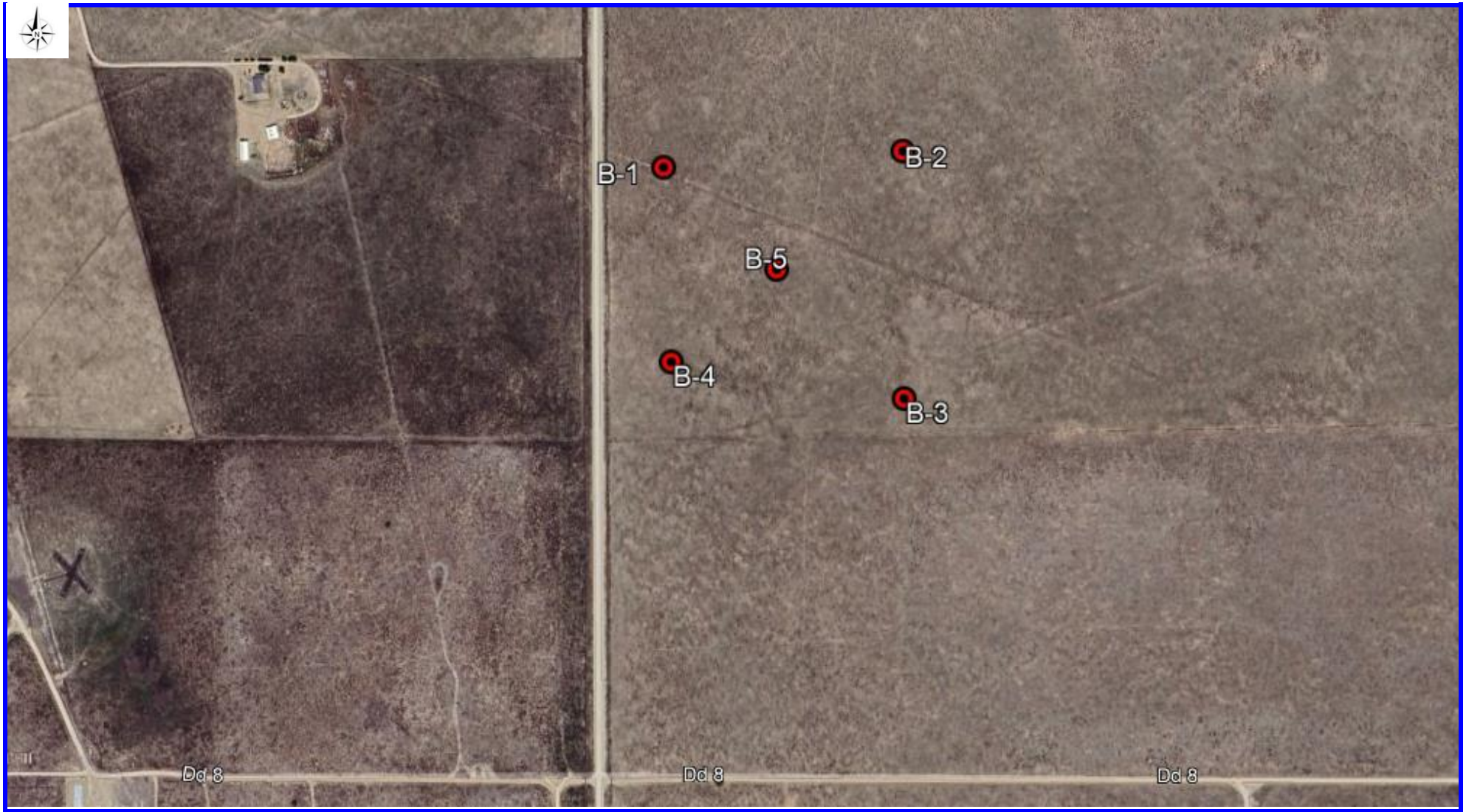
FIGURE NO. 2 a – BORING MAP

Project: **Proposed Lamar Clay Creek Energy**
(38.043839°, -102.593004°)
Lamar, CO

Scale: **NTS**

GEOTILL ENGINEERING, INC.

GEOTILL PROJECT # 112449706	DATE: February 12, 2025	CLIENT: Sandhills Energy



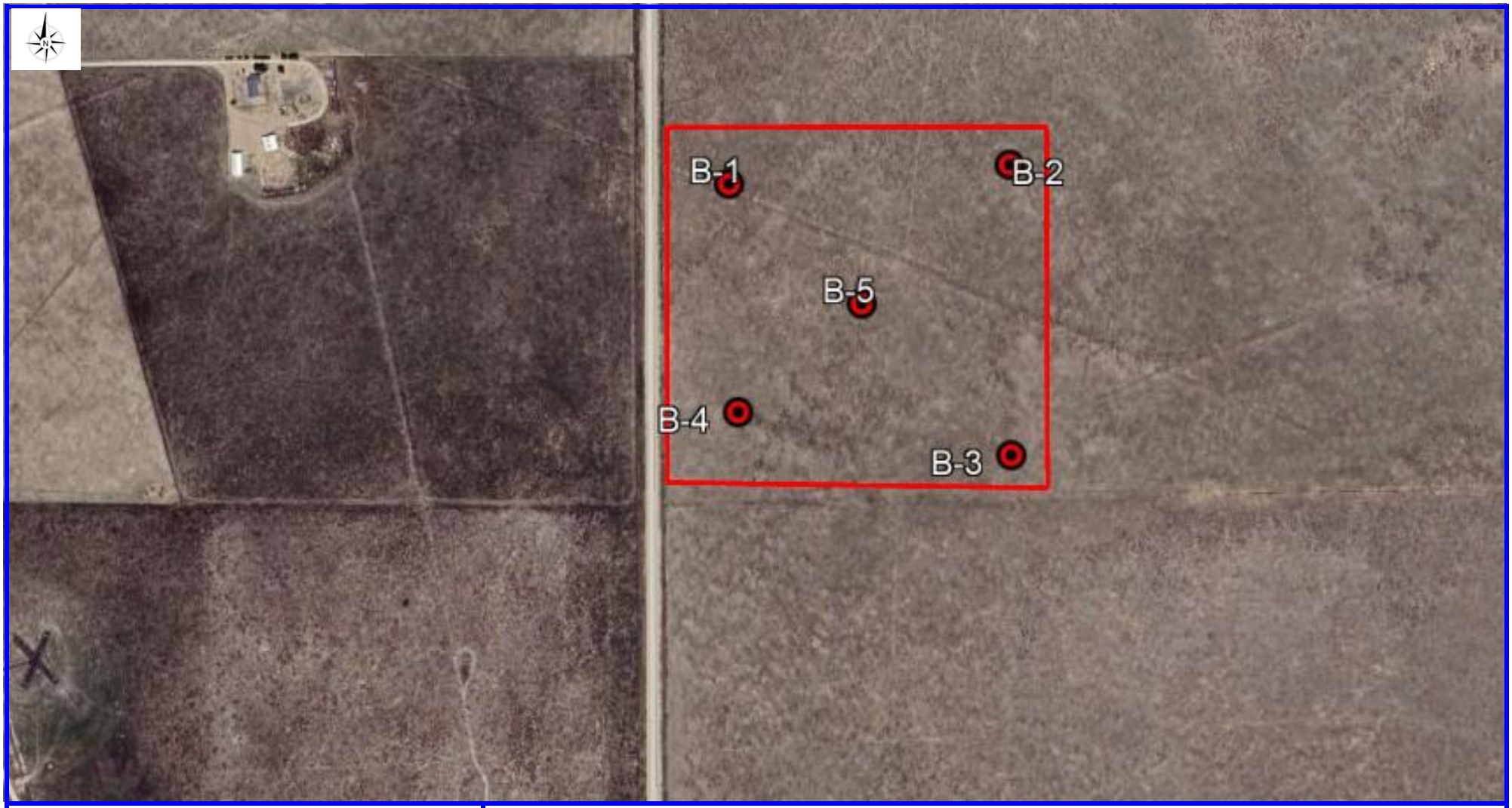
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FIGURE NO. 2 b – BORING MAP

Project: Proposed Lamar Clay Creek Energy
(38.043839°, -102.593004°)
Lamar, CO

Scale: NTS

GEOTILL PROJECT # 112449706	DATE: February 12, 2025	CLIENT: Sandhills Energy



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FIGURE NO. 2 c – BORING MAP

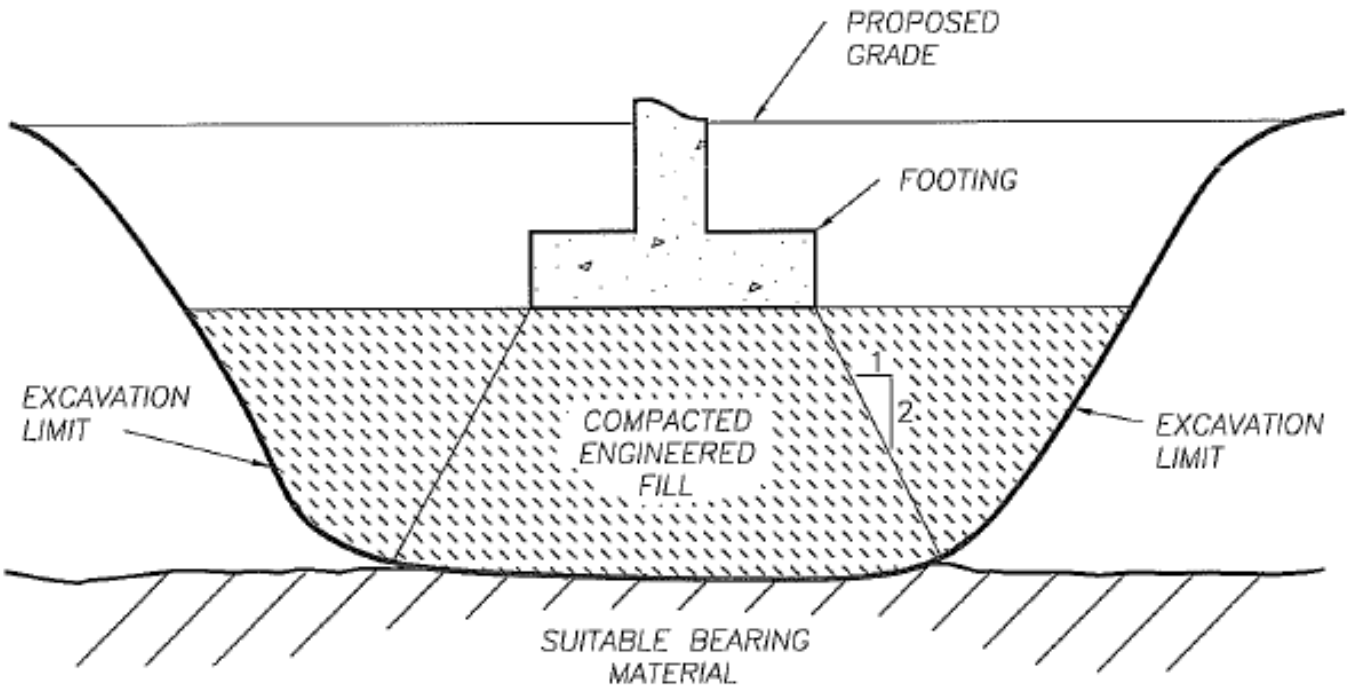
Project: **Proposed Lamar Clay Creek Energy**
(38.043839°, -102.593004°)
Lamar, CO

Scale: **NTS**

GEOTILL PROJECT # 112449706

DATE: **February 12, 2025**

CLIENT: **Sandhills Energy**



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FIGURE NO. 3 – DESIGN ILLUSTRATION
FOOTINGS IN UNDERCUT AREA

Project: **Proposed Lamar Clay Creek Energy**
(38.043839°, -102.593004°)
Lamar, CO

Scale: **NTS**

GEOTILL PROJECT # 112449706	DATE: February 12, 2025	CLIENT: Sandhills Energy

GEOTILL ENGINEERING, INC.

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3174490033
Fax 3172850609

TEST BORING LOG

CLIENT **Sandhills Energy**
PROJECT NAME **Lamar Clay Creek Energy**
PROJECT LOCATION **Near 8551 County Rd Ee.5**
Lamar CO 81052

BORING # **B-01**
JOB # **112449706**
Latitude, Longitude **38.044566, -102.593433**

DRILLING and SAMPLING INFORMATION

Date Started	12/13/24	Hammer Wt.	140 lbs.
Date Completed	12/13/24	Hammer Drop	30 in.
Drill Foreman		Spoon Sampler OD	2 in.
Inspector	Naz	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION SURFACE ELEVATION 3736	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
Brown, slightly moist, stiff, sandy Clay (CL), with a trace of limestone dust particle			1	SS			4-7-8	7.0	>4.5	
	4.5	5								
Light brown, moist, very stiff to hard, silty Clay (CL), with a trace of lime stone dust particle			2	SS			8-10-13	14.0		
			3	SS			21-30-50/5"	13.0	>4.5	
	9.5	10								
Brown, moist, hard, silty Clay (CL), with a trace of limestone dust			4	SS			23-50/6"	13.0	>4.5	
	12.0									
Refusal of boring at 12 ft		15								
		20								

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
Noted on Drilling Tools **Dry** ft.
At Completion **Dry** ft.
After _____ hours _____ ft.
Cave Depth **-** ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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TEST BORING LOG

CLIENT **Sandhills Energy**
PROJECT NAME **Lamar Clay Creek Energy**
PROJECT LOCATION **Near 8551 County Rd Ee.5**
Lamar CO 81052

BORING # **B-02**
JOB # **112449706**
Latitude, Longitude **38.044742, -102.590222**

DRILLING and SAMPLING INFORMATION

Date Started	12/13/24	Hammer Wt.	140 lbs.
Date Completed	12/13/24	Hammer Drop	30 in.
Drill Foreman		Spoon Sampler OD	2 in.
Inspector	Naz	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION / SURFACE ELEVATION 3725	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics / Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
Topsoil = 1"	0.1									
Deep brown, dry, loose, fine Sand (SP)			1	SS			2-3-4			
	4.5									
Deep brown, dry, medium dense, fine Sand (SP)		5	2	SS			5-5-6			
	7.0									
Light brown, moist, hard, silty Clay (CL) with a trace of limestone dust particle			3	SS			20-21-28	14.0	>4.5	
		10	4	SS			20-23-50/6"	11.0	>4.5	
	13.5									
Refusal of boring at 13.5 ft		15								
		20								

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
Noted on Drilling Tools **Dry** ft.
At Completion **Dry** ft.
After _____ hours _____ ft.
Cave Depth **-** ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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Fax 3172850609

TEST BORING LOG

CLIENT **Sandhills Energy**
PROJECT NAME **Lamar Clay Creek Energy**
PROJECT LOCATION **Near 8551 County Rd Ee.5**
Lamar CO 81052

BORING # **B-03**
JOB # **112449706**
Latitude, Longitude **38.042124, -102.590206**

DRILLING and SAMPLING INFORMATION

Date Started	12/13/24	Hammer Wt.	140 lbs.
Date Completed	12/13/24	Hammer Drop	30 in.
Drill Foreman		Spoon Sampler OD	2 in.
Inspector	Naz	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION SURFACE ELEVATION 3737	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
Deep brown, dry, very loose, fine Sand(SP)			1	SS			3-2-2			
	4.5	5								
Brown, dry, loose, fine Sand (SP)			2	SS			5-8-4			
	7.0									
Light brown, moist, hard, silty Clay(CL) with a trace of limestone dust particle			3	SS			12-17-34	12.0		
	9.5	10								
Light brown, slightly moist, very stiff, silty Clay(CL) with a trace of limestone dust particle			4	SS			6-9-12	9.0		
	13.0	15								
Refusal of boring at 13 ft										
		20								

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater
Noted on Drilling Tools **Dry** ft.
At Completion **Dry** ft.
After _____ hours _____ ft.
Cave Depth **-** ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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TEST BORING LOG

CLIENT **Sandhills Energy**
PROJECT NAME **Lamar Clay Creek Energy**
PROJECT LOCATION **Near 8551 County Rd Ee.5**
Lamar CO 81052

BORING # **B-04**
JOB # **112449706**
Latitude, Longitude **38.042512, -102.593326**

DRILLING and SAMPLING INFORMATION

Date Started	12/13/24	Hammer Wt.	140 lbs.
Date Completed	12/13/24	Hammer Drop	30 in.
Drill Foreman		Spoon Sampler OD	2 in.
Inspector	Naz	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION SURFACE ELEVATION 3751	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
Deep brown, dry, very loose, fine Sand(SP)			1	SS			1-1-2			
	4.5	5								
Brown, dry, loose, fine Sand (SP)			2	SS			2-2-4			
	7.0									
Light brown, slightly moist to moist, hard, silty Clay(CL) with a trace of limestone dust particle			3	SS			11-15-17	9.0		
		10	4	SS			20-27-50/4"	13.0		
	12.5									
Refusal of boring at 12.5 ft		15								
		20								

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater

Noted on Drilling Tools	Dry	ft.
At Completion	Dry	ft.
After ____ hours		ft.
Cave Depth	-	ft.

Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

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TEST BORING LOG

CLIENT **Sandhills Energy**
PROJECT NAME **Lamar Clay Creek Energy**
PROJECT LOCATION **Near 8551 County Rd Ee.5**
Lamar CO 81052

BORING # **B-05**
JOB # **112449706**
Latitude, Longitude **38.043489, -102.591916**

DRILLING and SAMPLING INFORMATION

Date Started	12/13/24	Hammer Wt.	140 lbs.
Date Completed	12/13/24	Hammer Drop	30 in.
Drill Foreman		Spoon Sampler OD	2 in.
Inspector	Naz	Rock Core Dia.	-- in.
Boring Method	HSA	Shelby Tube OD	-- in.

TEST DATA

SOIL CLASSIFICATION SURFACE ELEVATION 3738	Stratum Depth, ft	Depth Scale, ft	Sample No.	Sample Type	Sampler Graphics Recovery Graphics	Groundwater	Standard Penetration Test, Blows per 6 in. Increments	Moisture Content, %	Pocket Penetrometer PP-tsf	Remarks
Deep brown, dry, very loose, fine Sand(SP)			1	SS			2-2-1			
	4.5	5								
Brown, dry, loose, fine Sand (SP)			2	SS			3-4-5			
	7.0									
Light brown, moist, hard, silty Clay(CL) with a trace of limestone dust particle			3	SS			11-19-24	16.0	>4.5	
		10	4	SS			16-18-35	13.0		
	14.0									
Refusal of boring at 14 ft		15								
		20								

Sample Type
SS - Driven Split Spoon
ST - Pressed Shelby Tube
CA - Continuous Flight Auger
RC - Rock Core
CU - Cuttings
CT - Continuous Tube

Depth to Groundwater

Noted on Drilling Tools	Dry	ft.
At Completion	Dry	ft.
After ____ hours		ft.
Cave Depth	-	ft.

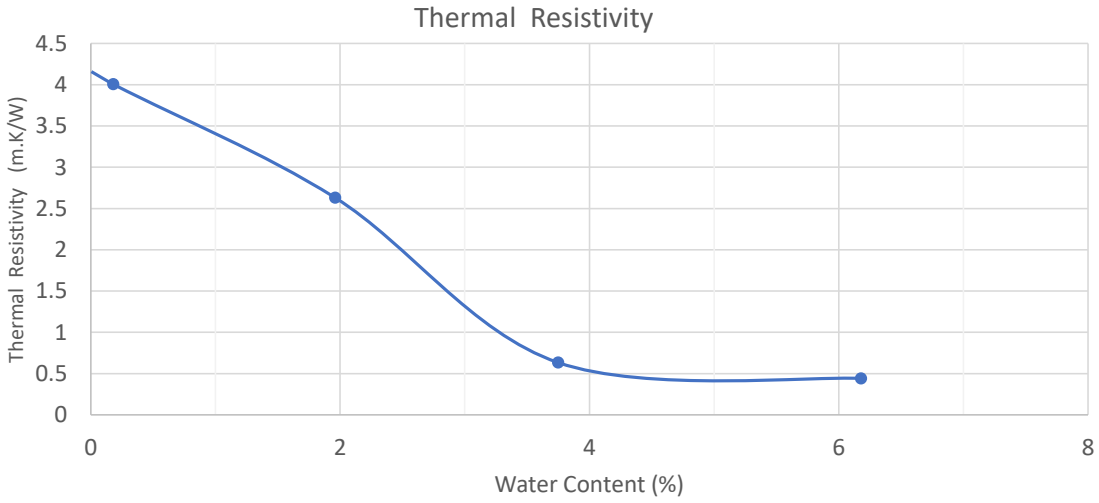
Boring Method
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
CA - Casing Advancer
MD - Mud Drilling
HA - Hand Auger

SOIL THERMAL RESISTIVITY

(ASTM D D5334)

Project Name:	Lamar Clay Creek Energy Lamar CO 81052		Client:	Sandhills Energy	
Project No.:	112449706		Tested By:	Masih/Saif	Date: 01/06/25
Boring No.:	B-5		Checked By:	Malek	Date: 01/23/25
Boring Coordinates:	38.043489°, -102.591916°		Depth (ft.):	3 ft	
Soil Identification:	Sandy Clay (CL)		Sample Type:	Bulk	

Reading #	W.C (%)	Thermal Resistivity (m.K/W)	Thermal Conductivity (W/m.K)
1	0	4.005	0.249
2	2	2.631	0.379
3	4	0.633	1.577
4	6	0.441	2.265



FIELD CLASSIFICATION SYSTEM FOR SOIL EXPLORATION

NON-COHESIVE SOILS
(Silt, Sand, Gravel and Combinations)

Density

Very Loose	-	5 blows/ft or less
Loose	-	6 to 10 blows/ft
Medium Dense	-	11 to 30 blows/ft
Dense	-	31 to 50 blows/ft
Very Dense	-	51 blows/ft or more

Relative Proportions

Descriptive Term	Percent
Trace	1 - 10
Little	11 - 20
Some	21 - 35
And	36 - 50

Particle Size Identification

Boulders	-	8 inch diameter or more	
Cobbles	-	3 to 8 inch diameter	
Gravel	-	Coarse	- 1 to 3 inch
		Medium	- ½ to 1 inch
		Fine	- ¼ to ½ inch
Sand	-	Coarse	2.00mm to ¼ inch (dia. of pencil lead)
		Medium	0.42 to 2.00mm (dia. of broom straw)
		Fine	0.074 to 0.42mm (dia. of human hair)
Silt			0.074 to 0.002mm (cannot see particles)

COHESIVE SOILS
(Clay, Silt and Combinations)

Consistency

Very Soft	-	3 blows/ft or less
Soft	-	4 to 5 blows/ft
Medium Stiff	-	6 to 10 blows/ft
Stiff	-	11 to 15 blows/ft
Very Stiff	-	16 to 30 blows/ft
Hard	-	31 blows/ft or more

Plasticity

Degree of Plasticity	Plasticity Index
None to slight	0 - 4
Slight	5 - 7
Medium	8 - 22
High to Very High	over 22

Standard Penetration Test — Driving a 2.0" O.D. 1-3/8" I.D. sampler a distance of 1.0 foot into undisturbed soil with a 140 pound hammer free falling a distance of 30 inches. It is customary for GEOTILL to drive the spoon 6 inches to seat into undisturbed soil, then perform the test. The number of hammer blows for seating the spoon and making the test are recorded for each 6 inches of penetration on the drill log (Example — 6-8-9). The standard penetration test result can be obtained by adding the last two figures (i.e., 8 + 9 = 17 blows/ft). (ASTM D-1586-99).

Strata Changes — In the column "Soil Descriptions" on the drill log the horizontal lines represent strata changes. A solid line (_____) represents an actually observed change. A dashed line (_ _ _ _ _ _) represents an estimated change.

Ground Water observations were made at the times indicated. Porosity of soil strata, weather conditions, site topography, etc., may cause changes in the water levels indicated on the logs.

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EXHIBIT E - FIRE SAFETY PLAN

EHS SECTION 05.0

Fire Prevention Plan

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Document # EHS-SOP-005

Document Control / History Information

Department(s):	EHS
Document Number:	EHS-SOP-005
Subject:	**Fire Prevention Plan**
Initial Release Date:	12/31/2024
Latest Release Date:	12/31/2024
Storage location link:	BOX / Sandhills O&M / EHS

Prepared By:

Name	Dept.	Signature
Kyle Gorsuch	O&M	

Reviewed By:

Name	Dept.	Signature
Raki Giannakouros	Executive VP	

Document Revision History

Rev #	Revision/Review Date	Revision/Review Made By	Description of Changes / Comments
00	12/30/2024		Initial Release
1.2	04/16/2026	Kyle Gorsuch	Mowing Operations/ Added Equipment. Sec 8.2.3

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1.0 PURPOSE, SCOPE, & DEFINITIONS

1.1 Purpose

1.1.1 This plan provides instruction and information relating to fire hazard recognition, fire prevention, fire notification and other procedures involving fire emergency action.

1.1.2 Leadership recognizes that communication of safe methods for fire protection and prevention will significantly reduce the likelihood and potential for fires or injuries to employees due to fires.

1.2 References

1.2.1 OSHA 29 General Industry

1.2.2 NFPA 25 - Standard for the Inspection, Testing, and Maintenance of Water Based Fire Protection Systems

1.2.3 NFPA 10 - Standard for Portable Fire Extinguishers

1.3 Scope

1.3.1 This procedure is applicable to all Sandhills Energy (SE) sites and facilities.

1.3.2 For sites that have a “specific” fire prevention plan for the site based on contract/customer requirements, then the requirements in both plans still apply and for similar topics, the more stringent plant between the two needs to be followed.

1.4 Acronyms & Definitions

TABLE A. Acronyms & Definitions

Automatic Fire Detection Device	A device designed to automatically detect the presence of fire by heat, flame, light, smoke or other products of combustion.
“Class A” Fire 	A fire involving ordinary combustible materials such as paper, wood, cloth and some rubber and plastic materials.
Class B Fire 	A fire involving flammable or combustible liquids, flammable gases, greases and similar materials, and some rubber and plastic materials.

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Class C Fire 	A fire involving energized electrical equipment where safety to the employees requires the use of electrically nonconductive extinguishing media.
Class D Fire	A fire involving combustible metals such as magnesium, titanium, zirconium, sodium, lithium and potassium.
Enclosed Structure	A structure with a roof or ceiling and at least two walls which may present fire hazards to employees, such as accumulation of smoke, toxic gases and heat, like those found in buildings.
Extinguisher Classification	The letter classification given an extinguisher to designate the class or classes of fire on which an extinguisher will be effective.
Fixed Extinguishing System	A permanently installed system that either extinguishes or controls a fire at the location of the system.
Fire Watch	A person assigned to: Keep watch on hot work and fire hazards in an area that does not have automatic fire warning or fire suppression systems. Patrol for minimum of 30 minutes and act where required in area(s) where there was recent hot work or fire.
Fire Weather Watch	A forecast warning issued by the National Weather Service in the United States to alert land managers and the public that upcoming weather conditions could result in extensive wildland fire occurrence or extreme fire behavior. Critical fire weather conditions are possible but not imminent or occurring.
Incipient Stage	The initial or beginning stage of fire, which can be controlled or extinguished by portable fire extinguishers, Class II standpipe or small hose systems without the need for protective clothing or breathing apparatus.
Red Flag Warning	A forecast warning issued by the National Weather Service in the United States to inform the public, firefighters and land management agencies that conditions are ideal for wildland fire combustion and rapid spread.
Safety Zone	A preplanned area of sufficient size and suitable location that is expected to protect mowing personnel from known hazards.
SE	Sandhills Energy

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2.0 ROLES & RESPONSIBILITIES

NOTE: *A "Designee" is defined as the primary decision maker for a task or a given scenario.*

2.1 Unit Leader

2.1.1 Administration of the Fire Prevention Plan.

2.1.2 Ensure that all personnel are trained and comply with the Fire Prevention Plan as presented in this document.

2.1.3 Be responsible for performing a periodic review of this procedure's implementation to ensure the safety of personnel, equipment, and systems.

2.1.4 Notify subcontractors about the Fire Prevention Plan and provide the necessary information to contacted personnel to ensure their safety.

2.1.5 Ensure that each employee has been properly trained in fire prevention.

2.1.6 Ensure each employee is trained in the use of a fire extinguisher.

2.2 Environmental, Health, & Safety

2.2.1 Review and update this procedure periodically.

2.2.2 Assist with monitoring training on this procedure.

2.3 O&M Unit Team Members/Contractor

2.3.1 Comply with this Fire Prevention Plan.

2.3.2 Be trained and familiar with the safety requirements and procedures in this Fire Prevention Plan.

2.3.3 Assist in ensuring that coworkers and subcontractors comply with the requirements of this program.

2.3.4 After discharging a portable fire extinguisher for any reason, employees shall report it to their immediate supervisor.

2.3.5 Perform inspections, remove and prevent the accumulation of combustible material.

2.3.6 Store chemicals in appropriate containers.

2.3.7 Store flammable chemicals in a Flammable Cabinet.

2.3.8 Stop and/or contain all leaks.

2.3.9 Ensure equipment is maintained to prevent and control sources of combustible material.

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2.3.10 Do not allow smoking or open flames in an area where combustible materials are located. Smoking is authorized in designated areas only.

2.3.11 Comply with the Hot Work Procedure.

2.3.12 Only fight a fire if:

- The fire is in the incipient stage and,
- You have been trained in the use of a fire extinguisher

3.0 GENERAL GUIDELINES

3.1 Smoking

3.1.1 Smoking must be confined to Designated Smoking Areas described and approved by site leadership.

3.1.2 The Designated Smoking Areas shall be equipped with the following:

- A sign shall be mounted in clear view indicating DESIGNATED

SMOKING AREA.

- A cigarette butt receptacle, ideally constructed of metal, for the proper collection of used smoking material.
- A portable fire extinguisher (dry chemical)

3.2 Housekeeping

3.2.1 Good housekeeping shall be maintained at all work locations and in all service vehicles.

3.2.2 Combustible materials such as oil-soaked rags, waste and shavings will be kept in approved metal containers with self-closing lids.

3.2.3 Paper and other combustible materials shall not be allowed to accumulate.

3.2.4 Monthly Building housekeeping Inspections shall be performed and documented using the Inspection loaded on Go Canvas:

3.2.5 The following buildings/locations (when applicable) should be covered at a minimum as part of the inspection: Office buildings, shops, warehouses, substation control room, & Connex storage units.

- If documentation is being completed on the Monthly Tech Rounds Checklist, the form should still be referenced as necessary to ensure all items are covered during the Monthly Tech Rounds.

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3.3 Work Practices

3.3.1 Before an open flame (such as a welding torch) is carried into a confined space, a test should be made to detect the presence of gas using an approved oxygen and combustible gas indicator.

3.3.2 Hot Work Permits must be utilized whenever grinding, cutting, welding or when sparks are created.

- Refer to the Hot Work Procedure for more guidance

3.3.3 When flammable or combustible liquids are drawn into open metal containers, the open container must be grounded/bonded by means of either threaded connections or a bonding wire to prevent any possible ignition source from generation of static electricity.

3.3.4 With exceptions of gasoline and oil, the mixing of two or more flammable liquids is prohibited.

- The use of gasoline as a cleaning agent is strictly forbidden.

3.3.5 Large quantities of flammable liquids shall be stored well away from the immediate work area.

3.3.6 Never handle a flammable substance near a heat source or bring a heat source near a flammable substance.

3.3.7 Safe transfers of flammable liquids are made in an open, well-ventilated area where the vapors will be diluted and dissipated by large quantities of fresh air.

- Make sure you have a bond between containers to eliminate static electricity.

3.3.8 All fuel leaks shall be reported and repaired immediately, if feasible.

- If immediate repair is not possible, adequate warning signs must be posted and extra precaution against fires instituted.
- Fuel leaks shall be cleaned up and disposed of according to best practices, industry standards and site environmental requirements.

3.3.9 In the event of fuel leak, all sources of ignition shall be shut down without delay.

3.3.10 When testing for fuel leaks, use soap suds or approved leak detector fluid. Never use an open flame.

3.3.11 Electrical fires can be avoided by not overloading circuitry.

3.4 Material Storage

3.4.1 Storage Cabinet

- Store all flammable and combustible material/liquid containers in fireproof cabinets designed & rated to safely store such materials.
- Storage cabinets, rooms or areas must be designated to store flammable liquids.

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– Cabinets should be labeled **"FLAMMABLE – KEEP FIRE AWAY"**.

• Not more than 60 gallons of flammable or 120 gallons of combustible liquid shall be stored in a single storage cabinet or container.

• **DO NOT** store compressed gas/cylinders in a flammable storage cabinet

• Do not store flammables within 25 feet of oxidizing liquids (NFPA 430)

– Some herbicides are classified as oxidizing materials

3.4.2 Storage Containers

• Use only approved containers for handling and dispensing flammable and combustible liquids (i.e. gasoline, oil and diesel fuel).

• Gasoline, kerosene, or other flammable liquids must not be stored in glass containers.

• All solvents shall be kept in approved, properly labeled containers.

• Small quantities of flammable liquids should be stored in approved safety cans.

– Safety cans must have self-closing lids, flame arrestors, and pressure relief vents.

– The contents must be labeled.

• Outside portable tank storage shall be located no closer than 25 feet from any building.

• Using funnels and spouted cans makes for a quick transfer and helps prevent dangerous spills.

• Flammable and combustible liquid spills must be cleaned up immediately and according to industry best practices, governing permits and the environmental guidelines and SPCC requirements.

• Rags saturated with flammable and combustible liquids are highly susceptible to spontaneous combustion and must be disposed of in containers provided for that purpose.

– Never pile them on the ground.

• Never use gasoline as a solvent - it produces dangerous amounts of vapor.

– Always use a high flashpoint solvent or thinner for cleaning off paint, grease, or oil around equipment.

• Store flammable gasses/compressed cylinders separately from flammable liquids (do not store butane gas cylinders in a flammable liquid storage cabinet)

• Label cans of flammable and combustible liquids in accordance with the Hazard Communication (GHS) program.

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4.0 FIRE PREPAREDNESS

4.1 Fire Protection Equipment Availability

4.1.1 Fire protection equipment is for fire use only and will be kept available and in its designated location.

4.1.2 All fire protection equipment must be in designated areas that are clearly identified with appropriate markings.

- This equipment should be in the vicinity of likely fire hazards and must be readily accessible.

4.1.3 There shall be enough approved portable fire extinguishers available to facilitate emergency egress from a work area.

- To ensure this, a portable fire extinguisher, rated not less than *3A:40B:C – 5 lbs*., shall be provided for each 1,500 square feet of the protected building area with travel distance from any point to the nearest extinguisher not to exceed 50 feet.

4.1.4 All SE owned service vehicles shall be equipped with a minimum of one 10 lb. ABC fire extinguisher or an approved alternate fire extinguisher device (such as the Element E50/E100 Fire extinguishing device.)

4.1.5 Access to portable fire extinguishers and fixed fire protection devices shall not be blocked from access.

4.2 Fixed Fire Protection Systems

NOTE: *All fire protection equipment will be inspected and maintained by a competent inspector. Records of inspection and maintenance will be maintained.*

4.2.1 Monthly Visual Inspection requirements

- Each device will be visually inspected by site personnel the first week of each month.
- Each device shall have a durable tag securely attached.
  - This tag reflects all inspection, maintenance or recharge dates, the service company name and initials of the technician performing the inspection / service.
  - This tag serves to document the occurrence of all required inspections and service.

4.2.2 Annual Certification

- Each device will be visually inspected & maintained by an authorized service company technician annually according to NFPA 25.
- Each device will be repaired as necessary, to ensure operability and safety.
- All defective equipment will be replaced as necessary.

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4.3 Portable Fire Extinguishers (PFE)

4.3.1 Monthly Visual Inspections

• Each portable fire extinguisher will be visually inspected by site/service personnel the first week of each month.

• Each portable fire extinguisher shall have a durable tag securely attached to show the maintenance or recharge date and the initial or signature of the person performing the inspection.

• Monthly PFE inspection are documented using either:

– *The Building Emergency Response Equipment (ERE) & Housekeeping inspection form*

OR

– *The Monthly Tech Rounds Checklist* (provided they are covered on the tech rounds checklist)

• PFE's associated with vehicles should be inspected as part of the *Monthly Vehicle Inspection form*

4.3.2 Inspection & Maintenance

• Each device will be visually inspected & maintained by an authorized service company technician annually according to NFPA 10.

• Dry chemical stored pressure & refillable extinguishers shall:

– Be emptied and maintenance every 6 years by a qualified vendor beginning from the manufacturing date.

– Have a hydrostatic test performed every 12 years by a qualified vendor beginning from the manufacturing date.

• CO2 fire extinguishers shall:

– Have a hydrostatic test performed every 5 years by a qualified vendor beginning from the manufacturing date.

• Repair or replacement as necessary to maintain operability and safety

5.0 INCIPIENT & BEYOND INCIPIENT STAGE FIRES

5.1 General guidance

5.1.1 Team's should only attempt to extinguish incipient stage fires.

5.1.2 If the fire is in the incipient stage and poses little threat to personnel, locate the appropriate portable fire extinguisher and attempt to extinguish it.

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5.1.3 If the fire is beyond the person's capability to safely extinguish (one extinguisher), site leadership / building management must ensure emergency services are requested.

5.1.4 The following factors generally apply to a fire in the incipient stage: Flames are small and aren't widespread, smoke allows visibility in the immediate location of the fire, and the heat emitted from the flame is low (in comparison with later stages).

5.1.5 A fire can no longer be considered an "incipient fire" if the fire has progressed to a point where visibility has been compromised by smoke, or conditions such as egress or weather compromise safety.

5.1.6 Fires beyond the incipient stage shall be managed and fought by the local fire departments (refer to the **EMERGENCY RESPONSE PROCEDURE** for appropriate fire response scenarios)

5.2 Extinguishing a Fire

5.2.1 Extinguishing the fire should only be attempted if there is appropriate portable extinguishing equipment available, the fire is in its incipient (initial or beginning) stage and can be safely controlled or extinguished with this equipment.

- If the size of a fire presents an immediate danger to life or health, evacuation (not suppression) shall be the primary objective.
- Call 911 if a fire is not extinguished immediately with the use of only one (1) fire extinguisher.
- Once the fire is out, overhaul the area using shovels and the mobile water trailer (If available) to ensure the fire area is cold.
- Once the area is cold, a *Fire Watch* is then set for thirty (30) minutes to ensure there is no re-ignition of the fire.

5.3 Classes of Fires

5.3.1 Class A

- Those that occur in ordinary materials such as wood, paper, rags, and rubbish shall be considered Class "A" fires.
- The quenching and cooling effects of water or of solutions containing large percentages of water are of first importance in extinguishing these fires.

5.3.2 Class B

- Those that occur in the vapor-air mixture over the surface of flammable liquids or flammable gasses (such as gasoline, oil, grease, paints, thinners, propane, butane, acetylene, etc.) shall be considered Class "B" fires.
- The limiting of air is of primary importance.

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• Generally, regular dry chemical, multi-purpose dry chemical, carbon dioxide, and foam may be used depending on the circumstances of the fire.

• Solid streams of water are likely to spread the fire, but on large fires of this class, water fog nozzles prove effective.

5.3.3 Class C

• Those which occur in energized electrical equipment shall be considered Class “C” fires.

• Dry chemical, carbon dioxide, or compressed gas may be used.

• Foam or a solid stream of water should not be used because of conductivity properties and can expose the operator to a severe shock hazard.

5.3.4 Class D

• Those that occur in combustible metals such as magnesium, titanium, zirconium, lithium and sodium should be considered Class “D” fires.

• Specialized techniques, extinguishing agents, and extinguishing equipment are needed to control and extinguish fires of this type.

• Normal extinguishing agents shall not be used as there is a danger of increasing intensity of the fire because of a chemical reaction between some extinguishing agents and the burning metal.

5.4 Proper use of a fire extinguisher

5.4.1 When fighting a fire with a standard portable fire extinguisher, use the following procedure to extinguish the fire:

5.4.2 Always use the handle to carry an extinguisher. Walk at a rapid pace but do not run to a fire.

5.4.3 Proceed to the upwind side of a fire.

• Stay well clear of the flames. When you are approximately 10 feet upwind of the near edge, stop and ready your extinguisher for discharge.

5.4.4 Hold the extinguisher in one hand and utilize the **PASS METHOD:**

• **P – PULL** the pin to enable the trigger to be activated.

• **A – AIM** the hose / nozzle at the base of the fire.

– Once your extinguisher is set for discharge, position yourself within eight feet of the near edge upwind of the fire.

– From this position, the air current helps carry the agent into the fire assuring maximum visibility and providing protection from the heat.

• **S – SQUEEZE** the handle / trigger to release the extinguishing agent.

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– When discharging the extinguisher agent, aim your stream just short of the near edge.

- **S – SWEEP** left and right across the width of the fire.

  – Apply the agent in a side-to-side sweeping action across the full width of the fire.

  – Make sure each sweep of the extinguishing agent is slightly wider than the near or leading edge of fire.

  – Advance forward only as fast as the extinguishing action of your agent will permit.

    - Do not outrun your protection.
    - Do not raise your stream to chase the flame. Keep it down in front of the flame edge.

  – Stop short of the already extinguished fuel area.

  – Do not become involved in the fire.

    - Above all, maintain your side-to-side sweeping action until the fire is extinguished.

5.4.5 Once the fire is out, stand by for a few minutes.

- Make sure there is no danger of a re- flash.
- Never turn your back on an apparently extinguished fire.

5.4.6 Each team member shall understand the fire response measures when a fire is deemed "uncontrollable and beyond the incipient stage".

- Under this condition, emergency assistance should be requested in accordance with the *Emergency Response Procedure*.

6.0 VEGETATION MANAGEMENT

6.1 General

6.1.1 Vegetation management is crucial for the safety and longevity of our sites. Dry vegetation in an array is both optimal but hazardous for the mowing process.

- To help prevent fire emergencies, SE has adopted use of National Weather Service's Fire Weather Alert System (FWAS) for use in the vegetation management process.

6.1.2 This system was designed to warn wildland firefighters of dangerous weather conditions and forecasts in their operating area.

- These warnings include weather conditions such as high winds, low relative humidity (RH) and thunderstorms into the Fire Weather Watch and Red Flag Warning alerts.

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6.1.3 The National Weather Service issues a FIRE WEATHER WATCH or RED FLAG WARNING alerting fire departments of current or possible onset of critical weather conditions that could lead to rapid or dramatic increases in wildfire activity.

- In dry conditions there are 3 Warning Criteria considered:
  - Temperature of 75F or above
  - Humidity of 15% or below
  - Wind speed of 25 mph or above

6.2 National Weather Service Alerts

6.2.1 FIRE WEATHER WATCH is issued when weather conditions which may result in fire could exist in the next 12-72 hours.

- A Fire Weather Watch is one level below the Red Flag Warning, but fire danger is still high.

6.2.2 If 2 of the 3 Warning Criteria are sustained for a 3-hour period, a Fire Weather Watch will be issued.

6.2.3 During a Fire Weather Watch, a properly outfitted Fire Watch shall be employed to inspect the area freshly mowed and capable of extinguishing any hazard immediately.

6.2.4 **RED FLAG WARNING** is the highest alert level and is issued for weather events which may result in extreme fire behavior that will occur within 24 hours.

- If 3 of 3 Warning Criteria are sustained for a 3-hour period, a Red Flag Warning will be issued.
- During a Red Flag Warning mowing will cease.
- Extreme caution is urged by all personnel because a simple spark can cause a major wildfire.

7.0 WILDFIRE PREVENTION

7.1 Equipment Use Safety

7.1.1 Never mow or trim dry grass on a Red Flag Warning Day.

7.1.2 Never use mowers in dry vegetation without proper means of fire suppression.

7.1.3 Spark arrestors are required on all fuel-powered equipment.

7.2 Defensible Space

7.2.1 Ensure defensible space is maintained around structures and developed areas.

7.2.2 Clear dead weeds and vegetation.

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7.2.3 Plan mowing operations to set anchor points, cut fire breaks and evacuation areas.

7.2.4 Start all mowing operations from a “Safety Zone” and into the wind (when possible).

- If a fire starts, it will burn downwind, away from the mower(s) and into cut vegetation.

7.3 Vehicle Equipment

7.3.1 When fueling, allow equipment to properly cool down in an area where there is no flammable vegetation.

7.3.2 Do not park on areas with tall vegetation.

7.3.3 Never pull over in dry grass.

7.3.4 Ensure trailer chains don’t drag on the ground.

7.3.5 Make sure vehicles and equipment are properly maintained.

7.3.6 Ensure proper tire pressure to avoid driving on wheel rim.

7.3.7 Never let brake pads wear thin.

7.3.8 Do not store flammables within 25 feet of oxidizing liquids (NFPA 430).

7.3.9 Some herbicides are classified as oxidizing materials.

7.4 Other:

7.4.1 Plan mowing operations where areas of greatest risk are mowed early in the day when temperatures are lower.

7.4.2 Make sure cigarette butts are properly extinguished.

7.4.3 No fire or spark-producing equipment or personal items (i.e., cigarette lighters) are allowed in the array, especially when the fire hazard level is moderate or higher.

7.4.4 Never burn landscape debris like leaves or branches

7.4.5 Report any suspicious activities to prevent arson.

8.0 MOWING

8.1 Preparation

8.1.1 Prior to starting a vegetation management / mowing operation, site personnel and/or subcontractors will verify the current regional fire hazard level.

- This will ensure the safety requirements employed align with the current reported hazard level.
- This will be reassessed throughout the workday as conditions change.

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8.1.2 Monitoring of weather conditions (temperatures, humidity, amount of sun, wind direction and speed) should begin in the Job Hazard Analysis (JHA) phase, discussed at the tailboard safety meeting and then continued throughout the workday.

8.1.3 Inspection of all vegetation management equipment will be performed prior to each day's use and cover the following items at a minimum:

- Ensure the exhaust system, spark arrestor or turbocharger, and mower are in proper working order and free of carbon buildup.
- Keep the mower free of flammable materials. Check the grass outlet around any blades and around any shrouds, covers, and heat shields. Keep the engine and radiator free of oil and dust.
  - Use the recommended grade of fuel and do NOT top off.
  - Blades and flail mower chains shall be set high enough to avoid sparks from striking rocks and encountering debris.
- Any fire or spark-producing equipment or personal items (i.e., cigarette lighter) should not enter the solar field, especially when the fire hazard level is moderate or higher.
- Inspect safety devices and equipment, verifying their serviceability and readiness for use.
- Verify the following additional equipment is available:
  - Two-way radio(s) – as necessary
  - Shovel(s)
  - Fire extinguishing equipment (as required by site)
  - Other PPE required by site, based upon scope of work.

8.1.4 Equipment use, inspections and repairs of all mowing and trimming equipment shall be performed according to the manufacturer's safety and maintenance instructions.

NOTE: *Hazard Level Vegetation Management Procedure*

8.2 Low to Moderate Fire Hazard Level

8.2.1 Minimum for all mowing operations

8.2.2 The team shall consist of the following persons:

- Fire Watch / Weed Wacker (FWWW)
- Mower

8.2.3 The FWWW will operate a vehicle (suitable to the terrain) containing the following equipment:

- ABC Fire extinguishers (4 each)
- (2) Pressurized water Extinguishers, & or a Wildland type water Backpack

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- Shovel(s)
- Two-way radio (communications to control room/control center)
- String Trimmer
- Mobile water trailer (if available)

8.2.4 The FWWW scouts ahead of the mower identify, exposing and removing (if possible) all hazards in the cutting path.

8.2.5 Once the path is cleared, the Mower begins to cut.

8.2.6 The FWWW falls in behind the Mower to clean up missed and hard to reach areas while monitoring the cutting path for signs of fire.

8.2.7 Any sign of fire, mowing operations cease.

8.2.8 The FWWW retrieves a portable fire extinguisher from the vehicle and extinguishes the fire.

8.2.9 Once the fire is out, the FWWW overhauls the area using shovels and the mobile water trailer ensuring the area is “cold”.

8.2.10 Only with the back-fill of the FWWW position, mowing operations may continue.

8.2.11 A Fire Watch is then set for thirty (30) minutes to ensure there is no re-ignition of the fire.

8.3 High & Extreme Fire Hazard Levels (Red Flag Warning)

8.3.1 All Mowing operations will stop

- Do not attempt to suppress the fire unless it is incipient.
- Call 911 immediately and report the location, size, and route of the fire.
- Always ensure the safety of personnel and the public.
- Assist fire and law enforcement agencies, as appropriate.

9.0 SUBCONTRACTORS

9.1 Subcontractor Vegetation Management

9.1.1 Subcontractors performing vegetation management operations on property under Sandhills Energy care, custody and control will adhere to the site-specific policy as well as all State, Federal and Sandhills Energy requirements.

9.1.2 Only trained and authorized personnel shall be permitted to operate equipment during vegetation management operations.

9.1.3 Emergency Response – In case of any emergency, follow the emergency response procedure.

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10.0 TRAINING

10.1 Annual Training for All Personnel

10.1.1 Familiarization with the general principles of fire extinguisher use

10.1.2 The hazards involved with incipient stage fire fighting

- This training will be delivered when employees are first hired and once a year thereafter according to 29 CFR 1910 157 (g) (1,2,3,4).

10.2 Emergency Response

10.2.1 Fire drills will be held periodically to familiarize personnel with location and operation of fire extinguishing equipment (Refer to the Emergency Response Plan for more details)

10.2.2 All occupants of facilities shall familiarize themselves with emergency procedures in their respective building(s) and work areas, so they know how to react when an alarm sounds, or an evacuation is communicated.

10.2.3 Know the location of and use for all fixed and portable fire extinguishing devices and systems.

10.2.4 All possible access and egress routes shall be maintained unobstructed to allow for safe and effective evacuation in the event of an emergency.

10.3 Vegetation Management Safety

10.3.1 Employees involved in vegetation management operations (e.g., mowing, trimming, and edging) shall be trained to ensure they obtain the necessary knowledge and skills for safe mowing operations prior to being assigned such work tasks.

10.3.2 All other employees whose work operations are or may be in an area where mowing operations are conducted shall be instructed to an awareness level about the procedures and restrictions relating to work in such areas.

10.4 Retraining

10.4.1 There is a change in their job assignments.

10.4.2 There is a change in equipment or processes that present a new hazard.

10.4.3 There is a change in this procedure.

10.4.4 A periodic inspection reveals that there are deviations from or inadequacies in the employee's knowledge or use of this procedure.

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11.0 CONSEQUENCES OF DEVIATION

11.1 Non-Compliance

11.1.1 Consequences will result from non-compliance with procedural standards, the severity of which will be determined by the applicable departmental Unit Leaders.

12.0 ATTACHMENTS

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EXHIBIT F - GLARE STUDY

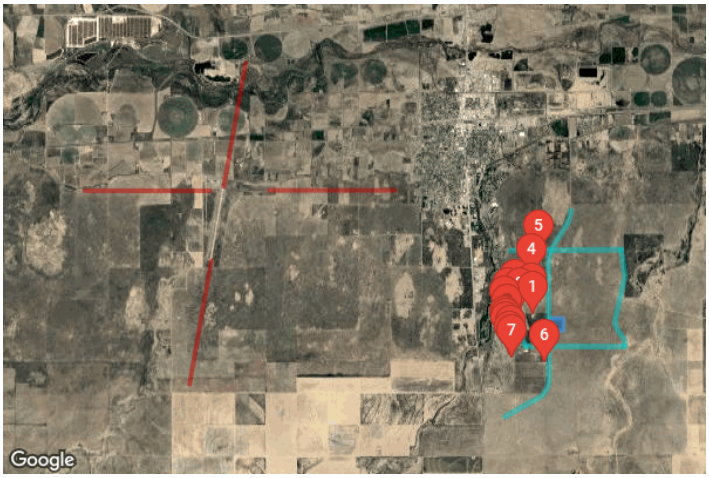
FORGESOLAR GLARE ANALYSIS

Project: **CCE - Lamar Municipal Solar**
Clay Creek Energy - Lamar site 5.8286 MWdc 4.8 MWac

Site configuration: **Lamar 9-25-25**

Created 25 Sep, 2025
Updated 25 Sep, 2025
Time-step 1 minute
Timezone offset UTC-7
Minimum sun altitude 0.0 deg
DNI peaks at 1,000.0 W/m^2
Category 5 MW to 10 MW
Site ID 160373.26934

Ocular transmission coefficient 0.5
Pupil diameter 0.002 m
Eye focal length 0.017 m
Sun subtended angle 9.3 mrad
PV analysis methodology V2



Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	18,190,000.0

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

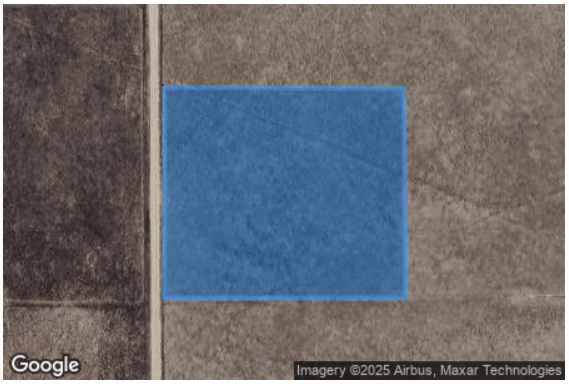
Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CR8 5	0	0.0	0	0.0
CR9	0	0.0	0	0.0
CR9 5 10	0	0.0	0	0.0
DD8	0	0.0	0	0.0
FF 25	0	0.0	0	0.0
RWY18	0	0.0	0	0.0
RWY26	0	0.0	0	0.0
RWY36	0	0.0	0	0.0
RWY8	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0

Component Data

PV Arrays

Name: PV array 1
Axis tracking: Single-axis rotation
Backtracking: None
Tracking axis orientation: 180.0°
Tracking axis tilt: 0.0°
Tracking axis panel offset: 0.0°
Max tracking angle: 60.0°
Rated power: 5828.6 kW
Panel material: Smooth glass with AR coating
Reflectivity: Vary with sun
Slope error: correlate with material



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	38.044592	-102.594175	3736.43	0.00	3736.43
2	38.041753	-102.594186	3753.06	0.00	3753.06
3	38.041753	-102.590034	3735.35	0.00	3735.35
4	38.044580	-102.590063	3721.03	0.00	3721.03

Route Receptors

Name: CR8 5
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 90.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	38.048482	-102.605143	3725.10	0.00	3725.10
2	38.042145	-102.604306	3744.24	0.00	3744.24
3	38.041604	-102.604113	3744.11	0.00	3744.11
4	38.039847	-102.602138	3759.93	0.00	3759.93
5	38.038208	-102.601087	3778.72	0.00	3778.72

Name: CR9
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 90.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	38.021965	-102.607151	3787.70	0.00	3787.70
2	38.026596	-102.596572	3772.27	0.00	3772.27
3	38.027813	-102.595327	3767.57	0.00	3767.57
4	38.029233	-102.594555	3766.16	0.00	3766.16
5	38.030281	-102.594297	3766.83	0.00	3766.83
6	38.056753	-102.594488	3711.07	0.00	3711.07
7	38.057981	-102.594373	3711.17	0.00	3711.17
8	38.060025	-102.593729	3703.16	0.00	3703.16
9	38.061766	-102.592613	3687.15	0.00	3687.15
10	38.065796	-102.589322	3677.84	0.00	3677.84
11	38.066776	-102.588636	3675.74	0.00	3675.74
12	38.068499	-102.588035	3668.13	0.00	3668.13
13	38.069276	-102.587820	3667.38	0.00	3667.38

Name: CR9 5 10
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 90.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	38.038152	-102.572178	3680.02	0.00	3680.02
2	38.039098	-102.572135	3685.17	0.00	3685.17
3	38.040045	-102.572435	3691.12	0.00	3691.12
4	38.040298	-102.572736	3692.37	0.00	3692.37
5	38.041887	-102.574195	3690.70	0.00	3690.70
6	38.043137	-102.574839	3688.19	0.00	3688.19
7	38.043594	-102.574924	3688.27	0.00	3688.27
8	38.044202	-102.574882	3685.30	0.00	3685.30
9	38.053987	-102.572113	3672.41	0.00	3672.41
10	38.054240	-102.572027	3674.57	0.00	3674.57
11	38.060374	-102.573192	3679.08	0.00	3679.08

Name: DD8
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 90.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	38.038155	-102.601009	3780.24	0.00	3780.24
2	38.038189	-102.600108	3780.41	0.00	3780.41
3	38.038147	-102.599421	3780.52	0.00	3780.52
4	38.038165	-102.594262	3769.03	0.00	3769.03
5	38.038072	-102.585743	3718.75	0.00	3718.75
6	38.038038	-102.574574	3700.24	0.00	3700.24
7	38.038139	-102.572150	3679.63	0.00	3679.63

Name: FF 25
Path type: Two-way
Azimuthal view angle: 50.0°
Downward view angle: 90.0°



Vertex	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
1	38.060147	-102.605506	3712.59	0.00	3712.59
2	38.060214	-102.601472	3711.06	0.00	3711.06
3	38.060265	-102.596536	3716.32	0.00	3716.32
4	38.060289	-102.587946	3682.73	0.00	3682.73
5	38.060381	-102.573206	3679.45	0.00	3679.45

Flight Path Receptors

Name: RWY18
Description:
Threshold height: 50 ft
Direction: 190.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	38.074837	-102.689560	3676.59	50.00	3726.59
Two-mile	38.103308	-102.683156	3640.35	639.67	4280.02

Name: RWY26
Description:
Threshold height: 50 ft
Direction: 270.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	38.074007	-102.676180	3685.88	50.00	3735.88
Two-mile	38.074007	-102.639409	3688.04	601.26	4289.31

Name: RWY36
Description:
Threshold height: 50 ft
Direction: 10.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	38.057842	-102.693206	3704.62	50.00	3754.62
Two-mile	38.029368	-102.699590	3804.63	503.42	4308.05

Name: RWY8
Description:
Threshold height: 50 ft
Direction: 90.0°
Glide slope: 3.0°
Pilot view restricted? Yes
Vertical view: 30.0°
Azimuthal view: 50.0°



Point	Latitude (°)	Longitude (°)	Ground elevation (ft)	Height above ground (ft)	Total elevation (ft)
Threshold	38.073925	-102.693535	3681.71	50.00	3731.71
Two-mile	38.073925	-102.730306	3686.76	598.38	4285.14

Discrete Observation Point Receptors

Name	ID	Latitude (°)	Longitude (°)	Elevation (ft)	Height (ft)
OP 1	1	38.045351	-102.598842	3741.73	0.00
OP 2	2	38.046162	-102.602549	3736.98	0.00
OP 3	3	38.047260	-102.599127	3740.59	0.00
OP 4	4	38.054087	-102.599417	3725.25	0.00
OP 5	5	38.059384	-102.597341	3716.21	0.00
OP 6	6	38.034220	-102.595552	3783.03	0.00
OP 7	7	38.035416	-102.605004	3767.71	0.00
OP 8	8	38.036219	-102.605723	3759.36	0.00
OP 9	9	38.037630	-102.605562	3770.01	0.00
OP 10	10	38.038348	-102.606849	3756.31	0.00
OP 11	11	38.039166	-102.606864	3755.92	0.00
OP 12	12	38.039606	-102.607036	3748.80	0.00
OP 13	13	38.042353	-102.606408	3737.85	0.00
OP 14	14	38.044201	-102.607141	3729.60	0.00
OP 15	15	38.046208	-102.606229	3731.31	0.00
OP 16	16	38.047982	-102.604083	3729.60	0.00

Glare Analysis Results

Summary of Results No glare predicted

PV Array	Tilt	Orient	Annual Green Glare		Annual Yellow Glare		Energy
	°	°	min	hr	min	hr	kWh
PV array 1	SA tracking	SA tracking	0	0.0	0	0.0	18,190,000.0

Total glare received by each receptor; may include duplicate times of glare from multiple reflective surfaces.

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CR8 5	0	0.0	0	0.0
CR9	0	0.0	0	0.0
CR9 5 10	0	0.0	0	0.0
DD8	0	0.0	0	0.0
FF 25	0	0.0	0	0.0
RWY18	0	0.0	0	0.0
RWY26	0	0.0	0	0.0
RWY36	0	0.0	0	0.0
RWY8	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0

PV: PV array 1 no glare found

Receptor results ordered by category of glare

Receptor	Annual Green Glare		Annual Yellow Glare	
	min	hr	min	hr
CR8 5	0	0.0	0	0.0
CR9	0	0.0	0	0.0
CR9 5 10	0	0.0	0	0.0
DD8	0	0.0	0	0.0
FF 25	0	0.0	0	0.0
RWY18	0	0.0	0	0.0
RWY26	0	0.0	0	0.0
RWY36	0	0.0	0	0.0
RWY8	0	0.0	0	0.0
OP 1	0	0.0	0	0.0
OP 2	0	0.0	0	0.0
OP 3	0	0.0	0	0.0
OP 4	0	0.0	0	0.0
OP 5	0	0.0	0	0.0
OP 6	0	0.0	0	0.0
OP 7	0	0.0	0	0.0
OP 8	0	0.0	0	0.0
OP 9	0	0.0	0	0.0
OP 10	0	0.0	0	0.0
OP 11	0	0.0	0	0.0
OP 12	0	0.0	0	0.0
OP 13	0	0.0	0	0.0
OP 14	0	0.0	0	0.0
OP 15	0	0.0	0	0.0
OP 16	0	0.0	0	0.0

PV array 1 and Route: CR8 5

No glare found

PV array 1 and Route: CR9

No glare found

PV array 1 and Route: CR9 5 10

No glare found

PV array 1 and Route: DD8

No glare found

PV array 1 and Route: FF 25

No glare found

PV array 1 and FP: RWY18

No glare found

PV array 1 and FP: RWY26

No glare found

PV array 1 and FP: RWY36

No glare found

PV array 1 and FP: RWY8

No glare found

PV array 1 and OP 1

No glare found

PV array 1 and OP 2

No glare found

PV array 1 and OP 3

No glare found

PV array 1 and OP 4

No glare found

PV array 1 and OP 5

No glare found

PV array 1 and OP 6

No glare found

PV array 1 and OP 7

No glare found

PV array 1 and OP 8

No glare found

PV array 1 and OP 9

No glare found

PV array 1 and OP 10

No glare found

PV array 1 and OP 11

No glare found

PV array 1 and OP 12

No glare found

PV array 1 and OP 13

No glare found

PV array 1 and OP 14

No glare found

PV array 1 and OP 15

No glare found

PV array 1 and OP 16

No glare found

Assumptions

"Green" glare is glare with low potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
"Yellow" glare is glare with potential to cause an after-image (flash blindness) when observed prior to a typical blink response time.
Times associated with glare are denoted in Standard time. For Daylight Savings, add one hour.
The algorithm does not rigorously represent the detailed geometry of a system; detailed features such as gaps between modules, variable height of the PV array, and support structures may impact actual glare results. However, we have validated our models against several systems, including a PV array causing glare to the air-traffic control tower at Manchester-Boston Regional Airport and several sites in Albuquerque, and the tool accurately predicted the occurrence and intensity of glare at different times and days of the year.
Several V1 calculations utilize the PV array centroid, rather than the actual glare spot location, due to algorithm limitations. This may affect results for large PV footprints. Additional analyses of array sub-sections can provide additional information on expected glare. This primarily affects V1 analyses of path receptors.
Random number computations are utilized by various steps of the annual hazard analysis algorithm. Predicted minutes of glare can vary between runs as a result. This limitation primarily affects analyses of Observation Point receptors, including ATCTs. Note that the SGHAT/ ForgeSolar methodology has always relied on an analytical, qualitative approach to accurately determine the overall hazard (i.e. green vs. yellow) of expected glare on an annual basis.
The analysis does not automatically consider obstacles (either man-made or natural) between the observation points and the prescribed solar installation that may obstruct observed glare, such as trees, hills, buildings, etc.
The subtended source angle (glare spot size) is constrained by the PV array footprint size. Partitioning large arrays into smaller sections will reduce the maximum potential subtended angle, potentially impacting results if actual glare spots are larger than the sub-array size. Additional analyses of the combined area of adjacent sub-arrays can provide more information on potential glare hazards. (See previous point on related limitations.)
The variable direct normal irradiance (DNI) feature (if selected) scales the user-prescribed peak DNI using a typical clear-day irradiance profile. This profile has a lower DNI in the mornings and evenings and a maximum at solar noon. The scaling uses a clear-day irradiance profile based on a normalized time relative to sunrise, solar noon, and sunset, which are prescribed by a sun-position algorithm and the latitude and longitude obtained from Google maps. The actual DNI on any given day can be affected by cloud cover, atmospheric attenuation, and other environmental factors.
The ocular hazard predicted by the tool depends on a number of environmental, optical, and human factors, which can be uncertain. We provide input fields and typical ranges of values for these factors so that the user can vary these parameters to see if they have an impact on the results. The speed of SGHAT allows expedited sensitivity and parametric analyses.
The system output calculation is a DNI-based approximation that assumes clear, sunny skies year-round. It should not be used in place of more rigorous modeling methods.
Hazard zone boundaries shown in the Glare Hazard plot are an approximation and visual aid based on aggregated research data. Actual ocular impact outcomes encompass a continuous, not discrete, spectrum.
Glare locations displayed on receptor plots are approximate. Actual glare-spot locations may differ.
Refer to the Help page at **www.forgesolar.com/help/** for assumptions and limitations not listed here.

Default glare analysis parameters and observer eye characteristics (for reference only):

- Analysis time interval: 1 minute
- Ocular transmission coefficient: 0.5
- Pupil diameter: 0.002 meters
- Eye focal length: 0.017 meters
- Sun subtended angle: 9.3 milliradians

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EXHIBIT G - O&M SCHEDULE

Sandhills ENERGY

Annual Operating Procedures

Startup and Shutdown Procedures

- Implement a checklist for the startup and shutdown procedures to ensure that all required steps are followed.
- Train personnel on the proper startup and shutdown procedures to ensure that they are performed consistently and safely.
- Establish clear protocols for restarting the system after an unexpected shutdown, such as a power outage occurs.

Startup Procedure Checklist:

1. Verify that all personnel involved in the startup process have received appropriate training and understand the startup procedures.
2. Check the weather forecast to ensure that weather conditions are suitable for starting up the system.
3. Verify that the solar panels are not covered with any debris or obstructions that could interfere with their performance.
4. Check the power supply to the system to ensure that it is stable and sufficient to support startup.
5. Verify that all systems components are properly connected and secured.
6. Turn on the inverters and other key components of the system in the proper sequence, making sure to follow manufacturers guidelines.
7. Monitor the system output to ensure that it is increasing as expected.
8. Verify that all system alarms and indicators are functioning properly.
9. Complete any required startup documentation, including logging system performance data.

Shutdown Procedure Checklist:

1. Verify that all personnel involved in the shutdown process have received appropriate training and understand the shutdown procedures.
2. Check the weather forecast to ensure that weather conditions are suitable for shutting down the system.
3. Notify customer seven days prior of the shutdown and provide an estimated time for system restoration.
4. Turn off the inverters and other key components of the system in the proper sequence, making sure to follow manufacturers guidelines.
5. Disconnect the solar panels for the system.
6. Verify that all system alarms and indicators have been cleared.

7. Complete any required shutdown documentation, including logging system performance data.
8. Secure the system to prevent unauthorized access.
9. Conduct a final visual inspection of the system to ensure that it has been properly shut down.

Annual Preventative Maintenance Procedures

- Schedule regular maintenance inspections to ensure that the solar project is functioning optimally.

Array Maintenance Checklist:

- Inspect for any damage, cracks, or signs of wear and tear.
- Check for any accumulation of dirt, debris, or other obstructions.
- Monitor performance and output levels.
- Test the wiring and connections.

1. Modules and DC Wiring
    a. 100% Inspection — Years 1, 6, 10; Years 16 & 21 if extended
    b. 20% Inspection — All Years 100% not performed
    c. Thermal Imaging of Modules — 10% Annually
2. Combiner Boxes
    a. Thermal Imaging — Annually
    b. Clean and Inspect — Annually

Array Mounting Structure Maintenance Checklist:

- Inspect for any signs of damage or corrosion.
- Check for proper alignment and stability.
- Test the fastenings and connections.

1. Support Brackets, Rails, and Grounding Connection
    a. Visual Inspection of Support Post — 20% Bi-Annually
2. Foundation
    a. Visual Inspection of Support Post — 20% Bi-Annually
    b. Visual Inspection of Connection Bolts — 20% Bi-Annually

Inverters Maintenance Checklist:

- Inspect for any signs of corrosion or damage.
- Check for proper functioning and output levels.
- Test the wiring and connections.

1. Thermal Imaging — Annually
2. Non-OEM Clean and Inspect — Annually
3. Check Enclosure Seals — Semi-Annually
4. Cycle AC, DC, and Aux Power Disconnects — Annually
5. OEM prescribed maintenance — Annually

Inverter Shelter / Power Conversion Shelter (PCS) Maintenance Checklist:

1. Clean and Inspect — Semi-Annually
2. General Inspection — Monthly
3. HVAC Tuning — Annually
4. Inspect / Replace Air Filters — Quarterly

MV / HV Maintenance Checklist:

- Inspect all electrical components.
- Test the wiring and connections for any signs of wear and tear.
- Check for any overheating or unusual noise.

1. MV Transformer
    a. Oil Sample & Analysis — Annually
    b. Nitrogen Add & Bleed — As Required
    c. Visual Inspections(External) — Monthly
    d. Visual Inspections(Internal) — Annually
    e. Thermal Imaging(if applicable) — Annually
2. Switchgear
    a. Relays — Per OEM Requirements
    b. Uninterrupted Power Supply — Per OEM Requirements
    c. Station Battery — Per OEM Requirements
    d. Breakers — Per OEM Requirements
    e. Disconnects — Per OEM Requirements
    f. Auxiliary Transformer(if included)
    g. Visual Inspections — Monthly
    h. Thermal Imaging — Annually
    i. OEM Prescribed Maintenance — Per OEM Requirements

Measurement & Control Systems Maintenance Checklist:

- Inspect and test the monitoring equipment and sensors to ensure accurate data collection.
- Check the software systems for any updates or maintenance requirements.
- Verify that alarms and alerts are functioning properly.

1. Metering
    a. Maintenance per Interconnection Provider & OEM — As Required
    b. Inspection per Interconnection Provider & OEM — As Required
    c. Meter Calibration per Interconnection Provider — As Required
2. SCADA Components
    a. Visual Inspection — Semi-Annually
    b. Maintenance — Semi-Annually
3. Meteorological Stations
    a. Monthly Inspection and Level Check — Monthly
    b. Cleaning Pyranometers — Monthly, or as needed

c. Met. Station Maintenance — As Recommended by OEM
d. Calibration — Annually

Interconnection Gateway Maintenance Checklist:

1. OEM prescribed maintenance — As Required

Other Maintenance Services Checklist:

- Monitor the surrounding environment for any signs of damage or negative impact.
- Inspect and test the stormwater management system to ensure that it is functioning properly.
- Inspect and test the erosion control measures to prevent soil erosion and protect the surrounding environment.

1. Washing
    a. Panel Washing — Annually
    b. Washing Equipment Management — As Required
2. Ground
    a. Visual Inspection
        i. Site Drainage — As Required
        ii. Site Security Fences — Annually
    b. Mechanical Maintenance
        i. Gate Operations — As Required
        ii. Ensure signage is visible — As Required
        iii. Minor Fence Repairs — As Required
        iv. Fire Systems and Equipment — Per Local Req.
    c. Land Management — As Required
        i. Weed Abatement
        ii. Landscape Management
        iii. Erosion Management
        iv. Road Maintenance

Safety Procedures

- Develop and implement a safety plan that includes hazard identification, risk assessment, and mitigation measures.
- Provide personnel with appropriate PPE, such as safety glasses, hard hats, and gloves.
- Train personnel on safe work practices, such as proper lifting techniques and the safe use of tools and equipment.

Performance Monitoring Procedures

- Implement a monitoring system to track the output of the solar panels and other key components.
- Develop and implement a plan for analyzing performance data to identify trends and potential issues.
- Establish performance benchmarks and track progress towards achieving them.

Troubleshooting Procedures

- Develop and implement a troubleshooting guide that includes a flowchart or decision tree for diagnosing issues.
- Train personnel on the proper troubleshooting procedures to enable quick resolution of problems.
- Maintain an inventory of common replacement parts to enable quick repairs.

1. Check the system logs and error messages to identify the specific component that is causing the issue.
2. Inspect the wiring and connections for loose or damaged connections.
3. Check the fuses and breakers for any signs of damage or tripping.
4. Test the voltage and current levels at various points in the system to identify any drops or inconsistencies.
5. Verify that the panels are not obstructed or covered in any way.
6. Monitor the performance of individual components to identify if any are operating outside of normal parameters.
7. Check the inverter output for any fluctuations or inconsistencies.
8. Inspect the batteries to ensure they are functioning properly and holding a charge.
9. Verify that the system is properly grounded, and that the grounding system is functioning correctly.
10. Check for any environmental factors that may be impacting the system's performance, such as shading or extreme temperatures.
11. Verify that the software and monitoring systems are functioning properly.
12. Consult with manufacturer manuals, technical support, or service contractors for additional troubleshooting and repair guidance.

Emergency Response Procedures

- Develop and implement an emergency response plan that includes excavation procedures and protocols for shutting down the system safely.

Evacuation Procedures:

- Establish an evacuation plan that outlines evacuation routes and procedures for all personnel.
- Conduct regular evacuation drills and training to ensure that all personnel are familiar with the procedures.
- Have an emergency communication plan in place to ensure that all personnel can be accounted for during an emergency.
- Train personnel on the emergency response plan and conduct regular drills to ensure readiness.
- Establish communications protocols for contacting emergency services and Interconnection Provider personnel in the event of an emergency.

Medical Emergencies Procedures:

- Ensure that all personnel know the location of first aid kits, fire extinguishers, and other emergency equipment.

- Train personnel on basic first aid and CPR
- Establish a communication plan with local emergency medical services and provide them with relevant information about the solar project's location.

Fire Emergencies Procedures:

- Ensure that all personnel know the location of fire extinguishers and other fire suppression equipment.
- Conduct regular fire drills and training to ensure that all personnel are familiar with the procedures.
- Establish a communication plan with local fire departments and provide them with relevant information about the solar project's location.

Electrical Emergencies Procedures:

- Ensure that all personnel know the location of the main electrical shutoff switch and other electrical safety equipment.
- Train personnel on how to identify and respond to electrical hazards.
- Establish a communication plan with local emergency services and provide them with relevant information about the solar project's location.

Severe Weather Emergencies Procedures:

- Monitor weather forecasts and alerts for severe weather conditions, such as lightning, high winds, or tornadoes.
- Establish procedures for shutting down the system in the event of severe weather.
- Ensure that all personnel know the location of safe shelters and evacuation routes.

Reporting Procedures

- Develop and implement a reporting system to provide regular updates to the Buyer and its designated market participant on the performance of the solar project.
    - Hourly forecasts and yearly true ups for system performance compared to projected output.
- Provide the Buyer and its designated market participant with access to performance data and other relevant information.
- Establish clear protocols for reporting any issues or concerns that arise during the operation of the system.

Environmental Procedures

- Develop and implement an environmental management plan that includes measures for preventing soil erosion and protecting wildlife.
- Train personnel on the environmental management plan and ensure that they follow it consistently.
- Monitor the surrounding environment for any signs of damage or negative impact.

Security Procedures

- Develop and implement a security plan that includes physical and electronic security measures.
- Train personnel on the security plan and ensure that they follow it consistently.

- Establish protocols for monitoring and responding to security breaches or incidents.

Training Procedures

- Develop and implement a training program for all personnel involved in the operation of the solar project.
- Provide regular training updates to ensure that personnel are up to date on the latest procedures and techniques.
- Conduct regular skills assessments to identify areas where additional training is needed.

EXHIBIT H - LEGAL DESCRIPTION

LEGAL DESCRIPTION

THE LAND REFERRED TO HEREIN BELOW IS SITUATED LAMAR, IN THE COUNTY OF PROWERS, STATE OF COLORADO, AND IS DESCRIBED AS FOLLOWS:

A tract of land lying in the SW1/4SW1/4 of Sec. 16, T.23S., R.46W. of the 6th P.M. being more particularly described as follows:

Beginning at the Southwest corner of said Sec. 16 as monumented by a 2-1/2" aluminum pipe with 3-1/4" aluminum cap marked PLS 10102 and considering the South line of said Sec. 16, (as monumented by a similar pipe and cap at its East end), bearing N.88°37'43"E. with all other bearings contained herein being relative thereto; thence N.88°37'43"E., along the South line of said Sec. 16, a distance of 199.89 feet to a point on the East Right-of-Way line of the Lamar Alternate Truck Route as found in document recorded at Reception No. 448656 of the Prowers County records and the TRUE POINT OF BEGINNING; thence N.0°21'54"W., along said East Right-of-Way line, a distance of 1143.20 feet; thence N.88°37'43"E., 1143.20 feet; thence S.0°21'54"E., 1143.20 feet to a point on the South line of said Sec. 16; thence S.88°37'43"W., 1143.20 feet to the True Point of Beginning. In the County of Prowers, State of Colorado.

For Informational Purposes:
Tax ID No.: a portion of 000085100

EXHIBIT I - DECOMISSIONING PLAN

SANDHILLS ENERGY

SOLAR ENERGY SYSTEM DECOMMISSIONING PLAN

LAMAR SOLAR PROJECT

4,800 kWAC / 6,030 kWDC

Lamar, Prowers County, Colorado

Prepared by: Sandhills Energy, LLC
1403 Harney Street, Suite 200 | Omaha, NE 68102

April 2026

DRAFT

1. Project Overview

This Decommissioning Plan establishes the obligations, procedures, and timeline for the safe and environmentally responsible removal of the Lamar Solar Project solar energy system at the conclusion of its operational life. This plan is prepared by Sandhills Energy, LLC in accordance with applicable local, state, and federal requirements and constitutes a binding commitment to restore the project site to its pre-development condition.

1.1 Project Information

Project Name	Lamar Solar Project
Project Location	Lamar, Prowers County, Colorado
AC System Capacity	4,800 kWAC (rated at maximum combined output at inverter terminals)
DC System Capacity	6,030 kWDC STC
PV Modules	~12,960 × First Solar Series 6 Plus (465W) — IEC 61215 / UL 1703 Listed
Inverters	To be specified per IFC electrical design drawings
Racking System	FTC Solar Pioneer 1P Single-Axis Tracker — 180 rows (168 interior + 12 exterior) — UL 2703 / UL 3703 Certified
Foundation System	~1,980 driven steel piles (W6x8.5 / W6x9 / W6x12 / W6x15 wide-flange sections per FTC Solar ISD design)
Site Controls	FTC Solar Pioneer: 180 Row Controllers + 2 Zone Controllers + 2 Sensor Packages
Developer / Manager	Sandhills Energy, LLC — 1403 Harney St., Suite 200, Omaha, NE 68102
Project Entity	Clay Creek Energy, LLC
AHJ	Prowers County, Colorado
Applicable Codes	2023 National Electrical Code; Colorado Building Code; NFPA 70; UL; ANSI; ASTM; ASCE 7-16

1.2 Estimated Project Lifespan

The Lamar Solar Project utilizes First Solar Series 6 Plus thin-film photovoltaic modules, which carry a 30-year linear performance warranty with a degradation rate not to exceed 0.5% per year. The FTC Solar Pioneer tracker system carries a 10-year structural warranty and 5-year electronics warranty. Based on these specifications and industry standards, the estimated operational lifespan of this project is 25–35 years from the commercial operation date (COD), placing the anticipated decommissioning window between approximately 2052 and 2062.

This Decommissioning Plan shall be reviewed and updated at minimum every five (5) years to reflect changes in technology, recycling infrastructure, cost estimates, and regulatory requirements. A formal decommissioning cost reassessment by an independent licensed professional engineer shall be conducted no later than five (5) years following the project's Commercial Operation Date. Clay Creek Energy, LLC shall maintain financial assurance at minimum equal to the amounts required by the Colorado State Board of Land Commissioners under Lease No. SO-117537 at all times.

2. Conditions Triggering Decommissioning

Decommissioning of the Lamar Solar Project shall be initiated upon the occurrence of any of the following conditions:

- Expiration or non-renewal of the project land lease agreement(s)
- Cessation of electricity generation for a continuous period of twelve (12) months or greater without documented plans for repowering or refurbishment
- Voluntary termination of operations by the project owner
- Revocation of operating permits by Prowers County or applicable state regulatory body
- A pre-identified end date established in the project lease or power purchase agreement (PPA)
- Determination by a licensed professional engineer that the facility cannot be safely or economically restored to operational status

Upon determination that any triggering condition has been met, Sandhills Energy (or its successor project owner) shall notify Prowers County, all applicable landowners, and the local AHJ in writing within thirty (30) days. Formal decommissioning activities shall commence no later than twelve (12) months following notification.

3. End-of-Life Management Options

Prior to initiating full decommissioning, Sandhills Energy will evaluate the following options to determine whether extending the project's operational life is technically and economically feasible:

3.1 Extending the Performance Period

Option A: Continued Operation (Lease/Permit Extension)

If equipment remains in working order and all lease, permit, and interconnection agreements can be extended, continued operation may be pursued at no capital cost. The ongoing costs of maintaining aged equipment, including drive unit replacements and tracker maintenance for the FTC Solar Pioneer system, will be assessed against the value of continued generation.

Option B: Reuse / Repurposing

First Solar Series 6 Plus modules are manufactured 100% domestically (Perrysburg, Ohio) and carry strong secondary market value, particularly given their U.S. domestic content qualification under the Inflation Reduction Act. If panels are still functional, they may be sold or donated to secondary markets, providing both revenue and environmental benefit. Reuse is considered the most economically and environmentally favorable end-of-life option.

Option C: Refurbishment

Inverters, tracker electronics, wiring, and balance-of-system components may be refurbished to extend system life. Spare parts availability for the FTC Solar Pioneer drive units, row controllers, and zone controllers shall be assessed. Refurbishment is recommended only where cost is justified relative to remaining energy generation value.

Option D: Repowering

The site's existing land use approvals, utility interconnection (Tri-State Generation & Transmission), and permitting infrastructure represent significant embedded value. A repowered system — replacing aging modules, inverters, and tracker drive units with next-generation equipment — can leverage these assets while capturing efficiency improvements. Repowering would essentially restart the project lifecycle.

3.2 Full Decommissioning

If none of the above options is feasible or elected, full decommissioning will be executed as described in Sections 4–7 of this plan. Full decommissioning involves the complete removal of all solar infrastructure and the restoration of the site to its pre-development condition.

4. Decommissioning Tasks & Schedule

4.1 Responsible Party

The project owner of record at the time decommissioning is triggered — currently Clay Creek Energy, LLC, managed by Sandhills Energy, LLC — bears full financial and operational responsibility for all decommissioning activities. This responsibility is non-transferable without written consent from Prowers County and affected landowners. The project owner shall engage a licensed contractor to oversee decommissioning activities.

4.2 Notification Protocol

Notification of intent to decommission shall be provided as follows:

- Written notice to Prowers County (AHJ) — at least 12 months prior to anticipated decommissioning commencement; note that per State Land Board Lease No. SO-117537 (Section 27.B), decommissioning must commence within six (6) months of lease expiration or termination — notice to all parties shall be timed to ensure this deadline is met
- Written notice to all landowners under lease — at least 12 months prior
- Notice to Tri-State Generation & Transmission (utility interconnection provider) — at least 6 months prior
- Notice to Colorado Public Utilities Commission (CPUC) if required — per applicable state regulations
- Notice to Colorado Department of Public Health & Environment (CDPHE) if required — per applicable environmental regulations

4.3 Decommissioning Work Sequence

Based on the Facility's size and configuration, complete decommissioning and site restoration is estimated to require approximately 10 to 14 weeks of active work, broken down as follows:

Phase	Estimated Duration
Planning, permitting, and utility coordination	2–3 weeks
De-energization, module removal, and equipment disassembly	3–4 weeks
FTC Pioneer pile extraction and underground cable removal	2–3 weeks
Site grading, restoration, and seeding	2–3 weeks
Final inspection and closeout	1 week
TOTAL ESTIMATED DURATION	10–14 weeks

5. Equipment Inventory & Materials

The following table provides a comprehensive inventory of all equipment and materials to be removed during decommissioning, based on the Lamar Solar Project design documents. All amounts given below are to be updated with as built construction drawings at Commercial Operations.

Equipment / Material	Qty	Category	Preferred Disposition
First Solar Series 6 Plus PV Modules (465W)	12,960	PV Modules	Resale (secondary market) / First Solar Take-Back Program
Inverters	Per IFC design	Power Electronics	Electronics Recycle
FTC Solar Pioneer Row Controllers	180	Tracker Controls	Electronics Recycle
FTC Solar Pioneer Zone Controllers	2	Tracker Controls	Electronics Recycle
FTC Solar Pioneer Sensor Packages (Anemometer + Snow)	2	Monitoring	Electronics Recycle
FTC Solar Pioneer Tracker Structure — Interior Full Rows	168 rows	Structural Steel	Steel Recycling / Resale
FTC Solar Pioneer Tracker Structure — Exterior Full Rows	12 rows	Structural Steel	Steel Recycling / Resale
Driven Steel Piles (W6x8.5 / W6x9 / W6x12 / W6x15)	1,980	Structural Steel	Steel Recycling
Step-Up Transformer(s)	Per IFC design	Utility Equipment	Utility Coordination / Recycle
AC Combiner / Switchgear	Per IFC design	Electrical Equipment	Resale / Metal Recycle
String Combiner Boxes / DC Equipment	Per IFC design	DC Equipment	Metal Recycle
PV Wire / Conductors (AL & CU)	~18 miles (est.)	Electrical Conductors	Copper / Aluminum Recycling
PVC 40 / EMT Conduit	Multiple	Conduit	Recycling / Disposal
LiFePO4 Battery Backup Modules (FTC Pioneer per-row)	180 units	Energy Storage	Licensed Battery Recycler
Control Power / Auxiliary Panels	Per IFC design	Electrical Equipment	Resale / Metal Recycle
SCADA / Weather Station / Monitoring Equipment	1 system	Monitoring Equipment	Resale / OEM Return
7' Perimeter Fence	Full Perimeter	Fencing	Resale / Metal Recycle
Concrete Equipment Pads	Multiple	Civil Infrastructure	Crush / Recycle or Remove
Grounding System (Cu ground ring, ground rods)	Full System	Grounding	Copper Recycling

6. Recycling & Disposal Strategy

6.1 Solar Module Recycling

First Solar Series 6 Plus modules utilize advanced thin-film cadmium telluride (CdTe) technology and are manufactured entirely in the United States at First Solar's Perrysburg, Ohio facility. First Solar operates an industry-leading, manufacturer-funded global module recycling program. At end-of-life, Sandhills Energy will:

- Evaluate secondary market resale as the primary disposition — First Solar Series 6 Plus modules carry strong secondary value, particularly given their 100% U.S. domestic content qualification
- If resale is not viable, contact First Solar's recycling program directly for take-back, as First Solar provides dedicated recycling services for its modules globally
- If First Solar's program is unavailable, engage SEIA PV Recycling Partner Network members operating in the Rocky Mountain / Southwest region
- Document all module serial numbers and chain-of-custody prior to transport

NOTE: *First Solar CdTe modules have been tested to pass the EPA's TCLP under federal RCRA standards, which may support non-hazardous waste classification at end-of-life — reducing decommissioning cost and complexity compared to modules that require hazardous waste handling. Colorado-specific waste classification requirements shall be confirmed at the time of decommissioning. First Solar also operates a module recycling program designed to recover more than 90% of materials by mass, including closed-loop recovery of semiconductor material for use in new modules.*

6.2 Tracker System & Structural Materials

The FTC Solar Pioneer tracker system consists of pre-galvanized (G90) torque beams, module rails, and wide-flange driven steel piles. These components represent significant recoverable steel by weight. Structural steel, tracker piles, and racking shall be transported to licensed metal recycling facilities or offered for direct resale to solar construction contractors. The LiFePO4 battery backup modules in each row controller unit shall be recycled through a licensed battery recycling facility in compliance with applicable Colorado and federal regulations.

6.3 Metals & Structural Materials

Structural steel (tracker piles, torque tubes, racking), copper conductors (DC cabling, grounding), and aluminum components represent the bulk of recoverable material by weight. These materials shall be transported to licensed metal recycling facilities. Current estimates indicate that over 80% of total system weight is recoverable as steel, copper, and aluminum.

6.4 Power Electronics

Inverters, combiners, transformers, and control equipment shall be offered for resale through certified electrical equipment dealers prior to recycling. Fluid-containing equipment (transformers) shall be inspected for PCBs and managed according to EPA requirements. All fluids and oils shall be properly recovered prior to disposal.

6.5 Hazardous Materials Management

The following potential hazardous materials shall be identified, tested, and managed per applicable federal, Colorado state (CDPHE), and local regulations:

- First Solar CdTe modules — verified non-hazardous per EPA TCLP testing; recycling through First Solar's manufacturer program recommended
- Transformer dielectric fluids — test for PCBs; manage per 40 CFR Part 761
- LiFePO4 battery backup units (FTC Pioneer row-level battery backup) — managed per applicable Colorado battery disposal and RCRA regulations
- Lead-containing solder in electrical equipment — managed per RCRA

7. Decommissioning Cost Estimates

7.1 Cost Estimation Basis

Cost estimates are prepared using a bottom-up unit cost methodology consistent with the EPRI 2018 PV Plant Decommissioning Study (Sargent & Lundy), NYSERDA decommissioning benchmarks, and project-specific factors including the 4,800 kWAC / 6,030 kWDC system size, 180-row FTC Solar Pioneer single-axis tracker

configuration, and approximately 40 acres of site area. Unit rates are at the low end of published ranges (RSMEANS 2024, CDOT eastern Colorado unit prices, AMM Midwest metals pricing Q1 2025). Salvage value of steel, copper, aluminum, and functional equipment has been incorporated as a credit. Module resale is excluded from salvage value in this estimate as a conservative assumption.

All figures are in 2025/2026 USD with no inflation escalation applied. Per the Financial Assurance terms in Section 8, an independent licensed professional engineer shall re-calculate the Net Decommissioning Cost approximately five (5) years following COD. The decommissioning bond shall be maintained at minimum at the amount required by the Colorado State Board of Land Commissioners under Lease No. SO-117537.

Cost Category	Low Estimate	Mid Estimate	High Estimate
Module Removal & Handling (12,960 modules)	$28,000	$38,000	$52,000
FTC Pioneer Tracker & Racking Disassembly (180 rows, 1,980 piles)	$105,000	$140,000	$185,000
Electrical Equipment Removal (inverters, combiners, wiring)	$55,000	$75,000	$102,000
Underground Cable & Conduit Removal (~18 miles)	$32,000	$45,000	$62,000
Civil Infrastructure (concrete pads, roads, fencing)	$58,000	$78,000	$105,000
Transformer & Utility Coordination	$16,000	$22,000	$30,000
Site Grading, Re-vegetation & Restoration	$25,000	$35,000	$48,000
Module Recycling & Disposal (if resale not viable)	$0	$15,000	$35,000
Engineering, Permitting & Project Management	$25,000	$35,000	$48,000
Transportation & Logistics	$20,000	$28,000	$38,000
GROSS DECOMMISSIONING COST SUBTOTAL	$364,000	$511,000	$705,000
Contingency (10%)	$36,400	$51,100	$70,500
TOTAL GROSS DECOMMISSIONING COST	$400,400	$562,100	$775,500
Less: Salvage Value Credit (steel, copper, aluminum, equipment)	($74,000)	($105,000)	($135,000)
NET ESTIMATED DECOMMISSIONING COST	$326,400	$457,100	$640,500
Net Cost per MW (4.8 MWAC)	$68,000/MW	$95,200/MW	$133,400/MW

Note: The above estimates are in present-day (2025/2026) dollars. Applying an assumed 2.5% annual inflation rate, the projected net cost at Year 25 (approximately 2052) would range from approximately $607,000 to $1,190,000. These estimates shall be reviewed and updated every five years. If decommissioning occurs earlier in the operational life (e.g., years 1–10), First Solar Series 6 Plus modules may be sold on the secondary market (estimated $0.06–$0.12/W for functioning modules with U.S. domestic content premium), which would significantly reduce or eliminate the net cost of decommissioning.

7.2 Salvage Value Breakdown

The following table provides a detailed breakdown of the estimated salvage and resale value of the Facility's major non-module components. Module salvage value is excluded from this analysis as a conservative assumption; however, First Solar Series 6 Plus modules may retain meaningful secondary market value depending on condition and market conditions at the time of decommissioning.

Component	Salvage Basis	Estimated Value
Structural steel — FTC Pioneer piles, torque tubes, racking (1,980 piles)	Scrap steel at ~$175–220/ton (AMM Midwest Q1 2025)	$28,000 – $48,000
Copper — DC cabling, conductors, ground ring (~18,000 lbs)	Scrap copper net ~$2.75–3.25/lb (LME Q1 2025 basis)	$33,000 – $58,000
Aluminum — AC cable and miscellaneous components	Scrap aluminum net ~$0.55–0.70/lb	$6,000 – $10,000
Inverters	Resale or component recovery	$8,000 – $15,000
Transformers	Resale or scrap (copper/steel core)	$6,000 – $12,000
FTC Pioneer Row/Zone Controllers & Sensors	OEM return or electronics resale	$3,000 – $8,000
Combiners, DAS, miscellaneous electrical	Resale or component scrap	$3,000 – $7,000
Fencing materials	Scrap steel / reuse	$2,000 – $3,000
TOTAL ESTIMATED SALVAGE VALUE		$89,000 – $161,000

8. Financial Assurance & Decommissioning Bond

8.1 Bond Structure

Clay Creek Energy, LLC has posted a decommissioning bond of $150,000 to the Colorado State Board of Land Commissioners pursuant to State Land Board Solar Energy Production Lease No. SO-117537, Section 31 (executed October 1, 2025). This amount was calculated per the Lease formula of $25,000 base plus $25,000 per megawatt. Clay Creek Energy, LLC shall maintain financial assurance at minimum equal to the amounts required by the State Land Board at all times. The bond may be used by the State Land Board to satisfy any obligation under the Lease, including payments owed, removal of all improvements, and reclamation required under Section 27 of the Lease.

In addition to the State Land Board bond described above, the following supplemental financial assurance process applies for Prowers County and project purposes:

- Within six (6) months following the project's Commercial Operation Date (COD), Sandhills Energy shall engage an independent licensed professional engineer (PE) to prepare a formal Net Decommissioning Cost estimate for the Lamar Solar Project
- Clay Creek Energy shall ensure that total decommissioning financial assurance equals or exceeds the PE-certified Net Decommissioning Cost; if the PE-certified amount exceeds the State Land Board bond, Clay Creek Energy shall post supplemental assurance in a form acceptable to Prowers County
- Prior to PE certification, Clay Creek Energy shall maintain the State Land Board bond of $150,000 and shall be capable of funding decommissioning at a level no less than the Mid Estimate set forth in Section 7.1 above

8.2 Periodic Recertification

The State Land Board shall review the bond amount every five (5) years under Lease No. SO-117537, Section 31, and may require increases as warranted. Independently, Clay Creek Energy shall also engage a licensed PE to recalculate the Net Decommissioning Cost approximately every five (5) years. Clay Creek Energy shall, at minimum, comply with the State Land Board's bond requirements at all times. If either review indicates an increase is warranted, the financial assurance instrument shall be increased accordingly within 90 days. The bond

amount shall not be decreased except as may be drawn upon to implement this Decommissioning Plan or as authorized by the State Land Board.

8.3 Net Decommissioning Cost Definition

For purposes of financial assurance, Net Decommissioning Cost means the total estimated gross cost of fully implementing this Decommissioning Plan (including a 10% contingency), less the estimated salvage and recycling credit value of project components, as determined by an independent PE. If the PE-certified Net Decommissioning Cost is zero or negative (i.e., salvage value equals or exceeds gross decommissioning cost), no supplemental bond posting beyond the State Land Board's required amount is required at that review cycle. The State Land Board bond shall remain in place at the amount required by the Board regardless of PE findings, per Lease No. SO-117537, Section 31.

9. Natural Resource Impacts & Environmental Considerations

The Lamar Solar Project was designed with single-axis trackers and vegetated ground cover. During decommissioning, the following natural resource considerations shall be addressed:

- Soil Compaction & Agricultural Productivity: Pile extraction and equipment staging may cause soil compaction. All compacted areas shall be deep-tilled using chisel plowing and/or subsoiling, and amended to restore pre-construction soil structure and productivity per USDA FSA Conservation Practice Standard 324. All disturbed native grassland shall be reseeded using grass seed mixes recommended by the Prowers County NRCS office or the Colorado State University (CSU) Extension office for Prowers County, per the requirements of State Land Board Lease No. SO-117537, Section 24. Reseeding shall continue until the damaged native grassland is fully established, with the reseeding obligation extending up to five (5) years from the date of complete or partial removal of physical Solar Power Generating Facilities from the Leased Premises.
- Stormwater Management: A Colorado CDPHE Stormwater Permit shall be obtained prior to ground disturbance. A SWPPP (Stormwater Pollution Prevention Plan) shall be implemented throughout the decommissioning period per applicable Colorado regulations.
- Erosion Control: Silt fencing, erosion control blankets, and temporary seeding shall be used to prevent sediment discharge during decommissioning activities.
- Wildlife & Habitat: Any ground-nesting bird surveys shall be conducted prior to vegetation removal if decommissioning occurs during nesting season (March–August). Existing pollinator or native habitat plantings, if established, shall be preserved or restored per landowner agreement.
- Materials Management: Transformer fluids shall be tested for PCBs and managed per Section 6.5. FTC Pioneer LiFePO4 battery backup units shall be recycled through a licensed battery facility. First Solar CdTe modules are classified as non-hazardous waste (verified via EPA TCLP testing) and will be recycled through First Solar's manufacturer recycling program or SEIA partners.
- Cultural Resources: No ground disturbance beyond existing pile locations without evaluation for previously unidentified cultural resources per Colorado SHPO protocols.

10. Decommissioning Plan Review & Updates

Because decommissioning will not occur for 25 or more years from the project's commercial operation date, this plan must remain current and relevant over time. Sandhills Energy commits to the following review schedule:

Review Interval	Scope of Review
5 years from COD	Independent PE cost recertification; post or adjust decommissioning bond per Section 8; update salvage value assumptions

Review Interval	Scope of Review
Every 5 years thereafter	Update decommissioning cost estimates based on current labor, material, and recycling market conditions; update salvage value assumptions and PE recertification
Every 10 years	Full plan revision incorporating technology changes, changes in solar recycling infrastructure, changes in Colorado regulations, landowner agreement amendments, and ownership / operator changes
Upon Trigger Event	Immediate plan activation and update upon occurrence of any triggering condition defined in Section 2; review and update cost estimates prior to commencing decommissioning activities
Upon Ownership Transfer	New owner must formally assume all decommissioning obligations; written notification to Prowers County required within 30 days of transfer

11. Summary of Commitments

Sandhills Energy (on behalf of Clay Creek Energy, LLC) commits to the following obligations with respect to the Lamar Solar Project:

- Submit this Decommissioning Plan to Prowers County (AHJ) and affected landowners prior to or concurrent with project permitting
- Maintain the decommissioning bond posted with the Colorado State Board of Land Commissioners (Lease No. SO-117537, Section 31) at all times at minimum equal to the amounts required by the Board; engage an independent licensed PE to certify the Net Decommissioning Cost no later than five (5) years following COD and post any supplemental assurance required above the State Land Board bond amount
- Recertify the Net Decommissioning Cost with an independent PE approximately every five (5) years over the operating life and adjust the bond accordingly
- Provide timely written notification to all parties upon determination that a decommissioning trigger has been met
- Bear full financial responsibility for all decommissioning costs; landowners and Prowers County will not bear these costs
- Prioritize secondary market resale, then recycling, over landfill disposal for all recoverable equipment and materials
- Complete full removal of all equipment and site restoration within 18 months of lease termination or expiration, consistent with State Land Board Lease No. SO-117537, Section 27.B; decommissioning activities shall commence no later than six (6) months following termination or expiration
- Ensure compliance with all applicable federal, Colorado state, and local regulations throughout the decommissioning process

12. Signatures & Certifications

By signing below, the authorized representative of Sandhills Energy, LLC (as manager of Clay Creek Energy, LLC) certifies that this Decommissioning Plan is accurate, complete, and represents a binding commitment of the project owner.

_____ _____

Authorized Representative, Sandhills Energy, LLC Date

Brian Boerner, SVP Development

Title

EXHIBIT J - EMERGENCY RESPONSE PLAN

Sandhills Energy



Plant Emergency Action Plan

SITE NAME









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1 Introduction

This Emergency Action Plan (EAP) has been prepared for **SITE NAME** (hereafter, referred to as the Site). The EAP must be reviewed by all Associates before their work activities commence at the Site.
The location of the Site is **ADDRESS**.
Associated with this EAP, Sandhills Energy is to ensure its personnel, subcontractors and visitors to the Site (of any tier) are provided guidance and awareness relating to the overall health and safety management at the Site. This EAP shall be updated as necessary to address any additional activities or changes in Site conditions, which may occur during construction and full-scale operations. In addition, this is a living document which may be altered at any time throughout the duration of the project.

Figure 1: Map of the Project Site Location

Note: The term, Associate, may refer to any Site worker or personnel, either indirectly contracted or employed directly by the Company during construction or operations of the Site. The Company may include Sandhills Energy, or any of the Affiliated Limited Liability Companies controlled or serviced by RNWBL.

1.1 Purpose

The purpose of this Emergency Action Plan is to establish procedures for safely and effectively managing an emergency event for the Site. ALL site personnel, including visitors are expected to follow the procedures outlined in this plan to ensure that they are protected from any further harm during an emergency.

1.2 Authority

- OSHA 29 CFR 1910.38, Emergency action plans.
- OSHA 29 CFR 1926.35, Employee emergency action plan

1.3 Scope

This Emergency Action Plan covers those designated actions managers and employees must take to ensure employee, subcontractors and visitors safety from fire and other emergencies. This plan includes: emergency escape procedures and emergency escape route assignments; procedures for employees who have to stay to operate critical plant operations before they evacuate (if applicable); procedures to account for employees after emergency evacuation has been completed; rescue and medical duties for those employees who are to perform them; the preferred means of reporting fires and other emergencies; and individuals who can be contacted for further information about the plan.

2 Responsibilities

Key Sandhills Energy Employees have responsibility and accountability in ensuring the safe response and evacuation of Site personnel in an emergency. Those key job titles, with appropriate responsibilities, are listed in the following section below and hereafter will be referred to as Emergency Response Team (ERT) members. The ERT is made up from management and supervisory personnel who have the delegated authority to act and make decisions as required during emergencies in accordance with their defined roles and responsibilities.

2.1 Emergency Response Team (ERT) Responsibilities

The goal of the ERT is to assist in the orderly evacuation of Associates and visitors from a building or area during an emergency or assist with shelter in place procedures if warranted. The duties of the Response Team are as follows:

- Be familiar with the content of this Plan.
- Alert staff of emergency situations.
- Ensure that Associates and visitors are appropriately evacuating the facility or area based on the escape route assignments (see diagrams in Appendix A & B).
- Assist in the evacuation of visitors and Associates with disabilities during emergency situations, or altering security, fire, and police personnel of the last known location of the individuals.
- Perform medical duties as necessary to Associates and visitors during emergency situations.
- Extinguish small fires with the use of a fire extinguisher.
- If instructed, account for all Associates and visitors at the designated meeting location(s).

2.2 Site Manager Responsibilities

The Site Manager (or designee) has the following responsibilities:

- Approving the EAP.
- Acting as the sole liaison to senior emergency services personnel.
- In the event of an emergency evacuation, the Site Manager (or designee) is also responsible for directing Associates, as follows.
    - Relaying the final accountability results to senior Emergency Services staff.
    - Having sole responsibility to allow workers to return to the Site or to dismiss them from the Site.
    - Organizing a meeting of all key Associates after each evacuation to investigate, discuss, and review the occurrence.
- Reviewing and updating the EAP periodically to cover prevalent conditions or dangers or those likely to occur at the Site.
- Assessing Site conditions and directing emergency response activities in accordance with the EAP.
- Making sure that information regarding Site evacuations, emergency assembly areas, communication, and other emergency procedures are accurate and up to date.
- Conducting routine EAP drills and an evaluating compliance with the EAP.

- Making sure Site contact information is accurate and up to date (see **Appendix B**).
- Preparing detailed written reports of each incident, which include recommendations for preventing future incidents and suggestions for improved handling of similar emergencies.

2.3 Field Supervisor Responsibilities

Site Supervisors have the following responsibilities:

- Ensuring all Associates has received the proper fire and evacuation training.
- Monitoring their work areas for potential fire risks and obstructed fire exits, alarm stations, fire extinguishers.
- Verifying that emergency evacuation routes and emergency assembly areas are accessible.
- Managing emergency equipment or supplies, including first aid kits, fire-fighting equipment and PPE.
- In the event of an emergency, Field Supervisors are also responsible for the following:
    - Assisting or coordinating the evacuation of handicapped individuals.
    - Assisting with mobilization of supplies and equipment required during and after an emergency.
    - Bringing their group to the emergency assembly area and obtaining a head count as soon as possible to determine if anyone is missing.
    - Reporting accountability results to the Safety Manager.
    - Maintaining control of the Associates within their areas to prevent wandering, premature return to the work area, or unauthorized exit from the work area.

2.4 Associate Responsibilities

All Associates have the following responsibilities.

- Complying with the Site EAP.
- Advising Site Management of problems or discrepancies with this EAP at the Site.
- In the event of an emergency, most Associates are evacuated and do not participate in emergency response activities.

3 Emergency Methods & Procedures

This section of the EAP details the appropriate measures to be employed during the development of the Plan and during an actual emergency or incident. It should be noted that all procedures should only be undertaken if safe to do so, and there is no risk of harm to any other personnel. Should further risks to other personnel exist, it is imperative that external professional assistance is used to ensure all Associates and visitors are safe and no further incidents occur.

3.1 Risk Analysis and Plan Development

During initial O&M move-on, the Site Manager (or designee) shall perform the following steps in developing the Site EAP:

Step	Action
1	Perform a risk analysis of the entire Site to identify the potential accidents and incidents that may occur and the mitigating measures to reduce exposure.
2	Develop a list of site address, primary Sandhills Energy contact, and local emergency response (e.g. fire, police and ambulance) and update in **Appendix B.**
3	Identify site muster points (i.e. emergency assembly areas) and develop an emergency evacuation map for site personnel. Post emergency evacuation map in conspicuous areas for site Associates and visitors.
4	Identify Associates responsible for emergency response and evacuation and update in **Appendix B.**
5	Provide EAP training component for site safety orientation for all new Technicians and visitors.

3.2 Reporting Emergencies

In the event of a Site emergency, the following steps shall be taken:

Step	Action
1	First, notify SERO and, if appropriate, call **911.** 911 shall **ALWAYS** be contacted for all life-threatening injuries and significant environmental events (e.g. uncontrolled fires, floods, earthquakes, etc.).
2	Provide as much information as possible, including the following (if applicable):

	• Type of emergency • Address and geographical location • Location of emergency (e.g. block/equipment, trailer, parking lot, etc.) • Number of injured or trapped Associates
3	Site Manager (or designee) shall notify the entire Site of emergency through two-way radio communication and/or telephone.

3.3 General Emergency Response

Once an emergency has been issued by the Site, all Associates and visitors shall take the following actions:

Step	Action
1	Turn off all mobile equipment and power tools.
2	Attempt to rescue or assist others only if it can be done safely.
3	Report to the designated muster point (i.e. emergency assembly area), unless the egress route to the muster area is not safe for travel. In such a case, proceed to an alternate muster area. Important: Walk briskly, but do not run.
4	Remain calm, alert, and wait for further instructions from your supervisor or other representative designated as the 'Person-in-Charge'.
5	Listen carefully for your name to be called for accountability. If your name is not called, report this to your supervisor, or Person-in-Charge, immediately.
6	Listen for the names of unaccounted Associates. If possible, provide information to their supervisor regarding their location such as an Associate's absence, break, off-site meeting, etc.
7	Remain in the assembly area until dismissed by site management. Do not get into a car, leave the site, or wander out of your assembly area unless given the 'ALL CLEAR' or return to work authorization has been given by site management.
8	Do not return to the work area until authorized by site management.

3.4 Injury Response

Step	Action
1	Check the scene and the victim to determine the danger potential and the extent of the injury. Do not move a seriously injured victim unless there is an immediate danger.
2	Notify SERO first and, if appropriate, call **911**.

3	If the injury is minor, treat with first aid.
4	If injury is determined to need medical attention, the supervisor (or designee) will make notifications.
5	If ambulance is required, site supervisor (or designee) will assist in escorting ambulance to area of injured person.

3.5 Hazardous Materials Response

A hazardous material is a substance that presents a physical or health hazard. A health hazard refers to a substance for which there is significant evidence that health effects may occur for exposed employees.
A Material Safety Data Sheet (MSDS) or Safety Data Sheet (SDS) is required for all hazardous substances in use at the Site. Associates will be provided with training on the safe use of all chemicals they will be exposed to.
The list of chemicals, regularly used at this Site, is located at the O&M office.

Step	Action
1	Evacuate the area, securing access to the area when possible.
2	Immediately inform your supervisor of the situation. Provide as much information as possible.
3	If safe, remain in the immediate area and prevent others from being exposed to the chemicals until appropriate emergency response can arrive.
4	If it is determined that emergency services are needed, the site supervisor (or designee) will make the call and help assist the arrival of emergency vehicles.

3.6 Spill to the Environment

Any spill of hazardous or potentially hazardous product must be properly controlled and follow report prepared. General clean up shall be coordinated with Site Manager, Fire Department, and, if necessary, the cleanup vendor. Contain minor spills using spill containment kits provided at the various locations at the site.

Controllable, Localized Spill

Controllable, localized spills typically involve small quantities of material that can be controlled by the first responder and/or with the aid of other personnel in the immediate work area using readily available, on-site spill response equipment. Releases of all commonly used products (e.g., cleaning supplies, fuel, oil, or other hazardous chemical) and can be handled with existing equipment.

1. Notify the Site Supervisor immediately.
2. Give your name, exact location, the number of contaminated person(s), and brief description of emergency and nature or type of contamination.
3. Determine the source chemical released.
4. Eliminate any unusual hazards and sources of ignition.

5. Ensure responders wear PPE.
6. Clean up the release in accordance with procedures on Safety Data Sheets (SDS).

Significant Spills

A significant spill is a spill that requires the assistance of an off-site, private spill cleanup contractor to control and/or clean-up the spill or the spill poses a significant hazard or potential hazard to human health or the environment.

During operations, in each situation where the assistance of an off-site, private spill cleanup contractor is required, Site Management shall immediately notify the Sandhills Energy Remote Operations (SERO) at 402-992-5825, 24-hours a day/7 days a week.

1. Notify Site Supervisor immediately.
2. Give your name, exact location, the number of contaminated person(s), and brief description of emergency and nature or type of injury or contamination.
3. Immediately have all staff exit the affected area while preventing anyone from walking through the spill.
4. Gather as much information as possible.
5. Determine if anyone has been contaminated or hurt.
6. If safe, stop the source of the spill while exiting the area.
7. DO NOT TRY TO CLEAN UP THE RELEASE. Qualified HAZMAT personnel will be contacted.
8. Evacuate the area if necessary.
9. If the spill is over the critical threshold as defined by the state of operations contact: CLEAN HARBORS (800) 645-8265 (24 Hour Hotline)

3.7 Earthquake Response

Step	Action
1	If indoors during an earthquake: • Take cover by moving under a sturdy table or other piece of furniture. • Hold on until shaking stops. • If you cannot take cover under a piece of furniture, tuck your head into your knees and cover your head with your arms. • Proceed to muster point only after shaking has stopped and it is safe to do so.
2	If outdoors during an earthquake: • Get out of trenches and excavations by using the safest means necessary. • Remain outdoors. DO NOT enter a building. • Stop all work, exit arrays and hot areas, and proceed to nearest muster point. • Drop to your knees into a fetal position, close your eyes, and cross your arms over the back of your neck for protection. • Remain in this position until shaking stops. • Do not walk the Site alone.
3	If in a vehicle during an earthquake:

- Stop as quickly as safety permits and stay in the vehicle.
- Avoid stopping near or under buildings, trees, overpasses and utility wires.
- Proceed to muster point cautiously once shaking has stopped.
- Avoid roads, bridges, or ramps that might have been damaged by the earthquake.

3.8 Fire or Explosion Response

Step	Action
1	Notify SERO first and, if appropriate, call **911**.
2	Provide your location – use landmarks or block/array info if working outside.
3	Provide status of victims, if any, and the affected areas of the fire or explosion.
4	If you are a victim that is on fire – STOP, DROP, and ROLL.
5	Try to extinguish the fire ONLY if safe to do so and trained to use a fire extinguisher or other firefighting medium.
6	Alert others nearby to clear affected area.
7	All site personnel shall stop work and maintain radio silence if not directly involved in the emergency.
8	Try to move any victims to a safe area, if possible.
9	Upon radio and/or phone instruction from site management, proceed to the nearest assembly area and wait for further instruction.
10	Stay together and do not leave until ‘ALL CLEAR’ is given or further instruction is provided by site management.

3.9 Severe Weather Response

Step	Action
1	Monitor media resources for warnings associated with severe weather conditions. Sever Weather can be any of or a combination of the following: • Dust Storm • Windstorm • Heavy Rainstorm or Flash Flood • Lightning Storm • Other weather conditions that may be rare events in the desert that could disrupt operations or present hazardous conditions such as snow, sleet, hail, or tornados
2	In the event of a severe weather event, perform the following steps below.

3 Get as much information as possible from information sources. Potential sources of information include:

- Internet access to weather websites.
- Local forecasting and warnings via AM/FM radio.
- Weather apps on smart phones.
- Personal observation of existing conditions.

4 Personnel should be advised to seek shelter in one of the following locations (preferably in the O&M building):

- O&M Building.
- PCS Shelter.
- SCC Building.
- Vehicles.

5 In the case of the following conditions further sheltering or protection should be sought as explained:

- Dust Storm
  - If driving, pull off the side of the road and park clear of traffic. Stay with your vehicle.
  - If on the plant site and able, seek shelter in one of the above listed sheltering locations.
  - If on the plant site and unable to avoid the storm, shelter in your vehicle.
- Windstorm
  - If driving, assess conditions and try to pull off the road in a sheltered location. Avoid trees, power lines and other objects that may be displaced by the wind.
  - If on site, seek shelter in the above-mentioned locations.
- Heavy Rainstorm or Flash Flood
  - If traveling assess conditions and adjust traveling speed accordingly.
  - If traveling and water is rising, seek high ground and shelter in your vehicle.
  - DO NOT try to cross portions of roadways covered by water. Wait until water flows subside to assure that the roadway is intact and that no current can sweep away your vehicle.
  - If on site shelter in the above-mentioned locations.
  - Seek high ground if sheltering in a vehicle.
  - Stay clear of electrical devices, poles, breakers, and overhead lines.
  - DO NOT try and drive through low lying areas that are covered with water.
  - DO NOT return to the plant site until conditions allow safe access.
- Lightning Storm
  - If lightning is detected at 30 miles from the location
    - Prepare to shut down all activities.
    - Identify shelter and prepare to move to it.

- If Lightning is detected at 15 miles from the location
  - Cease outdoor activity
  - Secure equipment
- If Lightning is detected at 8 miles or visibly observed
  - Immediately seek shelter and cease any outdoor activities. Abandon any efforts to secure equipment.
- Outdoor activity should not resume until lightning activity has been verified to have moved at least 15 miles away from the site.

- Any speech pattern or accent
- Background noises

6	Other Conditions and Response:
	• In the event of snow, hail, sleet or freezing rain.
	  • If driving, slow vehicle to match conditions or safely exit at the next exit location and wait for conditions to improve.
	  • Shelter in buildings if possible.
	  • If sheltered in vehicle, run vehicle motor sparingly and be aware of carbon monoxide poisoning potential.
	  • Be aware of traveling conditions on site and avoid locations where vehicles may get stuck or are otherwise inhibited from travel.
	• In the event of a tornado.
	  • Seek shelter on the most interior sections of buildings.
	  • Seek shelter in low areas on the ground. Abandon your vehicle and look for a depression in the ground.

3.10 Bomb Threat

Step	Action
1	If you receive a bomb threat or discover a possible bomb or suspicious object(s), immediately notify your supervisor.
2	In the event of a bomb threat by telephone, perform the following steps below.
3	Get someone's attention and convey the nature of the call. Have them make the above notifications.
4	Get as much information as possible from the caller. Ask the following questions: • Where is the bomb? • When is it going to explode? • What does it look like? • What kind of bomb is it? • What is the person's name or organization?

5	Record the following information: • Date and time of call • Exact words of caller • Age, sex, adult, or child • Any speech pattern or accent • Background noises
6	For bomb threats by mail or for suspicious objects discovered: • Do not handle the letter, envelope, or package any further. • Notify your Supervisor, Safety and the ROC. • Site management will make call to emergency services.

3.11 Emergency Recovery

Emergency recovery planning and activities shall commence while the actual emergency is still running. Where statutory investigations may need to be undertaken prior to the commencement of clean-up activities, a designated ERT representative shall only permit entry into the emergency site by authorized personnel. Site access boundaries will be determined, enforced and continuously reassessed. Consideration will be given to allowing entry by personnel into those parts of the site not impacted by the emergency and found to be free of contamination.

The following shall also be considered during emergency recovery:

- Mobile equipment and machinery will be inspected and assessed to determine if it is safe for return to service.
- The site will be cleaned up, including the removal and disposal of damaged materials.
- Essential services (power, water, sewage etc.) will be restored.
- Reconstruction of infrastructure will be undertaken as required.
- Any contaminated materials must be contained, cleaned up and disposed of in accordance with legislative requirements for hazardous materials. Temporary storage sites may need to be identified until such time as contaminated materials can be removed from site.
- Environmental monitoring must be undertaken to determine the extent of any environmental harm and continue until it can be confirmed that all contamination has been cleaned up.

A stand-down of the ERT shall not occur until recovery arrangements are in place. Progress reports of recovery activities shall be communicated to all Associates and other relevant stakeholders.

4 Training

Training shall be provided to all Associates to ensure they understand their roles and responsibilities in emergency action response. Typically, this training shall be provided in the mandatory site safety orientation. The following emergency procedures and topics shall be covered in the site safety orientation:

- Locations of muster points (i.e. emergency assembly areas).
- Pre-determined routes used to reach emergency assembly areas.
- Procedures to follow in the event of specific emergency situations.
- Locations of fire extinguishers and first aid kits.
- Site emergency contact information; and
- Details of equipment to be utilized during emergency situations – Alarm stations, air horns, two-way radios and firefighting equipment.

All individuals designated as members of an Emergency Response Team (ERT) shall be indoctrinated through a more formal training exercise provided by a Site Safety representative. This training shall be provided to key ERT staff during initial site move-on.

They shall be made aware of their responsibilities under this Plan:

- Initially when the plan is developed.
- Whenever the Associate's responsibility under the Plan changes; and
- Whenever the Plan is changed.

5 Reporting & Notification

All site emergencies shall be adequately reported to Sandhills Energy management, Site Owner(s), regulatory agencies (if applicable) and other appropriate organizations in a timely fashion. Drills shall also be conducted regularly to ensure the EAP works as designed.

5.1 Emergency Notification

There is a requirement to ensure that consistent information is presented to all stakeholders appropriate to the nature of all emergencies at the Site.

Client (Owner) Notification – Client or Owner representatives shall be provided the details of all Site emergencies within 24 hours or as prescribed in the O&M contract.

Community/Authority Notification – The process for notification of stakeholders relates directly to the nature of the hazard. In the event of an unacceptable risk to the community from the emergency or incident, the impacted community stakeholders will be notified. OSHA shall also be notified in the event of serious injury or death within 8 hours.

5.2 Emergency Investigation and Close Out

All emergency events shall be reported, investigated and managed as prescribed in the O&M Health and Safety Manual, including Sandhills Energy procedures in Incident Reporting & Investigation.
On close out of an emergency, the ERT shall assess if further controls or resources are required to prevent or mitigate the impact of a future recurrence.

5.3 Emergency Drill Schedule

Office fire and emergency drills shall be conducted at least *annually*. Where offices accommodate persons with special requirements, emergency arrangements shall be tested at least every six (6) months.

The ERT team leader shall nominate observers who understand the deliverables and required actions in the Plan to observe the drill, take notes and provide feedback at a debrief which will be recorded and evaluated.

Formal documented debriefs shall also be conducted with involved personnel following each actual emergency to identify the strengths, deficiencies and opportunities for improvement.
Revisions or lessons learned shall be communicated to all stakeholders at construction team meetings, toolbox talks and via email.

6 Continuous Improvement

This EAP shall be reviewed, at least, *annually* and any time an emergency scenario or drill identifies deficiencies in the Plan. The EHS Department shall be responsible in performing, at least, an *annual* EAP audit. Findings and corrective actions shall be forwarded to O&M management, the ERT and O&M Safety Manager for review/corrective action.

7 Appendices

7.1 Appendix A – Emergency Evacuation Map

7.2 Appendix B – Emergency Contact List

SITE NAME:	**SITE NAME**	
ADDRESS:	**ADDRESS**	
Description	**Contact Name**	**Contact Details,** e.g. phone number, address, instructions
SERO (Sandhills Energy Remote)	Kyle Gorsuch 24/7	(402)992-5825
Sandhills Energy Technician	Garrett Maronde	(870)878-1332
Sandhills Energy Technician	Ben Backus	(308) 631-4628
Electrical Supervisor	Needs Added	Needs Added
Emergency Numbers	Emergency	911
	Ambulance, Sheriff, Fire (County)	911
Local Police Station		
Nearest Hospital/Medical Center	Needs Added	Needs Added
	Hours	24 hrs./day, 7 days a week
Security	24 Hour Phone	
Local OSHA Office	24 Hour Phone	
EPA	24 Hour Phone	
Poison Control	24 Hour Phone	

EXHIBIT K - CULTURAL RESOURCES SURVEY

Cultural Resources Survey

REPORT DATE: February 27, 2025

PROPERTY INFORMATION
Lamar Community Solar Project
Section 16, Township 23 South, Range 46 West of the 6th PM
Prowers County, Colorado

PROJECT INFORMATION
AEI Project No. 497462
Site Assessment Date: November 18, 2024

PREPARED FOR
Sandhill Energy
1403 Harney Street #200
Omaha, Nebraska 68102

PREPARED BY
AEI Consultants ▫ Corporate Headquarters
2500 Camino Diablo, Walnut Creek, CA 94597

And

EROS Resources Corporation
1626 Cole Boulevard, Suite 100, Lakewood, CO 80401

1.800.801.3224
www.aeiconsultants.com

LIMITED-RESULTS CULTURAL RESOURCE SURVEY FORM

This form (#1420) is for small scale limited results projects - block surveys less than 160 acres with linear surveys under four miles. Additionally, there should be no sites and a maximum of four Isolated Finds. This form must be typed.

I. IDENTIFICATION

1. Report Title (include County): Limited results Report for the Lamar Community Solar Project, Prowers County, Colorado

2. Date of Field Work: 11/18/2024

3. Form completed by: Caitlin Payne Date: 12/9/2024

4. Survey Organization/Agency: ERO Resources Corporation

   Principal Investigator: Kathy Croll

   Principal Investigator's Signature: Kathy Croll

   Other Crew: Caitlin Payne, Sadie Schafer

   Address: 835 E. 2nd Avenue, Durango, CO 81301

5. Lead Agency / Land Owner: United States Department of Agriculture, Rural Utilities Services.

   Contact: Colorado Rural Development State Office

   Address: Denver Federal Center

6. Client: AEI Consultants - Corporate Headquarters

   2500 Camino Diablo

   Walnut Creek, California 94597

7. Permit Type and Number: 84050

8. Report / Contract Number: PW.RD.NR2

9. Comments: N/A

II. DESCRIPTION OF UNDERTAKING / PROJECT

10. Type of Undertaking: Clay Creek Energy, LLC. (Applicant) is seeking financial assistance from the United States Department of Agriculture (USDA) Rural Development (RD), Rural Utilities Service (RUS) under its Powering Affordable Clean Energy (PACE) Program for the Lamar Community Solar Project (project). The grant would support the development and construction of a 4.8 megawatt (MW) alternating current (AC) solar facility of the City of Lamar (City) in Prowers County, Colorado (project area).

The proposed project would cover approximately 33.7 acres of vacant private land (Figure 1). The project area abuts grazing land to the north and east, undeveloped land to the south, and County Road 50 to the west. The project would be accessed via an existing dirt road running through the property off County Road 50. The project would connect to the City's municipal distribution system.

The project would include 129,000 modules (First Solar Series 6+), 24 generating units, and Yaskawa Solectria XGI 1500-200 inverters. Per code regulations, the area occupied by the solar panels and components would be fenced using chain link (7-foot height) to prevent wildlife from passing through (National Electrical Safety Code Section 19, Rule 190, and Section 11, Rule 110.A.1.a). No lighting would be used in the project area. In addition to the solar panels, inverters, and the perimeter fencing, the proposed equipment and components for the Proposed Action would consist of the following:

- steel pylons and steel racking
- distribution transformer
- AC power cables
- direct current power cables
- fiber communication cables
- interconnection breaker
- interconnection switchgear
- interconnection metering enclosure
- communications enclosure
- signage

The Proposed Action would require utility-scale solar equipment, such as solar panels, inverters, mounting structures, and electrical infrastructure—commercially available technology that adhere to established industry standards. The project area benefits from relatively flat terrain, which minimizes ground disturbance associated with excavation and grading. The land would be leveled slightly to drive pylons but would not be stripped.

11. Size of Undertaking (acres): 33.7 acres Size of Project (if different): N/A

12. Nature of the Anticipated Disturbance: The proposed project would cover approximately 33.7 acres of vacant private land. The APE for the Proposed Action was defined by RUS to include construction and excavation activity required to construct, modify, improve, or maintain any facilities; any right-of-way or easement areas necessary for the construction, operation, and maintenance of the project; all areas used for excavation of borrow material and habitat creation; and all construction staging areas, access routes, utilities, spoil areas, and stockpiling areas (approximately 14.3 acres).

    The Proposed Action would include solar arrays installed within the 33.7 acres of the project area. The project would include 12,9000 modules (First Solar Series 6+), 24 generating units and Yaskawa Solectria XGI 1500-200 inverters. Per code regulations, the area occupied by the solar panels and components would be fenced using chain link (seven-foot height).

13. Comments: N/A

III. PROJECT LOCATION

Please attach a photocopy of USGS Quad. clearly showing the project location. The Quad. should be clearly labeled with the Prime Meridian, Township, Range, Section(s), Quad. map name, size, and date. Please do not reduce or enlarge the photocopy.

14. Description: The project area is located in a flat, open pastoral field with the Arkansas River flowing 4.3 miles north. Willow creek is located to the west, and Clay Creek to the east. The larger area is characterized by expansive farmland in the open plains.

15. Legal Location: Quad. Map: Larmar East, CO Date(s): 2022

Principal Meridian: 6th X NM Ute

NOTE: Only generalized subdivision ("quarter quarters") within each section is needed

Township: 23S Range: 46W Sec.: 16 1/4s SW SW

If section(s) is irregular, explain alignment method: N/A

16. Total number of acres surveyed: 33.7

17. Comments: N/A

IV. ENVIRONMENT

18. General Topographic Setting: The area is situated in the Piedmont Plains of eastern Colorado.

Current Land Use: Open grazing

19. Flora: Vegetation consists of yucca, prickly pear cactus, blue gram, side oats grama, and various other bunch grasses and forbs.

20. Soils/Geology: 95.4 percent of the soils within the APE are Valent soils common to aeolian sand dunes. The remaining 4.6 percent of soils are Vonid sandy loam also common to the sandy plains (Natural Resources Conservation Service 2025).

21. Ground Visibility: Ground visibility was approximately 60%.

22. Comments: N/A

V. LITERATURE REVIEW

23. Location of File Search: Office of Archaeology and Historic Preservation

Date: 10/4/2024

24. Previous Survey Activity – In the project area: Two previous survey intersects the project area.

PW.CH.R2 An Archaeological Inventory of the Proposed U.S. 287 Lamar Bypass in Prowers County, Colorado (CDOT No. 2871-026) and Addendum

PW.CH.R5 An Historic Inventory of the Proposed U.S. 287 Lamar Bypass in Prowers County, Colorado.

In the general region: No other surveys have been previously conducted within a half mile of the APE.

25. Known Cultural Resources - In the project area: There are no known cultural resources within the project area.

    In the general region (summarize): There are no known cultural resources within a half mile of the APE.

26. Expected Results: None

VI. STATEMENT OF OBJECTIVES

27. Identify and evaluate project effects to potential historic properties in compliance with Section 106 of the National Historic Preservation Act.

VII. FIELD METHODS

28. Definitions – Site: 10 or more artifacts and/or feature

    IF: Less than 10 artifacts and no features

29. Describe Survey Method: Pedestrian survey using transects spaced 15 meters apart.

VIII. RESULTS

30. List IFs if applicable. Indicate IF locations on the map completed for Part III.
    No IFs were identified.

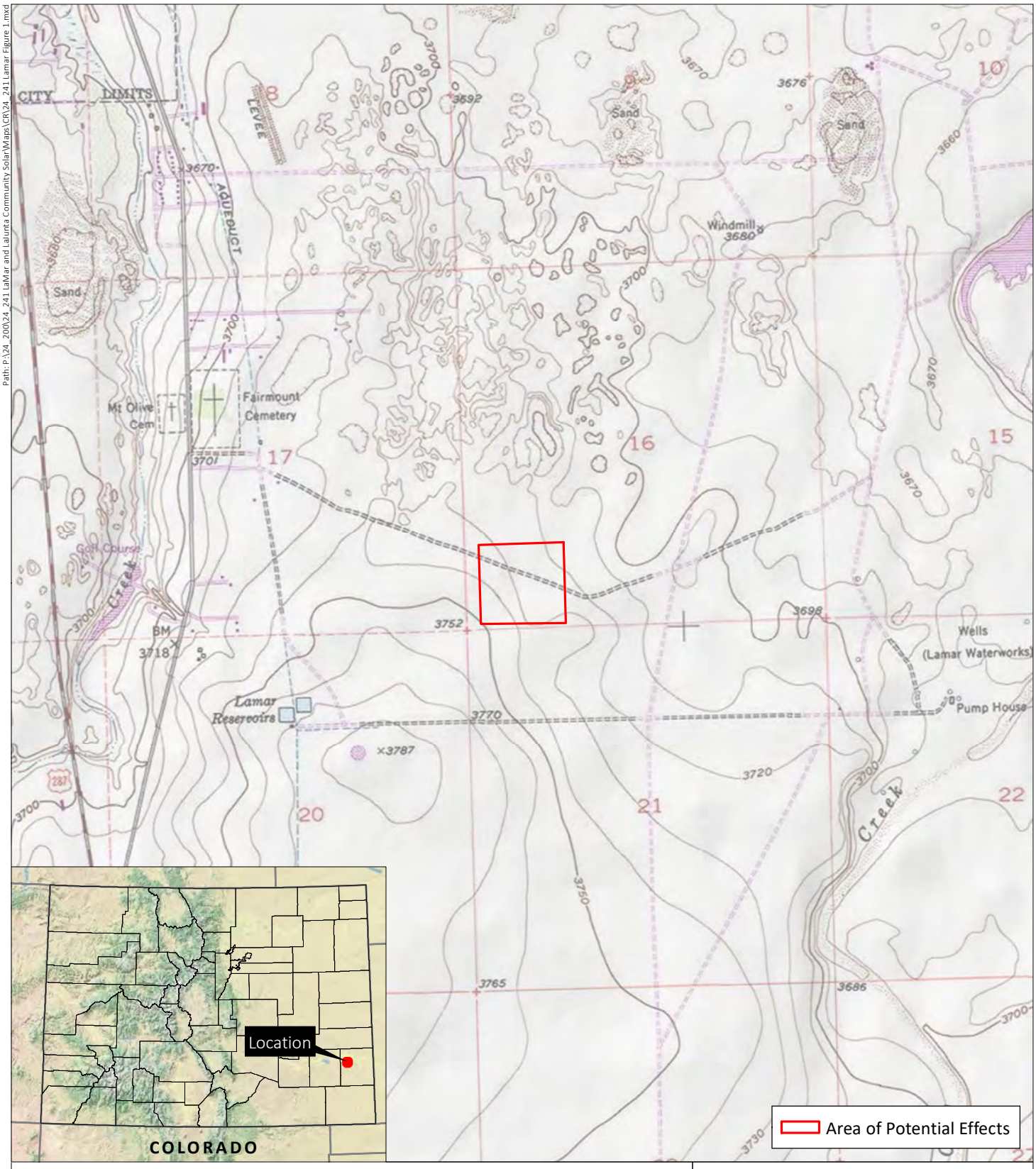
31. Using your professional knowledge of the region, why are there none or very limited cultural remains in the project area? Is there subsurface potential?

The project area is a relatively small area in an agricultural field that has been continually utilized for grazing. Additionally, the majority of cultural resources in the surrounding area are historic structures related to the town of Lamar and would not occur surrounding agricultural land.

References:

Natural Resources Conservation Service
2025 Web Soil Survey. https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx.

Path: P:\24_200\24_241 LaMar and Lalunta Community Solar\Maps\CR\24_241 Lamar Figure 1.mxd



Cultural Resource Survey
Lamar Community Solar
Prowers County, Colorado

Section 16, T23S, R46W; 6th PM
USGS Lamar East, CO Quadrangle (1:24,000; 1975)
Prowers County, Colorado

N

0 1,000 2,000 Feet
1:24,000

Figure 1
Project Location

Prepared for: AEI Consultants
File: 24_241 Lamar Figure 1.mxd (GS)
January 23, 2025

ERO Resources Corp.

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Figure 2. APE overview. View to the west.



Figure 3. Project overview, view to the east.

EXHIBIT L - SHPO CONSULTATION

History Colorado

May 7, 2025

Marco Giannakouros
Direcotr, Procurement and Permitting
Sandhills Energy
1403 Harney Street, Suite 200
Omaha, NE 68102
marco@sandhillsenergyco.com

RE: Lamar Community Solar Project, La Junta, CO (HC# 86063)

Dear Mr. Giannakouros,

We appreciate the additional documentation received by our office through email on April 29 and May 7, 2025 continuing consultation for the above referenced undertaking under Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations 36 CFR 800. Our office has reviewed the submitted materials, and we offer the following comment.

Identification of Historic Properties
Based on the documentation provided, we find that a finding of no historic properties affected, 36 CFR 800.4(d)(1), is appropriate for the subject undertaking.

Should unidentified archaeological resources be discovered in the course of the project, work must be interrupted until the resources have been evaluated in terms of the National Register eligibility criteria (36 CFR 60.4) in consultation with our office pursuant to 36 CFR 800.13. Also, should the consulted-upon scope of the work change, please contact our office for continued consultation under Section 106 of the NHPA.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or other consulting parties might cause our office to re-evaluate our eligibility and potential effect findings. Please note that our compliance letter does not end the 30-day review period provided to other consulting parties.

Thank you for the opportunity to comment. If you have any questions, please contact Matthew Marques, Section 106 Compliance Manager, at (303) 866-4678, or matthew.marques@state.co.us.

Sincerely,

Dr. Holly Kathryn Norton
(for) Dawn DiPrince
State Historic Preservation Officer

Digitally signed by Dr. Holly Kathryn Norton
Date: 2025.05.09 09:58:36 -06'00'

History Colorado

May 7, 2025

Marco Giannakouros
Direcotr, Procurement and Permitting
Sandhills Energy
1403 Harney Street, Suite 200
Omaha, NE 68102
marco@sandhillsenergyco.com

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Based on the documentation provided, we find that a finding of no historic properties affected, 36 CFR 800.4(d)(1), is appropriate for the subject undertaking.

Should unidentified archaeological resources be discovered in the course of the project, work must be interrupted until the resources have been evaluated in terms of the National Register eligibility criteria (36 CFR 60.4) in consultation with our office pursuant to 36 CFR 800.13. Also, should the consulted-upon scope of the work change, please contact our office for continued consultation under Section 106 of the NHPA.

We request being involved in the consultation process with the local government, which as stipulated in 36 CFR 800.3 is required to be notified of the undertaking, and with other consulting parties. Additional information provided by the local government or other consulting parties might cause our office to re-evaluate our eligibility and potential effect findings. Please note that our compliance letter does not end the 30-day review period provided to other consulting parties.

Thank you for the opportunity to comment. If you have any questions, please contact Matthew Marques, Section 106 Compliance Manager, at (303) 866-4678, or matthew.marques@state.co.us.

Sincerely,

(for) Dawn DiPrince
State Historic Preservation Officer

Resources

Acronyms

Directives

Disaster Assistance

Environmental Studies

Assessments

FPEP Environmental Review Comment Submissions

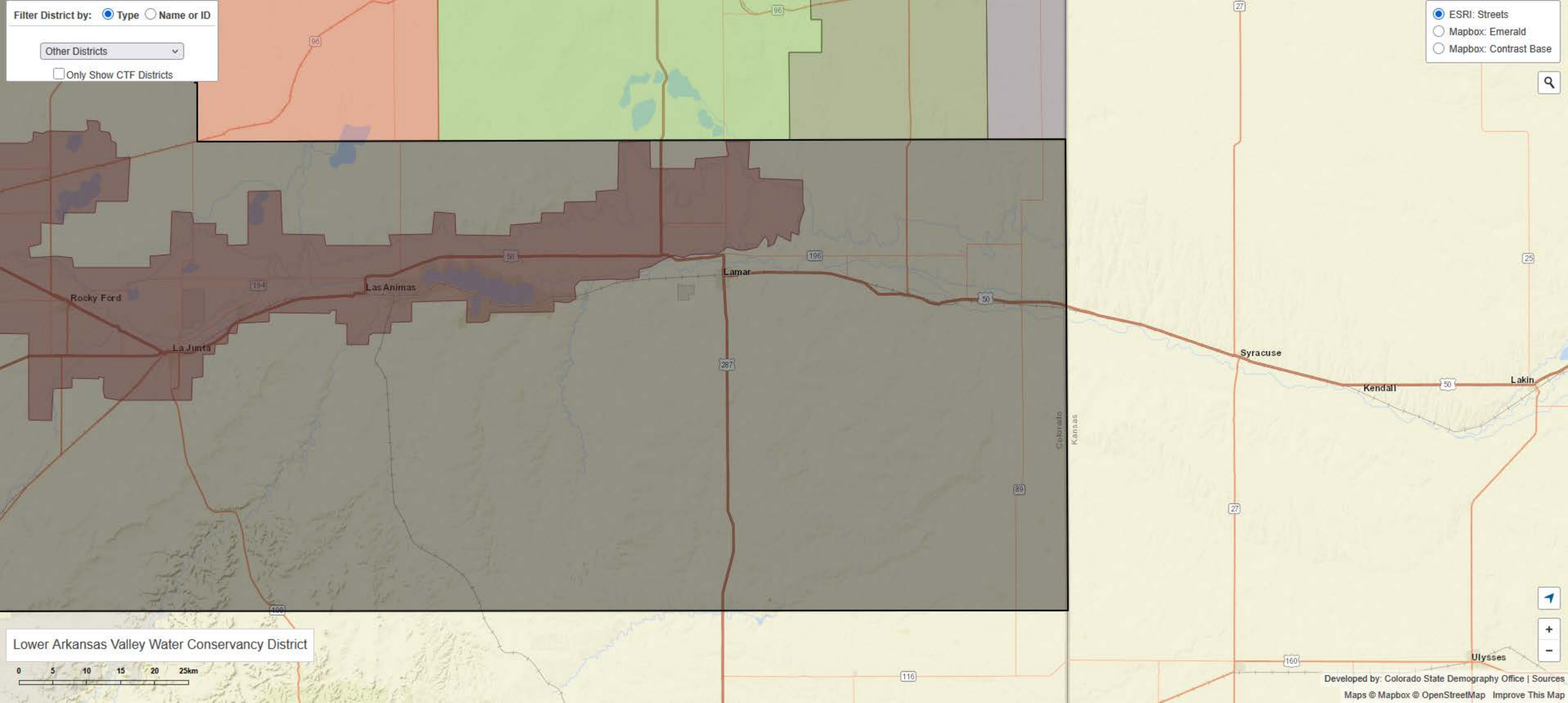
CO 58 Clay Creek/Sandhills Energy L Solar Project

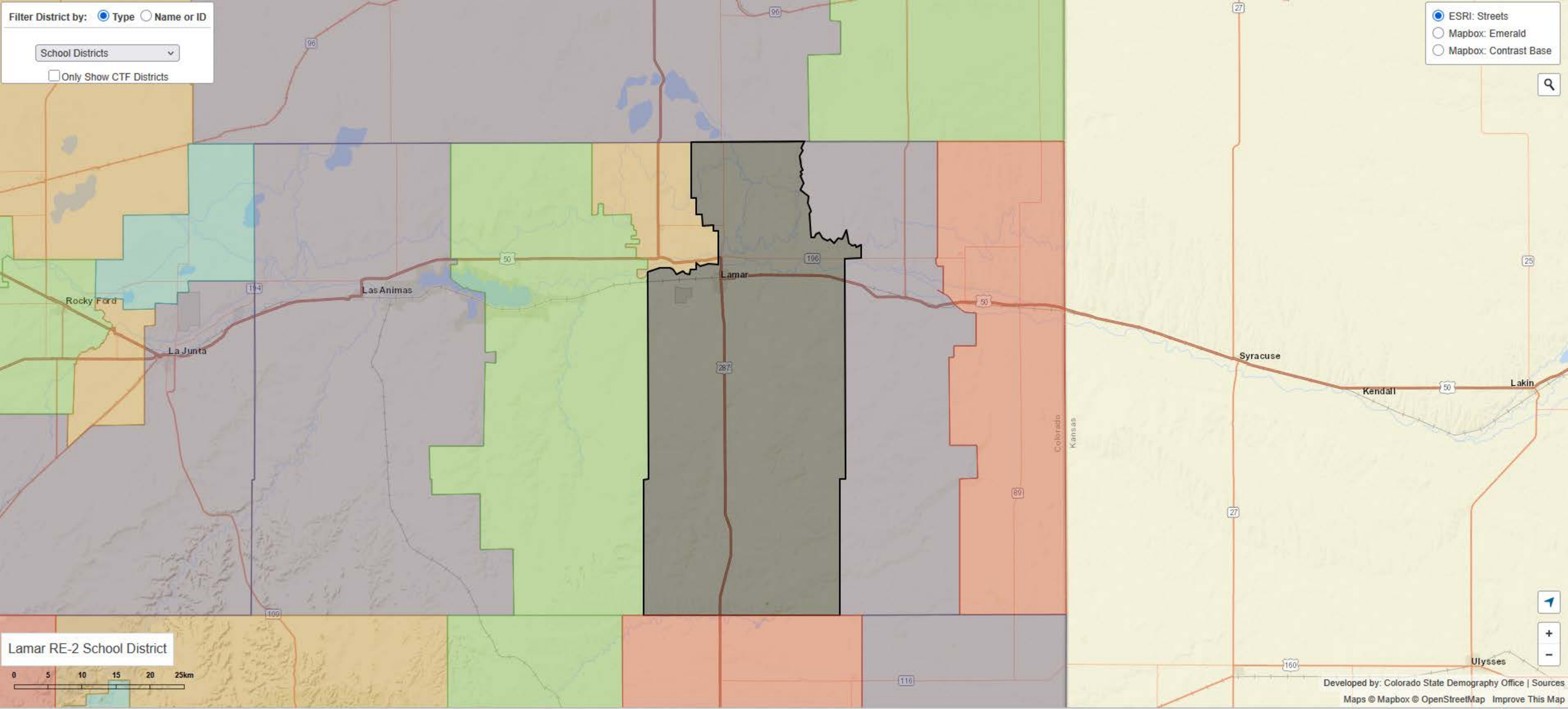
Sandhills Energy

The Proposed Action would include solar arrays installed in the 33.7-acre project area. The pr 12,9000 modules, 24 generating units, and inverters.

Staff assignment name: Russell Japuntich
Project submittal date: 9/5/2025
Project Approval Date: 9/9/2025
DOE CE Applied: B5.16

EXHIBIT M - DOLA SPECIAL DISTRICTS MAPPING


Filter District by: Type Name or ID
Other Districts
Only Show CTF Districts
ESRI: Streets
Mapbox: Emerald
Mapbox: Contrast Base
Rocky Ford
La Junta
Las Animas
Lamar
Syracuse
Kendall
Lakin
Ulysses
Colorado
Kansas
Lower Arkansas Valley Water Conservancy District
0 5 10 15 20 25km
Developed by: Colorado State Demography Office | Sources
Maps © Mapbox © OpenStreetMap Improve This Map


Filter District by: Type Name or ID
School Districts
Only Show CTF Districts
ESRI: Streets
Mapbox: Emerald
Mapbox: Contrast Base
Lamar
Las Animas
Rocky Ford
La Junta
Syracuse
Kendall
Lakin
Ulysses
Colorado
Kansas
Lamar RE-2 School District
0 5 10 15 20 25km
Developed by: Colorado State Demography Office | Sources
Maps © Mapbox © OpenStreetMap Improve This Map

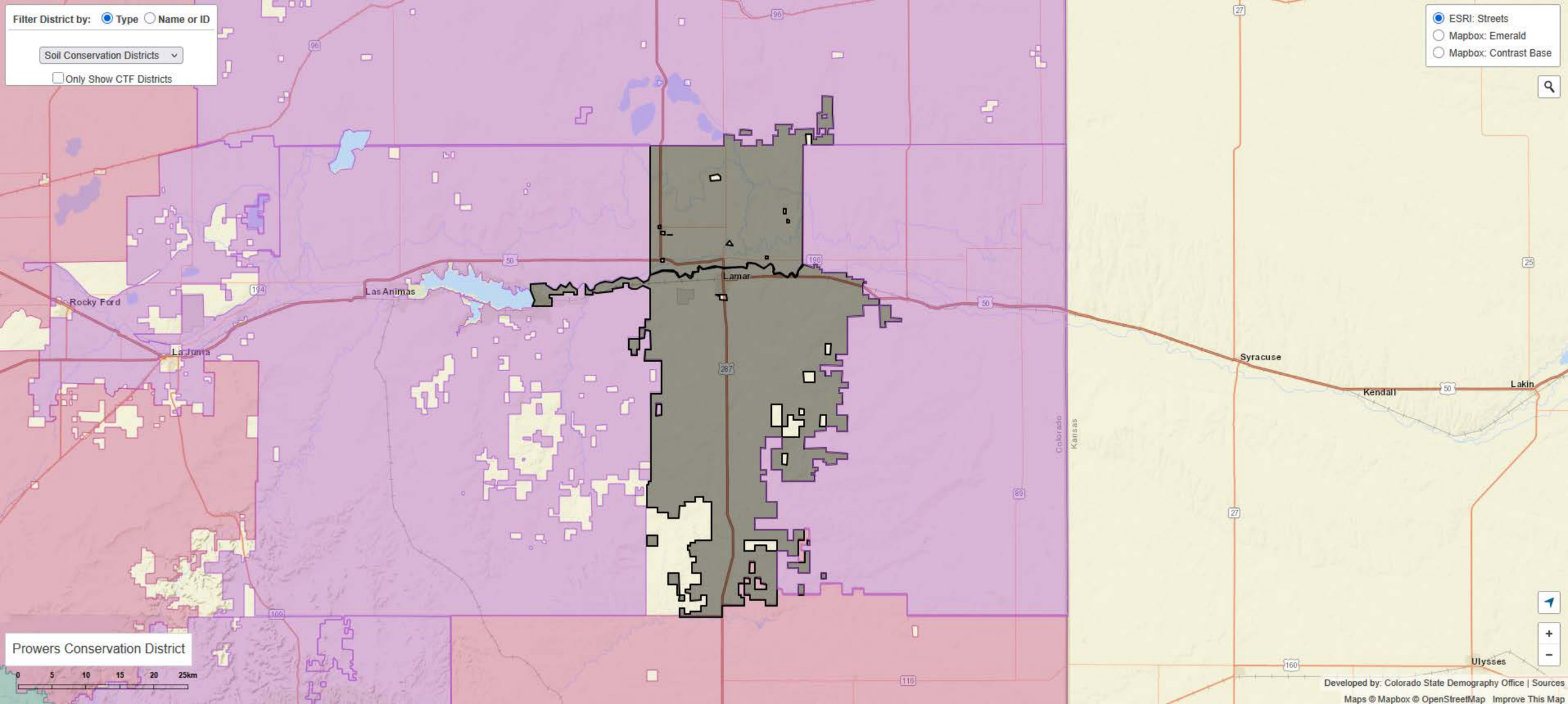

Filter District by:
Type
Name or ID
Soil Conservation Districts
Only Show CTF Districts
Prowers Conservation District
0 5 10 15 20 25km
ESRI: Streets
Mapbox: Emerald
Mapbox: Contrast Base
Rocky Ford
La Junta
Las Animas
Lamar
Syracuse
Kendall
Lakin
Ulysses
Colorado
Kansas
Developed by: Colorado State Demography Office | Sources
Maps © Mapbox © OpenStreetMap Improve This Map

EXHIBIT N - PHASE 1

Phase I Environmental Site Assessment

REPORT DATE: May 14, 2026

PROPERTY INFORMATION:
Clay Creek Energy - Lamar Community Solar Project
East of CC.50 and 1,300 feet north of DD.8
Lamar, Prowers County, Colorado 81052

PROJECT INFORMATION:
AEI Project No. 497462
Site Assessment Date: May 6, 2026

PREPARED FOR:
Sandhills Energy
1403 Harney Street #200
Omaha, Nebraska 68102

PREPARED BY:
AEI Consultants - Corporate Headquarters
2500 Camino Diablo
Walnut Creek, California 94597

1.800.801.3224
www.aeiconsultants.com

May 14, 2026

Brian Boerner
Sandhills Energy
1403 Harney Street #200
Omaha, Nebraska 68102

Subject: **Phase I Environmental Site Assessment**
Clay Creek Energy - Lamar Community Solar Project
East of CC.50 and 1,300 feet north of DD.8
Lamar, Colorado 81052
AEI Project No. 497462

Dear Brian Boerner:

AEI Consultants is pleased to provide the *Phase I Environmental Site Assessment* of the above referenced property. This assessment was authorized and performed in accordance with the scope of services engaged.

We appreciate the opportunity to provide services to you. If you have any questions concerning this report, or if we can assist you in any other matter, please contact me at (708)-646-1147 or epicciolini@aeiconsultants.com.

Sincerely,

Edna M. Picciolini

Edna Picciolini
National Client Manager
AEI Consultants

PROJECT SUMMARY

East of CC.50 and 1,300 feet north of DD.8, Lamar, Prowers County, Colorado 81052
AEI Project No. 497462

REC: Recognized Environmental Condition
CREC: Controlled Recognized Environmental Condition
HREC: Historical Recognized Environmental Condition
OEC: Other Environmental Concerns (business environmental risks & de minimis conditions)
SDG: Significant Data Gap

Report Section		REC	CREC	HREC	OEC	SDG	Recommended Action
1.0	Introduction						None
2.0	Site and Vicinity Description						None
3.0	Historical Records Review						None
4.0	Regulatory Agency Records Review						None
5.0	Regulatory Database Records Review						None
6.0	Interviews and User Provided Information						None
7.0	Site Reconnaissance						None
8.1	Asbestos-Containing Building Materials						None
8.2	Lead-Based Paint						None
8.3	Naturally-Occurring Radon						None
8.4	Suspect Mold or Microbial Growth Conditions						None

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REPORT VIABILITY

Regulatory Database	April 27, 2026
Site Visit	May 6, 2026
Interview(s)	Property Owner: N/A Key Site Manager: N/A
EP Declaration	May 14, 2026
Environmental Lien Search (if conducted by AEI)	N/A
Report Viability per ASTM E1527-21	October 24, 2026

The dates listed are required for Users who are using the report in connection with CERCLA liability protections. The User may have their own criteria when the report is being used for business risk purposes, and not CERCLA liability protections.

EXECUTIVE SUMMARY

AEI Consultants (AEI) was retained by Sandhills Energy to conduct a Phase I ESA in conformance with AEI's contract and the scope and limitations of ASTM Standard Practice E1527-21 and the EPA Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), for the property located at East of CC.50 and 1,300 feet north of DD.8, Lamar, Prowers County, Colorado (the "subject property"). Any exceptions to, or deletions from, this practice are described in Sections 1.4, 1.5, and 1.6 of this report.

Pertinent subject property information is noted below:

Property Information	
Site Address(es)	East of CC.50 and 1,300 feet north of DD.8, Lamar, Prowers County, Colorado 81052
Property ID (APN or Block/Lot)	85100
Location	East of CC.50 and 1,300 feet north of Dd.8
Site and Building Information	
Approximate Site Acreage/Source	30/Client provided
Number of Buildings	N/A
Building Construction Date(s)/Source	N/A/N/A
Building Square Footage (SF)/Source	N/A/N/A
Number of Floors/Stories	N/A
Basement or Subgrade Area(s)	N/A
Use/Occupancy of Basement or Subgrade Area(s)	N/A
Number of Units	N/A
Additional Improvements	None currently
Property Type	Renewable Energy (wind, solar)
On-site Occupant(s)	None currently
Current On-site Operations/Use	Vacant land
Current Use of Hazardous Substances	None identified
Regulatory Information	
Regulatory Database Listing(s)	None identified

A chronological summary of historical subject property information is as follows:

Date Range	Subject Property Description and Occupancy (Historical Addresses)	Source(s)
Prior to 1947	Unknown use/Data failure; refer to Section 1.6.1	N/A
1947-1988	Undeveloped land and/or grazing land with dirt road running through subject property	Aerial photographs, topographic maps
1993-Present	Undeveloped land and/or grazing land	Aerial photographs, city directories, site observation

The immediately surrounding properties consist of the following:

Direction	Tenant/Use (Address)	Regulatory Database Listing(s)
North	Vacant grazing land	None identified
East	Vacant grazing land	None identified
South	Vacant grazing land	None identified
West	County Road CC.50 followed by a residence (8802 County Road EE.5)	None identified

Findings and Opinions

Significant Data Gap(s) is defined by the current ASTM Standard E1527 as a data gap that affects the ability of the environmental professional to identify a recognized environmental condition.

AEI did not identify significant data gaps which affected our ability to identify RECs.

Recognized Environmental Condition (REC) is defined by the current ASTM Standard E1527 as (1) the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment.

- AEI did not identify evidence of RECs during the course of this assessment.

Controlled Recognized Environmental Condition (CREC) is defined by the current ASTM Standard E1527 as a recognized environmental condition affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place subject to implementation of required controls (for example, activity and use limitations or other property use limitations).

- AEI did not identify evidence of CRECs during the course of this assessment.

Historical Recognized Environmental Condition (HREC) is defined by the current ASTM Standard E1527 as a previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by the applicable regulatory authority or authorities without subjecting the subject property to any controls (for example, activity and use limitations or other property use limitations).

- AEI did not identify evidence of HRECs during the course of this assessment.

Other Environmental Considerations (OEC) include, but are not limited to, de minimis conditions and/or business environmental risks such as the presence of ACMs, LBP, radon, mold, and lead in drinking water, which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of a parcel of commercial real estate, not necessarily limited to those environmental issues required to be investigated in the ASTM Standard. These may also affect the liabilities and financial obligations of the client, the health and safety of site occupants, and the value and marketability of the subject property.

- AEI did not identify evidence of OECs during the course of this assessment.

CONCLUSIONS

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Standard Practice E1527-21, of East of CC.50 and 1,300 feet north of DD.8, Lamar, Prowers County, Colorado, the *subject property*. Any exceptions to, or deletions from, this practice are described in Sections 1.4, 1.5, and 1.6 of this report.

This assessment has revealed no evidence of recognized environmental conditions, controlled recognized environmental conditions, or significant data gaps in connection with the subject property.

RECOMMENDATIONS

AEI recommends no further investigation for the subject property at this time.

1.0 INTRODUCTION

This report documents the methods and findings of the Phase I Environmental Site Assessment performed in conformance with AEI's contract and scope and limitations of ASTM Standard Practice E1527-21 and the EPA Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), for the property located at East of CC.50 and 1,300 feet north of DD.8, Lamar, Prowers County, Colorado (Appendix A: Figures and Appendix B: Property Photographs).

1.1 Scope of Work

The purpose of the Phase I ESA is to assist the client in identifying potential RECs, in accordance with the most current ASTM E1527 Standard associated with the presence of any hazardous substances or petroleum products, their use, storage, and disposal at and in the vicinity of the subject property. Property assessment activities focused on: 1) a review of federal, state, tribal, and local databases that identify and describe underground fuel tank sites, leaking underground fuel tank sites, hazardous waste generation sites, and hazardous waste storage and disposal facility sites within the ASTM approximate minimum search distance; 2) a property and surrounding site reconnaissance, and interviews with the past and present owners and current occupants and operators to identify potential environmental contamination; and 3) a review of historical sources to help ascertain previous land use at the site and in the surrounding area.

1.2 Additional Services

Other Environmental Considerations such as ACMs, LBP, lead in drinking water, radon, mold, and wetlands can result in business environmental risks for property owners which may disrupt current or planned operations or cash flow and are generally beyond the scope of a Phase I assessment as defined by the current ASTM Standard E1527. Based upon the agreed-on scope of services this ESA did not include subsurface or other invasive assessments, business environmental risks, or other services not specifically identified and discussed herein.

1.3 Significant Assumptions

The following assumptions are made by AEI in this report. AEI relied on information derived from secondary sources including governmental agencies, the client, designated representatives of the client, property contact, property owner, property owner representatives, computer databases, and personal interviews. AEI has reviewed and evaluated the thoroughness and reliability of the information derived from secondary sources including government agencies, the client, designated representatives of the client, property contact, property owner, property owner representatives, computer databases, or personal interviews. It appears that all information obtained from outside sources and reviewed for this assessment is thorough and reliable. However, AEI cannot guarantee the thoroughness or reliability of this information.

Groundwater flow, unless otherwise specified by on-site well data or well data from the subject property or nearby sites, is inferred from contour information depicted on the USGS topographic maps. AEI assumes the property has been correctly and accurately identified by the client, designated representative of the client, property contact, property owner, and property owner's representatives.

1.4 LIMITATIONS

Property conditions, as well as local, state, tribal, and federal regulations can change significantly over time. Therefore, the recommendations and conclusions presented as a result of this assessment apply strictly to the environmental regulations and property conditions existing at the time the assessment was performed. Available information has been analyzed using currently accepted assessment techniques and it is believed that the inferences made are reasonably representative of the property. AEI makes no warranty, expressed or implied, except that the services have been performed in accordance with generally accepted environmental property assessment practices applicable at the time and location of the assessment.

Considerations identified by ASTM as beyond the scope of a Phase I ESA that may affect business environmental risk at a given property include the following: ACMs, radon, LBP, lead in drinking water, wetlands, regulatory compliance, cultural and historical resources, industrial hygiene, health and safety, ecological resources, endangered species, indoor air quality, mold, and high voltage lines. These environmental issues or conditions may warrant assessment based on the type of the property transaction; however, they are considered non-scope issues under the current ASTM Standard E1527.

If requested by the client, these non-scope issues are discussed herein. Otherwise, the purpose of this assessment is solely to satisfy one of the requirements for qualification of the innocent landowner defense, contiguous property owner or bona fide prospective purchaser under CERCLA. The current ASTM Standard E1527 and the United States EPA Standards and Practices for All Appropriate Inquiries (40 CFR Part 312) constitute the "all appropriate inquiry into the previous ownership and uses of the property consistent with good commercial or customary practice" as defined in:

1. 42 U.S.C. § 9601(35)(B), referenced in the current ASTM Standard E1527.
2. Sections 101(35)(B) (ii) and (iii) of CERCLA and referenced in the EPA Standards and Practices for All Appropriate Inquiries (40 CFR Part 312).
3. 42 U.S.C. § 9601(40) and 42 U.S.C. § 9607(q).

The Phase I Environmental Site Assessment is not, and should not be construed as, a warranty or guarantee about the presence or absence of environmental contaminants that may affect the property. Neither is the assessment intended to assure clear title to the property in question. The sole purpose of assessment into property title records is to ascertain a historical basis of prior land use. All findings, conclusions, and recommendations stated in this report are based upon facts, circumstances, and industry-accepted procedures for such services as they existed at the time this report was prepared (i.e., federal, state, and local laws, rules, regulations, market conditions, economic conditions, political climate, and other applicable matters). All findings, conclusions, and recommendations stated in this report are based on the data and information provided, current subject property use, and observations and conditions that existed on the date and time of the property reconnaissance.

Responses received from local, state, or federal agencies or other secondary sources of information after the issuance of this report may change certain facts, findings, conclusions, or circumstances to the report. A change in any fact, circumstance, or industry-accepted procedure upon which this report was based may adversely affect the findings, conclusions, and recommendations expressed in this report.

AEI's limited radon screening, if included, is intended to provide a preliminary screening to evaluate the potential presence of elevated radon concentrations at the site. The proposed scope is not intended to define the full extent of the presence of radon at the subject property. As such, the results should be used for lending purposes only. The recommendations and conclusions presented as a result of the limited preliminary radon screening apply strictly to the property conditions existing at the time the sampling was performed. The sample analytical results are only valid for the time, place, and condition of the site at the time of collection and AEI does not warrant that the results will be repeatable or are representative of past or future conditions.

1.5 Limiting Conditions/Deviations

The performance of this assessment was limited by the following:

- While additional assessments may have been conducted on the subject property, these documents must be provided for AEI's review in order for the information to be summarized/included in this report. Please refer to Section 6.3 for a summary of previous reports and other documentation provided to AEI during this assessment.
- The User did not complete the ASTM User Questionnaire or provide the User information to AEI. AEI assumes that qualification for the LLPs is being established by the User in documentation outside of this assessment.
- The subject property owner and/or key site manager, was not interviewed during this assessment. Based on information obtained from other sources, this limiting condition is not expected to alter the overall findings of this assessment.
- Since the subject property has never been developed, no physical address has been provided to or identified by AEI during the course of this assessment. A physical address is often utilized in the historical research process in order to identify any address-specific information, such as regulatory and enforcement actions. However, based on the reliability of other data sources, the lack of a physical address is not expected to significantly alter the findings of this assessment.
- Due to the size of the subject property, AEI performed a reconnaissance of the property utilizing a field technique of traversing the site in an attempt to provide an overlapping field of view. Due to the size of the property and the vegetation present on site, isolated areas of the site may have not been accessible for direct observation during AEI's field reconnaissance. Based on historical sources, this limitation is not expected to significantly alter the findings of this assessment.

1.6 Data Failure and Data Gaps

According to the current ASTM Standard E1527, data gaps occur when the Environmental Professional is unable to obtain information required by the Standard, despite good faith efforts to gather such information. Pursuant to the current ASTM Standard E1527, only significant data gaps, defined as those that affect the ability of the Environmental Professional to identify RECs, need to be documented.

Data failure is one type of data gap. According to the current ASTM Standard E1527, data failure occurs when all of the standard historical sources that are reasonably ascertainable and likely to be useful have been reviewed and yet the objectives have not been met. Pursuant

to the current ASTM Standard E1527, historical sources are required to document property use back to the property's first developed use or back to 1940, whichever is earlier, or periods of five years or greater.

1.6.1 Data Failure

The following data failure was identified during the course of this assessment:

Data Failure	As noted in Section 3.0, the earliest historical resource obtained during this assessment indicated that the subject property was undeveloped. The lack of historical sources dating back to 1940 represents historical data source failure. However, as it is assumed that the subject property would have previously been undeveloped, this data failure is not expected to significantly alter the findings of this assessment.
Information/Sources Consulted	Aerial photographs, Sanborn fire insurance maps, city directories, historical topographic maps, agency records

1.6.2 Significant Data Gaps

AEI did not identify significant data gaps which affected our ability to identify RECs.

1.7 Reliance

All reports, both verbal and written, are for the benefit of Sandhills Energy. This report has no other purpose and may not be relied upon by any other person or entity without the written consent of AEI. Either verbally or in writing, third parties may come into possession of this report or all or part of the information generated as a result of this work. In the absence of a written agreement with AEI granting such rights, no third parties shall have rights of recourse or recovery whatsoever under any course of action against AEI, its officers, employees, vendors, successors or assigns.

Reliance is provided in accordance with Sandhills Energy and AEI's contract and Terms and Conditions dated August 13, 2024. The limitation of liability defined in the contracted terms is the aggregate limit of AEI's liability to the client and all relying parties.

2.0 SITE AND VICINITY DESCRIPTION

2.1 Site Location and Description

Property Information	
Site Address(es)	East of CC.50 and 1,300 feet north of DD.8, Lamar, Prowers County, Colorado 81052
Property ID (APN or Block/Lot)	85100
Location	East of CC.50 and 1,300 feet north of Dd.8
Site and Building Information	
Approximate Site Acreage/Source	30/Client provided
Number of Buildings	N/A
Building Construction Date(s)/Source	N/A/N/A
Building Square Footage (SF)/Source	N/A/N/A
Number of Floors/Stories	N/A
Basement or Subgrade Area(s)	N/A
Use/Occupancy of Basement or Subgrade Area(s)	N/A
Number of Units	N/A
Additional Improvements	None currently
Property Type	Renewable Energy (wind, solar)
On-site Occupant(s)	None currently
Current On-site Operations/Use	Vacant land
Current Use of Hazardous Substances	None identified
Regulatory Information	
Regulatory Database Listing(s)	None identified

2.2 On-Site Utilities

Utility	Source/System Information
Heating System	None identified
Cooling System	None identified
Potable Water	None identified
Sewage Disposal/Treatment	None identified

2.3 Site and Vicinity Characteristics

The subject property is located in a agricultural and residentail area of Lamar, Colorado. The immediately surrounding properties consist of the following:

Direction	Tenant/Use (Address)	Regulatory Database Listing(s)
North	Vacant grazing land	None identified
East	Vacant grazing land	None identified
South	Vacant grazing land	None identified
West	County Road CC.50 followed by a residence (8802 County Road EE.5)	None identified

2.4 Physical Setting

Geologic Unit	uK1: Mesozoic era, Cretaceous system shale Source: USGS and United States Department of the Interior
Soil Series	Valent: Valent soils, 10 to 25 percent slopes, severely eroded, dry Eolian sand

	Source: USDA Soil Survey
Groundwater Flow Direction	Northeast Source: Topographic map interpretation
Estimated Depth to Groundwater	Approximately 10-30 feet bgs Source: USGS groundwater data
Surface waters on the subject property or adjoining properties	None
Additional Notes	None

Note: Groundwater flow direction can be influenced locally and regionally by the presence of local wetland features, surface topography, recharge and discharge areas, horizontal and vertical inconsistencies in the types and location of subsurface soils, and proximity to water pumping wells. Depth and gradient of the water table can change seasonally in response to variation in precipitation and recharge, and over time, in response to urban development such as storm water controls, impervious surfaces, pumping wells, cleanup activities, dewatering, seawater intrusion barrier projects near the coast, and other factors.

3.0 HISTORICAL RECORDS REVIEW

Reasonably ascertainable standard historical sources as outlined in the current ASTM Standard E1527 were used to determine previous uses and occupancies of the subject property that are likely to have led to RECs in connection with the subject property. A chronological summary of historical data found, including but not limited to aerial photographs, Sanborn fire insurance maps, historical city directories, historical topographic maps, and agency records, is as follows:

Date Range	Subject Property Description and Occupancy (Historical Addresses)	Source(s)
Prior to 1947	Unknown use/Data failure; refer to Section 1.6.1	N/A
1947-1988	Undeveloped land and/or grazing land with dirt road running through subject property	Aerial photographs, topographic maps
1993-Present	Undeveloped land and/or grazing land	Aerial photographs, city directories, site observation

AEI did not identify potential environmental concerns in association with the current or historical use of the subject property.

If available, copies of historical sources are provided in Appendix D.

3.1 AERIAL PHOTOGRAPHS

AEI reviewed aerial photographs of the subject property and surrounding area. A search was made of the EDR collection of aerial photographs. Aerial photographs were reviewed for the following years (1947-2019, non-inclusive):

Year(s)	Subject Property Description	Adjoining Property Descriptions
1947, 1954, 1975, 1983, 1988	Undeveloped land and/or grazing land with dirt roadway through property	NORTH: Undeveloped land and/or grazing land EAST: Undeveloped land and/or grazing land SOUTH: Undeveloped land and/or grazing land WEST: Undeveloped land and/or grazing land
1993, 1998, 2006, 2011, 2015, 2019	Undeveloped land and/or grazing land	NORTH: No significant change EAST: No significant change SOUTH: No significant change WEST: Road then undeveloped land and/or grazing land and house father west

Subject property:

- No potential environmental concerns identified

Adjoining properties:

- No potential environmental concerns identified

3.2 Sanborn Fire Insurance Maps

Sanborn Fire Insurance maps were developed in the late 1800s and early 1900s for use as an assessment tool for fire insurance rates in urbanized areas. A search was made of the EDR collection of Sanborn Fire Insurance maps.

Sanborn map coverage was not available for the subject property.

3.3 City Directories

A search of historical city directories was conducted for the subject property utilizing EDR. Directories were reviewed in approximate five-year increments from 1992-2020.

Since the subject property has never been developed, no physical address has been provided to or identified by AEI during the course of this assessment. Based on the lack of physical address, no listings were identified for the subject property.

The table below summarizes the search of historical city directories conducted for the adjoining properties. Refer to the appendices for a complete list of historical adjoining occupants identified during the review of city directories obtained from EDR.

Adjoining Properties

Direction	Address(es)	Potential Listings of Concern
North	N/A	N/A
East	N/A	N/A
South	N/A	N/A
West	8802 County Road EE.5	None identified

Subject property:

- No potential environmental concerns identified

Adjoining properties:

- No potential environmental concerns identified

3.4 Historical Topographic Maps

AEI reviewed historical topographic maps of the subject property and surrounding area. A search was made of the EDR collection of topographic maps. Historical topographic maps were reviewed for the following years (1892-2022):

Year(s)	Subject Property Description	Adjoining Property Descriptions
1892	No features depicted	NORTH: No features depicted EAST: No features depicted SOUTH: No features depicted WEST: No features depicted
1953, 1979	Dirt road running through subject property	NORTH: No features observed EAST: Continuation of dirt road SOUTH: No features observed; Lamar Reservoirs are located farther southwest and

Year(s)	Subject Property Description	Adjoining Property Descriptions
		Lamar Waterworks pump house and wells are located farther southeast WEST: Continuation of dirt road
2013, 2016, 2019, 2022	No features depicted	NORTH: No features observed EAST: No features observed SOUTH: No features observed WEST: No features observed

Subject property:

- No potential environmental concerns identified

Adjoining properties:

- No potential environmental concerns identified

3.5 Chain of Title

Based on the quality of information obtained from other sources, a chain of title search was not performed as part of this assessment.

4.0 REGULATORY AGENCY RECORDS REVIEW

Local and state agencies, such as environmental health departments, fire prevention bureaus, and building and planning departments are contacted to identify any current or previous reports of hazardous substance use, storage, and/or unauthorized releases that may have impacted the subject property. In addition, information pertaining to AULs, defined as legal or physical restrictions, or limitations on the use of, or access to, a site or facility, is requested.

4.1 Local Environmental Health Department and/or State Environmental Agency

Agency	Date Contacted	Method of Contact	Name & Title of Contact	Agency Response
Colorado Department of Public Health and Environment (CDPHE)	April 28, 2026	Online	N/A	No subject property records on file

Agency	Date Contacted	Method of Contact	Name & Title of Contact	Agency Response
Colorado Department of Labor and Employment Division of Oil and Public Safety (CDLE OPS)	April 28, 2026	Online	N/A	No subject property records on file

4.2 Fire Department

Agency	Date Contacted	Method of Contact	Name & Title of Contact	Agency Response
Lamar Fire Department (LFD)	N/A	N/A	N/A	No records on file based on no physical address

4.3 Building Department

Agency	Date Contacted	Method of Contact	Name & Title of Contact	Agency Response
Lamar Building Department (LBD)	N/A	N/A	N/A	Since the subject property has never been developed, no physical address has been provided to or identified by AEI during the course of this assessment.

4.4 Planning Department

Agency	Date Contacted	Method of Contact	Name & Title of Contact	Agency Response
Lamar Planning Department (LPB)	April 28, 2026	Telephone	Administrator	No evidence indicating the existence of AULs on file for the subject property

4.5 Assessor's Office

Agency	Date Contacted	Method of Contact	Name & Title of Contact	Agency Response
Prowers County Assessor's Office	August 19, 2024	Online	N/A	Information obtained is discussed below

Records Summary

APN(s)	85100
Acreage	Not provided
Construction Date	N/A
Building Square Footage	N/A
Current Owner	School Land Co.
Additional Information	None

4.6 Other Agencies Searched

No other agencies were contacted during the course of this assessment.

4.7 Oil and Gas Wells

Agency	Date Referenced	Resource	Oil or gas wells located within 500 feet of the subject property
Colorado Oil and Gas Conservation Commission (COGCC)	May 6, 2026	COGCC Map	No

4.8 Oil and Gas Pipelines

Agency	Date Referenced	Resource	Pipelines located within 500 feet of the subject property
National Pipeline Mapping System (NPMS)	May 6, 2026	NPMS Public Map Viewer	No

5.0 REGULATORY DATABASE RECORDS REVIEW

AEI contracted EDR to conduct a search of publicly available information from federal, state, tribal, and local databases containing known and suspected sites of environmental contamination and sites of potential environmental significance. Data gathered during the current regulatory database search is compiled by EDR into one regulatory database report. Location information for listed sites is designated using geocoded information provided by federal, state, or local agencies and commonly used mapping databases with the exception of "Orphan" sites. Due to poor or inadequate address information, Orphan sites are identified but not geocoded/mapped by EDR, rather, information is provided based upon vicinity zip codes, city name, and state. The minimum search distance from the federal and state environmental records database listings specified in the current ASTM Standard E1527 is included in Section 5.1. A copy of the regulatory database report, which includes detailed descriptions of the databases noted below as well as the total number of sites identified, is included in Appendix C of this report.

In determining if a listed site is a potential environmental concern to the subject property, AEI generally applies the following criteria to classify the site as lower potential environmental concern: 1) the site only holds an operating permit (which does not imply a release), 2) the site's distance from, and/or topographic position relative to, the subject property, and/or 3) the site has recently been granted "No Further Action" by the appropriate regulatory agency.

Regulatory database listings associated with the subject property, adjoining properties and/or nearby sites of concern that were determined to warrant additional discussion, if any, are identified and further discussed in Section 5.1.

5.1 RECORDS SUMMARY

Database	Search Distance (Miles)	Subject Property	Adjoining Property	Other Nearby Sites of Concern
Federal NPL (Superfund) sites	1.0			
Federal Delisted NPL sites	0.5			
Federal CERCLA removals/orders sites	0.5			
Federal CERCLA sites with NFRAP	0.5			
Federal RCRA facilities undergoing Corrective Action	1.0			
Federal RCRA TSD facilities	0.5			
Federal RCRA generators (LQG, SQG, VSQG)	SP/ADJ			
Federal RCRA NonGen/NLR sites	SP/ADJ			
Federal IC/EC sites	SP			
Federal ERNS sites	SP			
State/tribal "Superfund" equivalent sites	1.0			
State/tribal hazardous waste facilities	0.5			
State/tribal landfill and solid waste disposal facilities	0.5			
State/tribal leaking storage tanks	0.5			
State/tribal registered storage tanks	SP/ADJ			

Database	Search Distance (Miles)	Subject Property	Adjoining Property	Other Nearby Sites of Concern
State/tribal voluntary cleanup sites	0.5			
State/tribal IC/EC registries	SP			
State/tribal brownfield sites	0.5			
Orphans	N/A			
Additional Environmental Record lists	SP/ADJ			

5.2 Vapor Migration

A vapor encroachment condition (VEC) is the presence or likely presence of Chemical(s) of Concern (COC) vapors in the vadose zone of the subject property caused by the release of vapors from contaminated soil and/or groundwater either on or near the subject property.

AEI conducted a limited screening for potential VECs that may affect the subject property. The VEC screening focused on the current and historical usage of the subject property and also utilized the aforementioned regulatory agency database report provided by EDR to evaluate identified Chemicals of Concern (COCs), including petroleum hydrocarbons.

Determination of AOC

To identify the area of concern (AOC) for contaminated sites with non-petroleum hydrocarbon COCs, AEI utilized the approximate minimum search distance defined by the current ASTM E2600 of 1,760 feet (1/3 mile) from the subject property boundary for COC-contaminated sites. For sites contaminated with petroleum hydrocarbon COCs, AEI utilized the AOC approximate minimum search distance of 528 feet (1/10 mile). The AOC was adjusted accordingly based on review of physical setting characteristics, known release information, property and land features, groundwater flow direction, and soil type, et al.

ASTM's Vapor Encroachment guidance indicates that when groundwater flow direction can be estimated or determined, the cross-gradient or downgradient radius distances can be significantly reduced. AEI calculated the reduced AOC distances when considering groundwater flow direction by utilizing the following default distances, which were determined using the Buonicore Methodology:

Non-petroleum hydrocarbon COCs:

- 1,760 feet in the upgradient direction
- 365 feet in the cross-gradient direction
- 100 feet in the downgradient direction

Petroleum hydrocarbon COCs if Light, Non-Aqueous Phase Liquid, (LNAPL, i.e. floating product) is suspected:

- 528 feet in the upgradient direction
- 165 feet in the cross-gradient direction
- 100 feet in the downgradient direction

Petroleum hydrocarbon COCs if LNAPL is *not* suspected:

- 528 feet in the upgradient direction
- 95 feet in the cross-gradient direction
- 30 feet in the downgradient position

Additional adjustment of the AOC may be conducted based on AEI's professional judgment.

Conclusions

Source	VEC Identified	VEC Not Identified	Comments
Subject Property		✔	N/A
Adjoining and/or Nearby Site(s)		✔	N/A

5.3 Per- and Polyfluoroalkyl Substances (PFAS)

As defined in Section 3.2.36 of the current ASTM Standard E1527, hazardous substance means "those substances defined as a hazardous substance pursuant to CERCLA 42 USC § 9601(14), as interpreted by EPA regulations and the courts." Hazardous substances that are not defined (or not yet defined) as hazardous substances under CERCLA are outside of the scope of the current ASTM Standard E1527.

On July 8, 2024, the Final EPA rule became effective that designates perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) as CERCLA hazardous substances. Per the current ASTM Standard E1527, once this rule went into effect, these substances are evaluated within the scope of this standard, and a release or likely release of PFOA and/or PFOS is considered a REC.

Other than PFOA/PFOS, compounds classified as PFAS are not currently classified as hazardous substances under CERCLA, and thus the potential presence of PFAS (other than PFOA/PFOS) is outside of the scope of the current ASTM Standard E1527, and does not constitute a REC at this time. However, the report User should be aware that regulatory criteria and classifications are subject to change.

AEI's research of potential PFAS contamination focuses on the release/likely release of PFOA/PFOS. However, if additional information pertaining to other PFAS is identified, AEI will also assess/discuss these compounds, as deemed applicable/appropriate within the scope of this investigation.

It should be noted that AEI's screening of PFOA/PFOS and other PFAS is based solely on review of the resources cited within this report. Identification, or lack thereof, is not a warranty that PFOA/PFOS or other PFAS contamination is present or absent at a site. Additionally, it should be noted that given the evolving nature of science and regulatory oversight of PFOA/PFOS and other PFAS, additional sources of contamination may exist at the subject property, adjoining properties and/or other nearby sites that were not identified by the limited data and screening tools cited within this report.

5.3.1 Potential On-Site PFAS Sources/Concerns

AEI researched the standard historical and regulatory sources cited within this report to determine if a release or likely release of PFOA/PFOS has occurred at the subject property.

A voluntary industry phaseout of PFOA and PFOS was first implemented in the late 1990s and was fully implemented for PFOS by 2002 and PFOA by 2015. Although PFOA and PFOS have been generally phased out since 2015, studies have found that precursor PFAS in wastewater treatment systems may form PFOA and PFOS. As such, even after 2015, the presence of PFAS in wastewater discharges is considered a likely source of PFOA and PFOS contamination.

Potential Source	Yes	No
Past or present industrial operations that potentially included the use of PFAS (if "yes" see *Potential PFAS Sources from Industrial Uses* section/table below)		✔
The use or discharge of AFFF (if "yes" see *Potential Sources of AFFF* section/table below)		✔
Electroplating (1950s-present) NOTE: Electroplating (specifically hard chromium plating) is an industrial activity where PFAS-containing mist suppressants may have been used		✔
Agricultural uses, specifically 1970s-present that included the verified application of biosolids/WWTP sludge that potentially contained PFAS		✔
Wastewater treatment plant (WWTP) (1960s-present)		✔
Landfill operations / waste disposal areas (1960s-present)		✔
Mining / quarrying / oil production		✔
Commercial carwash (1989-2010)		✔
Dry cleaner and/or commercial laundry (1970s-2010)		✔

AEI did not identify any obvious potential sources of PFAS contamination originating from on-site operations/sources.

6.0 INTERVIEWS AND USER PROVIDED INFORMATION

6.1 Interviews

Pursuant to the current ASTM Standard E1527, the following interviews were performed during this assessment in order to obtain information indicating RECs in connection with the subject property.

6.1.1 Interview with Owner

Name	N/A
Date Interviewed	N/A
Method of Contact	N/A
Year First Associated w/Property	N/A
Notes	Not interviewed; refer to Section 1.5
Interview Summary	N/A

6.1.2 Interview with Key Site Manager

Name	N/A
Date Interviewed	N/A
Method of Contact	N/A
Year First Associated w/Property	N/A
Notes	Not interviewed; refer to Section 1.5
Interview Summary	N/A

6.1.3 Past Owners, Operators, and Occupants

AEI did not attempt to interview past owners, operators, and occupants of the subject property because information from these sources would likely be duplicative of information already obtained from other sources.

6.1.4 Interview with Others

Information obtained during interviews with local government officials is incorporated into the appropriate segments of this report.

6.2 User Provided Information

User provided information is intended to help identify the possibility of RECs in connection with the subject property. According to the current ASTM Standard E1527 and the EPA Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), certain items should be researched by the prospective landowner or grantee, and the results of such inquiries may be provided to the Environmental Professional. The responsibility for qualifying for LLPs by conducting the inquiries ultimately rests with the User, and providing the information to the Environmental Professional would be prudent if such information is available.

The User did not complete the ASTM User Questionnaire or provide the User information to AEI. AEI assumes that qualification for the LLPs is being established by the User in documentation outside of this assessment.

Question	Response/ Comment
1. Environmental liens that are filed or recorded against the property (40 CFR 312.25) Did a search of recorded land title records (or judicial records where appropriate) identify any environmental liens filed or recorded against the property under federal, tribal, state or local law?	Information not provided
2. Activity and use limitations that are in place on the property or that have been filed or recorded against the property (40 CFR 312.26(a)(1)(v) and vi)). Did a search of recorded land title records (or judicial records where appropriate) identify any AULs, such as engineering controls, land use restrictions or institutional controls that are in place at the property and/or have been filed or recorded against the property under federal, tribal, state or local law?	Information not provided
3. Specialized knowledge or experience of the person seeking to qualify for the LLP (40 CFR 312.28). Do you have any specialized knowledge or experience related to the property or nearby properties? For example, are you involved in the same line of business as the current or former occupants of the property or an adjoining property so that you would have specialized knowledge of the chemicals and processes used by this type of business?	Information not provided
4. Relationship of the purchase price to the fair market value of the property if it were not contaminated (40 CFR 312.29). Does the purchase price being paid for this property reasonably reflect the fair market value of the property? If you conclude that there is a difference, have you considered whether the lower purchase price is because contamination is known or believed to be present at the property?	Information not provided
5. Commonly known or reasonably ascertainable information about the property (40 CFR 312.30). Are you aware of commonly known or reasonably ascertainable information about the property that would help the environmental professional to identify conditions indicative of releases or threatened releases? For example: (a) Do you know the past uses of the property? (b) Do you know of specific chemicals that are present or once were present at the property? (c) Do you know of spills or other chemical releases that have taken place at the property? (d) Do you know of any environmental cleanups that have taken place at the property?	Information not provided
6. The degree of obviousness of the presence or likely presence of contamination at the property, and the ability to detect the contamination by appropriate investigation (40 CFR 312.31). Based on your knowledge and experience related to the property, are there any obvious indicators that point to the presence or likely presence of contamination at the property?	Information not provided
Purpose/reason for conducting Phase I ESA:	Information not provided; AEI assumes the purpose

Question	Response/ Comment
	is to qualify for an LLP to CERCLA liability

6.3 Previous Reports and Other Provided Documentation

Documentation was provided to AEI by the client during this assessment. A summary of this information follows:

Phase I Environmental Site Assessment (Clay Creek Energy -Lamar Community Solar Project, East of CC.50, 1,300 Feet north of DD.8, Lamar, Colorado), prepared by AEI (September 18, 2024)

This report describes the subject property generally consistent with current conditions. No RECs, CRECs, HRECs, or OECS were identified. AEI recommended no further investigation for the subject property.

A copy of the report can be provided upon request.

6.4 Environmental Lien and AUL Search Information Reports

To meet the requirements of 40 CFR 312.20 and 312.25, a search for the existence of environmental liens and AULs that are filed or recorded against the subject property must be conducted. The current ASTM Standard E1527 recognizes two acceptable methods to meet this requirement:

- **Method 1** consists of a review of title documents by the User (or a title professional engaged by the User) for environmental liens and AULs.

  Note: this method must be completed by the User (or a title professional engaged by the User), and thus cannot be completed by AEI.

  Refer to Section 6.2 User Provided Information for information (if any) provided by the User via the User Questionnaire.

- **Method 2** consists of obtaining and relying on title search information reports designed to search for environmental liens and AULs.

  Note: these reports are not included within the scope of the current ASTM E1527 Standard. Thus, these reports can only be obtained by a consultant if explicitly added to the agreed upon scope of work between the consultant and the client.

The inclusion of a title search information report designed to search for environmental liens and AULs was not part of AEI's approved scope of services.

7.0 SITE RECONNAISSANCE

Site Reconnaissance Date	May 6, 2026
AEI Site Assessor(s)	Shannon Parker
Property Escort(s)/ Relationship(s) to Property	No escort provided
Units/Areas Observed	Majority of vacant land
Area(s) not accessed and reason(s)	Large parcel of vacant land. Refer to Section 1.5 for discussion of limiting condition(s)
Other Physical Constraints	None
General Observations	The property includes vacant land

Reconnaissance Findings Summary

Feature	Observed on Subject Property (see Section 7.1)	Observed on Adjoining Property (see Section 7.2)
Regulated Hazardous Substances/Wastes and/or Petroleum Products in Connection with Property Use (including drums, totes, and intermediate bulk containers)		
Aboveground/Underground Hazardous Substance or Petroleum Product Storage Tanks (ASTs/USTs)		
Hazardous Substance and Petroleum Product Containers Not in Connection with Property Use		
Unidentified Substance Containers		
Electrical or Mechanical Equipment Likely to Contain Fluids		
Interior Stains or Corrosion		
Strong, Pungent, or Noxious Odors		
Pools of Liquid		
Drains, Sumps, and Clarifiers		
Pits, Ponds, and Lagoons		
Stained Soil or Pavement		
Stressed Vegetation		
Solid Waste Disposal or Evidence of Fill Materials		
Waste Water Discharges		
Wells		
Septic Systems or Cesspools		
Biomedical Wastes		
Other		

7.1 SUBJECT PROPERTY RECONNAISSANCE FINDINGS

During the site reconnaissance, AEI did not observe any of the items listed in the above Reconnaissance Findings Summary table.

7.2 ADJOINING PROPERTY RECONNAISSANCE FINDINGS

During the site reconnaissance, AEI did not observe any of the items listed in the above Reconnaissance Findings Summary table.

8.0 NON-ASTM SERVICES

8.1 Asbestos-Containing Building Materials

The subject property is currently vacant land or lacks structures. Consequently, no building components containing suspect asbestos containing materials were identified during the site inspection.

8.2 Lead-Based Paint

The subject property is currently vacant land or lacks structures. Consequently, AEI did not observe building components likely to contain suspect LBP during the site reconnaissance.

8.3 Naturally-Occurring Radon

Radon is a naturally-occurring, odorless, and invisible radioactive gas. According to the United States EPA, radon is the second leading cause of lung cancer. Natural radon levels vary and are closely related to geologic formations, soils, and foundation construction. Radon may enter buildings through basement sumps or other openings such as cracks and other holes in foundations.

US EPA Map

In 1993 the United States EPA prepared a map to assist national, state, and local organizations to target their resources and to implement radon-resistant building codes. The Map of Radon Zones should not be used to determine if individual buildings need to be tested. The map identifies counties of the US with the greatest potential for elevated indoor radon levels based on indoor radon measurement data, geology, soil parameters, and foundation types. The map divides the country into three radon zones based on potential radon accumulation, but is not to be considered predictive of radon accumulation.

The 1993 EPA map identifies the following three radon zones:

- Zone 1 - Average indoor radon levels may be greater than 4.0 pCi/L
- Zone 2 - Average indoor radon levels may be between 2.0 and 4.0 pCi/L
- Zone 3 - Average indoor radon levels may be less than 2.0 pCi/L

It is important to note that elevated levels of radon can be found in all three zones, and the EPA and other agencies recommend site-specific testing to determine radon levels at a specific property.

It should also be noted that EPA's 1993 Map of Radon Zones was based on limited data collected prior to 1993 and therefore may be supplemented with available state-developed or other data to further understand the radon potential for a specific area.

According to the US EPA, the radon zone level for the County is Zone 1, which has a high potential for radon accumulation.

Colorado Department of Public Health and Environment (CDPHE)

Additionally, it should be noted that the Colorado Department of Public Health and Environment (CDPHE) has developed its own map of counties within the State of Colorado that uses the same three zones as the United States EPA. According to the CDPHE radon zones map, every county in the state of Colorado is Zone 1.

As the site is undeveloped, radon sampling is not practical nor predictive of potential accumulation in finished structures. If residential development is proposed at the subject property, radon-resistant construction should be considered.

8.4 Suspect Mold or Microbial Growth Conditions

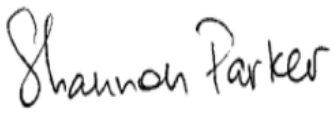
The subject property is currently vacant land or lacks structures. Consequently, suspect mold was not addressed as part of this assessment.

9.0 SIGNATURE OF ENVIRONMENTAL PROFESSIONALS

We declare that, to the best of our professional knowledge and belief, we meet the definition of Environmental Professional as defined in § 312.10 of 40 CFR Part 312.

We have the specific qualifications based on education, training, and experience to assess a property of the nature, history and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared By:



Shannon Parker
Associate Consultant

Reviewed By:



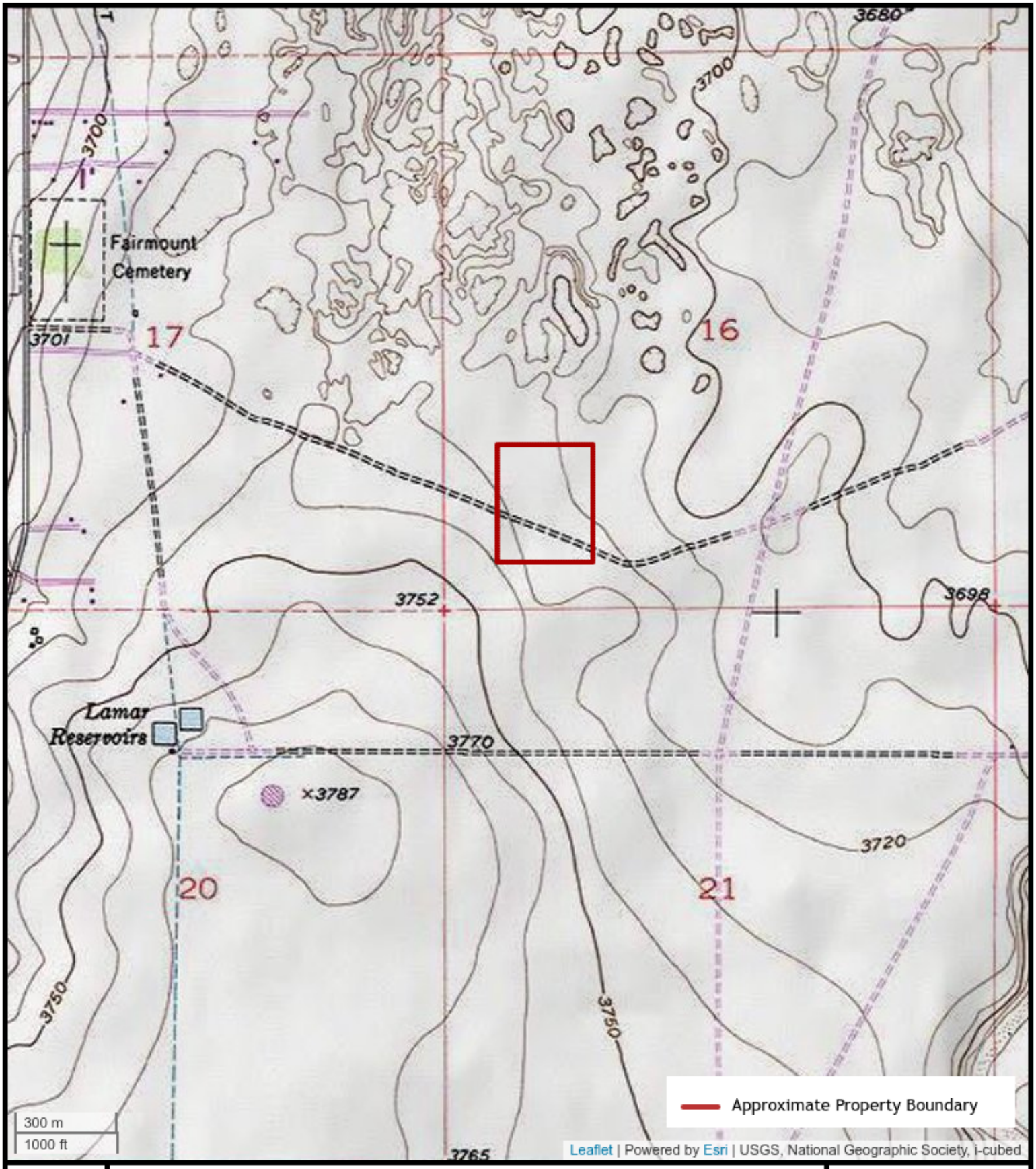
Edna Picciolini
Senior Author

10.0 REFERENCES

Item	Date(s)	Source
Soils Information	Accessed April 2026	USDA Web Soil Survey http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx
Depth to Groundwater Information	April 2026	USGS groundwater data
Aerial Photographs	1947-2019, non-inclusive	EDR
Sanborn Map Report/Search	August 2024	EDR
City Directories	1992-2020	EDR
Historical Topographic Maps	1892-2022	EDR
Environmental Health Department	April 28, 2026	Colorado Department of Public Health and Environment
State Environmental Agency	April 28, 2026	Colorado Department of Labor and Employment Division of Oil and Public Safety
Fire Department	N/A	Lamar Fire Department
Building Department	N/A	Lamar Building Department
Planning Department	April 28, 2026	Lamar Planning Department
Assessor's Information and Parcel Map	August 19, 2024	Prowers County
Oil and Gas Wells	May 6, 2026	Colorado Oil and Gas Conservation Commission
Oil and Gas Pipelines	May 6, 2026	NPMS Public Map Viewer https://www.npms.phmsa.dot.gov/PublicViewer/composite.jsf
Regulatory Database Report	April 27, 2026	EDR
Interview with Owner	N/A	N/A
Interview with Key Site Manager	N/A	N/A
Radon Zone Information	1993	US EPA Map of Radon Zones https://www.epa.gov/radon
Previous Report	September 28, 2024	*Phase I ESA, Clay Creek Energy, Lamar Solar Project, Lamar, Colorado*, prepared by AEI

APPENDIX A

FIGURES

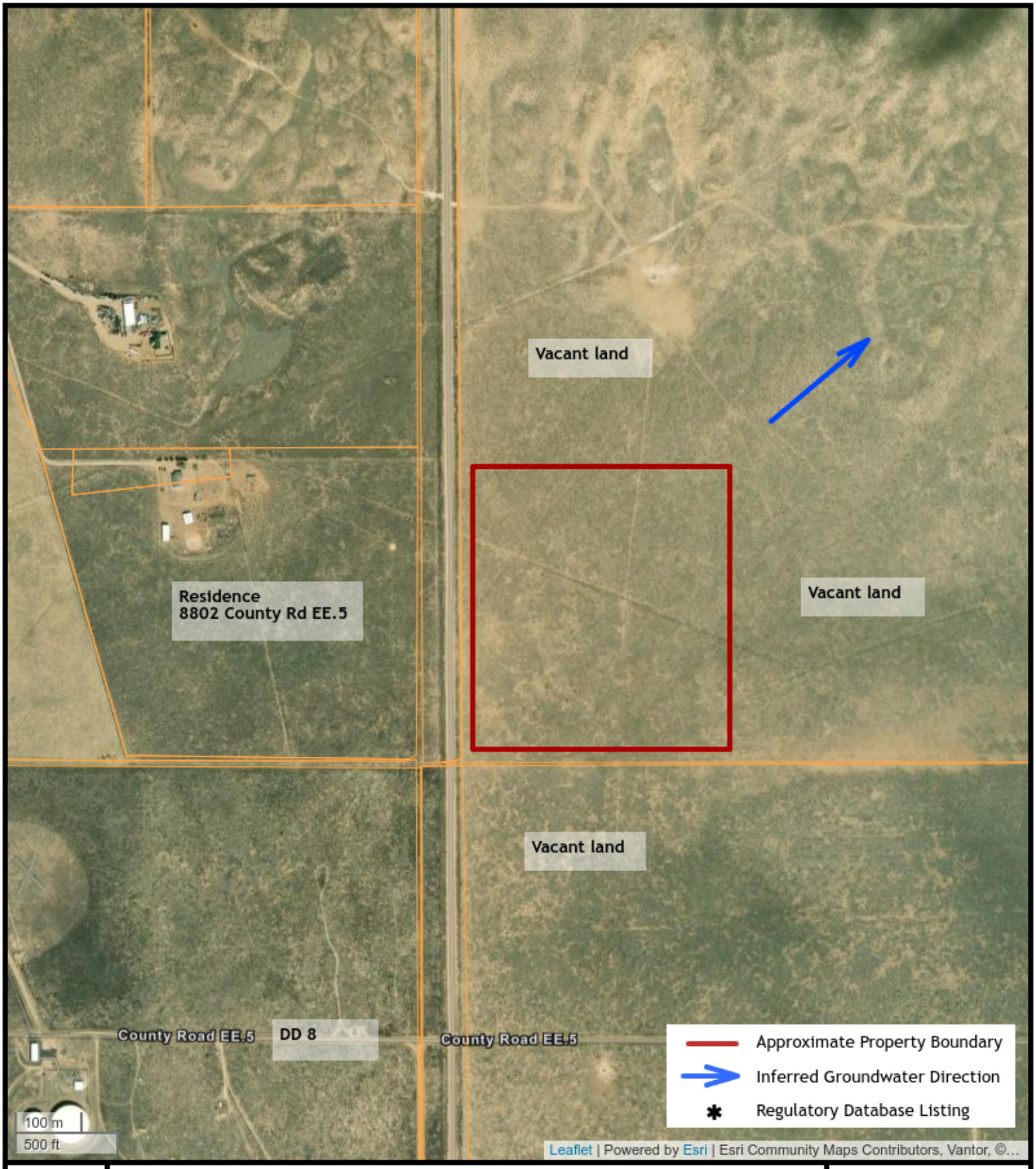


N

FIGURE 1: TOPOGRAPHIC MAP

East of CC.50 and 1,300 feet north of Dd.8, Lamar, Colorado 81052
AEI Project Number: 497462

AEI



N

FIGURE 2: SITE MAP

East of CC.50 and 1,300 feet north of DD.8, Lamar, Colorado 81052
AEI Project Number: 497462

AEI

APPENDIX B

PROPERTY PHOTOGRAPHS



1. Subject property looking northeast



2. Subject property looking east



3. Subject property looking east



4. Subject property looking east



5. Subject property looking southeast



6. North adjacent property



7. West adjacent property



8. South adjacent property

APPENDIX C

REGULATORY DATABASE

East of CC.50 and 1,300 Feet North of Dd.8
East of CC.50 and 1,300 Feet North of Dd.8
Lamar, CO 81052

Inquiry Number: 8324735.2s
April 27, 2026

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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LIGHTBOX LIVE

Open LightBox Live to access data, tools, and advanced analytics in one online platform.

http://www.web.edrnet.com/ordering/switchboard/login.aspx?s=goto_lightbox&pguid=04006A0E-3457-42CD-96B2-6060AEBA3949

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E1527 - 21), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E2247 - 23), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E1528 - 22) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

EAST OF CC.50 AND 1,300 FEET NORTH OF DD.8
LAMAR, CO 81052

COORDINATES

Latitude (North):	38.0436020 - 38° 2' 36.96''
Longitude (West):	102.5918220 - 102° 35' 30.55''
Universal Tranverse Mercator:	Zone 13
UTM X (Meters):	711326.8
UTM Y (Meters):	4213185.0
Elevation:	3742 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	50010725 LAMAR EAST, CO
Version Date:	2022

AERIAL PHOTOGRAPHY IN THIS REPORT

Photo Year:	2023
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
EAST OF CC.50 AND 1,300 FEET NORTH OF DD.8
LAMAR, CO 81052

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION

NO MAPPED SITES FOUND

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was not listed in any of the databases searched by EDR.

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL ---- National Priority List
Proposed NPL ---- Proposed National Priority List Sites
NPL LIENS ---- Federal Superfund Liens

Lists of Federal Delisted NPL sites

Delisted NPL ---- National Priority List Deletions

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY ---- Federal Facility Site Information listing
SEMS ---- Superfund Enterprise Management System

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE ---- Superfund Enterprise Management System Archive

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS ---- Corrective Action Report

Lists of Federal RCRA TSD facilities

RCRA-TSDF ---- RCRA - Treatment, Storage and Disposal

Lists of Federal RCRA generators

RCRA-LQG ---- RCRA - Large Quantity Generators
RCRA-SQG ---- RCRA - Small Quantity Generators
RCRA-VSQG ---- RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

Federal institutional controls / engineering controls registries

LUCIS ---- Land Use Control Information System

US ENG CONTROLS..... Engineering Controls Sites List
US INST CONTROLS..... Institutional Controls Sites List

Federal ERNS list

ERNS..... Emergency Response Notification System

Lists of state- and tribal hazardous waste facilities

SHWS..... This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF..... Solid Waste Sites & Facilities
SHWF..... Solid Waste Information System Listing

Lists of state and tribal leaking storage tanks

LTANKS..... Petroleum Release Events Listing
LUST..... Leaking Underground Storage Tank List
LAST..... Leaking Aboveground Storage Tank Listing
INDIAN LUST..... Leaking Underground Storage Tanks on Indian Land
LUST TRUST..... RAP Site Listing

Lists of state and tribal registered storage tanks

FEMA UST..... Underground Storage Tank Listing
UST..... Underground Storage Tank Database
AST..... Aboveground Tank List
INDIAN UST..... Underground Storage Tanks on Indian Land

State and tribal institutional control / engineering control registries

AUL..... Environmental Covenants and Environmental Use Restrictions List

Lists of state and tribal voluntary cleanup sites

INDIAN VCP..... Voluntary Cleanup Priority Listing
VCP..... Voluntary Cleanup & Redevelopment Act Application Tracking Report

Lists of state and tribal brownfield sites

BROWNFIELDS..... Brownfields Sites Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS..... A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

HIST LF..... Historical Landfill List

SWRCY	Registered Recyclers Listing
INDIAN ODI	Report on the Status of Open Dumps on Indian Lands
DEBRIS REGION 9	Torres Martinez Reservation Illegal Dump Site Locations
ODI	Open Dump Inventory
IHS OPEN DUMPS	Open Dumps on Indian Land
DENVER CO HIST FILL	Denver City & County Historic Fill Areas

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL	Delisted National Clandestine Laboratory Register
CDL	Meth Lab Locations
US CDL	National Clandestine Laboratory Register

Local Land Records

LIENS 2	CERCLA Lien Information

Records of Emergency Release Reports

HMIRS	Hazardous Materials Information Reporting System
SPILLS	Spills Database
SPILLS 90	SPILLS 90 data from FirstSearch

Other Ascertainable Records

RCRA NonGen / NLR	RCRA - Non Generators / No Longer Regulated
FUDS	Formerly Used Defense Sites
DOD	Department of Defense Sites
SCRD DRYCLEANERS	State Coalition for Remediation of Drycleaners Listing
US FIN ASSUR	Financial Assurance Information
EPA WATCH LIST	EPA WATCH LIST
2020 COR ACTION	2020 Corrective Action Program List
TSCA	Toxic Substances Control Act
TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
PADS	PCB Activity Database System
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites

EXECUTIVE SUMMARY

US AIRS ---- Aerometric Information Retrieval System Facility Subsystem
US MINES ---- Mines Master Index File
ABANDONED MINES ---- Abandoned Mines
MINES MRDS ---- Mineral Resources Data System
FINDS ---- Facility Index System/Facility Registry System
UXO ---- Unexploded Ordnance Sites
ECHO ---- Enforcement & Compliance History Information
DOCKET HWC ---- Hazardous Waste Compliance Docket Listing
FUELS PROGRAM ---- EPA Fuels Program Registered Listing
PFAS NPL ---- Superfund Sites with PFAS Detections Information
PFAS FEDERAL SITES ---- Federal Sites PFAS Information
PFAS TSCA ---- PFAS Manufacture and Imports Information
PFAS TRIS ---- List of PFAS Added to the TRI
PFAS RCRA MANIFEST ---- PFAS Transfers Identified In the RCRA Database Listing
PFAS ATSDR ---- PFAS Contamination Site Location Listing
PFAS WQP ---- Ambient Environmental Sampling for PFAS
PFAS NPDES ---- Clean Water Act Discharge Monitoring Information
PFAS PROJECT ---- NORTHEASTERN UNIVERSITY PFAS PROJECT
PFAS ECHO ---- Facilities in Industries that May Be Handling PFAS Listing
PFAS ECHO FIRE TRAIN ---- Facilities in Industries that May Be Handling PFAS Listing
PFAS PT 139 AIRPORT ---- All Certified Part 139 Airports PFAS Information Listing
AQUEOUS FOAM NRC ---- Aqueous Foam Related Incidents Listing
BIOSOLIDS ---- ICIS-NPDES Biosolids Facility Data
UST FINDER RELEASE ---- UST Finder Releases Database
UST FINDER ---- UST Finder Database
E MANIFEST ---- Hazardous Waste Electronic Manifest System
PFAS ---- PFAS Information Listing
AQUEOUS FOAM ---- Class B Firefighting Foam Contaminating PFAS Listing
AIRS ---- Permitted Facility & Emissions Listing
ASBESTOS ---- Asbestos Abatement & Demolition Projects
METHANE SITE ---- Methane Site Investigations - Jefferson County 1980
Methane Investig ---- Methane Gas & Swamp Findings
DRYCLEANERS ---- Drycleaner Facilities
Financial Assurance ---- Financial Assurance Information Listing
LEAD ---- LEAD
MINES ---- Permitted Mines Listing
NPDES ---- Permitted Facility Listing
UIC ---- Underground Injection Control
UMTRA ---- Uranium Mill Tailings Sites
ABAND AIRFIELDS ---- Abandoned & Little-Known Airfields Listing
DRYCLEANERS ---- Drycleaner Facility Listing

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP ---- EDR Proprietary Manufactured Gas Plants
EDR Hist Auto ---- EDR Exclusive Historical Auto Stations
EDR Hist Cleaner ---- EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF ---- Recovered Government Archive Solid Waste Facilities List

EXECUTIVE SUMMARY

RGA LUST---------- Recovered Government Archive Leaking Underground Storage Tank

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were not identified.

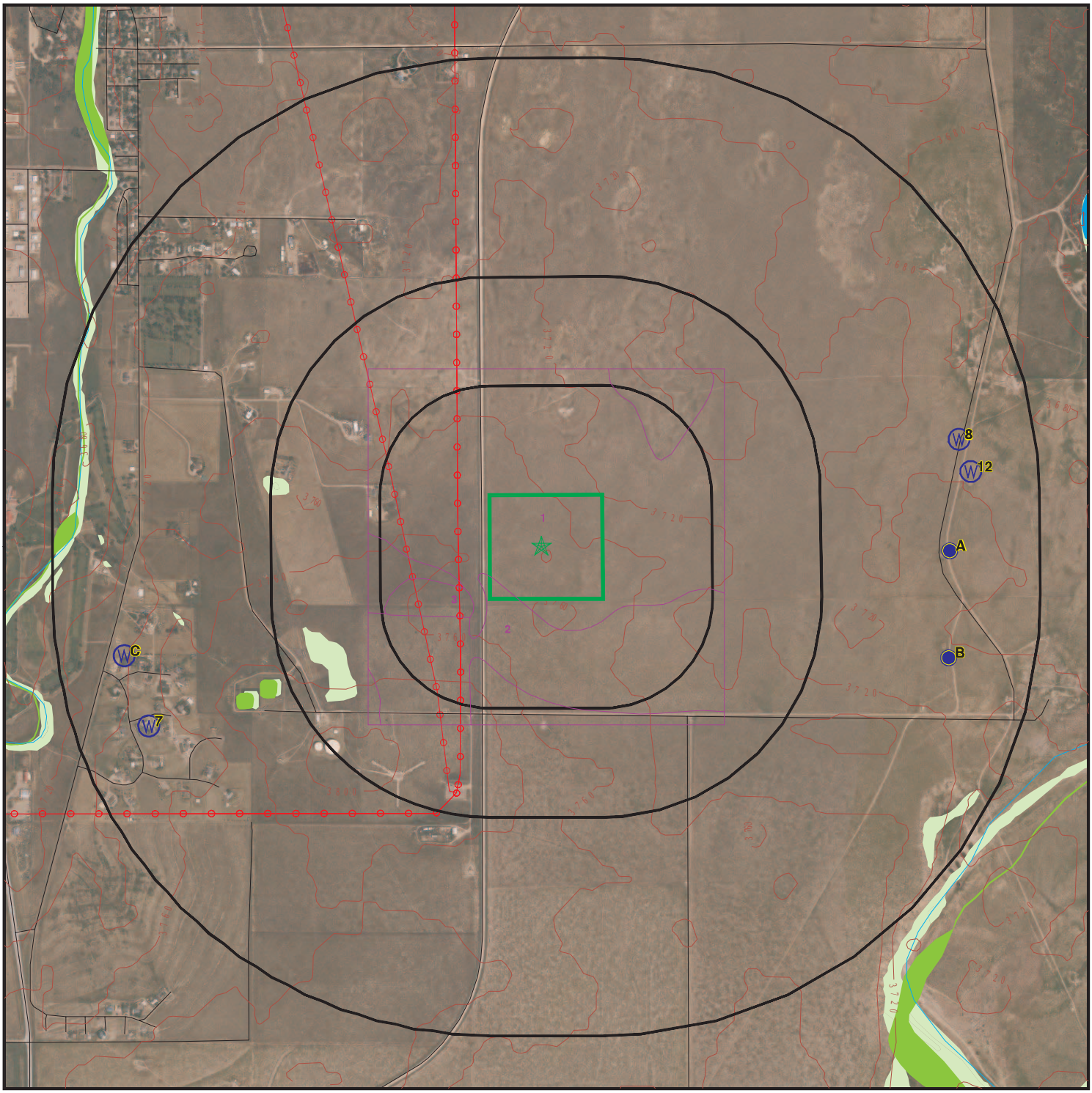
Unmappable (orphan) sites are not considered in the foregoing analysis.

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 4 records.

Site Name	Database(s)
AT&T FRICK RS	LTANKS
AT&T LAMAR RELAY STATION	LTANKS, UST
AT&T FRICK RS	LTANKS, UST
EAST LAMAR MUNICIPAL LANDFILL	SWF/LF

OVERVIEW MAP - 8324735.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

National Wetland Inventory

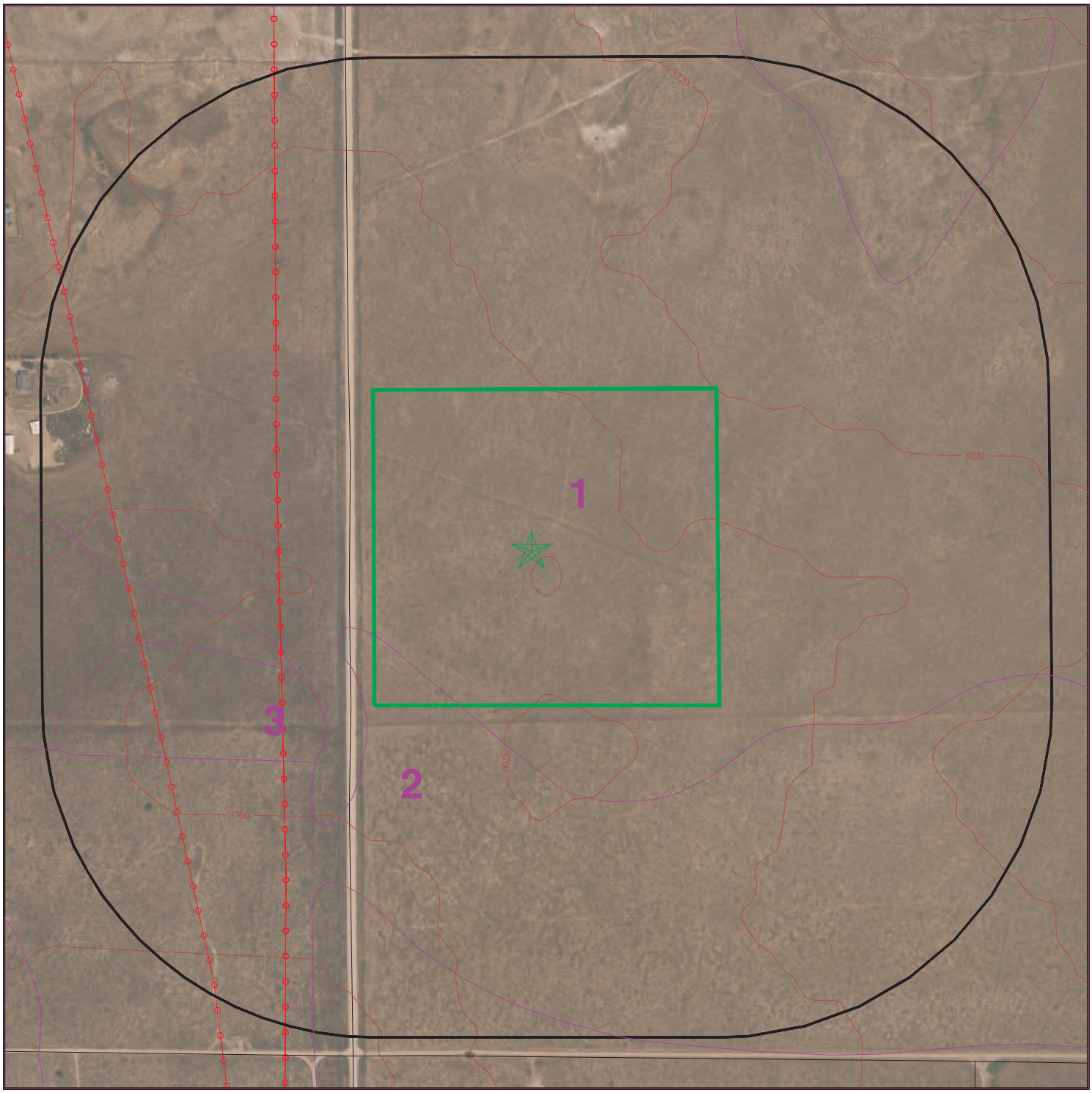
State Wetlands

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	East of CC.50 and 1,300 Feet North of Dd.8	CLIENT:	AEI Consultants
ADDRESS:	East of CC.50 and 1,300 Feet North of Dd.8 Lamar CO 81052	CONTACT:	Marilu Galeana
		INQUIRY #:	8324735.2s
LAT/LONG:	38.043602 / 102.591822	DATE:	April 27, 2026 2:11 pm

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DETAIL MAP - 8324735.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/16 1/8 1/4 Miles

Indian Reservations BIA

Power transmission lines

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	East of CC.50 and 1,300 Feet North of Dd.8	CLIENT:	AEI Consultants
ADDRESS:	East of CC.50 and 1,300 Feet North of Dd.8 Lamar CO 81052	CONTACT:	Marilu Galeana
		INQUIRY #:	8324735.2s
LAT/LONG:	38.043602 / 102.591822	DATE:	April 27, 2026 2:13 pm

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Lists of Federal NPL (Superfund) sites								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	1.000		0	0	0	0	NR	0
Lists of Federal Delisted NPL sites								
Delisted NPL	1.000		0	0	0	0	NR	0
Lists of Federal sites subject to CERCLA removals and CERCLA orders								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Lists of Federal CERCLA sites with NFRAP								
SEMS-ARCHIVE	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA facilities undergoing Corrective Action								
CORRACTS	1.000		0	0	0	0	NR	0
Lists of Federal RCRA TSD facilities								
RCRA-TSDF	0.500		0	0	0	NR	NR	0
Lists of Federal RCRA generators								
RCRA-LQG	0.250		0	0	NR	NR	NR	0
RCRA-SQG	0.250		0	0	NR	NR	NR	0
RCRA-VSQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROLS	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	TP		NR	NR	NR	NR	NR	0
Lists of state- and tribal hazardous waste facilities								
SHWS	N/A		N/A	N/A	N/A	N/A	N/A	N/A
Lists of state and tribal landfills and solid waste disposal facilities								
SWF/LF	0.500		0	0	0	NR	NR	0
SHWF	0.500		0	0	0	NR	NR	0
Lists of state and tribal leaking storage tanks								
LTANKS	0.500		0	0	0	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
LUST	0.500		0	0	0	NR	NR	0
LAST	0.500		0	0	0	NR	NR	0
INDIAN LUST	0.500		0	0	0	NR	NR	0
LUST TRUST	0.500		0	0	0	NR	NR	0
Lists of state and tribal registered storage tanks								
FEMA UST	0.250		0	0	NR	NR	NR	0
UST	0.250		0	0	NR	NR	NR	0
AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal institutional control / engineering control registries								
AUL	0.500		0	0	0	NR	NR	0
Lists of state and tribal voluntary cleanup sites								
INDIAN VCP	0.500		0	0	0	NR	NR	0
VCP	0.500		0	0	0	NR	NR	0
Lists of state and tribal brownfield sites								
BROWNFIELDS	0.500		0	0	0	NR	NR	0
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
HIST LF	0.500		0	0	0	NR	NR	0
SWRCY	0.500		0	0	0	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
DENVER CO HIST FILL	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	TP		NR	NR	NR	NR	NR	0
CDL	TP		NR	NR	NR	NR	NR	0
US CDL	TP		NR	NR	NR	NR	NR	0
Local Land Records								
LIENS 2	TP		NR	NR	NR	NR	NR	0
Records of Emergency Release Reports								
HMIRS	TP		NR	NR	NR	NR	NR	0
SPILLS	TP		NR	NR	NR	NR	NR	0
SPILLS 90	TP		NR	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		0	0	NR	NR	NR	0
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	TP		NR	NR	NR	NR	NR	0
EPA WATCH LIST	TP		NR	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	TP		NR	NR	NR	NR	NR	0
TRIS	TP		NR	NR	NR	NR	NR	0
SSTS	TP		NR	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	TP		NR	NR	NR	NR	NR	0
RAATS	TP		NR	NR	NR	NR	NR	0
PRP	TP		NR	NR	NR	NR	NR	0
PADS	TP		NR	NR	NR	NR	NR	0
ICIS	TP		NR	NR	NR	NR	NR	0
FTTS	TP		NR	NR	NR	NR	NR	0
MLTS	TP		NR	NR	NR	NR	NR	0
COAL ASH DOE	TP		NR	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	TP		NR	NR	NR	NR	NR	0
RADINFO	TP		NR	NR	NR	NR	NR	0
HIST FTTS	TP		NR	NR	NR	NR	NR	0
DOT OPS	TP		NR	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	1.000		0	0	0	0	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	TP		NR	NR	NR	NR	NR	0
US AIRS	TP		NR	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.250		0	0	NR	NR	NR	0
MINES MRDS	0.250		0	0	NR	NR	NR	0
FINDS	TP		NR	NR	NR	NR	NR	0
UXO	1.000		0	0	0	0	NR	0
ECHO	TP		NR	NR	NR	NR	NR	0
DOCKET HWC	TP		NR	NR	NR	NR	NR	0
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
PFAS NPL	0.250		0	0	NR	NR	NR	0
PFAS FEDERAL SITES	0.250		0	0	NR	NR	NR	0
PFAS TSCA	0.250		0	0	NR	NR	NR	0
PFAS TRIS	0.250		0	0	NR	NR	NR	0
PFAS RCRA MANIFEST	0.250		0	0	NR	NR	NR	0
PFAS ATSDR	0.250		0	0	NR	NR	NR	0
PFAS WQP	0.250		0	0	NR	NR	NR	0
PFAS NPDES	0.250		0	0	NR	NR	NR	0
PFAS PROJECT	0.250		0	0	NR	NR	NR	0
PFAS ECHO	0.250		0	0	NR	NR	NR	0
PFAS ECHO FIRE TRAIN	0.250		0	0	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
PFAS PT 139 AIRPORT	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM NRC	0.250		0	0	NR	NR	NR	0
BIOSOLIDS	TP		NR	NR	NR	NR	NR	0
UST FINDER RELEASE	0.500		0	0	0	NR	NR	0
UST FINDER	0.250		0	0	NR	NR	NR	0
E MANIFEST	0.250		0	0	NR	NR	NR	0
PFAS	0.250		0	0	NR	NR	NR	0
AQUEOUS FOAM	0.250		0	0	NR	NR	NR	0
AIRS	TP		NR	NR	NR	NR	NR	0
ASBESTOS	TP		NR	NR	NR	NR	NR	0
METHANE SITE	TP		NR	NR	NR	NR	NR	0
Methane Investig	TP		NR	NR	NR	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
Financial Assurance	TP		NR	NR	NR	NR	NR	0
LEAD	TP		NR	NR	NR	NR	NR	0
MINES	0.250		0	0	NR	NR	NR	0
NPDES	TP		NR	NR	NR	NR	NR	0
UIC	TP		NR	NR	NR	NR	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
ABAND AIRFIELDS	0.500		0	0	0	NR	NR	0
DRYCLEANERS	0.250		0	0	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
RGA LF	TP		NR	NR	NR	NR	NR	0
RGA LUST	TP		NR	NR	NR	NR	NR	0
- Totals --		0	0	0	0	0	0	0

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

N/A = This State does not maintain a SHWS list. See the Federal CERCLIS list.

MAP FINDINGS

Map ID Direction Distance Elevation	Site	Database(s)	EDR ID Number EPA ID Number

NO SITES FOUND

Count: 4 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
LAMAR	S125420240	AT&T FRICK RS	RD C 33 MI SW OF LAMAR	81052	LTANKS
LAMAR	U003121356	AT&T LAMAR RELAY STATION	4 MI E OF 287/50 ON HWY 196	81052	LTANKS, UST
LAMAR	S131543435	EAST LAMAR MUNICIPAL LANDFILL	5 M E, R 14 S OF HWY 50 2.0 M	81052	SWF/LF
LAMAR	U003364319	AT&T FRICK RS	17 MI W OF HWY 287 ON RD C	81052	LTANKS, UST

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Lists of Federal NPL (Superfund) sites

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 03/26/2026
Date Data Arrived at EDR: 04/01/2026
Date Made Active in Reports: 04/21/2026
Number of Days to Update: 20

Source: EPA
Telephone: N/A
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/06/2026
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 3
Telephone 215-814-5418

EPA Region 4
Telephone 404-562-8033

EPA Region 5
Telephone 312-886-6686

EPA Region 10
Telephone 206-553-8665

EPA Region 6
Telephone: 214-655-6659

EPA Region 7
Telephone: 913-551-7247

EPA Region 8
Telephone: 303-312-6774

EPA Region 9
Telephone: 415-947-4246

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 03/26/2026
Date Data Arrived at EDR: 04/01/2026
Date Made Active in Reports: 04/21/2026
Number of Days to Update: 20

Source: EPA
Telephone: N/A
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/06/2026
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

Lists of Federal Delisted NPL sites

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 03/26/2026
Date Data Arrived at EDR: 04/01/2026
Date Made Active in Reports: 04/21/2026
Number of Days to Update: 20

Source: EPA
Telephone: N/A
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/06/2026
Data Release Frequency: Quarterly

Lists of Federal sites subject to CERCLA removals and CERCLA orders

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 12/10/2025
Date Data Arrived at EDR: 12/10/2025
Date Made Active in Reports: 02/12/2026
Number of Days to Update: 64

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 03/24/2026
Next Scheduled EDR Contact: 07/06/2026
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 03/26/2026
Date Data Arrived at EDR: 04/01/2026
Date Made Active in Reports: 04/21/2026
Number of Days to Update: 20

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/20/2026
Data Release Frequency: Quarterly

Lists of Federal CERCLA sites with NFRAP

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 03/26/2026
Date Data Arrived at EDR: 04/01/2026
Date Made Active in Reports: 04/21/2026
Number of Days to Update: 20

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/20/2026
Data Release Frequency: Quarterly

Lists of Federal RCRA facilities undergoing Corrective Action

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 11/30/2025
Date Data Arrived at EDR: 12/03/2025
Date Made Active in Reports: 12/10/2025
Number of Days to Update: 7

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 03/17/2026
Next Scheduled EDR Contact: 06/29/2026
Data Release Frequency: Quarterly

Lists of Federal RCRA TSD facilities

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 11/30/2025
Date Data Arrived at EDR: 12/03/2025
Date Made Active in Reports: 12/10/2025
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 303-312-6149
Last EDR Contact: 03/17/2026
Next Scheduled EDR Contact: 06/29/2026
Data Release Frequency: Quarterly

Lists of Federal RCRA generators

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 11/30/2025
Date Data Arrived at EDR: 12/03/2025
Date Made Active in Reports: 12/10/2025
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 303-312-6149
Last EDR Contact: 03/17/2026
Next Scheduled EDR Contact: 06/29/2026
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 11/30/2025
Date Data Arrived at EDR: 12/03/2025
Date Made Active in Reports: 12/10/2025
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 303-312-6149
Last EDR Contact: 03/17/2026
Next Scheduled EDR Contact: 06/29/2026
Data Release Frequency: Quarterly

RCRA-VSQG: RCRA - Very Small Quantity Generators (Formerly Conditionally Exempt Small Quantity Generators)

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Very small quantity generators (VSQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 11/30/2025
Date Data Arrived at EDR: 12/03/2025
Date Made Active in Reports: 12/10/2025
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 303-312-6149
Last EDR Contact: 03/17/2026
Next Scheduled EDR Contact: 06/29/2026
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 03/11/2025
Date Data Arrived at EDR: 04/02/2025
Date Made Active in Reports: 06/24/2025
Number of Days to Update: 83

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 01/28/2026
Next Scheduled EDR Contact: 05/18/2026
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 10/30/2025
Date Data Arrived at EDR: 11/11/2025
Date Made Active in Reports: 11/12/2025
Number of Days to Update: 1

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/17/2026
Next Scheduled EDR Contact: 06/01/2026
Data Release Frequency: Varies

US INST CONTROLS: Institutional Controls Sites List

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 10/30/2025
Date Data Arrived at EDR: 11/11/2025
Date Made Active in Reports: 11/12/2025
Number of Days to Update: 1

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/17/2026
Next Scheduled EDR Contact: 06/01/2026
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 12/01/2025
Date Data Arrived at EDR: 12/08/2025
Date Made Active in Reports: 02/12/2026
Number of Days to Update: 66

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 03/17/2026
Next Scheduled EDR Contact: 06/29/2026
Data Release Frequency: Quarterly

Lists of state- and tribal hazardous waste facilities

SHWS: This state does not maintain a SHWS list. See the Federal CERCLIS list and Federal NPL list.

State Hazardous Waste Sites. State hazardous waste site records are the states' equivalent to CERCLIS. These sites may or may not already be listed on the federal CERCLIS list. Priority sites planned for cleanup using state funds (state equivalent of Superfund) are identified along with sites where cleanup will be paid for by potentially responsible parties. Available information varies by state.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: Department of Public Health & Environment
Telephone: 303-692-3300
Last EDR Contact: 02/05/2026
Next Scheduled EDR Contact: 05/18/2026
Data Release Frequency: N/A

Lists of state and tribal landfills and solid waste disposal facilities

SWF/LF: Solid Waste Sites & Facilities

Solid Waste Facilities/Landfill Sites. SWF/LF type records typically contain an inventory of solid waste disposal facilities or landfills in a particular state. Depending on the state, these may be active or inactive facilities or open dumps that failed to meet RCRA Subtitle D Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 10/01/2025
Date Data Arrived at EDR: 02/03/2026
Date Made Active in Reports: 04/22/2026
Number of Days to Update: 78

Source: Department of Public Health & Environment
Telephone: 303-692-3300
Last EDR Contact: 02/03/2026
Next Scheduled EDR Contact: 05/18/2026
Data Release Frequency: Varies

SHWF: Solid Waste Information System Listing

A listing from the Solid Waste Information System, which is used to help administer the various programs of our solid waste and materials management program. It includes a wide variety of types of facilities and sites, and includes information obtained over several decades and numerous legacy data systems.

Date of Government Version: 01/26/2026
Date Data Arrived at EDR: 01/27/2026
Date Made Active in Reports: 04/14/2026
Number of Days to Update: 77

Source: Department of Public Health & Environment
Telephone: 303-692-6349
Last EDR Contact: 01/27/2026
Next Scheduled EDR Contact: 05/11/2026
Data Release Frequency: Varies

Lists of state and tribal leaking storage tanks

LAST: Leaking Aboveground Storage Tank Listing

A listing of leaking aboveground storage tank sites. This list is no longer maintained. For current Leaking AST information, please see LTANKS.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/07/2018
Date Made Active in Reports: 04/03/2018
Number of Days to Update: 27

Source: Department of Labor & Employment
Telephone: 303-318-8525
Last EDR Contact: 05/31/2018
Next Scheduled EDR Contact: 09/10/2018
Data Release Frequency: No Update Planned

LTANKS: Petroleum Release Events Listing

Active and Closed OPS Petroleum Release Events in Colorado. Includes the OPS Open Event locations, but also shows locations of closed events (releases that have been issued a No Further Action determination).

Date of Government Version: 11/03/2025
Date Data Arrived at EDR: 11/19/2025
Date Made Active in Reports: 02/04/2026
Number of Days to Update: 77

Source: Department of Labor & Employment
Telephone: 303-318-8525
Last EDR Contact: 02/24/2026
Next Scheduled EDR Contact: 06/08/2026
Data Release Frequency: Quarterly

LUST: Leaking Underground Storage Tank List

Leaking Underground Storage Tank Incident Reports. LUST records contain an inventory of reported leaking underground storage tank incidents. Not all states maintain these records, and the information stored varies by state.

Date of Government Version: 03/01/2018
Date Data Arrived at EDR: 03/07/2018
Date Made Active in Reports: 04/03/2018
Number of Days to Update: 27

Source: Department of Labor and Employment, Oil Inspection Section
Telephone: 303-318-8521
Last EDR Contact: 03/07/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 12/11/2025
Date Made Active in Reports: 02/19/2026
Number of Days to Update: 70

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/13/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 12/11/2025
Date Made Active in Reports: 02/19/2026
Number of Days to Update: 70

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/13/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 12/11/2025
Date Made Active in Reports: 02/19/2026
Number of Days to Update: 70

Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 04/13/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land

Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 12/11/2025
Date Made Active in Reports: 02/19/2026
Number of Days to Update: 70

Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 04/13/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 12/11/2025
Date Made Active in Reports: 02/19/2026
Number of Days to Update: 70

Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 04/13/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 12/12/2025
Date Made Active in Reports: 02/19/2026
Number of Days to Update: 69
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/13/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 12/11/2025
Date Made Active in Reports: 02/19/2026
Number of Days to Update: 70
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 04/13/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 12/11/2025
Date Made Active in Reports: 02/19/2026
Number of Days to Update: 70
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 04/13/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

TRUST: Lust Trust Sites
Reimbursement application package. The 1989 Colorado General Assembly established Colorado's Petroleum Storage Tank Fund. The Fund reimburses eligible applicants for allowable costs incurred in cleaning up petroleum contamination from underground and aboveground petroleum storage tanks, as well as for third-party liability expenses. Remediation of contamination caused by railroad or aircraft fuel is not eligible for reimbursement. The Fund satisfies federal Environmental Protection Agency financial assurance requirements. Monies in the Fund come from various sources, predominantly the state environmental surcharge imposed on all petroleum products except railroad or aircraft fuel.

Date of Government Version: 12/04/2025
Date Data Arrived at EDR: 12/05/2025
Date Made Active in Reports: 02/25/2026
Number of Days to Update: 82
Source: Department of Labor and Employment, Oil Inspection Section
Telephone: 303-318-8521
Last EDR Contact: 03/11/2026
Next Scheduled EDR Contact: 06/29/2026
Data Release Frequency: Varies

Lists of state and tribal registered storage tanks

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 06/06/2025
Date Data Arrived at EDR: 08/26/2025
Date Made Active in Reports: 11/12/2025
Number of Days to Update: 78
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 03/25/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Varies

UST: Underground Storage Tank Database
Registered Underground Storage Tanks. UST's are regulated under Subtitle I of the Resource Conservation and Recovery Act (RCRA) and must be registered with the state department responsible for administering the UST program. Available information varies by state program.

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 11/21/2025
Date Made Active in Reports: 02/05/2026
Number of Days to Update: 76
Source: Department of Labor and Employment, Oil Inspection Section
Telephone: 303-318-8521
Last EDR Contact: 02/18/2026
Next Scheduled EDR Contact: 06/08/2026
Data Release Frequency: Quarterly

AST: Aboveground Tank List
Aboveground storage tank locations.

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 11/21/2025
Date Made Active in Reports: 02/05/2026
Number of Days to Update: 76

Source: Department of Labor and Employment, Oil Inspection Section
Telephone: 303-318-8521
Last EDR Contact: 02/18/2026
Next Scheduled EDR Contact: 06/08/2026
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 12/11/2025
Date Made Active in Reports: 02/19/2026
Number of Days to Update: 70

Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 04/13/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 12/11/2025
Date Made Active in Reports: 02/19/2026
Number of Days to Update: 70

Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 04/13/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 12/11/2025
Date Made Active in Reports: 02/19/2026
Number of Days to Update: 70

Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 04/13/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 12/11/2025
Date Made Active in Reports: 02/19/2026
Number of Days to Update: 70

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 04/13/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 12/11/2025
Date Made Active in Reports: 02/19/2026
Number of Days to Update: 70

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 04/13/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 12/11/2025
Date Made Active in Reports: 02/19/2026
Number of Days to Update: 70

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 04/13/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

INDIAN UST R1: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 12/11/2025
Date Made Active in Reports: 02/19/2026
Number of Days to Update: 70

Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 04/13/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

INDIAN UST R2: Underground Storage Tanks on Indian Land

A listing of underground storage tanks located on Indian Land in Region 2

Date of Government Version: 04/06/2016
Date Data Arrived at EDR: 03/02/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 36

Source: Environmental Protection Agency,
Telephone: 212-637-3668
Last EDR Contact: 04/13/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 11/21/2025
Date Data Arrived at EDR: 12/11/2025
Date Made Active in Reports: 02/19/2026
Number of Days to Update: 70

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 04/13/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

State and tribal institutional control / engineering control registries

AUL: Environmental Real Covenants List

Senate Bill 01-145 gave authority to the Colorado Department of Public Health and Environment to approve requests to restrict the future use of a property using an enforceable agreement called an environmental covenant. When a contaminated site is not cleaned up completely, land use restrictions may be used to ensure that the selected cleanup remedy is adequately protective of human health and the environment.

Date of Government Version: 10/21/2025
Date Data Arrived at EDR: 10/21/2025
Date Made Active in Reports: 01/08/2026
Number of Days to Update: 79

Source: Department of Public Health & Environment
Telephone: 303-692-3331
Last EDR Contact: 04/08/2026
Next Scheduled EDR Contact: 08/03/2026
Data Release Frequency: Varies

Lists of state and tribal voluntary cleanup sites

VCP: Voluntary Cleanup & Redevelopment Act Application Tracking Report

The Voluntary Cleanup and Redevelopment Act is intended to permit and encourage voluntary cleanups by providing a method to determine clean-up responsibilities in planning the reuse of property. The VCRA was intended for sites which were not covered by existing regulatory programs.

Date of Government Version: 12/16/2025
Date Data Arrived at EDR: 12/17/2025
Date Made Active in Reports: 12/22/2025
Number of Days to Update: 5
Source: Department of Public Health and Environmental
Telephone: 303-692-3331
Last EDR Contact: 03/31/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Semi-Annually

INDIAN VCP R1: Voluntary Cleanup Priority Listing
A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142
Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/03/2025
Next Scheduled EDR Contact: 03/30/2026
Data Release Frequency: Varies

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng
A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27
Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 07/08/2021
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

Lists of state and tribal brownfield sites

BROWNFIELDS: Brownfields Sites Listing
Brownfields Sites Listing

Date of Government Version: 01/12/2026
Date Data Arrived at EDR: 01/13/2026
Date Made Active in Reports: 04/02/2026
Number of Days to Update: 79
Source: Department of Public Health & Environment
Telephone: 303-692-3331
Last EDR Contact: 04/14/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 12/02/2025
Date Data Arrived at EDR: 12/03/2025
Date Made Active in Reports: 02/12/2026
Number of Days to Update: 71
Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 03/10/2026
Next Scheduled EDR Contact: 06/22/2026
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

HISTORICAL LANDFILL: Historical Landfill List
Abandoned/Inactive Landfills.

Date of Government Version: 01/31/1993
Date Data Arrived at EDR: 04/24/1994
Date Made Active in Reports: 05/30/1994
Number of Days to Update: 36

Source: Department of Public Health & Environment
Telephone: 303-692-3300
Last EDR Contact: 09/05/1996
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

SWRCY: Registered Recyclers Listing
A listing of registered recycler locations in the state of Colorado.

Date of Government Version: 12/29/2025
Date Data Arrived at EDR: 02/10/2026
Date Made Active in Reports: 03/20/2026
Number of Days to Update: 38

Source: Department of Public Health & Environment
Telephone: 303-692-3337
Last EDR Contact: 02/05/2026
Next Scheduled EDR Contact: 06/15/2026
Data Release Frequency: Semi-Annually

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands
Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 04/15/2026
Next Scheduled EDR Contact: 08/03/2026
Data Release Frequency: Varies

ODI: Open Dump Inventory
An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations
A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 04/08/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land
A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 02/07/2024
Date Data Arrived at EDR: 11/13/2024
Date Made Active in Reports: 11/19/2024
Number of Days to Update: 6

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 04/15/2026
Next Scheduled EDR Contact: 08/03/2026
Data Release Frequency: Varies

DENVER CO HIST FILL: Denver City & County Historic Fill Areas
This dataset denotes the approximate locations of historical fill areas within the City and County of Denver (CCoD) and with within approximately three-quarters of a mile of the CCoD boundaries. The data is of a general nature and obtained from historic and current documents that may not be accurate or precise.

Date of Government Version: 05/22/2024
Date Data Arrived at EDR: 07/02/2024
Date Made Active in Reports: 09/24/2024
Number of Days to Update: 84

Source: City & County of Denver
Telephone: 720-913-5237
Last EDR Contact: 04/02/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 04/04/2025
Date Data Arrived at EDR: 06/02/2025
Date Made Active in Reports: 08/12/2025
Number of Days to Update: 71

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 11/20/2025
Next Scheduled EDR Contact: 03/02/2026
Data Release Frequency: No Update Planned

CDL: Meth Lab Locations

Meth lab locations that were reported to the Department of Public Health & Environment.

Date of Government Version: 12/08/2025
Date Data Arrived at EDR: 12/12/2025
Date Made Active in Reports: 12/22/2025
Number of Days to Update: 10

Source: Department of Public Health and Environment
Telephone: 303-692-3023
Last EDR Contact: 03/18/2026
Next Scheduled EDR Contact: 07/06/2026
Data Release Frequency: Quarterly

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 04/04/2025
Date Data Arrived at EDR: 06/02/2025
Date Made Active in Reports: 08/12/2025
Number of Days to Update: 71

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/19/2026
Next Scheduled EDR Contact: 06/01/2026
Data Release Frequency: Quarterly

Local Land Records

LIENS 2: CERCLA Lien Information

A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 03/26/2026
Date Data Arrived at EDR: 04/01/2026
Date Made Active in Reports: 04/21/2026
Number of Days to Update: 20

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/06/2026
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 12/07/2025
Date Data Arrived at EDR: 12/08/2025
Date Made Active in Reports: 02/12/2026
Number of Days to Update: 66

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 03/17/2026
Next Scheduled EDR Contact: 06/29/2026
Data Release Frequency: Quarterly

SPILLS 2: Spills
A listing of spills reported to the Oil & Gas Conservation Commission

Date of Government Version: 12/01/2025
Date Data Arrived at EDR: 12/08/2025
Date Made Active in Reports: 02/26/2026
Number of Days to Update: 80
Source: Oil & Gas Conservation Commission
Telephone: 303-894-2100
Last EDR Contact: 03/17/2026
Next Scheduled EDR Contact: 06/29/2026
Data Release Frequency: Quarterly

CO ERNS: Spills Database
State reported spills.

Date of Government Version: 12/08/2025
Date Data Arrived at EDR: 12/12/2025
Date Made Active in Reports: 12/22/2025
Number of Days to Update: 10
Source: Department of Public Health and Environmental
Telephone: 303-692-2000
Last EDR Contact: 03/18/2026
Next Scheduled EDR Contact: 07/06/2026
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch
Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 10/15/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/06/2013
Number of Days to Update: 34
Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated
RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 11/30/2025
Date Data Arrived at EDR: 12/03/2025
Date Made Active in Reports: 12/10/2025
Number of Days to Update: 7
Source: Environmental Protection Agency
Telephone: 303-312-6149
Last EDR Contact: 03/17/2026
Next Scheduled EDR Contact: 06/29/2026
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites
The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 10/22/2025
Date Data Arrived at EDR: 11/06/2025
Date Made Active in Reports: 01/12/2026
Number of Days to Update: 67
Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 02/10/2026
Next Scheduled EDR Contact: 05/25/2026
Data Release Frequency: Varies

DOD: Department of Defense Sites
This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 06/07/2021
Date Data Arrived at EDR: 07/13/2021
Date Made Active in Reports: 03/09/2022
Number of Days to Update: 239
Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 04/09/2026
Next Scheduled EDR Contact: 07/20/2026
Data Release Frequency: Varies

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 04/02/2018
Date Data Arrived at EDR: 04/11/2018
Date Made Active in Reports: 11/06/2019
Number of Days to Update: 574

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 03/31/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 07/30/2021
Date Data Arrived at EDR: 02/03/2023
Date Made Active in Reports: 02/10/2023
Number of Days to Update: 7

Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 01/29/2026
Next Scheduled EDR Contact: 05/18/2026
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 12/07/2025
Date Data Arrived at EDR: 12/08/2025
Date Made Active in Reports: 02/05/2026
Number of Days to Update: 59

Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 03/17/2026
Next Scheduled EDR Contact: 06/29/2026
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA Watch List

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88

Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 01/28/2026
Next Scheduled EDR Contact: 05/11/2026
Data Release Frequency: No Update Planned

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 05/08/2018
Date Made Active in Reports: 07/20/2018
Number of Days to Update: 73

Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 01/28/2026
Next Scheduled EDR Contact: 05/11/2026
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2020
Date Data Arrived at EDR: 06/14/2022
Date Made Active in Reports: 03/24/2023
Number of Days to Update: 283

Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 04/22/2026
Next Scheduled EDR Contact: 06/22/2026
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2024
Date Data Arrived at EDR: 11/10/2025
Date Made Active in Reports: 01/29/2026
Number of Days to Update: 80

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/12/2026
Next Scheduled EDR Contact: 05/25/2026
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 01/12/2026
Date Data Arrived at EDR: 01/13/2026
Date Made Active in Reports: 03/05/2026
Number of Days to Update: 51

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 04/14/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 01/30/2026
Date Data Arrived at EDR: 02/02/2026
Date Made Active in Reports: 02/12/2026
Number of Days to Update: 10

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 06/08/2026
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 01/01/2026
Date Data Arrived at EDR: 01/14/2026
Date Made Active in Reports: 01/22/2026
Number of Days to Update: 8

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 04/08/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties

A listing of verified Potentially Responsible Parties

Date of Government Version: 06/26/2025
Date Data Arrived at EDR: 07/01/2025
Date Made Active in Reports: 07/29/2025
Number of Days to Update: 28

Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 05/11/2026
Data Release Frequency: Quarterly

PADS: PCB Activity Database System

PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 08/12/2025
Date Data Arrived at EDR: 09/30/2025
Date Made Active in Reports: 11/24/2025
Number of Days to Update: 55

Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 03/04/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System

The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 09/23/2025
Next Scheduled EDR Contact: 01/12/2026
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25

Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: No Update Planned

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 01/26/2026
Date Data Arrived at EDR: 01/27/2026
Date Made Active in Reports: 02/25/2026
Number of Days to Update: 29

Source: Nuclear Regulatory Commission
Telephone: 301-415-0717
Last EDR Contact: 04/08/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2024
Date Data Arrived at EDR: 11/19/2025
Date Made Active in Reports: 01/29/2026
Number of Days to Update: 71

Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 02/20/2026
Next Scheduled EDR Contact: 06/08/2026
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 01/12/2017
Date Data Arrived at EDR: 03/05/2019
Date Made Active in Reports: 11/11/2019
Number of Days to Update: 251

Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 02/20/2026
Next Scheduled EDR Contact: 06/08/2026
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 09/13/2019
Date Data Arrived at EDR: 11/06/2019
Date Made Active in Reports: 02/10/2020
Number of Days to Update: 96

Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/29/2026
Next Scheduled EDR Contact: 05/11/2026
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 07/01/2019
Date Data Arrived at EDR: 07/01/2019
Date Made Active in Reports: 09/23/2019
Number of Days to Update: 84

Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 03/18/2026
Next Scheduled EDR Contact: 07/06/2026
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing

A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing

A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 12/31/2025
Date Data Arrived at EDR: 01/20/2026
Date Made Active in Reports: 03/05/2026
Number of Days to Update: 44

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 04/21/2026
Next Scheduled EDR Contact: 08/03/2026
Data Release Frequency: Quarterly

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 09/30/2025
Date Data Arrived at EDR: 12/12/2025
Date Made Active in Reports: 02/25/2026
Number of Days to Update: 75

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 04/08/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2023
Date Data Arrived at EDR: 02/19/2025
Date Made Active in Reports: 03/07/2025
Number of Days to Update: 16

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 03/17/2026
Next Scheduled EDR Contact: 06/29/2026
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 03/31/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 03/03/2023
Date Data Arrived at EDR: 03/03/2023
Date Made Active in Reports: 06/09/2023
Number of Days to Update: 98

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 01/21/2026
Next Scheduled EDR Contact: 05/11/2026
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 05/15/2025
Date Data Arrived at EDR: 05/15/2025
Date Made Active in Reports: 07/29/2025
Number of Days to Update: 75

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/12/2026
Next Scheduled EDR Contact: 05/25/2026
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 03/26/2026
Date Data Arrived at EDR: 04/01/2026
Date Made Active in Reports: 04/21/2026
Number of Days to Update: 20

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/06/2026
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 08/08/2025
Date Data Arrived at EDR: 08/18/2025
Date Made Active in Reports: 11/12/2025
Number of Days to Update: 86

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 02/13/2026
Next Scheduled EDR Contact: 06/01/2026
Data Release Frequency: Semi-Annually

MINES VIOLATIONS: MSHA Violation Assessment Data

Mines violation and assessment information. Department of Labor, Mine Safety & Health Administration.

Date of Government Version: 01/01/2026
Date Data Arrived at EDR: 01/06/2026
Date Made Active in Reports: 01/07/2026
Number of Days to Update: 1

Source: DOL, Mine Safety & Health Admi
Telephone: 202-693-9424
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 06/01/2026
Data Release Frequency: Quarterly

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 04/08/2025
Date Data Arrived at EDR: 05/20/2025
Date Made Active in Reports: 08/12/2025
Number of Days to Update: 84

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 03/03/2026
Next Scheduled EDR Contact: 06/01/2026
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 02/19/2026
Next Scheduled EDR Contact: 06/01/2026
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 12/04/2025
Date Data Arrived at EDR: 12/05/2025
Date Made Active in Reports: 02/12/2026
Number of Days to Update: 69

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 03/11/2026
Next Scheduled EDR Contact: 06/15/2026
Data Release Frequency: Quarterly

MINES MRDS: Mineral Resources Data System
Mineral Resources Data System

Date of Government Version: 06/04/2024
Date Data Arrived at EDR: 11/22/2024
Date Made Active in Reports: 02/18/2025
Number of Days to Update: 88

Source: USGS
Telephone: 703-648-6533
Last EDR Contact: 03/03/2026
Next Scheduled EDR Contact: 06/01/2026
Data Release Frequency: Varies

FINDS: Facility Index System/Facility Registry System
Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 11/07/2025
Date Data Arrived at EDR: 11/19/2025
Date Made Active in Reports: 02/05/2026
Number of Days to Update: 78

Source: EPA
Telephone: (303) 312-6312
Last EDR Contact: 02/20/2026
Next Scheduled EDR Contact: 06/08/2026
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information
ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 12/13/2025
Date Data Arrived at EDR: 12/17/2025
Date Made Active in Reports: 02/25/2026
Number of Days to Update: 70

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 03/31/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Quarterly

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 05/06/2021
Date Data Arrived at EDR: 05/21/2021
Date Made Active in Reports: 08/11/2021
Number of Days to Update: 82

Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 02/11/2026
Next Scheduled EDR Contact: 06/01/2026
Data Release Frequency: Varies

UXO: Unexploded Ordnance Sites
A listing of unexploded ordnance site locations

Date of Government Version: 07/31/2025
Date Data Arrived at EDR: 08/14/2025
Date Made Active in Reports: 11/04/2025
Number of Days to Update: 82

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/20/2026
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 11/06/2025
Date Data Arrived at EDR: 11/06/2025
Date Made Active in Reports: 01/12/2026
Number of Days to Update: 67

Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/10/2026
Next Scheduled EDR Contact: 05/25/2026
Data Release Frequency: Quarterly

PFAS NPL: Superfund Sites with PFAS Detections Information

EPA's Office of Land and Emergency Management and EPA Regional Offices maintain data describing what is known about site investigations, contamination, and remedial actions under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) where PFAS is present in the environment.

Date of Government Version: 12/17/2025
Date Data Arrived at EDR: 12/18/2025
Date Made Active in Reports: 12/23/2025
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: 703-603-8895
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Varies

PFAS FEDERAL SITES: Federal Sites PFAS Information

Several federal entities, such as the federal Superfund program, Department of Defense, National Aeronautics and Space Administration, Department of Transportation, and Department of Energy provided information for sites with known or suspected detections at federal facilities.

Date of Government Version: 12/17/2025
Date Data Arrived at EDR: 12/18/2025
Date Made Active in Reports: 12/23/2025
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Varies

PFAS TSCA: PFAS Manufacture and Imports Information

EPA issued the Chemical Data Reporting (CDR) Rule under the Toxic Substances Control Act (TSCA) and requires chemical manufacturers and facilities that manufacture or import chemical substances to report data to EPA. EPA publishes non-confidential business information (non-CBI) and includes descriptive information about each site, corporate parent, production volume, other manufacturing information, and processing and use information.

Date of Government Version: 12/17/2025
Date Data Arrived at EDR: 12/18/2025
Date Made Active in Reports: 12/23/2025
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 03/31/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Varies

PFAS TRIS: List of PFAS Added to the TRI

Section 7321 of the National Defense Authorization Act for Fiscal Year 2020 (NDAA) immediately added certain per- and polyfluoroalkyl substances (PFAS) to the list of chemicals covered by the Toxics Release Inventory (TRI) under Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) and provided a framework for additional PFAS to be added to TRI on an annual basis.

Date of Government Version: 12/17/2025
Date Data Arrived at EDR: 12/18/2025
Date Made Active in Reports: 12/23/2025
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: 202-566-0250
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Varies

PFAS RCRA MANIFEST: PFAS Transfers Identified In the RCRA Database Listing

To work around the lack of PFAS waste codes in the RCRA database, EPA developed the PFAS Transfers dataset by mining e-Manifest records containing at least one of these common PFAS keywords: PFAS, PFOA, PFOS, PERFL, AFFF, GENX, GEN-X (plus the VT waste codes). These keywords were searched for in the following text fields: Manifest handling instructions (MANIFEST_HANDLING_INSTR), Non-hazardous waste description (NON_HAZ_WASTE_DESCRIPTION), DOT printed information (DOT_PRINTED_INFORMATION), Waste line handling instructions (WASTE_LINE_HANDLING_INSTR), Waste residue comments (WASTE_RESIDUE_COMMENTS).

Date of Government Version: 12/17/2025
Date Data Arrived at EDR: 12/18/2025
Date Made Active in Reports: 12/23/2025
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Varies

PFAS ATSDR: PFAS Contamination Site Location Listing

PFAS contamination site locations from the Department of Health & Human Services, Center for Disease Control & Prevention. ATSDR is involved at a number of PFAS-related sites, either directly or through assisting state and federal partners. As of now, most sites are related to drinking water contamination connected with PFAS production facilities or fire training areas where aqueous film-forming firefighting foam (AFFF) was regularly used.

Date of Government Version: 11/12/2024
Date Data Arrived at EDR: 07/21/2025
Date Made Active in Reports: 10/13/2025
Number of Days to Update: 84

Source: Department of Health & Human Services
Telephone: 202-741-5770
Last EDR Contact: 04/23/2026
Next Scheduled EDR Contact: 08/03/2026
Data Release Frequency: Varies

PFAS WQP: Ambient Environmental Sampling for PFAS

The Water Quality Portal (WQP) is a part of a modernized repository storing ambient sampling data for all environmental media and tissue samples. A wide range of federal, state, tribal and local governments, academic and non-governmental organizations and individuals submit project details and sampling results to this public repository. The information is commonly used for research and assessments of environmental quality.

Date of Government Version: 12/17/2025
Date Data Arrived at EDR: 12/18/2025
Date Made Active in Reports: 01/07/2026
Number of Days to Update: 20

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Varies

PFAS PROJECT: NORTHEASTERN UNIVERSITY PFAS PROJECT

The PFAS Contamination Site Tracker records qualitative and quantitative data from each site in a chart, specifically examining discovery, contamination levels, government response, litigation, health impacts, media coverage, and community characteristics. All data presented in the chart were extracted from government websites, such as state health departments or the Environmental Protection Agency, and news articles.

Date of Government Version: 08/21/2025
Date Data Arrived at EDR: 12/04/2025
Date Made Active in Reports: 02/12/2026
Number of Days to Update: 70

Source: Social Science Environmental Health Research Institute
Telephone: N/A
Last EDR Contact: 03/05/2026
Next Scheduled EDR Contact: 06/15/2026
Data Release Frequency: Varies

PFAS NPDES: Clean Water Act Discharge Monitoring Information

Any discharger of pollutants to waters of the United States from a point source must have a National Pollutant Discharge Elimination System (NPDES) permit. The process for obtaining limits involves the regulated entity (permittee) disclosing releases in a NPDES permit application and the permitting authority (typically the state but sometimes EPA) deciding whether to require monitoring or monitoring with limits. Caveats and Limitations: Less than half of states have required PFAS monitoring for at least one of their permittees and fewer states have established PFAS effluent limits for permittees. New rulemakings have been initiated that may increase the number of facilities monitoring for PFAS in the future.

Date of Government Version: 12/17/2025
Date Data Arrived at EDR: 12/19/2025
Date Made Active in Reports: 12/23/2025
Number of Days to Update: 4

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Varies

PFAS ECHO: Facilities in Industries that May Be Handling PFAS Listing

Regulators and the public have expressed interest in knowing which regulated entities may be using PFAS. EPA has developed a dataset from various sources that show which industries may be handling PFAS. Approximately 120,000 facilities subject to federal environmental programs have operated or currently operate in industry sectors with processes that may involve handling and/or release of PFAS.

Date of Government Version: 12/17/2025
Date Data Arrived at EDR: 12/18/2025
Date Made Active in Reports: 12/23/2025
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Varies

PFAS ECHO FIRE TRAIN: Facilities in Industries that May Be Handling PFAS Listing

A list of fire training sites was added to the Industry Sectors dataset using a keyword search on the permitted facilitys name to identify sites where fire-fighting foam may have been used in training exercises. Additionally, you may view an example spreadsheet of the subset of fire training facility data, as well as the keywords used in selecting or deselecting a facility for the subset. as well as the keywords used in selecting or deselecting a facility for the subset. These keywords were tested to maximize accuracy in selecting facilities that may use fire-fighting foam in training exercises, however, due to the lack of a required reporting field in the data systems for designating fire training sites, this methodology may not identify all fire training sites or may potentially misidentify them.

Date of Government Version: 12/17/2025
Date Data Arrived at EDR: 12/18/2025
Date Made Active in Reports: 12/23/2025
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Varies

PFAS PT 139 AIRPORT: All Certified Part 139 Airports PFAS Information Listing

Since July 1, 2006, all certified part 139 airports are required to have fire-fighting foam onsite that meet military specifications (MIL-F-24385) (14 CFR 139.317). To date, these military specification fire-fighting foams are fluorinated and have been historically used for training and extinguishing. The 2018 FAA Reauthorization Act has a provision stating that no later than October 2021, FAA shall not require the use of fluorinated AFFF. This provision does not prohibit the use of fluorinated AFFF at Part 139 civilian airports; it only prohibits FAA from mandating its use. The Federal Aviation Administration?s document AC 150/5210-6D - Aircraft Fire Extinguishing Agents provides guidance on Aircraft Fire Extinguishing Agents, which includes Aqueous Film Forming Foam (AFFF).

Date of Government Version: 12/17/2025
Date Data Arrived at EDR: 12/18/2025
Date Made Active in Reports: 12/23/2025
Number of Days to Update: 5

Source: Environmental Protection Agency
Telephone: 202-272-0167
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Varies

AQUEOUS FOAM NRC: Aqueous Foam Related Incidents Listing

The National Response Center (NRC) serves as an emergency call center that fields initial reports for pollution and railroad incidents and forwards that information to appropriate federal/state agencies for response. The spreadsheets posted to the NRC website contain initial incident data that has not been validated or investigated by a federal/state response agency. Response center calls from 1990 to the most recent complete calendar year where there was indication of Aqueous Film Forming Foam (AFFF) usage are included in this dataset. NRC calls may reference AFFF usage in the ?Material Involved? or ?Incident Description? fields.

Date of Government Version: 12/17/2025
Date Data Arrived at EDR: 12/18/2025
Date Made Active in Reports: 03/05/2026
Number of Days to Update: 77

Source: Environmental Protection Agency
Telephone: 202-267-2675
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Varies

PCS ENF: Enforcement data

No description is available for this data

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 02/05/2015
Date Made Active in Reports: 03/06/2015
Number of Days to Update: 29

Source: EPA
Telephone: 202-564-2497
Last EDR Contact: 09/24/2025
Next Scheduled EDR Contact: 01/12/2026
Data Release Frequency: Varies

PCS: Permit Compliance System

PCS is a computerized management information system that contains data on National Pollutant Discharge Elimination System (NPDES) permit holding facilities. PCS tracks the permit, compliance, and enforcement status of NPDES facilities.

Date of Government Version: 12/16/2016
Date Data Arrived at EDR: 01/06/2017
Date Made Active in Reports: 03/10/2017
Number of Days to Update: 63

Source: EPA, Office of Water
Telephone: 202-564-2496
Last EDR Contact: 09/24/2025
Next Scheduled EDR Contact: 01/12/2026
Data Release Frequency: No Update Planned

BIOSOLIDS: ICIS-NPDES Biosolids Facility Data

The data reflects compliance information about facilities in the biosolids program.

Date of Government Version: 01/10/2026
Date Data Arrived at EDR: 01/15/2026
Date Made Active in Reports: 03/05/2026
Number of Days to Update: 49

Source: Environmental Protection Agency
Telephone: 202-564-4700
Last EDR Contact: 04/14/2026
Next Scheduled EDR Contact: 07/27/2026
Data Release Frequency: Varies

UST FINDER: UST Finder Database

EPA developed UST Finder, a web map application containing a comprehensive, state-sourced national map of underground storage tank (UST) and leaking UST (LUST) data. It provides the attributes and locations of active and closed USTs, UST facilities, and LUST sites from states and from Tribal lands and US territories . UST Finder contains information about proximity of UST facilities and LUST sites to: surface and groundwater public drinking water protection areas; estimated number of private domestic wells and number of people living nearby; and flooding and wildfires.

Date of Government Version: 06/08/2023
Date Data Arrived at EDR: 10/04/2023
Date Made Active in Reports: 01/18/2024
Number of Days to Update: 106

Source: Environmental Protection Agency
Telephone: 202-564-0394
Last EDR Contact: 02/05/2026
Next Scheduled EDR Contact: 05/18/2026
Data Release Frequency: Varies

UST FINDER RELEASE: UST Finder Releases Database

US EPA's UST Finder data is a national composite of leaking underground storage tanks. This data contains information about, and locations of, leaking underground storage tanks. Data was collected from state sources and standardized into a national profile by EPA's Office of Underground Storage Tanks, Office of Research and Development, and the Association of State and Territorial Solid Waste Management Officials.

Date of Government Version: 06/08/2023
Date Data Arrived at EDR: 10/31/2023
Date Made Active in Reports: 01/18/2024
Number of Days to Update: 79

Source: Environmental Protecton Agency
Telephone: 202-564-0394
Last EDR Contact: 03/05/2026
Next Scheduled EDR Contact: 05/18/2026
Data Release Frequency: Semi-Annually

E MANIFEST: Hazardous Waste Electronic Manifest System

EPA established a national system for tracking hazardous waste shipments electronically. This system, known as ?e-Manifest,? will modernize the nation?s cradle-to-grave hazardous waste tracking process while saving valuable time, resources, and dollars for industry and states.

Date of Government Version: 11/30/2025
Date Data Arrived at EDR: 12/05/2025
Date Made Active in Reports: 12/19/2025
Number of Days to Update: 14

Source: Environmental Protection Agency
Telephone: 833-501-6826
Last EDR Contact: 03/17/2026
Next Scheduled EDR Contact: 06/29/2026
Data Release Frequency: Varies

PFAS: PFAS Information Listing

A list of entities that have tested groundwater and have found PFAS chemicals, specifically PFOA and PFOS, levels above the health advisory. Potential sources of these chemicals include military bases, fire stations or training centers, landfills, industrial sites, car racetracks, and ski resorts.

Date of Government Version: 06/11/2025
Date Data Arrived at EDR: 06/30/2025
Date Made Active in Reports: 07/29/2025
Number of Days to Update: 29

Source: Department of Public Health & Environment
Telephone: 303-692-3605
Last EDR Contact: 04/02/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Varies

AQUEOUS FOAM: Class B Firefighting Foam Contaminating PFAS Listing

Class B foams put out fires caused by flammable liquids like gasoline, oil, and jet fuel. They may contain PFAS chemicals. Anyone using or storing Class B firefighting foam containing these chemicals must register through the Certificate of Registration Program.303-692-38

Date of Government Version: 12/16/2025
Date Data Arrived at EDR: 12/17/2025
Date Made Active in Reports: 03/04/2026
Number of Days to Update: 77

Source: Department of Public Health & Environment
Telephone: 303-692-3605
Last EDR Contact: 03/31/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Varies

AIRS: Permitted Facility & Emissions Listing

A listing of Air Pollution Control Division permits and emissions data.

Date of Government Version: 11/18/2025
Date Data Arrived at EDR: 11/18/2025
Date Made Active in Reports: 02/04/2026
Number of Days to Update: 78

Source: Department of Public Health & Environment
Telephone: 303-692-3213
Last EDR Contact: 02/18/2026
Next Scheduled EDR Contact: 06/08/2026
Data Release Frequency: Varies

ASBESTOS: Asbestos Abatement & Demolition Projects

Asbestos abatement and demolition projects by the contractor.

Date of Government Version: 04/23/2025
Date Data Arrived at EDR: 04/24/2025
Date Made Active in Reports: 07/14/2025
Number of Days to Update: 81

Source: Department of Public Health & Environment
Telephone: 303-692-3100
Last EDR Contact: 04/22/2026
Next Scheduled EDR Contact: 08/10/2026
Data Release Frequency: Semi-Annually

METHANE SITE: Methane Site Investigations - Jefferson County 1980

The objectives of the study are to define as closely as possible the boundaries of methane producing solid waste landfills.

Date of Government Version: 12/31/1980
Date Data Arrived at EDR: 02/13/1995
Date Made Active in Reports: 04/04/1995
Number of Days to Update: 50

Source: Jefferson County Health Department
Telephone: 303-239-7175
Last EDR Contact: 01/27/1995
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

METHANE INVESTIG: Methane Gas & Swamp Findings

The primary objective of this study was to assess methane gas related hazards at selected landfill sites in Colorado. These sites were selected by the Colorado Department of Health following evaluation of responses received from County and Municipal agencies about completed and existing landfills within their jurisdiction.

Date of Government Version: 03/15/1979
Date Data Arrived at EDR: 02/13/1995
Date Made Active in Reports: 04/04/1995
Number of Days to Update: 50

Source: Department of Health
Telephone: 303-640-3335
Last EDR Contact: 01/27/1995
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DRYCLEANERS: Drycleaner Facilities

A listing of drycleaning facilities.

Date of Government Version: 11/18/2025
Date Data Arrived at EDR: 11/18/2025
Date Made Active in Reports: 02/04/2026
Number of Days to Update: 78
Source: Department of Public Health & Environment
Telephone: 303-692-3213
Last EDR Contact: 02/26/2026
Next Scheduled EDR Contact: 06/08/2026
Data Release Frequency: Varies

FIN ASSURANCE 1: Financial Assurance Information Listing

A listing of financial assurance information for hazardous waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 12/11/2025
Date Data Arrived at EDR: 12/12/2025
Date Made Active in Reports: 03/04/2026
Number of Days to Update: 82
Source: Department of Public Health & Environment
Telephone: 303-692-3350
Last EDR Contact: 03/18/2026
Next Scheduled EDR Contact: 07/06/2026
Data Release Frequency: Varies

FIN ASSURANCE 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 12/16/2025
Date Data Arrived at EDR: 12/18/2025
Date Made Active in Reports: 01/13/2026
Number of Days to Update: 26
Source: Department of Public Health & Environment
Telephone: 303-392-3350
Last EDR Contact: 03/18/2026
Next Scheduled EDR Contact: 07/06/2026
Data Release Frequency: Quarterly

LEAD: Lead Abatement Permit Listing

Lead inspection

Date of Government Version: 04/23/2025
Date Data Arrived at EDR: 04/24/2025
Date Made Active in Reports: 07/14/2025
Number of Days to Update: 81
Source: Department of Publich Health & Environment
Telephone: 303-692-2000
Last EDR Contact: 04/22/2026
Next Scheduled EDR Contact: 08/10/2026
Data Release Frequency: Varies

MINES: Permitted Mines Listing

This dataset represents permitted mines in the State of Colorado

Date of Government Version: 01/03/2026
Date Data Arrived at EDR: 01/06/2026
Date Made Active in Reports: 03/13/2026
Number of Days to Update: 66
Source: Division of Reclamation Mining and safety
Telephone: 303-866-3567
Last EDR Contact: 04/07/2026
Next Scheduled EDR Contact: 07/20/2026
Data Release Frequency: Semi-Annually

NPDES: Permitted Facility Listing

A listing of permitted facilities from the Water Quality Control Division.

Date of Government Version: 12/09/2025
Date Data Arrived at EDR: 01/16/2026
Date Made Active in Reports: 04/06/2026
Number of Days to Update: 80
Source: Department of Public Health & Environment
Telephone: 303-692-3611
Last EDR Contact: 04/21/2026
Next Scheduled EDR Contact: 08/03/2026
Data Release Frequency: Varies

UIC: Underground Injection Control

A list of underground injection wells and their locations.

Date of Government Version: 08/12/2025
Date Data Arrived at EDR: 08/12/2025
Date Made Active in Reports: 10/31/2025
Number of Days to Update: 80
Source: Oil & Gas Conservation Commission
Telephone: 303-894-2100
Last EDR Contact: 04/22/2026
Next Scheduled EDR Contact: 05/18/2026
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

There were nine uranium mill tailings sites in Colorado designated for cleanup under the federal Uranium Mill Tailings Radiation Control Act. These nine sites, know commonly as UMTRA sites, were remediated jointly by the State of Colorado and the U.S. Department of Energy during the late 1980's and early 1990's. Mill tailings were removed from 8 of the mill sites and relocated in engineered disposal cells. A disposal cell is designed to encapsulate the material, reduce radon emanation, and prevent the movement of water through the material. At one site, Maybell, CO, the tailings were stabilized in-place at the mill site. After remediation of the tailings was completed, the State and DOE began to investigate the residual impacts to groundwater at the mill sites. The groundwater phase of the UMTRA program is on-going.

Date of Government Version: 05/20/2025
Date Data Arrived at EDR: 08/15/2025
Date Made Active in Reports: 11/03/2025
Number of Days to Update: 80

Source: Department of Public Health & Environment
Telephone: 970-248-7164
Last EDR Contact: 02/12/2026
Next Scheduled EDR Contact: 05/25/2026
Data Release Frequency: Varies

DRYCLEANERS: Drycleaner Facility Listing

A listing of list of ALL Dry cleaner facilities from the Integrated Compliance Information System (ICIS).

Date of Government Version: 12/13/2025
Date Data Arrived at EDR: 12/17/2025
Date Made Active in Reports: 03/12/2026
Number of Days to Update: 85

Source: Environmental Protection Agency
Telephone: 202-254-2501
Last EDR Contact: 03/31/2026
Next Scheduled EDR Contact: 07/13/2026
Data Release Frequency: Varies

ABAND AIRFIELDS: Abandoned & Little-Known Airfields Listing

Abandoned and little known airfield locations, in the United States.

Date of Government Version: 03/04/2026
Date Data Arrived at EDR: 03/05/2026
Date Made Active in Reports: 03/12/2026
Number of Days to Update: 7

Source: Airfields-Freeman
Telephone: N/A
Last EDR Contact: 03/05/2026
Next Scheduled EDR Contact: 06/15/2026
Data Release Frequency: Varies

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Public Health & Environment in Colorado.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/15/2014
Number of Days to Update: 198

Source: Department of Public Health & Environment
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Labor and Employment, Oil Inspection Section in Colorado.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/02/2014
Number of Days to Update: 185

Source: Department of Labor and Employment, Oil Inspection Section
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ADAMS COUNTY:

LF ADAMS: Summary Report on Methane Gas Hazards and Surveys Conducted on Domestic and Demolition Landfills in Adams County

As of May 8, 1978, all known landfills or dumping sites in the Adams County area have been surveyed.

Date of Government Version: 05/08/1978
Date Data Arrived at EDR: 02/16/1995
Date Made Active in Reports: 04/04/1995
Number of Days to Update: 47

Source: Tri-County Health Department
Telephone: 303-761-1340
Last EDR Contact: 01/27/1995
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

ARAPAHOE COUNTY:

LF ARAPAHOE: A Survey of Landfills in Arapahoe County

A survey of Arapahoe County was conducted from August through November, 1977, of all open and closed landfills and dumpsites in the county. Each of the sites found was classified as domestic or demolition.

Date of Government Version: 12/31/1978
Date Data Arrived at EDR: 02/16/1995
Date Made Active in Reports: 04/04/1995
Number of Days to Update: 47

Source: Tri-County Health Department
Telephone: 303-761-1340
Last EDR Contact: 01/27/1995
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

BOULDER COUNTY:

LF BOULDER: Old Landfill Sites

Landfill sites in Boulder county.

Date of Government Version: 05/01/1986
Date Data Arrived at EDR: 11/14/1995
Date Made Active in Reports: 12/07/1995
Number of Days to Update: 23

Source: Boulder County Health Department
Telephone: 303-441-1182
Last EDR Contact: 01/30/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DENVER COUNTY:

LF DENVER: Landfills in Denver County

Landfill sites in the city and county of Denver.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 06/23/2017
Date Made Active in Reports: 09/06/2017
Number of Days to Update: 75

Source: City and County of Denver
Telephone: 720-913-4839
Last EDR Contact: 03/12/2026
Next Scheduled EDR Contact: 06/22/2026
Data Release Frequency: No Update Planned

LF DENVER CO METHANE: Investigation of Methane Gas Hazards

The purpose of this study was to assess the actual and potential generation, migration, explosive and related problem associated with specified old landfills, and to identify existing and potential problems, suggested strategies to prevent, abate, and control such problems and recommend investigative and monitoring functions as may be deemed necessary. Eight sites determined to be priorities due to population density and potential hazards to population and property were selected by the Colorado Department of Health.

Date of Government Version: 01/01/1981
Date Data Arrived at EDR: 01/29/2013
Date Made Active in Reports: 03/08/2013
Number of Days to Update: 38

Source: City and County of Denver Department of Environmental Health
Telephone: 720-865-5522
Last EDR Contact: 01/15/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DOUGLAS COUNTY:

LF DOUGLAS: Douglas County Landfill Key

Landfill sites in Douglas county.

Date of Government Version: 06/12/1991
Date Data Arrived at EDR: 02/16/1995
Date Made Active in Reports: 04/04/1995
Number of Days to Update: 47

Source: Tri-County Health Department
Telephone: 303-761-1340
Last EDR Contact: 01/27/1995
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

PUEBLO COUNTY:

LF PUEBLO: Designated Disposal & Landfill Sites
Only inert materials. Asphalt, cement, dirt & rock unless otherwise specified. These sites are no longer active.

Date of Government Version: 04/30/1990
Date Data Arrived at EDR: 11/16/1995
Date Made Active in Reports: 12/07/1995
Number of Days to Update: 21

Source: Pueblo City-County Health Department
Telephone: 719-583-4300
Last EDR Contact: 11/13/1995
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

TRI COUNTY:

LF TRI: Tri-County Area Solid Waste Facilities List (Adams, Arapahoe and Douglas Counties)
Closed Domestic Landfills in Adams County, Closed Domestic Landfills in Arapahoe County, Closed Demolition Landfills in Arapahoe County, Closed Domestic Landfills in Douglas County.

Date of Government Version: 10/15/1983
Date Data Arrived at EDR: 02/16/1995
Date Made Active in Reports: 04/04/1995
Number of Days to Update: 47

Source: Tri-County Health Department
Telephone: 303-761-1340
Last EDR Contact: 01/27/1995
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

WELD COUNTY:

LF WELD: Solid Waste Facilities in Weld County
Solid Waste Facilities in Weld County.

Date of Government Version: 01/16/2018
Date Data Arrived at EDR: 02/09/2018
Date Made Active in Reports: 02/23/2018
Number of Days to Update: 14

Source: Weld County Department of Public Health
Telephone: 970-304-6415
Last EDR Contact: 01/29/2026
Next Scheduled EDR Contact: 05/11/2026
Data Release Frequency: No Update Planned

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/02/2025
Date Data Arrived at EDR: 11/03/2025
Date Made Active in Reports: 01/23/2026
Number of Days to Update: 81

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/03/2026
Next Scheduled EDR Contact: 05/18/2026
Data Release Frequency: No Update Planned

NY MANIFEST: Facility and Manifest Data
Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 12/31/2019
Date Data Arrived at EDR: 11/30/2023
Date Made Active in Reports: 12/01/2023
Number of Days to Update: 1

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 04/21/2026
Next Scheduled EDR Contact: 08/03/2026
Data Release Frequency: No Update Planned

PA MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 06/30/2018
Date Data Arrived at EDR: 07/19/2019
Date Made Active in Reports: 09/10/2019
Number of Days to Update: 53

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 04/01/2026
Next Scheduled EDR Contact: 07/20/2026
Data Release Frequency: Annually

WI MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 05/31/2018
Date Data Arrived at EDR: 06/19/2019
Date Made Active in Reports: 09/03/2019
Number of Days to Update: 76

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 02/25/2026
Next Scheduled EDR Contact: 06/15/2026
Data Release Frequency: Annually

Oil/Gas Pipelines
Source: Endeavor Business Media
Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by Endeavor Business Media. This information is provided on a best effort basis and Endeavor Business Media does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of Endeavor Business Media.

Electric Power Transmission Line Data
Source: Endeavor Business Media
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Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:
Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing
Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.

Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.

Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.

Daycare Centers: Daycare Listing
Source: Department of Human Services
Telephone: 303-866-5958

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Riparian Vegetation Data
Source: Division of Wildlife
Telephone: 970-416-3360

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

EAST OF CC.50 AND 1,300 FEET NORTH OF DD.8
EAST OF CC.50 AND 1,300 FEET NORTH OF DD.8
LAMAR, CO 81052

TARGET PROPERTY COORDINATES

Latitude (North):	38.043602 - 38° 2' 36.97''
Longitude (West):	102.591822 - 102° 35' 30.56''
Universal Tranverse Mercator:	Zone 13
UTM X (Meters):	711326.8
UTM Y (Meters):	4213185.0
Elevation:	3742 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	50010725 LAMAR EAST, CO
Version Date:	2022

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principle investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

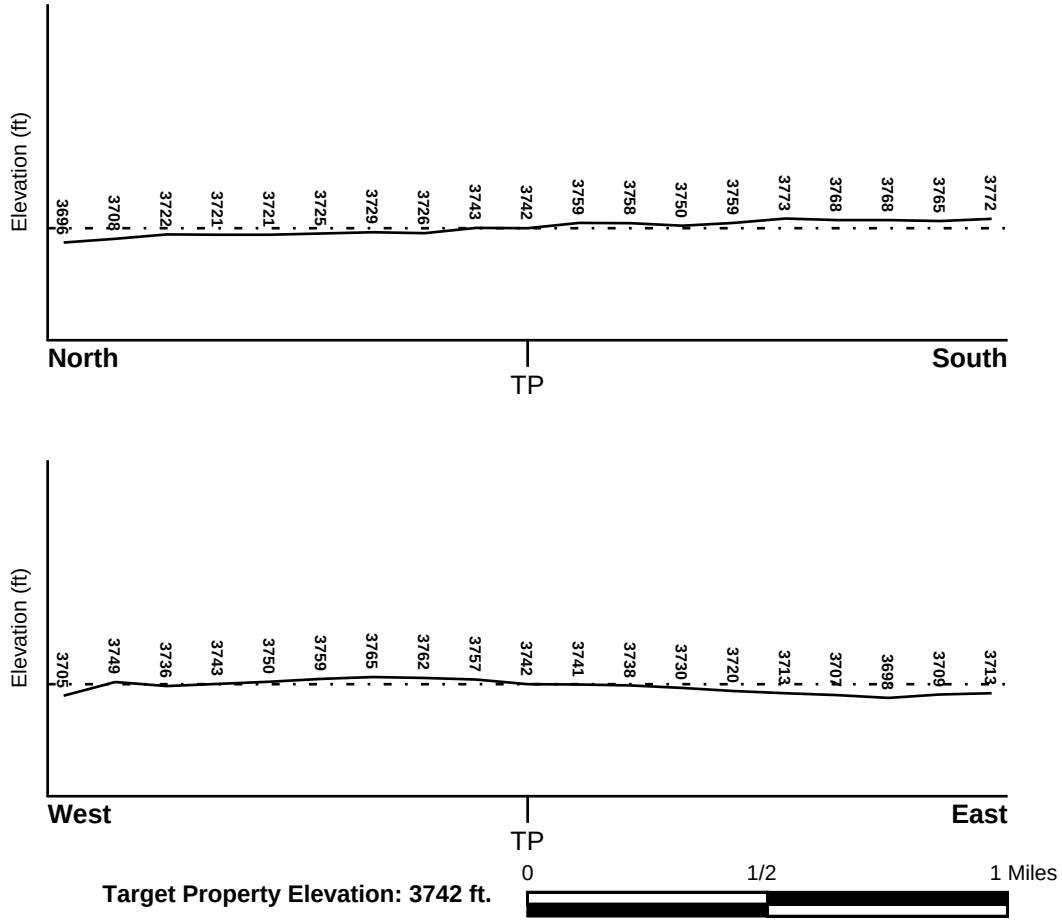
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
Not Reported	

Additional Panels in search area:	FEMA Source Type
Not Reported	

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
NOT AVAILABLE	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

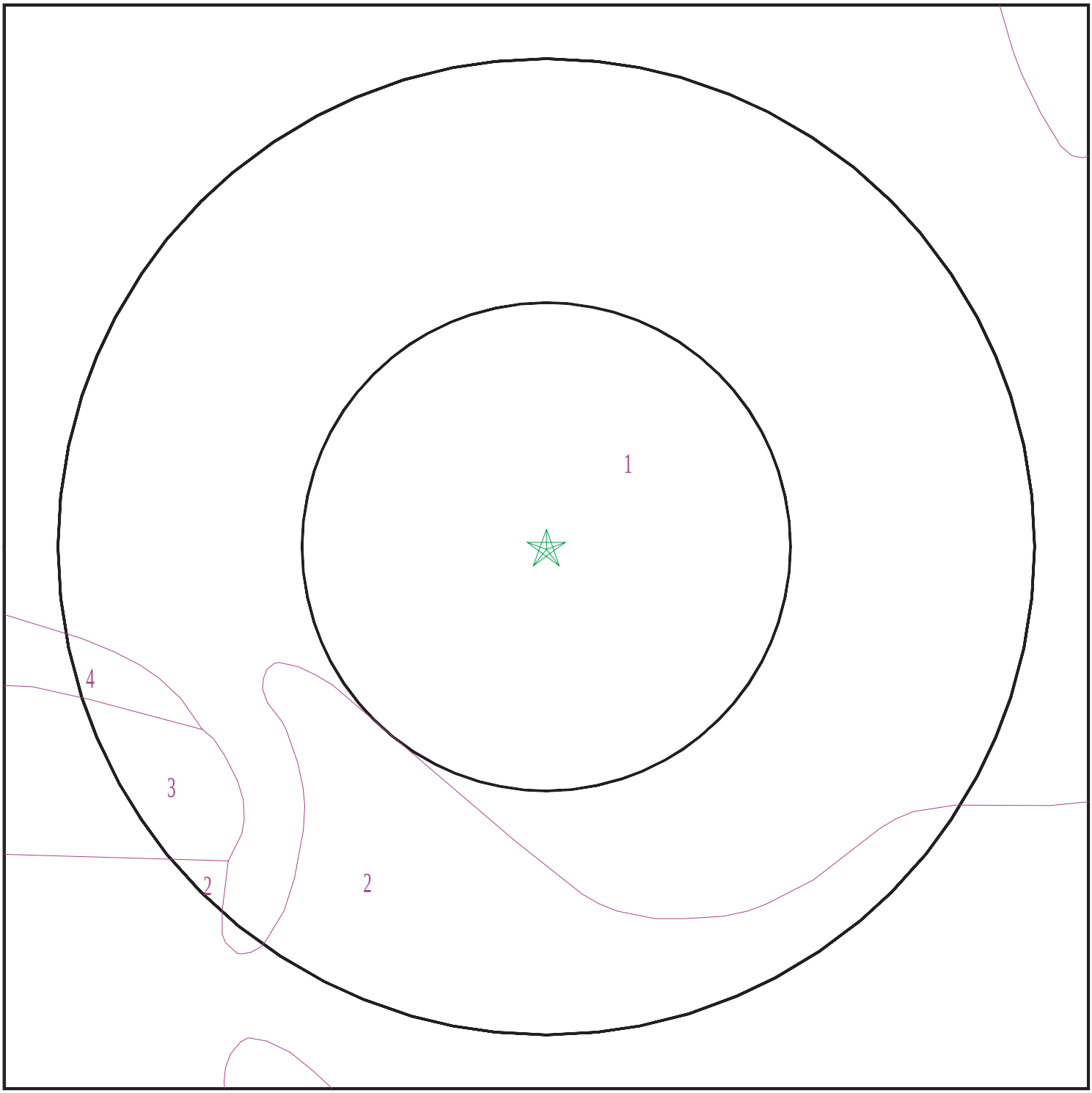
Era:	Mesozoic
System:	Cretaceous
Series:	Woodbine and Tuscaloosa Groups
Code:	uK1 *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratified Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 8324735.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	East of CC.50 and 1,300 Feet North of Dd.8	CLIENT:	AEI Consultants
ADDRESS:	East of CC.50 and 1,300 Feet North of Dd.8 Lamar CO 81052	CONTACT:	Marilu Galeana
		INQUIRY #:	8324735.2s
LAT/LONG:	38.043602 / 102.591822	DATE:	April 27, 2026 2:14 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Dune land

Soil Surface Texture:

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class: Excessively drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	7 inches		Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: Min:
2	7 inches	59 inches		Granular materials (35 pct. or less passing No. 200), Fine Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: Min:

Soil Map ID: 2

Soil Component Name: Vona

Soil Surface Texture: loamy sand

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 14	Max: 9 Min: 7.9
2	9 inches	22 inches	sandy loam	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 14	Max: 9 Min: 7.9
3	22 inches	59 inches	loamy sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 14	Max: 9 Min: 7.9

Soil Map ID: 3

Soil Component Name: Dune land

Soil Surface Texture: sand

Hydrologic Group: Class A - High infiltration rates. Soils are deep, well drained to excessively drained sands and gravels.

Soil Drainage Class:
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	59 inches	sand	Granular materials (35 pct. or less passing No. 200), Silty, or Clayey Gravel and Sand.	COARSE-GRAINED SOILS, Sands, Clean Sands, Poorly graded sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 42	Max: Min:

Soil Map ID: 4

Soil Component Name: Vona

Soil Surface Texture: sandy loam

Hydrologic Group: Class B - Moderate infiltration rates. Deep and moderately deep, moderately well and well drained soils with moderately coarse textures.

Soil Drainage Class: Well drained

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Moderate

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	9 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 14	Max: 9 Min: 7.9

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
2	9 inches	22 inches	sandy loam	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 14	Max: 9 Min: 7.9
3	22 inches	59 inches	loamy sand	Silt-Clay Materials (more than 35 pct. passing No. 200), Silty Soils.	COARSE-GRAINED SOILS, Sands, Sands with fines, Clayey sand. COARSE-GRAINED SOILS, Sands, Sands with fines, Silty Sand.	Max: 141 Min: 14	Max: 9 Min: 7.9

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 1 mile
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A1	USGS40000200228	1/2 - 1 Mile East
B2	USGS40000200188	1/2 - 1 Mile ESE
12	USGS40000200254	1/2 - 1 Mile East

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

MAP ID	WELL ID	LOCATION FROM TP

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

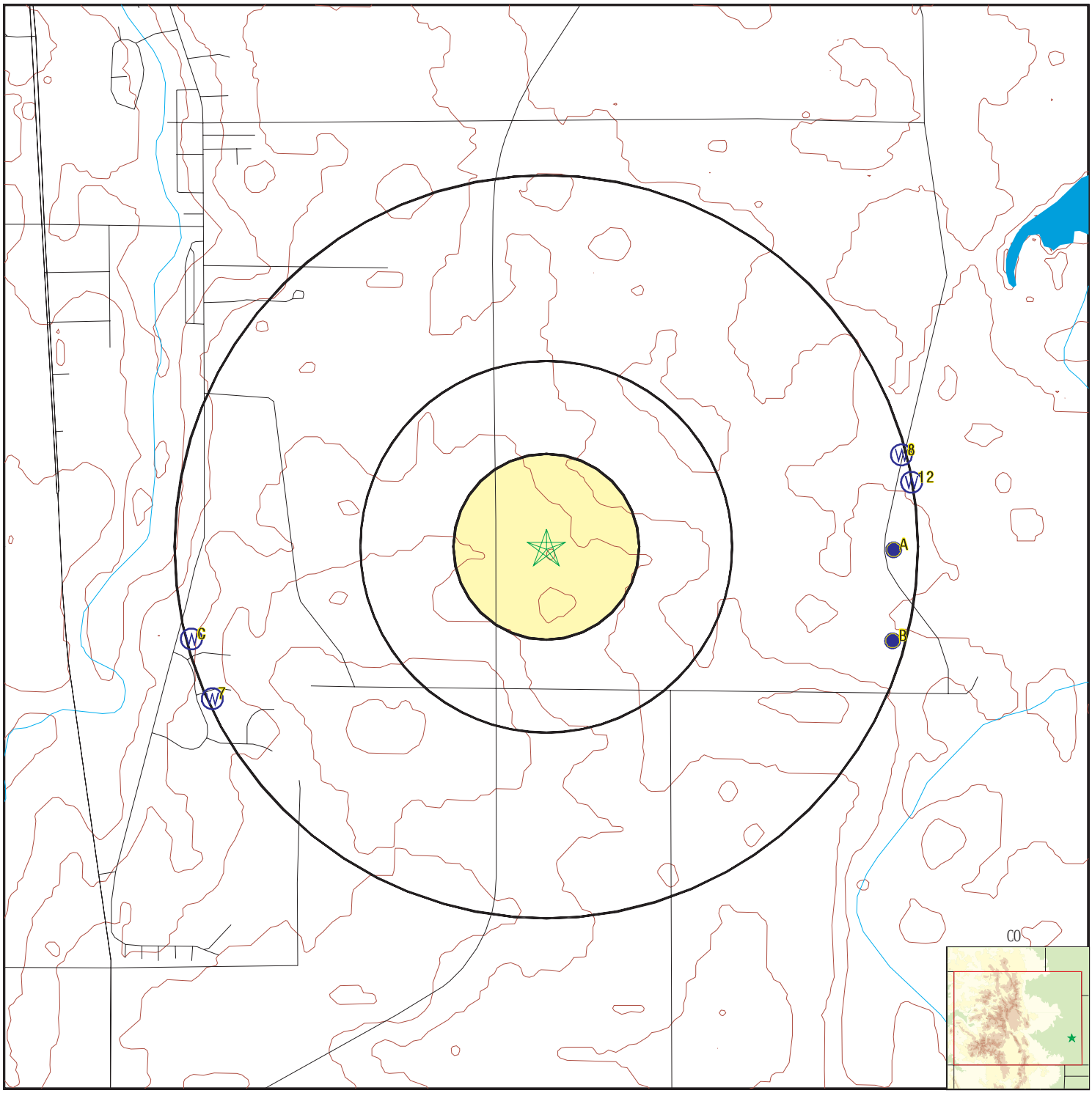
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
A3	CO9000000464556	1/2 - 1 Mile East
A4	CO9000000464626	1/2 - 1 Mile East
C5	CO9000000465221	1/2 - 1 Mile WSW
C6	CO9000000134529	1/2 - 1 Mile WSW
7	CO9000000167711	1/2 - 1 Mile WSW
8	CO9000000464627	1/2 - 1 Mile ENE
B9	CO9000000464580	1/2 - 1 Mile ESE
C10	CO9000000232538	1/2 - 1 Mile WSW
C11	CO9000000232539	1/2 - 1 Mile WSW

PHYSICAL SETTING SOURCE MAP - 8324735.2s



0 1/4 1/2 1 Miles

- County Boundary
- Major Roads
- Contour Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- GI Indeterminate Groundwater Flow at Location
- GV Groundwater Flow Varies at Location
- Oil, gas or related wells

N

SITE NAME:	East of CC.50 and 1,300 Feet North of Dd.8	CLIENT:	AEI Consultants
ADDRESS:	East of CC.50 and 1,300 Feet North of Dd.8 Lamar CO 81052	CONTACT:	Marilu Galeana
LAT/LONG:	38.043602 / 102.591822	INQUIRY #:	8324735.2s
		DATE:	April 27, 2026 2:14 pm

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

A1
East
1/2 - 1 Mile
Lower

FED USGS **USGS40000200228**

Organization ID:	USGS-CO	Organization Name:	USGS Colorado Water Science Center
Monitor Location:	SC02304615CCC	Type:	Well
Description:	Not Reported	HUC:	11020009
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Valley-Fill Deposits
Aquifer Type:	Not Reported	Construction Date:	19480101
Well Depth:	61	Well Depth Units:	ft
Well Hole Depth:	Not Reported	Well Hole Depth Units:	Not Reported

Ground water levels,Number of Measurements:	1	Level reading date:	1958-07-01
Feet below surface:	49.00	Feet to sea level:	Not Reported
Note:	Not Reported		

B2
ESE
1/2 - 1 Mile
Lower

FED USGS **USGS40000200188**

Organization ID:	USGS-CO	Organization Name:	USGS Colorado Water Science Center
Monitor Location:	SC02304622BBB	Type:	Well
Description:	Not Reported	HUC:	11020009
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Valley-Fill Deposits
Aquifer Type:	Not Reported	Construction Date:	19520101
Well Depth:	67	Well Depth Units:	ft
Well Hole Depth:	Not Reported	Well Hole Depth Units:	Not Reported

Ground water levels,Number of Measurements:	1	Level reading date:	1958-06-01
Feet below surface:	51.00	Feet to sea level:	Not Reported
Note:	Not Reported		

A3
East
1/2 - 1 Mile
Lower

CO WELLS **CO9000000464556**

Permit #:	18309-V	CD DWR ID #:	6705256
Well Status:	Well Constructed	Well Name:	0
Water Court Case #:	Not Reported	Parcel Size:	0
Well Use:	Municipal	Addtl Well Use:	Not Reported
Special Use:	Not Reported	Primary Aquifer:	ALL UNNAMED AQUIFERS
Addtl Aquifer:	Not Reported	Division:	2
Water District:	67	Mgmt District:	Not Reported
Ground Water Basin:	Not Reported	Irrigation Area:	0
Yrly Appropriation:	0	Issued Date:	Not Reported
Expiration Date:	Not Reported	Construction Date:	1966-02-28
Start Use Date:	Not Reported	Pump Install Date:	Not Reported
Well Plug Date:	Not Reported	Well Elevation:	0
Well Depth:	52	Top of 1st Perf Casing:	0

Bot of Last Perf Casing:	0	Yield (gpm):	0
Static Water Depth (ft):	29	Applicant:	LAMAR CITY OF
OGCC ID:	Not Reported	Comment:	Not Reported
URL:	https://dwr.state.co.us/Tools/WellPermits/9093194		

A4
East
1/2 - 1 Mile
Lower

CO WELLS **CO9000000464626**

Permit #:	19937-R	CD DWR ID #:	6705255
Well Status:	Not Reported	Well Name:	0
Water Court Case #:	Not Reported	Parcel Size:	0
Well Use:	Municipal	Addtl Well Use:	Not Reported
Special Use:	Not Reported	Primary Aquifer:	ALL UNNAMED AQUIFERS
Addtl Aquifer:	Not Reported	Division:	2
Water District:	67	Mgmt District:	Not Reported
Ground Water Basin:	Not Reported	Irrigation Area:	0
Yrly Appropriation:	0	Issued Date:	Not Reported
Expiration Date:	Not Reported	Construction Date:	Not Reported
Start Use Date:	Not Reported	Pump Install Date:	Not Reported
Well Plug Date:	Not Reported	Well Elevation:	0
Well Depth:	0	Top of 1st Perf Casing:	0
Bot of Last Perf Casing:	0	Yield (gpm):	0
Static Water Depth (ft):	0	Applicant:	LAMAR CITY OF
OGCC ID:	Not Reported	Comment:	Not Reported
URL:	https://dwr.state.co.us/Tools/WellPermits/9093265		

C5
WSW
1/2 - 1 Mile
Lower

CO WELLS **CO9000000465221**

Permit #:	151572-	CD DWR ID #:	Not Reported
Well Status:	Well Constructed	Well Name:	0
Water Court Case #:	Not Reported	Parcel Size:	0
Well Use:	Stock	Addtl Well Use:	Not Reported
Special Use:	Not Reported	Primary Aquifer:	ALL UNNAMED AQUIFERS
Addtl Aquifer:	Not Reported	Division:	2
Water District:	67	Mgmt District:	Not Reported
Ground Water Basin:	Not Reported	Irrigation Area:	0
Yrly Appropriation:	0	Issued Date:	Not Reported
Expiration Date:	Not Reported	Construction Date:	1955-08-20
Start Use Date:	1955-08-20	Pump Install Date:	Not Reported
Well Plug Date:	Not Reported	Well Elevation:	0
Well Depth:	205	Top of 1st Perf Casing:	0
Bot of Last Perf Casing:	0	Yield (gpm):	0
Static Water Depth (ft):	0	Applicant:	PEARSON, MICHAEL R
OGCC ID:	Not Reported	Comment:	Not Reported
URL:	https://dwr.state.co.us/Tools/WellPermits/9093874		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

C6
WSW
1/2 - 1 Mile
Lower

CO WELLS **CO9000000134529**

Permit #:	Not Reported	CD DWR ID #:	Not Reported
Well Status:	Application Received	Well Name:	0
Water Court Case #:	Not Reported	Parcel Size:	0
Well Use:	Stock	Addtl Well Use:	Not Reported
Special Use:	Not Reported	Primary Aquifer:	ALL UNNAMED AQUIFERS
Addtl Aquifer:	Not Reported	Division:	2
Water District:	67	Mgmt District:	Not Reported
Ground Water Basin:	Not Reported	Irrigation Area:	0
Yrly Appropriation:	0	Issued Date:	Not Reported
Expiration Date:	Not Reported	Construction Date:	Not Reported
Start Use Date:	Not Reported	Pump Install Date:	Not Reported
Well Plug Date:	Not Reported	Well Elevation:	0
Well Depth:	0	Top of 1st Perf Casing:	0
Bot of Last Perf Casing:	0	Yield (gpm):	0
Static Water Depth (ft):	0	Applicant:	PEARSON, MICHAEL
OGCC ID:	Not Reported	Comment:	Not Reported
URL:	https://dwr.state.co.us/Tools/WellPermits/0289028B		

7
WSW
1/2 - 1 Mile
Higher

CO WELLS **CO9000000167711**

Permit #:	170302-	CD DWR ID #:	Not Reported
Well Status:	Permit Issued	Well Name:	0
Water Court Case #:	Not Reported	Parcel Size:	0
Well Use:	Domestic	Addtl Well Use:	Not Reported
Special Use:	Not Reported	Primary Aquifer:	CHEYENNE
Addtl Aquifer:	Not Reported	Division:	2
Water District:	67	Mgmt District:	Not Reported
Ground Water Basin:	Not Reported	Irrigation Area:	0
Yrly Appropriation:	0	Issued Date:	1993-06-02
Expiration Date:	Not Reported	Construction Date:	Not Reported
Start Use Date:	Not Reported	Pump Install Date:	Not Reported
Well Plug Date:	Not Reported	Well Elevation:	0
Well Depth:	0	Top of 1st Perf Casing:	0
Bot of Last Perf Casing:	0	Yield (gpm):	0
Static Water Depth (ft):	0	Applicant:	PEARSON, LORRAINE J
OGCC ID:	Not Reported	Comment:	Not Reported
URL:	https://dwr.state.co.us/Tools/WellPermits/0351981B		

8
ENE
1/2 - 1 Mile
Lower

CO WELLS **CO9000000464627**

Permit #:	19937-S	CD DWR ID #:	6705254
Well Status:	Not Reported	Well Name:	0
Water Court Case #:	Not Reported	Parcel Size:	0
Well Use:	Municipal	Addtl Well Use:	Not Reported
Special Use:	Not Reported	Primary Aquifer:	ALL UNNAMED AQUIFERS

Addtl Aquifer:	Not Reported	Division:	2
Water District:	67	Mgmt District:	Not Reported
Ground Water Basin:	Not Reported	Irrigation Area:	0
Yrly Appropriation:	0	Issued Date:	Not Reported
Expiration Date:	Not Reported	Construction Date:	Not Reported
Start Use Date:	Not Reported	Pump Install Date:	Not Reported
Well Plug Date:	Not Reported	Well Elevation:	0
Well Depth:	0	Top of 1st Perf Casing:	0
Bot of Last Perf Casing:	0	Yield (gpm):	0
Static Water Depth (ft):	0	Applicant:	LAMAR CITY OF
OGCC ID:	Not Reported	Comment:	Not Reported
URL:	https://dwr.state.co.us/Tools/WellPermits/9093266		

B9
ESE
1/2 - 1 Mile
Lower

CO WELLS **CO9000000464580**

Permit #:	19151-R	CD DWR ID #:	6705424
Well Status:	Not Reported	Well Name:	0
Water Court Case #:	Not Reported	Parcel Size:	0
Well Use:	Municipal	Addtl Well Use:	Not Reported
Special Use:	Not Reported	Primary Aquifer:	ALL UNNAMED AQUIFERS
Addtl Aquifer:	Not Reported	Division:	2
Water District:	67	Mgmt District:	Not Reported
Ground Water Basin:	Not Reported	Irrigation Area:	0
Yrly Appropriation:	0	Issued Date:	Not Reported
Expiration Date:	Not Reported	Construction Date:	Not Reported
Start Use Date:	Not Reported	Pump Install Date:	Not Reported
Well Plug Date:	Not Reported	Well Elevation:	0
Well Depth:	0	Top of 1st Perf Casing:	0
Bot of Last Perf Casing:	0	Yield (gpm):	0
Static Water Depth (ft):	0	Applicant:	LAMAR CITY OF
OGCC ID:	Not Reported	Comment:	Not Reported
URL:	https://dwr.state.co.us/Tools/WellPermits/9093218		

C10
WSW
1/2 - 1 Mile
Lower

CO WELLS **CO9000000232538**

Permit #:	151572--A	CD DWR ID #:	Not Reported
Well Status:	Well Constructed	Well Name:	0
Water Court Case #:	Not Reported	Parcel Size:	0
Well Use:	Stock	Addtl Well Use:	Not Reported
Special Use:	Not Reported	Primary Aquifer:	DAKOTA
Addtl Aquifer:	Not Reported	Division:	2
Water District:	67	Mgmt District:	Not Reported
Ground Water Basin:	Not Reported	Irrigation Area:	0
Yrly Appropriation:	0	Issued Date:	1999-03-17
Expiration Date:	Not Reported	Construction Date:	2000-06-01
Start Use Date:	Not Reported	Pump Install Date:	Not Reported
Well Plug Date:	Not Reported	Well Elevation:	0
Well Depth:	497	Top of 1st Perf Casing:	417
Bot of Last Perf Casing:	497	Yield (gpm):	0
Static Water Depth (ft):	408	Applicant:	STAGNER, ROGER J.
OGCC ID:	Not Reported	Comment:	Not Reported
URL:	https://dwr.state.co.us/Tools/WellPermits/0442206		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID
Direction
Distance
Elevation | Database | EDR ID Number

C11
WSW
1/2 - 1 Mile
Lower

CO WELLS **CO9000000232539**

Permit #:	151572--A	CD DWR ID #:	Not Reported
Well Status:	Well Constructed	Well Name:	0
Water Court Case #:	Not Reported	Parcel Size:	0
Well Use:	Stock	Addtl Well Use:	Not Reported
Special Use:	Not Reported	Primary Aquifer:	DAKOTA
Addtl Aquifer:	Not Reported	Division:	2
Water District:	67	Mgmt District:	Not Reported
Ground Water Basin:	Not Reported	Irrigation Area:	0
Yrly Appropriation:	0	Issued Date:	1999-03-17
Expiration Date:	Not Reported	Construction Date:	2000-06-01
Start Use Date:	Not Reported	Pump Install Date:	Not Reported
Well Plug Date:	Not Reported	Well Elevation:	0
Well Depth:	497	Top of 1st Perf Casing:	417
Bot of Last Perf Casing:	497	Yield (gpm):	0
Static Water Depth (ft):	408	Applicant:	STAGNER, LESLIE A.
OGCC ID:	Not Reported	Comment:	Not Reported
URL:	https://dwr.state.co.us/Tools/WellPermits/0442206		

12
East
1/2 - 1 Mile
Lower

FED USGS **USGS40000200254**

Organization ID:	USGS-CO	Organization Name:	USGS Colorado Water Science Center
Monitor Location:	SC02304615CBD	Type:	Well
Description:	Not Reported	HUC:	11020009
Drainage Area:	Not Reported	Drainage Area Units:	Not Reported
Contrib Drainage Area:	Not Reported	Contrib Drainage Area Unts:	Not Reported
Aquifer:	Not Reported	Formation Type:	Valley-Fill Deposits
Aquifer Type:	Not Reported	Construction Date:	19540101
Well Depth:	64	Well Depth Units:	ft
Well Hole Depth:	Not Reported	Well Hole Depth Units:	Not Reported

Ground water levels,Number of Measurements:	1	Level reading date:	1967-06-01
Feet below surface:	48.00	Feet to sea level:	Not Reported
Note:	Not Reported		

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CO Radon

Radon Test Results

Zip	Total Sites	Avg	% sites<=4 pCi/L	% sites>4&<10 pCi/L	% sites>=10&<20 pCi/L	% sites>20 pCi/L
81052	14	2.34	78.57	21.43	0.00	0.00

Federal EPA Radon Zone for PROWERS County: 1

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 81052

Number of sites tested: 13

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	2.177 pCi/L	85%	15%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	4.400 pCi/L	0%	100%	0%

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005, 2010 and 2015 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Riparian Vegetation Data
Source: Division of Wildlife
Telephone: 970-416-3360

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Colorado GIS Well Database
Source: Office of State Engineer, Division of Water Resources
Telephone: 303-866-3581
The GIS Well database includes all wells that the Division of Water Resources permits.

OTHER STATE DATABASE INFORMATION

Oil and Gas Well Locations
Source: Department of Natural Resources
Telephone: 303-894-2100

RADON

State Database: CO Radon
Source: Department of Public Health & Environment
Telephone: 303-692-3090
Radon Study in Colorado

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary faultlines, prepared in 1975 by the United State Geological Survey

PHYSICAL SETTING SOURCE RECORDS SEARCHED

STREET AND ADDRESS INFORMATION

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APPENDIX D

HISTORICAL SOURCES

497462

East of Highway 385 and Southeast of Highway 50

Lamar, CO 81052

Inquiry Number: 7740796.8

August 22, 2024

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

08/22/24

Site Name:

497462
East of Highway 385 and South
Lamar, CO 81052
EDR Inquiry # 7740796.8

Client Name:

AEI Consultants
2500 Camino Diablo
Walnut Creek, CA 94597
Contact: Fabiola

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	*Scale*	*Details*	*Source*
2019	1"=500'	Flight Year: 2019	USDA/NAIP
2015	1"=500'	Flight Year: 2015	USDA/NAIP
2011	1"=500'	Flight Year: 2011	USDA/NAIP
2006	1"=500'	Flight Year: 2006	USDA/NAIP
1998	1"=500'	Acquisition Date: January 01, 1998	USGS/DOQQ
1993	1"=500'	Flight Date: August 24, 1993	USGS
1988	1"=500'	Acquisition Date: January 01, 1988	USGS/DOQQ
1983	1"=500'	Flight Date: October 10, 1983	USDA
1975	1"=500'	Flight Date: June 08, 1975	USGS
1954	1"=500'	Flight Date: December 01, 1954	USGS
1947	1"=500'	Flight Date: July 12, 1947	USGS

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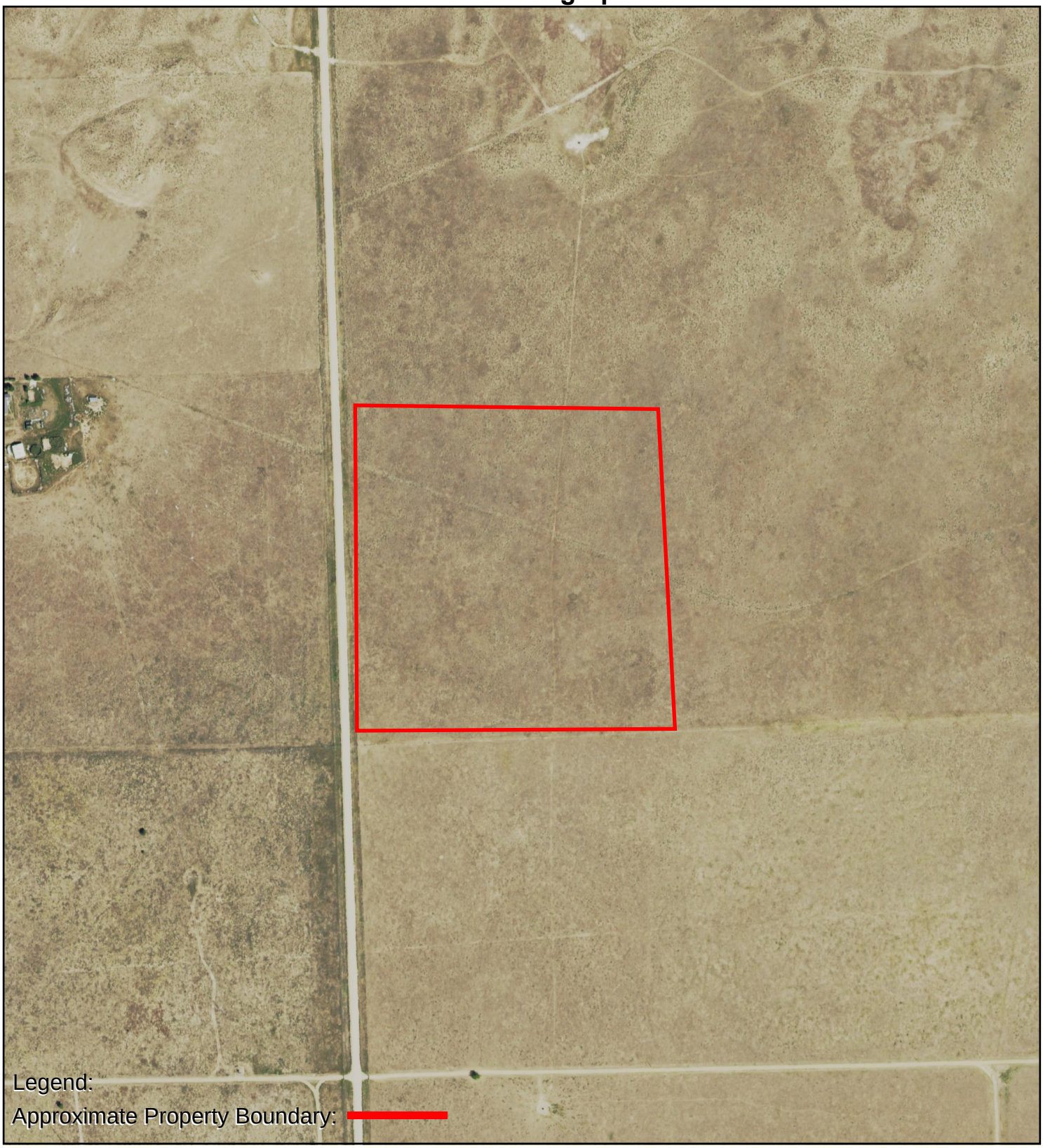
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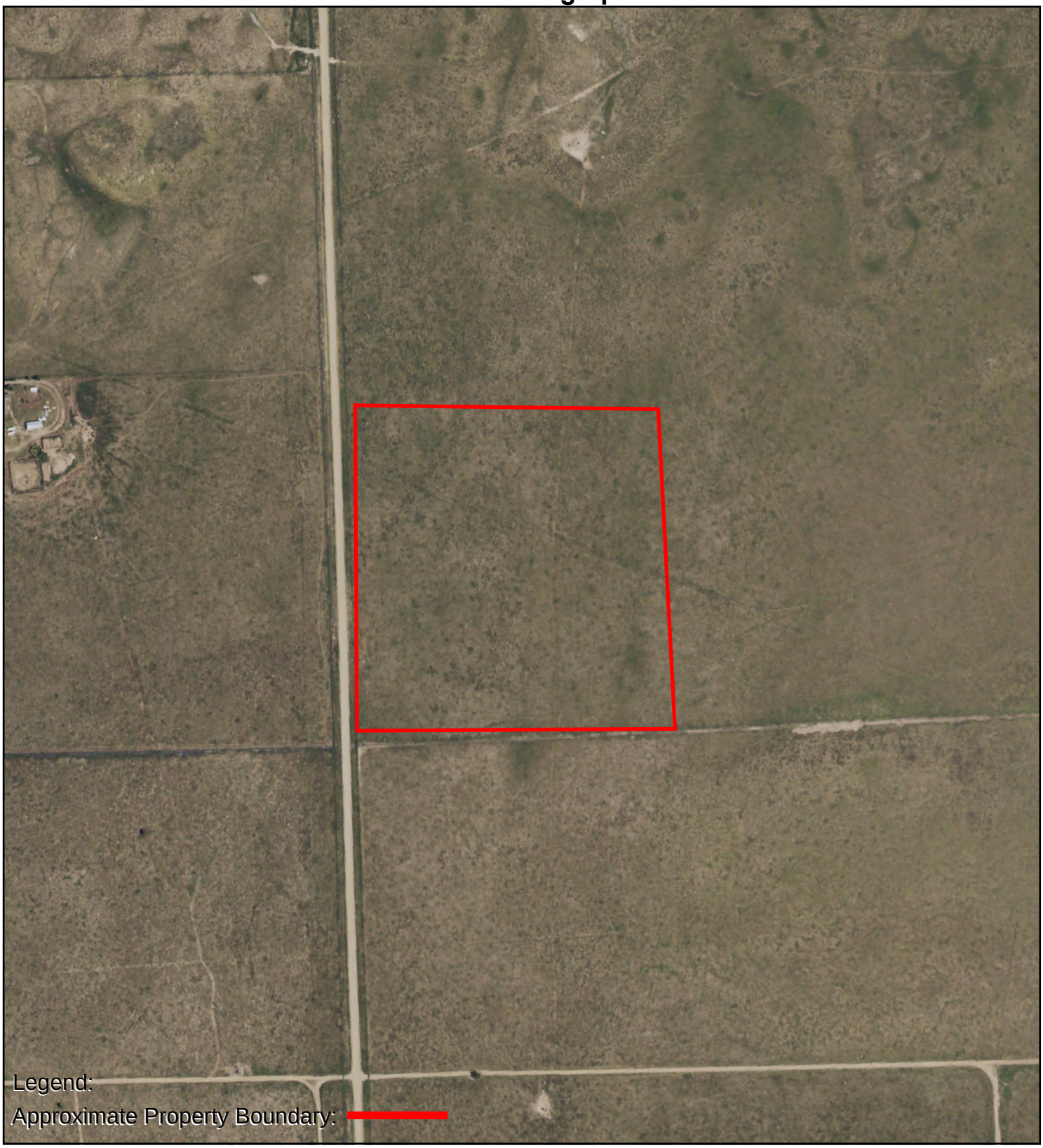


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AERIAL PHOTOGRAPH - 2019

AEI

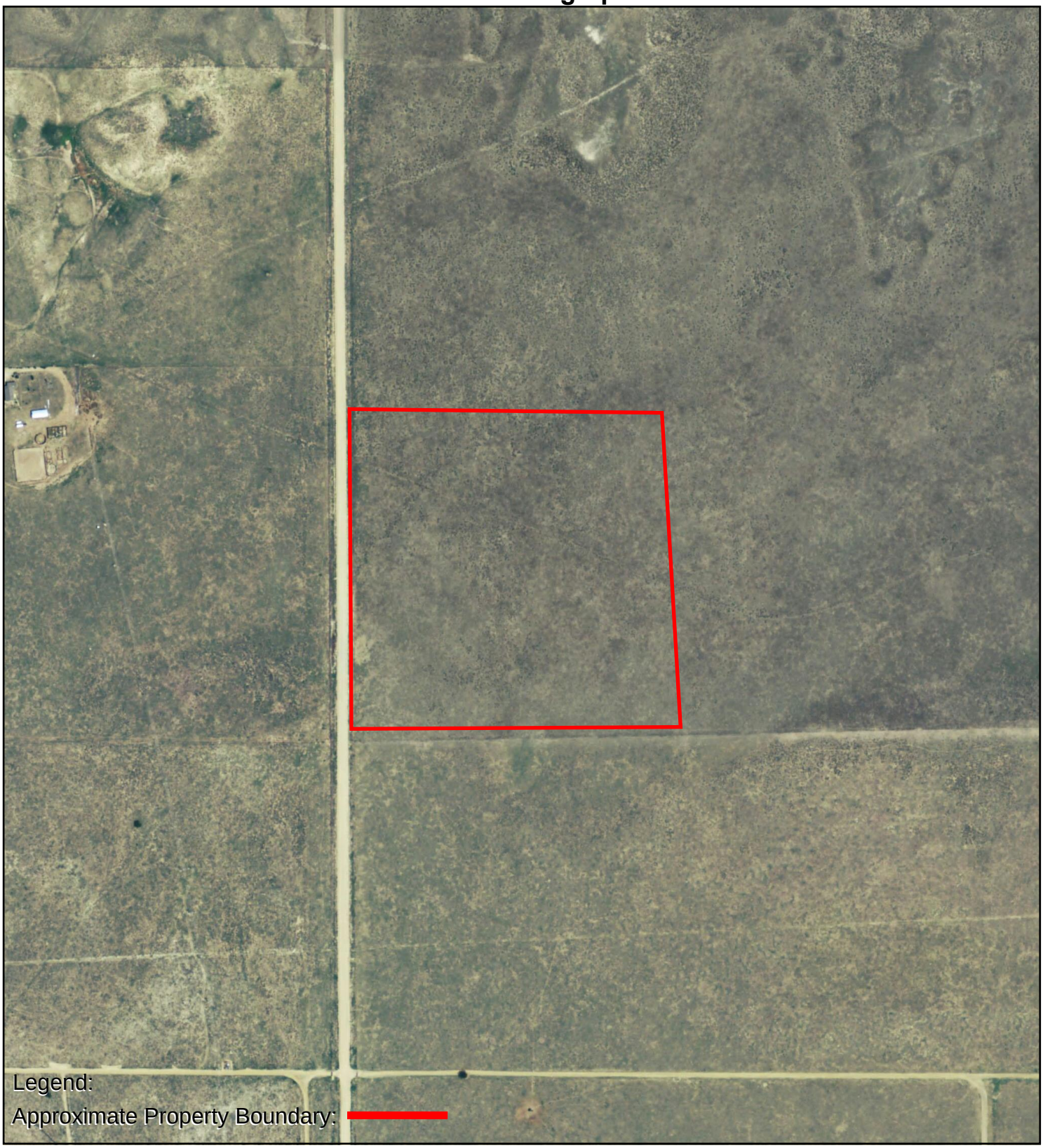


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AERIAL PHOTOGRAPH - 2015

AEI



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AEI

AERIAL PHOTOGRAPH - 2011



0 Feet 500 1000 2000

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AERIAL PHOTOGRAPH - 2006



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AERIAL PHOTOGRAPH - 1998



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AERIAL PHOTOGRAPH - 1993

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AERIAL PHOTOGRAPH - 1988



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AERIAL PHOTOGRAPH - 1983



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AERIAL PHOTOGRAPH - 1975



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AEI

AERIAL PHOTOGRAPH - 1954



0 Feet 500 1000 2000

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AERIAL PHOTOGRAPH - 1947

AEI

497462

East of Highway 385 and Southeast of Highway 50

Lamar, CO 81052

Inquiry Number: 7740796.3

August 20, 2024

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

08/20/24

Site Name:

497462
East of Highway 385 and South
Lamar, CO 81052
EDR Inquiry # 7740796.3

Client Name:

AEI Consultants
2500 Camino Diablo
Walnut Creek, CA 94597
Contact: Fabiola

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by AEI Consultants were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # B0F1-47EE-A018

PO # 376729

Project 497462

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: B0F1-47EE-A018

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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497462
East of Highway 385 and Southeast of Highway 50
Lamar, CO 81052

Inquiry Number: 7740796.5
August 23, 2024

The EDR-City Directory Image Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

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City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available business directory data at approximately five year intervals.

RECORD SOURCES

The EDR City Directory Report accesses a variety of business directory sources, including Haines, InfoUSA, Polk, Cole, Bresser, and Stewart. Listings marked as EDR Digital Archive access Cole and InfoUSA records. The various directory sources enhance and complement each other to provide a more thorough and accurate report.

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	*Target Street*	*Cross Street*	*Source*
2020	☐	☑	EDR Digital Archive
2017	☐	☐	Cole Information
2014	☐	☑	Cole Information
2010	☐	☑	Cole Information
2005	☐	☑	Cole Information
2000	☐	☑	Cole Information
1995	☐	☐	Cole Information
1992	☐	☐	Cole Information

FINDINGS

TARGET PROPERTY STREET

East of Highway 385 and Southeast of Highway 50
Lamar, CO 81052

Year	*CD Image*	*Source*	
HIGHWAY 385			
2020	-	EDR Digital Archive	Target and Adjoining not listed in Source
2017	-	Cole Information	Target and Adjoining not listed in Source
2014	-	Cole Information	Target and Adjoining not listed in Source
2010	-	Cole Information	Target and Adjoining not listed in Source
2005	-	Cole Information	Target and Adjoining not listed in Source
2000	-	Cole Information	Target and Adjoining not listed in Source
1995	-	Cole Information	Target and Adjoining not listed in Source
1992	-	Cole Information	Target and Adjoining not listed in Source

FINDINGS

CROSS STREETS

Year	*CD Image*	*Source*	
HIGHWAY 50			
2020	-	EDR Digital Archive	Target and Adjoining not listed in Source
2017	-	Cole Information	Target and Adjoining not listed in Source
2014	-	Cole Information	Target and Adjoining not listed in Source
2010	-	Cole Information	Target and Adjoining not listed in Source
2005	-	Cole Information	Target and Adjoining not listed in Source
2000	-	Cole Information	Target and Adjoining not listed in Source
1995	-	Cole Information	Target and Adjoining not listed in Source
1992	-	Cole Information	Target and Adjoining not listed in Source
COUNTY ROAD EE.5			
2020	pg. A1	EDR Digital Archive	
2017	-	Cole Information	Target and Adjoining not listed in Source
2014	pg. A2	Cole Information	
2010	pg. A3	Cole Information	
2005	pg. A4	Cole Information	
2000	pg. A5	Cole Information	
1995	-	Cole Information	Target and Adjoining not listed in Source
1992	-	Cole Information	Target and Adjoining not listed in Source

City Directory Images

Target Street	Cross Street	Source
-	✓	EDR Digital Archive

COUNTY ROAD EE.5 2020

8700 PATRICK MASON

Target Street	Cross Street	Source
-	✓	Cole Information

COUNTY ROAD EE.5 2014

8552	EISENHAUER, HARRY D
8700	MASON, PATRICK R
8802	JENKINS, JIMMY D
8806	HALL, RENEA L
	KRAVIG, JASON L

Target Street	Cross Street	Source
-	✓	Cole Information

COUNTY ROAD EE.5 2010

8552 EISENHAUER, HARRY D
8700 MASON, ELIZABETH M
8802 JENKINS, JIMMY D
8806 HALL, RENEA L
KRAVIG, JASON

Target Street	Cross Street	Source
-	✓	Cole Information

COUNTY ROAD EE.5 2005

8552 OCCUPANT UNKNOWN,
8700 MASON, PATRICK R
8802 JENKINS, JIMMY D
8806 HALL, RENEA
SALMON, JONI M

Target Street	Cross Street	Source
-	✓	Cole Information

COUNTY ROAD EE.5 2000

8551 LAMAR CITY ANIMAL SHELTER
8802 GILL, JACK
8806 SALMON, JONI

497462

East of Highway 385 and Southeast of Highway 50

Lamar, CO 81052

Inquiry Number: 7740796.4

August 20, 2024

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

08/20/24

Site Name:	Client Name:
497462	AEI Consultants
East of Highway 385 and South	2500 Camino Diablo
Lamar, CO 81052	Walnut Creek, CA 94597
EDR Inquiry # 7740796.4	Contact: Fabiola

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by AEI Consultants were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:		*Coordinates:*	
P.O.#	376729	**Latitude:**	38.043482 38° 2' 37" North
Project:	497462	**Longitude:**	-102.592086 -102° 35' 32" West
		UTM Zone:	Zone 13 North
		UTM X Meters:	711298.63
		UTM Y Meters:	4213376.57
		Elevation:	3744.21' above sea level

Maps Provided:

2022
2019
2016
2013
1979
1953
1892

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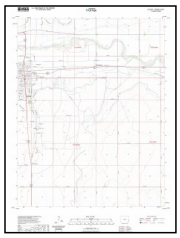
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Topo Sheet Key

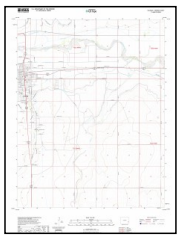
This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2022 Source Sheets



Lamar East
2022
7.5-minute, 24000

2019 Source Sheets



Lamar East
2019
7.5-minute, 24000

2016 Source Sheets



Lamar East
2016
7.5-minute, 24000

2013 Source Sheets



Lamar East
2013
7.5-minute, 24000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1979 Source Sheets



Lamar East
1979
7.5-minute, 24000
Aerial Photo Revised 1975

1953 Source Sheets

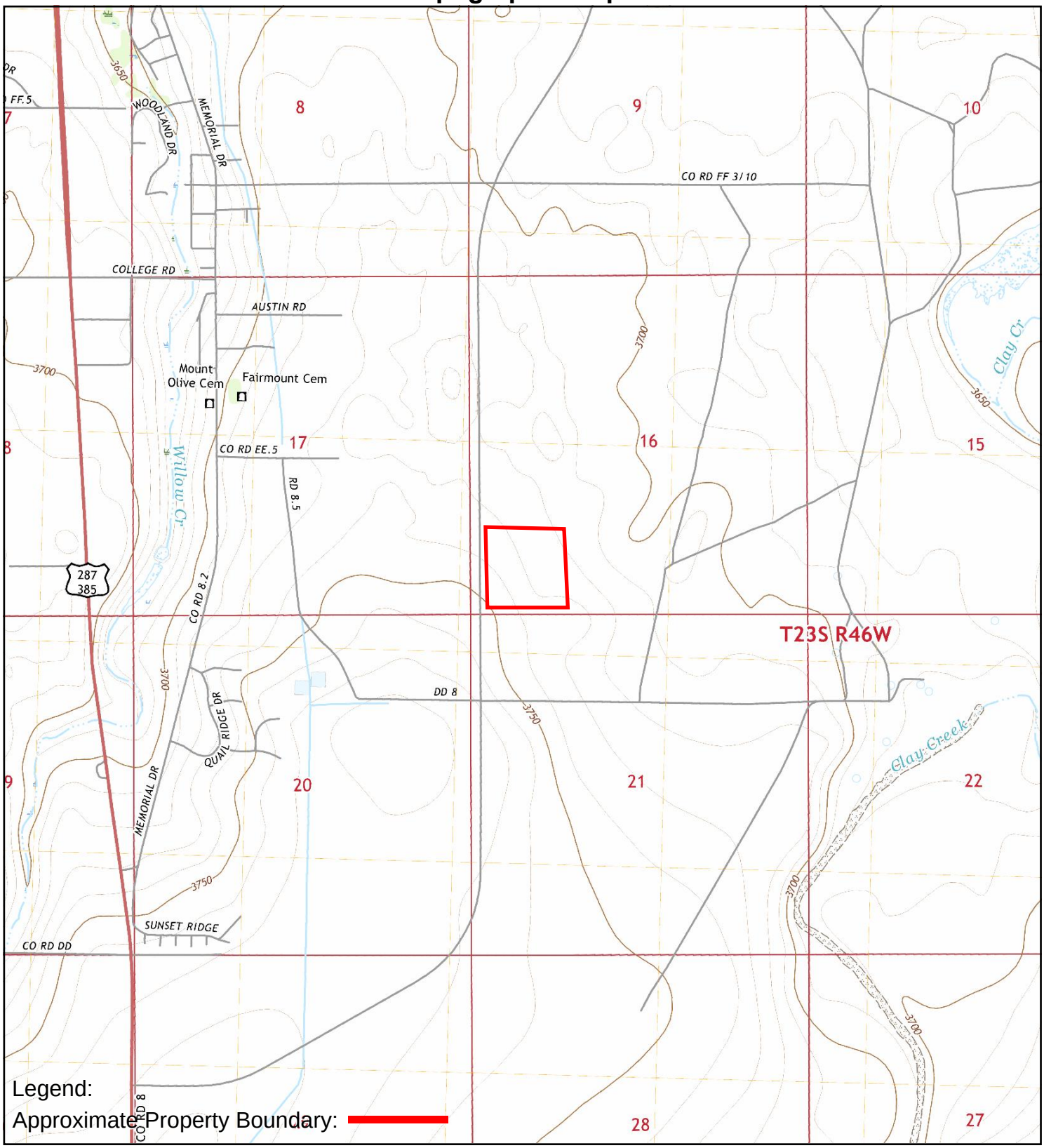


Lamar East
1953
7.5-minute, 24000
Aerial Photo Revised 1947

1892 Source Sheets



Lamar
1892
30-minute, 125000



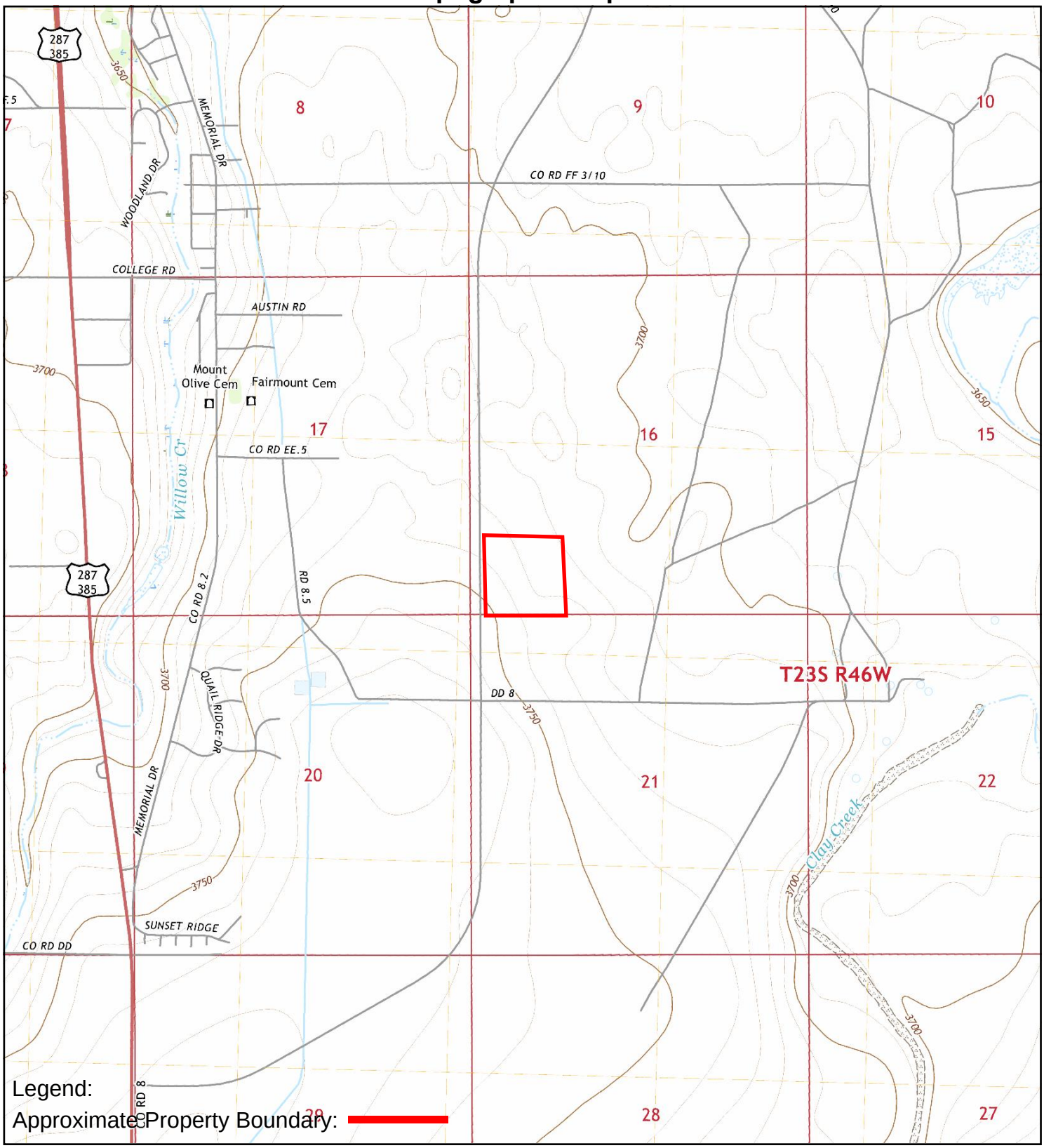
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0 Miles 0.25 0.5 1 1.5

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TOPOGRAPHIC MAP - 2022

AEI



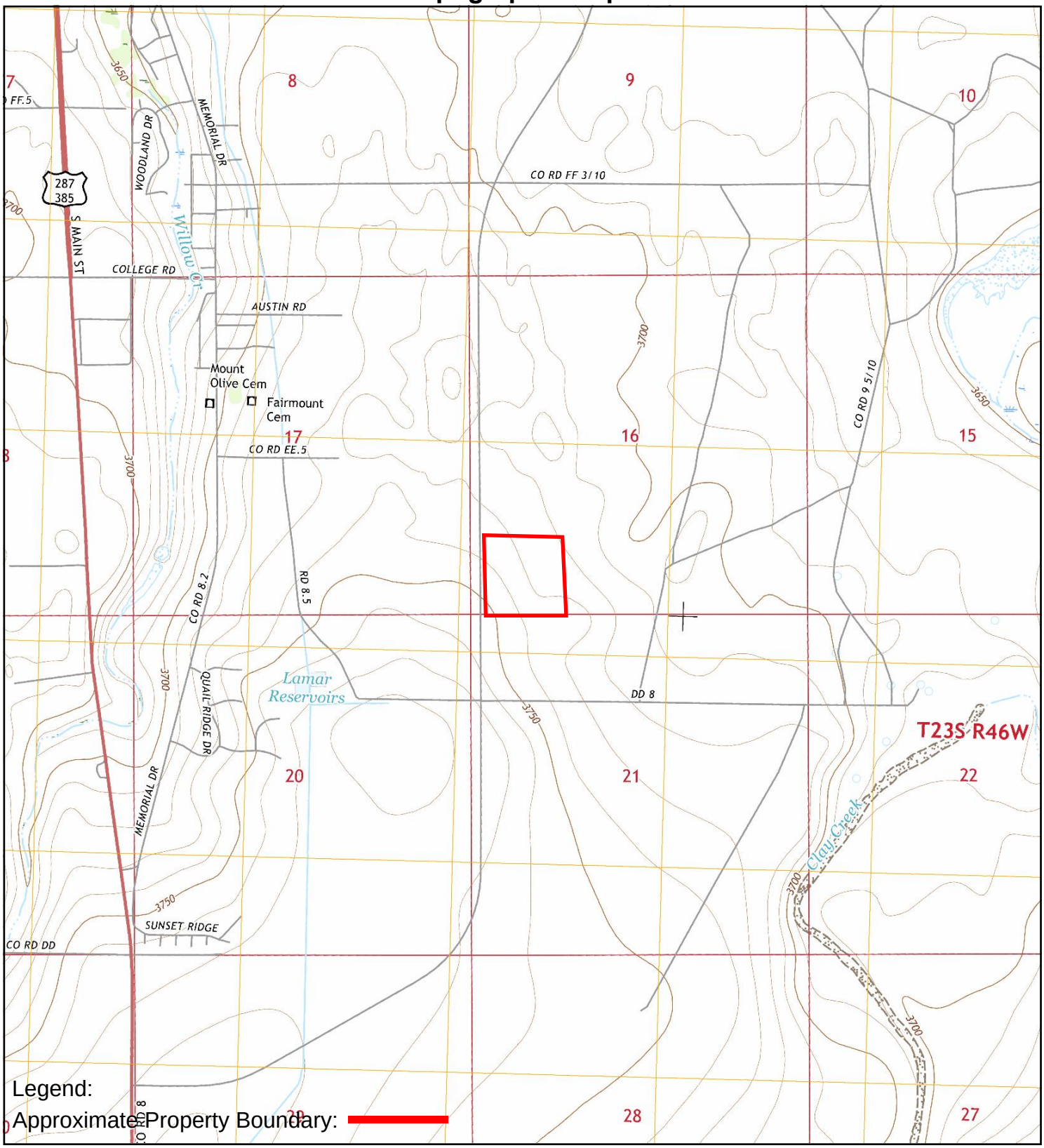
TP, Lamar East, 2019, 7.5-minute

0 Miles 0.25 0.5 1 1.5

N

TOPOGRAPHIC MAP - 2019

AEI



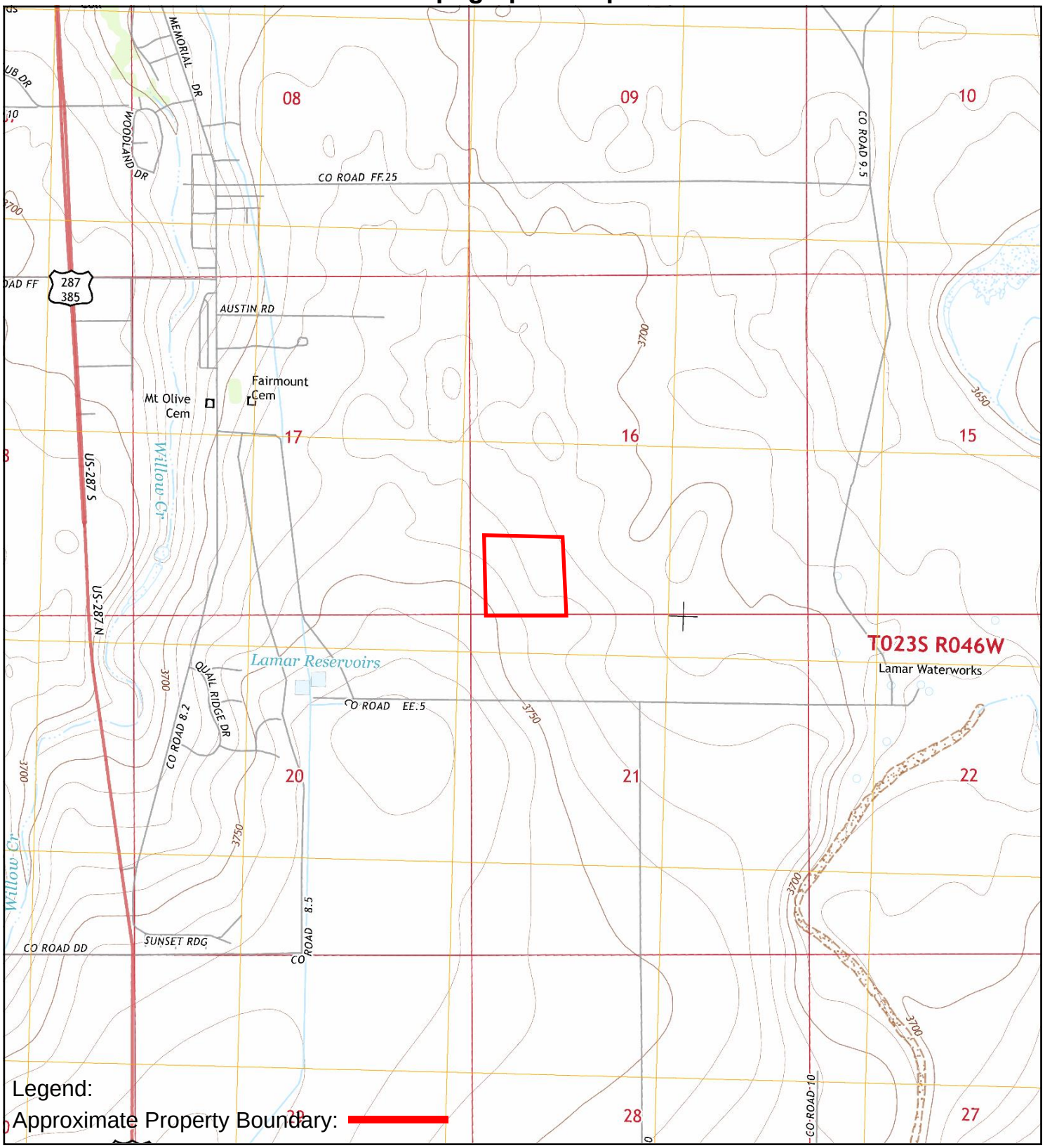
TP, Lamar East, 2016, 7.5-minute

0 Miles 0.25 0.5 1 1.5

N

TOPOGRAPHIC MAP - 2016

AEI



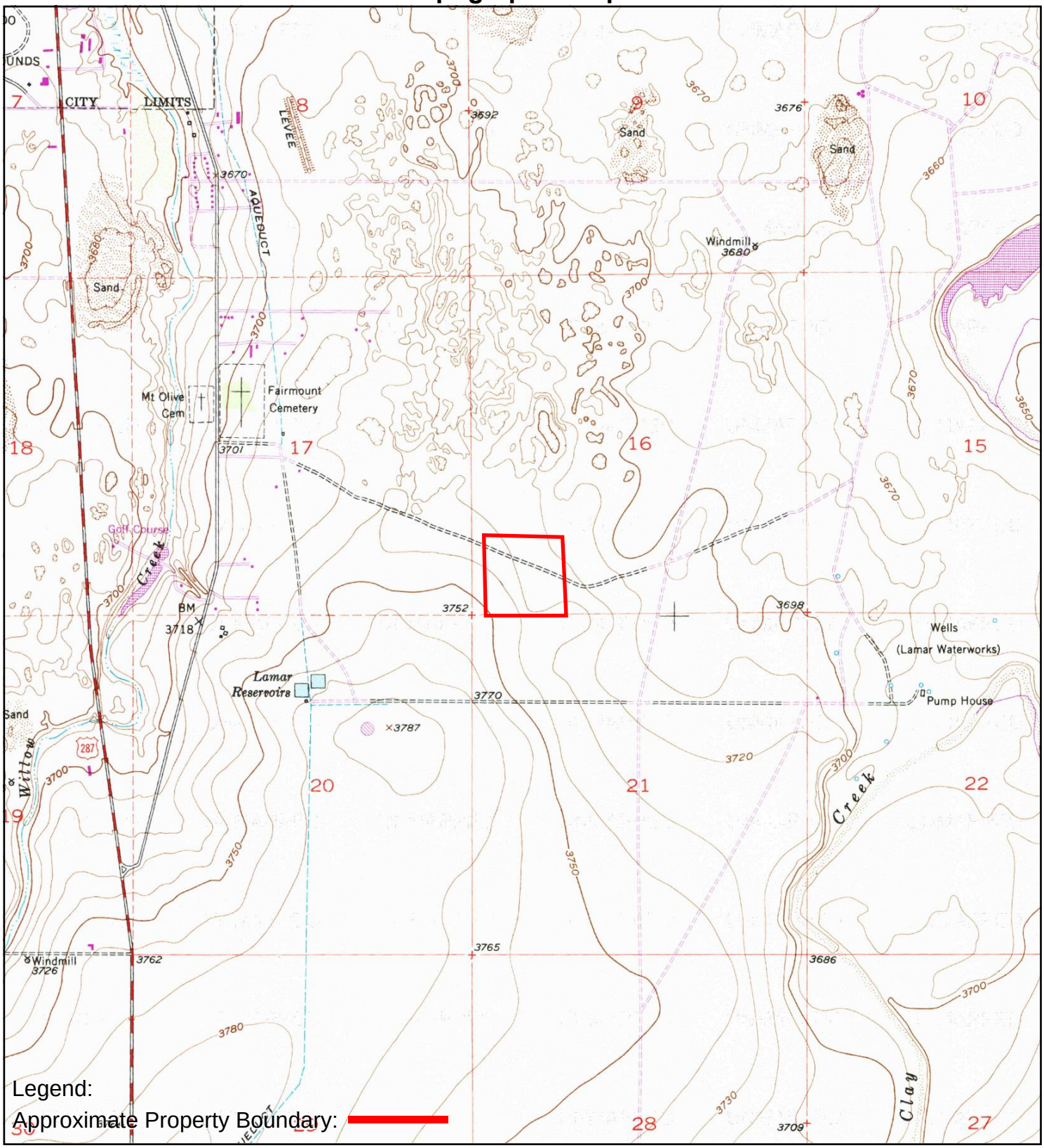
TP, Lamar East, 2013, 7.5-minute

0 Miles 0.25 0.5 1 1.5

N

TOPOGRAPHIC MAP - 2013

AEI



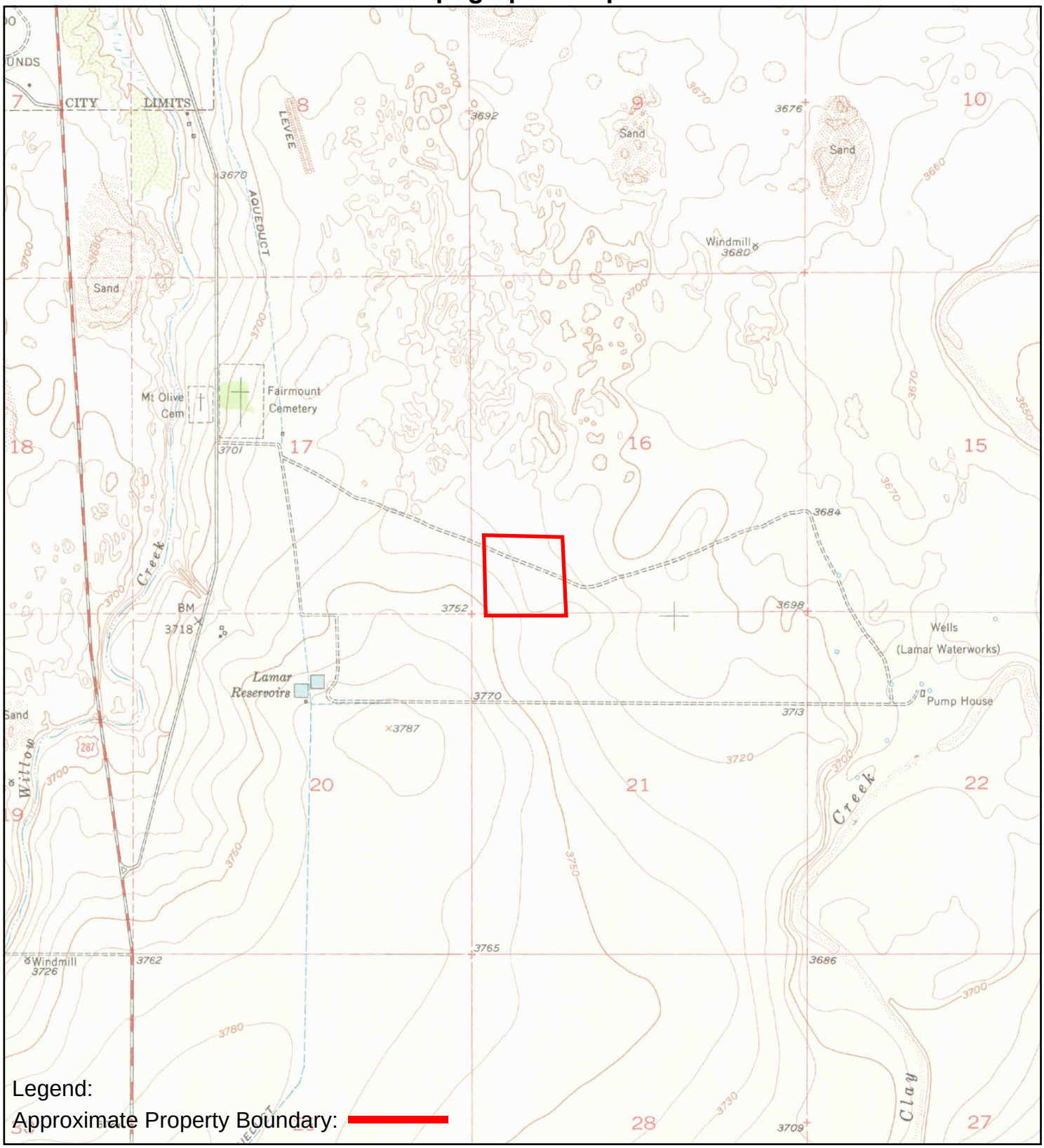
TP, Lamar East, 1979, 7.5-minute

0 Miles 0.25 0.5 1 1.5

N

TOPOGRAPHIC MAP - 1979

AEI



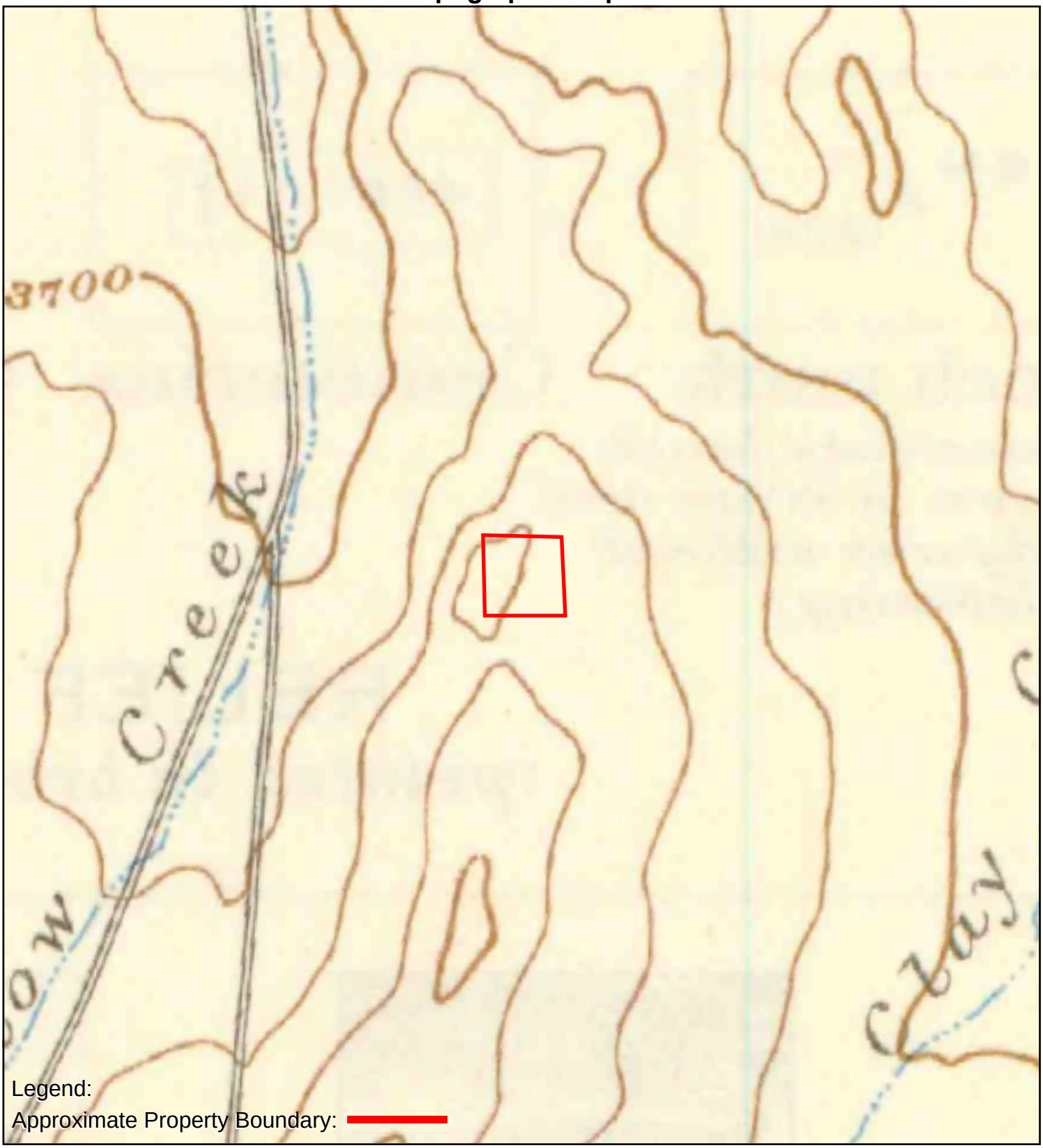
TP, Lamar East, 1953, 7.5-minute

0 Miles 0.25 0.5 1 1.5

N

TOPOGRAPHIC MAP - 1953

AEI



TP, Lamar, 1892, 30-minute

0 Miles 0.25 0.5 1 1.5

N

TOPOGRAPHIC MAP - 1892

AEI

APPENDIX E

REGULATORY AGENCY RECORDS - SUBJECT PROPERTY

Prowers County, CO

Parcel Summary

Parcel Number	0000085100
Location Address	
Brief Tax Description*	46-23-16 ALL EX 24.47AC M/L IN W2W2
	*The Description above is not to be used on legal documents.
Tax District	N/A
Net Levy	N/A
Property Usage	EXEMPT PROPERTY (009010)
Acreage	615.530

Map Not Available

Owner Information

Primary Owner
COLORADO
SCHOOL LAND CO 81052

Land Information

Code	Land Use	Number of Units	Unit Type
414200	GRAZ VIB	615.53	AC

Values

	2026	2025	2024	2023
Land Value	$33,534	$33,534	$34,032	$34,032
Building Value	$0	$0	$0	$0
Extra Features Value	$0	$0	$0	$0
Total Value	**$33,534**	**$33,534**	**$34,032**	**$34,032**

Recent Sales in Area

Sale date range:

From: 05/06/2

To: 05/06/2

Search Sales by Subdivision

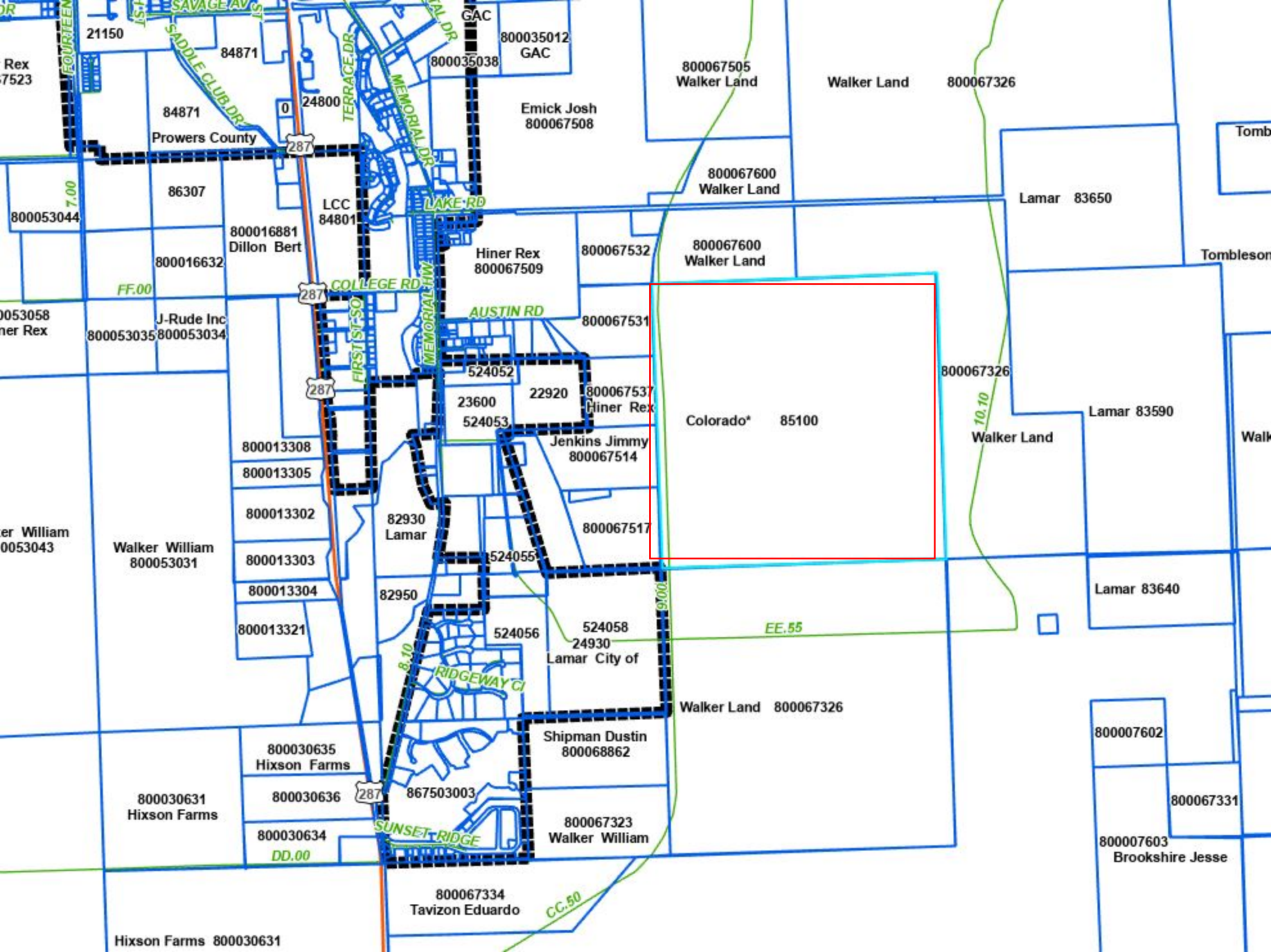
Sales by Area

No data available for the following modules: Buildings, Sub Area, Miscellaneous, Sales, Sketches.

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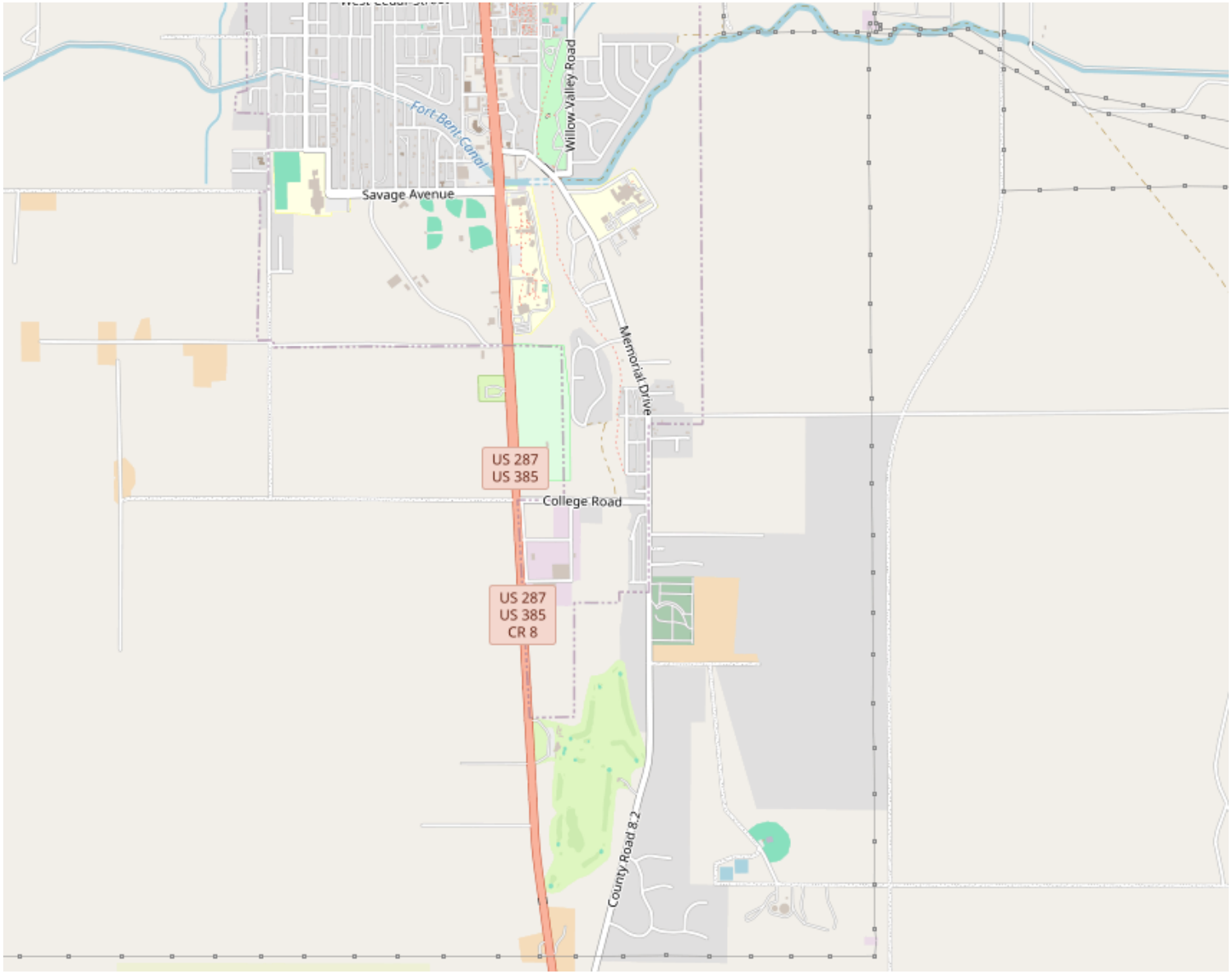
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800067505
Walker Land
Walker Land
800067326
84871
Prowers County
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24800
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Hiner Rex
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J-Rude Inc
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800053034
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Walk
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Jenkins Jimmy
800067514
800013305
800013302
82930
Lamar
800067517
er William
0053043
Walker William
800053031
524055
800013303
800013304
82950
Lamar 83640
9.00
800013321
524056
524058
24930
Lamar City of
EE.55
8.10
RIDGEWAY CI
Walker Land 800067326
Shipman Dustin
800068862
800007602
800030635
Hixson Farms
800030631
Hixson Farms
800030636
287
867503003
800067331
800030634
SUNSET RIDGE
800067323
Walker William
800007603
Brookshire Jesse
DD.00
800067334
Tavizon Eduardo
CC.50
Hixson Farms 800030631

Pipeline and Hazardous Materials Safety Administration

NATIONAL PIPELINE MAPPING SYSTEM



Legend

- Gas Transmission Pipelines
- Hazardous Liquid Pipelines

500 m
1000 ft

Pipelines depicted on this map represent gas transmission and hazardous liquid lines only. Gas gathering and gas distribution systems are not represented.

This map should never be used as a substitute for contacting a one-call center prior to excavation activities. Please call 811 before any digging occurs.

Questions regarding this map or its contents can be directed to npms@dot.gov.

Projection: Web Mercator

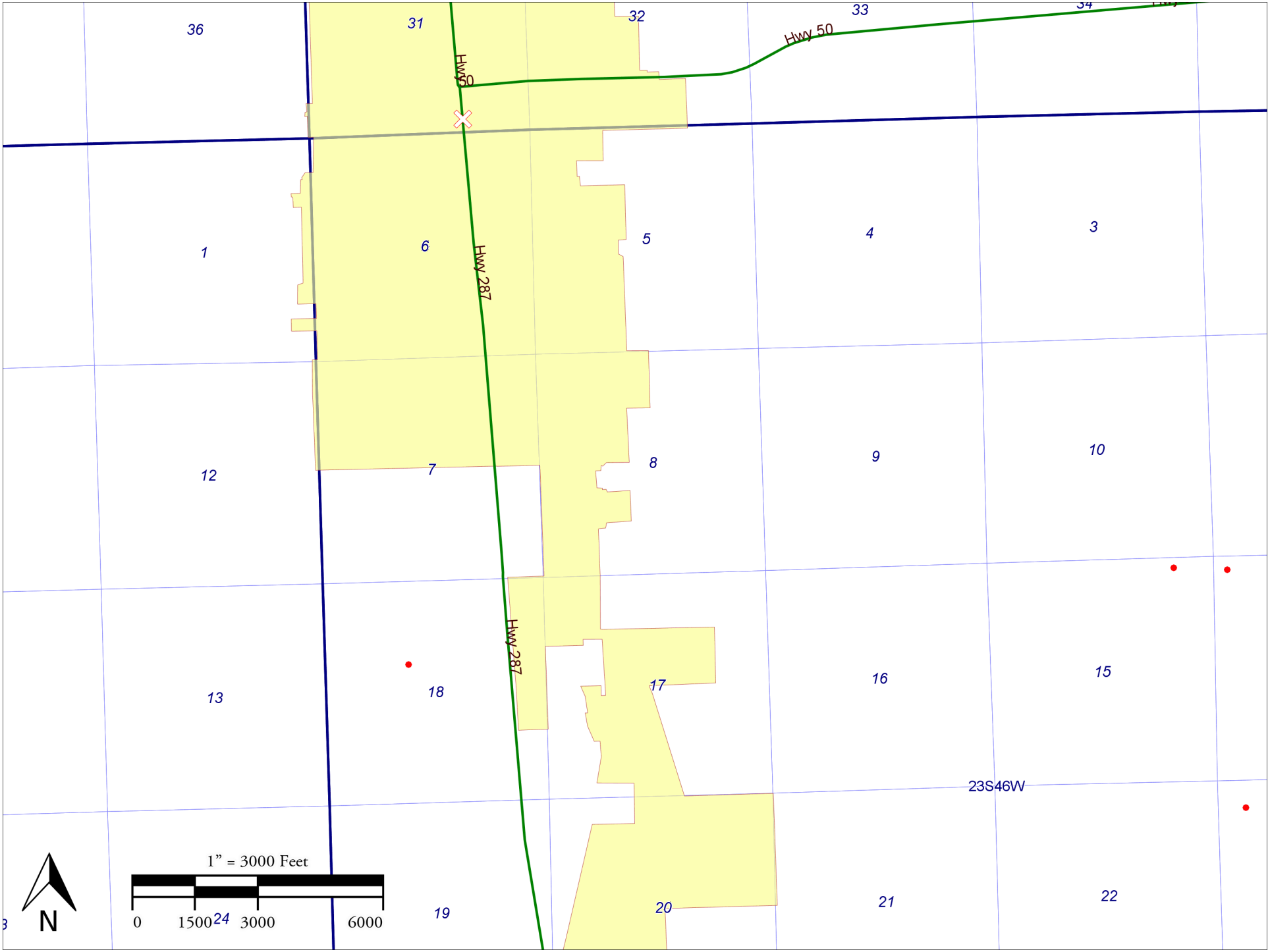
Datum: WGS84

Map produced by the Public Viewer application at www.npms.phmsa.dot.gov

Basemap image © OpenStreetMap contributors

Date Printed: May 06, 2026

CO ECMC


36
31
32
33
Hwy 50
Hwy 50
1
6
Hwy 287
5
4
3
12
7
8
9
10
Hwy 287
13
18
17
16
15
23S46W
19
20
21
22
1" = 3000 Feet
0
1500
3000
6000
N

APPENDIX F

QUALIFICATIONS

SHANNON PARKER
ASSOCIATE CONSULTANT

EDUCATION

- BS Environmental Science, University of Tennessee, Knoxville, Tennessee

CERTIFICATIONS

- CHMM #18271
- OSHA 40-hour HAZWOPER
- OSHA 8-hour Refresher

SUMMARY OF PROFESSIONAL EXPERIENCE

Ms. Parker has worked in the environmental consulting industry since 2000 with a focus on Phase I and Phase II Environmental Site Assessments, subsurface investigations, groundwater monitoring, data management, report preparation, and project coordination.

PROJECT EXPERIENCE

Project experience for Ms. Parker includes:

- **Phase I, gas station facilities, throughout the Southeastern United States** – Ms. Parker performed Phase I ESAs on a large portfolio involving over 60 gas stations. For some of the properties, Ms. Parker identified environmental concerns related to current and historical process including former leaking underground storage tanks and the improper storage of hazardous and petroleum products. IT was determined that a high likelihood existed for the presence of on=site subsurface contamination.
- **Phase I, multi-tenant office building, Denver, CO** – Ms. Parker performed a Phase I ESA for a large, multi-tenant office building. The current and historical activities of the Subject Property did not present an environmental concern; however, the adjacent property had historically been used for manufacturing purposes. The adjacent property was listed on several regulatory databases due to historic operations. Based on the topographic location and regulatory status, the adjacent property was considered a recognized environmental condition.

Ms. Parker has completed over 300 Phase I Environmental Site Assessments including commercial office/retail properties, shopping centers, and industrial properties. Her environmental background includes a detailed understanding of the risks associated with hazardous and regulated materials storage and disposal.

Ms. Parker has also overseen soil and groundwater remediation projects and has assisted with closing out petroleum contaminated sites. Her project management experience includes work plan development, on-site environmental investigation, data evaluation, and technical report writing.

Edna M. Picciolini

National Client Manager

EDUCATION

- B.A. – Environmental Sciences, Northwestern University

CERTIFICATIONS

- US EPA Accredited Asbestos Building Inspector

SUMMARY OF PROFESSIONAL EXPERIENCE

Ms. Picciolini has served as a National Client Manager, Senior Project Manager and Group Leader, overseeing all aspects of Environmental Due Diligence, including Phase I Environmental Site Assessments (ESAs), Phase II ESAs, and Regulatory Compliance Audits. Ms. Picciolini has 22 years of environmental consulting experience. Her responsibilities have included coordinating Phase I ESAs and Industrial Hygiene operations and managing national client accounts for sites throughout the United States, Canada and Mexico. Ms. Picciolini has produced several national client report formats for Phase I ESAs, as well as NEPA reports. She has prepared a Quality Assurance/Quality Control (QA/QC) database to track the report writing performance of internal staff. Her experience includes writing proposals, overseeing project budgets, invoicing, and reviewing Health and Safety Plans, Phase I ESAs, Asbestos and Lead Survey Reports, reviewing and writing Federal Communications (FCC) NEPA Compliance Checklists and FCC Environmental Assessments (EAs), and performing Phase I ESAs, asbestos surveys, mold inspections, hazardous materials surveys and compliance audits. She has been responsible for overall QA/QC of Phase I ESAs, Phase II ESAs, and Asbestos Surveys for multiple clients and portfolios. Ms. Picciolini has performed and managed Phase I ESAs on varied property types including retail shopping centers, commercial office buildings, high-rise structures, medical clinics, medical office buildings, manufacturing sites, industrial/warehouse structures, gas stations, automotive service stations, marinas, retail strip malls, multi-family residential buildings, railroad yards, airports, bulk oil storage terminals, cemeteries, funeral homes, and vacant parcels.

Ms. Picciolini's experience also includes FESOP and Title V air permitting, air emissions inventories, and a thorough knowledge of Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) issues and reform options; Illinois Responsible Property Transfer Act (IRPTA) applicability; Risk Management Planning (RMP); Resource Conservation and Recovery Act (RCRA); Emergency Prevention and Community Right-To-Know Act (EPCRA) regulations; asbestos surveys; mold surveys; hazardous materials surveys, and project management.

Ms. Picciolini has a thorough knowledge of health and safety issues and regulations. She has provided Occupational Safety and Health Administration (OSHA) Asbestos Awareness Training to clients and in-house personnel, and has provided mentoring and training to junior staff. She has successfully managed and/or completed numerous multi-site portfolios within project budgets and under strict

PROJECT EXPERIENCE

Project experience for Ms. Picciolini includes:

- **GMAC Commercial Mortgage Corporation** - Managed many multi-site portfolios of Phase I ESAs including healthcare, and emissions testing facilities throughout the State of Illinois. These projects were performed for re-financing purposes and identified recognized environmental conditions (RECs) associated with these sites. Provided client consultation regarding next steps for Phase II ESAs.
- **Confidential Client** - Managed major telecommunications account that involved over 1,300 projects, including FCC Checklist reports, FCC EAs, Phase I ESAs, and Phase II investigations, including asbestos surveys.
- **Confidential Client** - Managed major telecommunications account that involved over 1,300 projects, including FCC Checklist reports, FCC EAs, Phase I ESAs, and Phase II investigations, including asbestos surveys.
- **GuernseyBel** - Conducted air emissions inventory and completed the Illinois Environmental Protection Agency annual emissions summary report for a regional food topping manufacturer.
- **Confidential Client** - Completed desktop reviews of prior environmental reports, historical record reviews and database reports for 950 properties. Risk analysis of each property was performed, with information summarized in an access database. Calculated worst case environmental liability loss.
- **Confidential Client** - Maintained monthly reporting requirements for an active site remediation system. Activities include submitting wastewater effluent reports in connection with the industrial waste permit for an on-site remediation system.
- **Confidential Client** - Performed compliance reviews for a national drugstore's distribution warehouse facilities and an equipment rental company in Illinois, Wisconsin, and Indiana. Responsibilities included determination of compliance status and developing company-wide compliance manual.
- **Confidential Client** - Prepared EAs pertaining to flood plain, wetland, archaeological, and historical issues. Acted as liaison between local telecommunications clients and United States Army Corps of Engineers, Natural Resources Conservation Service, State Historic Preservation Agency, and local agencies.
- **LaSalle Investment Management** – Managed multiple Phase I ESAs, Asbestos and Lead Surveys, and Phase II ESAs for various properties throughout the US and Canada for purchase and sale. Inspections were performed to current ASTM Standards.
- **Military Housing** - Conducted Mold Surveys in the southeast to support the privatization of base housing.
- **Client Management: Various** - Managed multiple portfolios of Phase I ESAs, Asbestos and Lead Surveys, and Phase II ESAs for various properties throughout the US, Mexico and Canada for purchase, sale and refinances. Inspections were performed to current ASTM Standards. Performed staff training, prepared report formats, project management, staff assignments, report reviews, and client communications throughout the projects. Ensured projects
- **Client Management: Various** - Managed multiple portfolios of Phase I ESAs, Asbestos and Lead Surveys, and Phase II ESAs for various properties throughout the US, Mexico and Canada for purchase, sale and refinances. Inspections were performed to current ASTM Standards. Performed staff training, prepared report formats, project management, staff assignments, report reviews, and client communications throughout the projects. Ensured projects were performed within budget and timelines. Communicated updates to the client and provided consultation regarding next steps. Oversaw Phase II proposals and completion of Phase II ESAs. Analyzed subsurface data to determine if a reported release had occurred and next steps. Prepared or reviewed Health and Safety Plans for each project determining whether various safety issues were adequately addressed for on-site staff performing assessments.

- **Walgreen Co.** – Oversaw Due Diligence Services for a National Retail Drug Chain Account. Duties included training staff, overseeing all reporting, tracking, maintaining, developing, and providing training to the account. Oversaw project proposals, budgets, client contacts and updates, as well as made sure client performance standards were met. Sites were located throughout the US and Puerto Rico.
- **Confidential Client** - Performed a Visual Survey for suspect microbial growth on drywall, which included cuts to drywall throughout the structure. The Survey was performed for an insurance carrier to determine if the moisture infiltration was occurring in several areas, or was isolated to one portion of the building.
- **Equity** - Prepared an Asbestos and Hazardous Material Survey for a defunct power plant. Oversaw basement dewatering, hazardous material identification removal, and asbestos abatement contractors throughout the project, which spanned over one year and was valued at over $3 million in total cost. Oversaw obtaining de-watering permits from the local municipalities, as well as compliance with local, state and federal regulations throughout the project.
- **Lillibridge Healthcare Services, Inc.**- Provided OSHA Asbestos Awareness Training to maintenance personnel and established a Corporate Asbestos Management Plan for a healthcare property management company.
- **Albertson's** - Performed an Asbestos and Hazardous Material Survey for a defunct bakery building slated for demolition. Provided detailed reporting and drawings for asbestos removal cost estimates.

SPECIALIZED EDUCATION
Site Remediation 40 Hour HAZWOPER Training
Construction Safety 10 Hour OSHA Training
Confined Space Training

APPENDIX G

COMMONLY USED ACRONYMS & ABBREVIATIONS

Units	
µg/L	Micrograms per Liter
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Liter

Units	
pCi/L	PicoCuries per Liter
ppb	Parts per Billion
ppm	Parts per Million

Acronyms & Abbreviations	
AACEI	Association for the Advancement of Cost Engineering International
AC	Air Conditioner, or Acre
ACM	Asbestos-Containing Material
ADA	The Americans with Disabilities Act
ADAAG	ADA Accessibility Guidelines
ADJ	Adjoining Site
ADU	Accessory Dwelling Unit
AEI	AEI Consultants
AFUE	Annual Fuel Utilization Efficiency
AHERA	Asbestos Hazard Emergency Response Act
AHU	Air Handling Unit
AIA	American Institute of Architects
Allow	Allowance
ALTA	American Land Title Association
Amp	Amperage, or Ampere
APN	Assessor Parcel Number
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
AST	Aboveground Storage Tank
ASTM	ASTM International
AUL	Activity and Use Limitation
bgs	Below Ground Surface
BOMA	Building Owners & Managers Association
BTEX	Benzene, Toluene, Ethylbenzene, and Xylenes
BTU	British Thermal Unit (measurement of heat)
BTUH	British Thermal Units per Hour
BUR	Built-up Roof System
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CERCLIS	Comprehensive Environmental Response Compensation and Liability Information System
CESQG	Conditionally Exempt Small Quantity Generator
CH	Clubhouse
CO	Certificate of Occupancy
COC	Contaminant of Concern, or Chemical of Concern
COP	Coefficient of Performance
CRA	Construction Risk Assessment
CREC	Controlled Recognized Environmental Condition
CUP	Conditional Use Permit
CWH	Compact Water Heater, or Cold Water Heater
DHW	Domestic Hot Water
DWV	Drainage, Waste, Ventilation
EA	Each
EC	Engineering Controls
ECM	Energy Conservation Measure
EDR	Environmental Data Resources, Inc.
EEM	Energy Efficiency Measures
EER	Energy Efficiency Ratio

Acronyms & Abbreviations	
LBP	Lead-Based Paint
LCP	Lead-Containing Paint
LED	Light Emitting Diode
LEED	Leadership in Energy and Environmental Design
LFCA	Limited Facility Condition Assessment
LLP	Landowner Liability Protection
LQG	Large Quantity Generator
LS	Lump Sum
LUST	Leaking Underground Storage Tank
M	Model
MAP	Multifamily Accelerated Processing
MBH	1,000 BTUs per Hour
MCL	Maximum Contaminant Level
MDP	Main Distribution Panel
MEP	Mechanical, Electrical and Plumbing
MHP	Mobile Home Park
MMI	Modified Mercalli Intensity
MPH	Miles per Hour
MRL	Machine Room-Less
MTBE	Methyl Tertiary Butyl Ether
MTCO2e	Metric Tons of Carbon Dioxide Equivalent
NA or N/A	Not Applicable
ND	None Detected
NESHAP	National Emission Standards for Hazardous Air Pollutants
NFA	No Further Action
NFPA	National Fire Protection Association
NFRAP	No Further Remedial Action Planned
NLR	No Longer Regulated
NOV	Notice of Violation
NPL	National Priorities List
NPV	Net Present Value
NRA	Net Rentable Area
NRI	National Risk Index
O	Occupied
O&M	Operations and Maintenance
OEC	Other Environmental Consideration
OFC	Office
OH&PR / OH&P	Overhead and Profit
OPC	Opinion of Probable Cost
OSHA	Occupational Safety and Health Administration
PCA	Property Condition Assessment
PCB	Polychlorinated Biphenyl
PCE / PERC	Perchloroethylene, or Tetrachloroethylene, or Tetrachloroethene
PCR	Property Condition Report
PE	Professional Engineer
PFAS	Per- and Polyfluoroalkyl Substances

Acronyms & Abbreviations	
EFF AGE	Effective Age
EIFS	Exterior Insulation Finishing Systems
EMF	Electro Magnetic Fields
EMS	Energy Management System
EPA	Environmental Protection Agency
EPDM	Ethylene Propylene Diene Monomer (rubber membrane roof)
ERNS	Emergency Response Notification System
ESA	Environmental Site Assessment
ESG	Environmental, Social and Governance
EUI	Energy Use Intensity
EUL	Estimated Useful Life
EWEM	Energy and Water Efficiency Measure
F	Fahrenheit
FAR	Floor Area Ratio
FCA	Facility Condition Assessment
FCU	Fan Coil Unit
FEMA	Federal Emergency Management Agency
FF&E	Furniture, Fixtures and Equipment
FFHA	Federal Fair Housing Act
FHA	Forced Hot Air, or Fair Housing Act, or Fair Housing Adminitration
FHW	Forced Hot Water
FIRM	Flood Insurance Rate Map
FLS	Fire and Life Safety
FM	Factory Mutual
FOIA	US Freedom of Information Act
FOIL	Freedom of Information Law
FRP	Fiber Reinforced Plastic
FRT	Fire Retardant Treated
FTRP	Fire Retardant Treated Plywood
Gal	Gallon
GFA	Gross Floor Area
GFCI	Ground Fault Circuit Interrupter
GFI	Ground Fault Interrupt (circuit)
GHG	Greenhouse Gas
GIS	Geographic Information System
GPF	Gallons per Flush
GPM	Gallons per Minute
GPNA	Green Physical Needs Assessment
GPR	Ground-Penetrating Radar
GSF	Gross Square Footage
GWB	Gypsum Wall Board
HID	High Intensity Discharge
HREC	Historical Recognized Environmental Condition
HSPF	Heating Seasonal Performance Factor
HUD	Department of Housing and Urban Development
HVAC	Heating, Ventilation and Air Conditioning
IAQ	Indoor Air Quality
IBC	International Building Code
IC	Institutional Control
IM / IR	Immediate Repair
IRR	Internal Rate of Return
ISR	Impervious Surface Ratio
kBTU	Kilo-British Thermal Unit
kGal	Kilogallon
kW	Kilowatt
kWh	Kilowatt Hour

Acronyms & Abbreviations	
PGA	Peak Ground Acceleration
PML	Probable Maximum Loss
POC	Point of Contact
PSF	Pounds per Square Foot
PSQ	Pre-Survey Questionnaire
PTAC	Packaged Through-Wall Air Conditioning (Unit)
PVC	Polyvinyl Chloride
R&M	Repair and Maintain - Routine Maintenance
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RM	Room
ROI	Return On Investment
ROW	Right-of-Way
RP	Responsible Party
RR	Replacement Reserve
RTU	Rooftop Unit
RUL	Remaining Useful Life
SDS	Safety Data Sheet
SEDI	Statement of Energy Design Intent
SEER	Seasonal Energy Efficiency Ratio
SEL	Scenario Estimated Loss
SEMS	Superfund Enterprise Management System
SEP	Statement of Energy Performance
SF	Square Footage, or Square Feet
SIR	Savings to Investment Ratio
SL	Scenario Loss
SP	Subject Property
SQG	Small Quantity Generator
SRA	Seismic Risk Assessment
ST	Short Term
SUL	Scenario Upper Loss
SUP	Special Use Permit
SVOC	Semi-Volatile Organic Compound
SY	Square Yard
TCE	Trichloroethylene, or Trichloroethene
TE	Thermal Efficiency
TPH	Total Petroleum Hydrocarbons
TPHd / TPH-d	Total Petroleum Hydrocarbons (diesel range)
TPHg / TPH-g	Total Petroleum Hydrocarbons (gasoline range)
TPHo / TPH-o	Total Petroleum Hydrocarbons (oil range)
TPO	Thermoplastic Polyolefin Roof Membrane
TRPH	Total Recoverable Petroleum Hydrocarbons
TSD	Treatment, Storage, and Disposal
UBC	Uniform Building Code
USDA	United States Department of Agriculture
USGS	United States Geological Survey
UST	Underground Storage Tank
V	Vacant
VAV	Variable Air Volume Box
VCP	Voluntary Cleanup Program
VOC	Volatile Organic Compound
VSQG	Very Small Quantity Generator
WDO	Wood Destroying Organism
ZAR	Zoning Analysis Report

EXHIBIT O - ALTA SURVEY

TITLE COMMITMENT INFORMATION

THE PROPERTY HEREON DESCRIBED IS THE SAME AS THE PERTINENT PROPERTY AS DESCRIBED IN FIDELITY NATIONAL TITLE INSURANCE COMPANY, COMMITMENT FILE NO.: 00505794-201-T21-ES, WITH A DATE OF OCTOBER 8, 2025.

LEGAL DESCRIPTION

(AS DESCRIBED IN THE TITLE COMMITMENT)

THE LAND REFERRED TO HEREIN BELOW IS SITUATED LAMAR, IN THE COUNTY OF PROWERS, STATE OF COLORADO, AND IS DESCRIBED AS FOLLOWS:

A TRACT OF LAND LYING IN THE SW1/4SW1/4 OF SEC. 16, T.23S., R.46W. OF THE 6TH P.M. BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID SEC. 16 AS MONUMENTED BY A 2-1/2" ALUMINUM PIPE WITH 3-1/4" ALUMINUM CAP MARKED PLS 10102 AND CONSIDERING THE SOUTH LINE OF SAID SEC. 16. (AS MONUMENTED BY A SIMILAR PIPE AND CAP AT ITS EAST END), BEARING N.88°37'43"E. WITH ALL OTHER BEARINGS CONTAINED HEREIN BEING RELATIVE THERETO; THENCE N.88°37'43"E., ALONG THE SOUTH LINE OF SAID SEC. 16, A DISTANCE OF 199.89 FEET TO A POINT ON THE EAST RIGHT-OF-WAY LINE OF THE LAMAR ALTERNATE TRUCK ROUTE AS FOUND IN DOCUMENT RECORDED AT RECEPTION NO. 448656 OF THE PROWERS COUNTY RECORDS AND THE TRUE POINT OF BEGINNING; THENCE N.0°21'54"W., ALONG SAID EAST RIGHT-OF-WAY LINE, A DISTANCE OF 1143.20 FEET; THENCE N.88°37'43"E., 1143.20 FEET; THENCE S.0°21'54"E., 1143.20 FEET TO A POINT ON THE SOUTH LINE OF SAID SEC. 16; THENCE S.88°37'43"W., 1143.20 FEET TO THE TRUE POINT OF BEGINNING. IN THE COUNTY OF PROWERS, STATE OF COLORADO.

FOR INFORMATIONAL PURPOSES: TAX ID NO.: A PORTION OF 000085100

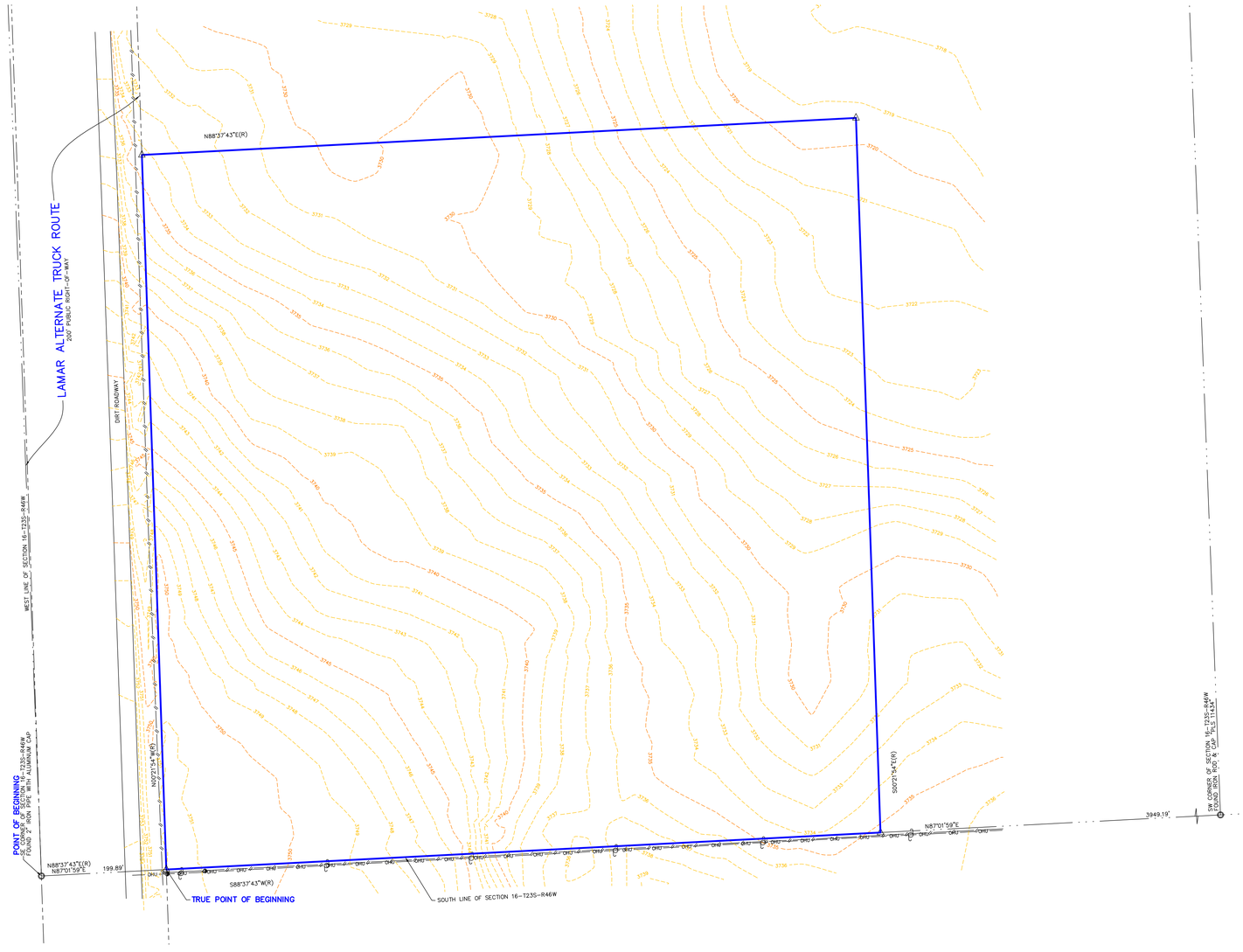
NOTES CORRESPONDING TO SCHEDULE B

THERE ARE NO SURVEY RELATED SCHEDULE BII EXCEPTIONS TO ADDRESS

STATEMENT OF SIGNIFICANT OBSERVATIONS

THE STATEMENTS BELOW CONTAIN OPINIONS BASED ON FIELD OBSERVATIONS AND MAY OR MAY NOT COINCIDE WITH THE FACTS RELATIVE TO MATTERS OF PUBLIC RECORDS, ACTUAL USE OF THE PROPERTY, USE OF IMPROVEMENTS TO THE PROPERTY, OR ACTUAL PROPER ACCESS.

NONE APPARENT



1" = 100'
GRAPHIC SCALE
0 50 100 200

LEGEND

FOUND MONUMENT	UTILITY POLE
COMPUTED POINT (NO MONUMENT)	GUY ANCHOR
N/F NOW OR FORMERLY	OHU OVERHEAD UTILITY LINE
(R) RECORD	BARBED WIRED FENCE
	RIGHT-OF-WAY LINE
	EASEMENT LINE (COLOR AS SHOWN)
	SETBACK LINE
	SUBJECT PROPERTY LINE

VICINITY MAP

NOT TO SCALE
MAP DATA © 2022 GOOGLE



SHEET 1 OF 1

LAND AREA

1,306,705 SQUARE FEET

29.998 ACRES

PARKING

REGULAR= 0
HANDICAP= 0
TOTAL= 0

FLOOD INFORMATION

SOURCE: FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) WWW.MC.FEMA.GOV
DETERMINATION METHOD: GRAPHICAL PLOTTING ONLY.
MAP NUMBER: 08099C0336C & 08099C0350C
EFFECTIVE DATE: 04/19/2016
ZONE "X" – MINIMAL RISK. AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.

BEARING BASIS

BEARING ARE BASED ON TRUE NORTH PER GPS OBSERVATION USING COLORADO STATE PLANE SOUTH ZONE, NAD 83.

GENERAL NOTES

1. NO UNDERGROUND UTILITIES ARE SHOWN ON THIS SURVEY, ONLY ABOVE GROUND VISIBLE EVIDENCE OF UTILITIES ARE SHOWN. WITHOUT EXCAVATION UTILITY INFORMATION MAY BE INCOMPLETE, INACCURATE AND UNRELIABLE.
2. UNLESS PROMINENTLY NOTED HEREON, ALL STATEMENTS AND OR CERTIFICATIONS RELATING TO IMPROVEMENT STRUCTURES OF ANY TYPE, UTILITIES, OR NON-RECORD USE ARE BASED SOLELY ON OBSERVABLE ABOVE GROUND EVIDENCE.
3. THE SUBJECT PROPERTY HAS PHYSICAL ACCESS TO LAMAR ALTERNATE TRUCK ROUTE (COUNTY ROAD 8), A DEDICATED PUBLIC STREET OR HIGHWAY. THIS STATEMENT IS BASED ENTIRELY ON FIELD OBSERVATIONS AT THE TIME OF SURVEY. THE LOCAL GOVERNING AUTHORITY SHOULD BE CONSULTED FOR ANY QUESTIONS CONCERNING THE VALIDITY OR RIGHTS OF THIS USE.
4. BASED ON LIMITED AND RUDIMENTARY SURFACE OBSERVATIONS, THERE DOES NOT APPEAR TO BE ANY CEMETERIES AND OR BURIAL GROUNDS ON SITE. HOWEVER, A QUALIFIED PROFESSIONAL IN THIS FIELD WAS NOT CONSULTED FOR ABSOLUTE CONFIRMATION.
5. THERE IS NO OBSERVABLE EVIDENCE OF EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS AT TIME OF SURVEY.
6. WITHOUT EXPRESSING A LEGAL OPINION THE PARCELS CONTAINED IN THE LEGAL DESCRIPTION ARE CONTIGUOUS WITHOUT ANY GAPS, GORES OR OVERLAPS.
7. BUILDING AREAS BASED ON THE FOOTPRINT.
8. NO INFORMATION WAS PROVIDED TO THE SURVEYOR TO INDICATE PROPOSED CHANGES IN STREET RIGHT-OF-WAY. NO EVIDENCE OF RECENT STREET OR SIDEWALK REPAIRS WAS OBSERVED AT TIME OF SURVEY.
9. THIS SURVEY DOCUMENT IS NOT VALID WITHOUT THE AUTHORIZED SEAL AND SIGNATURE OF A PROFESSIONAL SURVEYOR. IN ADDITION, ANY CHANGES TO THIS SURVEY DOCUMENT BY OTHER THAN THE PROFESSIONAL SURVEYOR NAMED HEREON INVALIDATES THE SURVEY DOCUMENT.
10. TITLE WORK FOR THIS ALTA SURVEY WAS FURNISHED TO AEI CONSULTANTS BY THE CLIENT. NO TITLE SEARCH WAS PERFORMED BY AEI CONSULTANTS. AEI CONSULTANTS DOES NOT ACCEPT ANY LIABILITY FOR ERRORS, OMISSIONS OR DEFICIENCIES DUE TO INACCURACIES IN THE TITLE WORK.
11. ALL DISTANCES ARE HORIZONTAL GROUND (U.S. SURVEY FEET).
12. IN REGARDS TO OPTIONAL TABLE A ITEM 8 AND BY SURFACE OBSERVATIONS MADE BY NON-QUALIFIED PERSONNEL ONLY. THERE DOES NOT APPEAR TO BE ANY OBSERVABLE REFUSE AREAS OR DUMPSITES AT TIME OF SURVEY.
13. ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU DISCOVER SUCH DEFECT. IN NO EVENT MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS AFTER THE DATE OF CERTIFICATION SHOWN HEREON.
14. ELEVATIONS SHOWN HEREON ARE BASED ON OPUS SOLUTION PER GPS OBSERVATION, NAVD 88 DATUM.
15. LOCATION OF IMPROVEMENTS AND TOPOGRAPHIC INFORMATION WAS ONLY PERFORMED ON A PORTION OF SUBJECT PROPERTY PER CLIENT'S REQUEST.

ALTA/NSPS LAND TITLE SURVEY

AEI JOB #497462
LAMAR COMMUNITY SOLAR PROJECT
EAST OF HIGHWAY 385 AND SOUTHEAST OF HIGHWAY 50
LAMAR CITY, COLORADO
PROWERS COUNTY

SITE PICTURE



PERFORMED BY:

AEI CONSULTANTS
2500 CAMINO DIABLO
WALNUT CREEK, CA, 94597

TELEPHONE: 925.746.6000
EMAIL: SURVEYS@AEICONSULTANTS.COM

DATE	REVISION HISTORY	BY

SURVEYOR JOB NUMBER: 497462
SCALE: 1" = 100'
DRAWN BY: UB
APPROVED BY: DEJ

ALTA/NSPS LAND TITLE SURVEY CERTIFICATION

TO: FIDELITY NATIONAL TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2021 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 5, 7(a), 7(b)(1), 7(c), 8, 9, 11(b), 13, 16, AND 17 OF TABLE A THEREOF. THE FIELDWORK WAS COMPLETED ON 10/27/2024. DATE OF PLAT OR MAP: 11/10/2025.

PRELIMINARY

REGISTERED SURVEYOR: DON E. JOHNSON DATED
PROFESSIONAL LAND SURVEYOR NO.: 34593
STATE OF COLORADO
(FOR THE FIRM AEI CONSULTANTS)

EXHIBIT P - REVEGETATION & WEED MANAGEMENT PLAN



Lamar DG Solar Site - Vegetation, Weeds, and Soil Management Plan

PROWERS COUNTY

DEVELOPED FOR SANDHILLS ENERGY

PRESENTED BY:

H2 ENTERPRISES

POWERED BY HUWAI

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VEGETATION, WEEDS, AND SOIL MANAGEMENT PLAN
LAMAR SOLAR SITE

The purpose of this Vegetation, Weeds, and Soil Management Plan (VWSMP) is to provide guidelines for site and soil preparation, native and naturalized seed installation, and establishment and management of pollinator-friendly vegetation prior to, during, and following construction at the Powers County Municipal Solar Site Project (Project) in Lamar, Colorado. The proposed project area consists of approximately 33 acres.

This VWSMP includes required activities during and after the construction period, which involve earthwork and solar infrastructure installation. It will be the Engineering, Procurement, and Construction (EPC) Contractor's responsibility, if utilized, to adapt the VWSMP as necessary to meet site and environmental conditions. If any changes are made to the approved VWSMP, the changes need to be reviewed and accepted by Sandhills Energy prior to implementation.

The overall goal of VWSMP programs is to develop site-specific, environmentally sensitive, and cost-effective solutions for meeting the goal of establishing and maintaining native grass and forb vegetation as required by the Construction General Permit (CGP) and Powers County (County). This integrated plan will require observing the conditions of the site and determining the appropriate maintenance techniques so that the Stormwater Pollution Prevention Plan (SWPPP), CBP, and County requirements are achieved. This document will help guide soil and vegetation handling during the construction phase. In addition, it should be used to assist the Operations and Maintenance (O&M) division in deciding how to manage newly seeded areas and existing vegetation in a way that promotes a healthy, self-sustaining native grass and flowering plant habitat. The goal is to reduce maintenance inputs over time by promoting, improving, and sustaining the health and diversity of the native grass and flowering plant areas while ensuring optimum power production. In addition, supporting a healthy plant and soil environment through the life of the Project can allow for better reclamation success after the decommissioning phase.

The guidelines provided in this plan should be utilized as a tool to help identify and effectively manage sensitive areas to provide long-term, sustainable vegetation and habitats. Without implementing the monitoring and maintenance guidelines discussed in this VWSMP, the likelihood for successful native grass and flowering plant species establishment and longevity is reduced. When performed correctly, the long-term maintenance needs for existing and permanent native plant communities are less than traditional solar maintenance needs.

Objectives

One of the primary goals during and after the construction phase is to preserve the topsoil and existing vegetation. The establishment phase, typically years one through five, for native grass and forbs is crucial. Selecting appropriate vegetation and controlling invasive weeds are critical management approaches. Invasive species thrive in disturbed soils, so targeted control methods may be used to support native plant growth. The VWSMP aims to:

- Utilize best management practices to preserve soil and vegetation during the construction phase and through final completion.
- Establish and maintain installed vegetation within arrays and buffers while maintaining desirable existing vegetation.
- Control noxious and invasive plant species.
- Protect and enhance natural areas within and adjacent to facility fencing.
- Reduce maintenance events over the project's lifetime.
- Maintain clearance at or below leading-edge height for solar panels and electrical equipment.

1.0 EXISTING SITE CONDITIONS

The Project area is located southeast of Lamar, Colorado in the Upper Arkansas Valley Rolling Plains Major Land Resource Area. The dominant soil type in the Project area is sandy to loamy sand, which is excessively drained with very rapid permeability. The average annual precipitation in the resource area can range between 10 to 20 inches, with most precipitation occurring April and September; however, annual precipitation can vary from year to year and extended dry periods are common (Web Soil Survey, Natural Resources Conservation Service (NRCS)). The dominant existing vegetation observed on site includes sand dropseed (*Sporobolus cryptandrus*), yucca (*Yucca* spp.), kochia (*Kochia scoparia*), and Russian thistle (*Salsola tragus*).

Comprehensive soil samples were collected from the site on May 15, 2026, to identify soil suitability parameters associated with physical and chemical properties. These parameters are used to determine if supplemental nutrients or amendments are necessary for establishing seeded vegetation. Overall, the soil on site is moderately alkaline, with an average pH of 7.9, and organic matter is very low (0.5-0.56%). Macronutrient concentrations for nitrogen and phosphorus are low to very low, while potassium levels are adequate. These conditions are considered characteristic of these native lands which do not receive sufficient moisture or supplemental nutrients and have slow plant material decomposition to support nutrient cycling. Soil sample results are provided in Appendix B.



Figure 1. Lamar DG solar facility location indicated by yellow pin and red outlined polygon.

2.0 GUIDELINES FOR SITE MONITORING

Monitoring soil and vegetation conditions is critical during the construction phase and throughout the establishment phase following construction completion. Sites should be regularly monitored; at least three times per year during the first three years (spring, summer, and late summer) and at least once per year after the fourth year. The Project should be monitored for vegetation height, grass maturity/seed production, invasive weed presence, and the health and abundance of desirable plant species. In addition, soil erosion issues should be identified as these issues can be a direct correlation to poor vegetation cover and can hinder productive power production.

2.1 Data Collection

Site monitoring can be conducted in conjunction with routine construction activities throughout development and during the maintenance/establishment years. Monitoring shall occur a minimum of three times per year; in the spring, summer, and late summer. The following information should be recorded during site monitoring visits:

1. Type of weed species present.
2. Abundance of weeds present.
3. Type of desirable species present.
4. Abundance of each desirable species and maturity stages.
5. Location of areas that need remedial seeding.
6. Vegetation heights of desirable and undesirable species.
7. Growth stage of both desirable and invasive weed species (blooming or not blooming).
8. Measure soil health indicators, such as organic matter content, soil moisture content, and soil aggregation.

Individuals performing the monitoring should be:

1. Trained in identifying common native grass and flowering plant species (and specific species in the seed mix).
2. Trained in identifying common invasive and noxious weed species.
3. Familiar with growth habits and aggressiveness of common invasive weed species and native vegetation.
4. Trained in identifying soil and stormwater erosion disturbance issues.

3.0 SOIL MANAGEMENT AND PERMANENT VEGETATION ESTABLISHMENT

The Contractor is responsible for implementing the vegetation establishment parameters described below and shall oversee responsibilities through construction completion or otherwise determined by Sandhills Energy. Proper soil and vegetation handling and management throughout all construction activities are crucial for preserving the land and achieving long-term vegetation establishment success, especially in this arid, sandy environment. Efforts should be made to minimize soil disturbance across the site during grading and solar infrastructure installation. This will help to preserve existing vegetation and minimize dust and soil displacement across the site.

- Throughout the entire construction and vegetation installation and establishment phases, vehicle traffic should be restricted to designated access roads and follow the same orientation as the solar array layout to minimize vegetation and soil disturbance and reduce the potential for erosion during the Project's operational life.
- Vehicle and equipment traffic should be minimized across the site to the greatest extent possible.
- It is recommended that a travel plan be prepared for construction and maintenance crews to follow.
- Laydown yards and work areas should be clearly marked, and equipment should be stored within these areas.

3.1 Soil Management

For areas where grading activities and other construction disturbances will occur, it is anticipated that revegetation will be needed using a site-specific permanent seed mix. The detailed seedbed preparation and seeding methods should be executed to achieve desirable vegetative ground cover following construction completion.

3.1.1 Topsoil Management

The upper-most layers of soil, or topsoil, have the highest levels of nutrients, organic matter, microbial activity, and other valuable characteristics that are critical for establishing permanent vegetation following construction activities. Protecting the topsoil (the top 4-8 inches) prior to construction activities, especially where grading activities are planned, is pertinent.

Salvage and replacement of topsoil prior to grading activities can allow for work to be completed without the loss of quality soil for seeded vegetation mixes. It is important to note that mixing the organic, topsoil, and subsoil horizons reduces organic matter concentration and breaks down beneficial soil structure in the topsoil layer, resulting in unsuccessful revegetation.

Topsoil delineation is recommended to determine approximate topsoil depths that need to be separated from the sub-soil horizon. Delineation is done by determining differences in color, texture, and other properties. Once depths are determined, topsoil segregation should be done to the specified depth and stockpiled adjacent to working areas to minimize transport and ensure that the topsoil is returned to the same location it was removed. Given the sandy soil conditions and the arid environment, topsoil depths may be minimal on site. However, the organic material present in the upper layer can contain essential nutrients and plant residue; therefore, it is recommended that topsoil be salvaged to a minimum depth of four inches.

Topsoil stockpile heights should not exceed the specifications provided in the Project's SWPPP to help preserve soil properties and healthy microbial communities, while minimizing erosion potential. If topsoil remains stockpiled for 14 days or longer, the pile(s) need to be temporarily stabilized with either vegetative or non-vegetative stabilization BMPs. The Contractor is responsible for ensuring proper stockpile protection and monitoring.

Soil Compaction

- For areas that were graded or used as a laydown yard, subsoil de-compaction may be necessary to alleviate compacted soil layers to allow for better root penetration and water infiltration.
- The sandy soil on site is less prone to soil compaction; thus, de-compaction efforts may not be required. However, compaction testing using a soil penetrometer should be done as required by the SWPPP to determine if it will be needed.
- If subsoil compaction occurs, a parabolic plow, disk, or equivalent equipment, is recommended to reduce soil compaction and improve root elongation and drainage.
- Once grading and de-compaction are complete, topsoil shall be replaced over the top of prepared subsoil. Topsoil shall be spread in a manner that meets the civil engineering requirements while ensuring the top layer is not compacted; thus, designated travel paths should be required for vehicles and equipment to keep disturbances minimal.

3.1.2 Site Preparation

Site preparation includes undesirable vegetation eradication, fertilizer/amendment application, and creating a firm, but friable soil surface for enhanced soil-to-seed contact. Site preparation needs will be area-specific to account for areas that were graded and topsoil was replaced or for areas left undisturbed but require herbicide application or mowing. It will be the Contractor's responsibility for assessing the site(s) to determine preparation activities, which will ultimately be determined by the timing of the end of construction and installing the permanent seed mix.

Invasive Weed Control

- Prior to installing permanent vegetation, existing vegetation will need to be recorded and identified for noxious and invasive plant species. The Colorado Noxious Weed Laws and Species List (Appendix A) shall be reviewed and implemented to provide appropriate guidelines for managing any noxious species on site. Powers County shall be consulted to determine if there are additional species, or more stringent control measures than provided by the State.
- Site-wide mowing may be necessary depending on site conditions and plant maturity stages at the time of seed installation. Mowing invasive plant species should be done before plants produce seed. Mowing will help to remove above ground vegetative material and help prevent plants from producing seeds; however, herbicide applications are preferred, if treatment timing will result in effective control. If mowing is conducted, vegetation should not be cut below 6 inches to help protect the root crowns of desirable, native vegetation.

- Broadcast non-selective, non-residual herbicides can be applied to control undesirable vegetation for areas that will be seeded. Applications should be prioritized as spot-treatments, if possible, and should be used in addition to other control methods, if applicable. Herbicides with minimal to no soil residual are recommended if seed installation is to follow within 30 days; however, label directions need to be followed for accurate planting intervals.
- Further guidelines for herbicide application techniques and requirements are provided in the "Chemical Control" section.

Seedbed Preparation

- Prior to installing temporary or permanent vegetation, a proper seedbed needs to be created to ensure optimal soil-to-seed contact during seeding.
- Seedbed preparation activities will be determined at the end of ground disturbing activities and/or previous site conditions for areas that are left undisturbed. For areas that will not be graded, preparation may still be required to manage existing vegetation, soil stabilization, and other site-specific conditions.
- In arid, sandy soil environments, it is important to provide additional measures to build soil structure and stabilization for when native grass and forbs are drill-seeded. The following recommendations consider soil conditions once grading activities are complete and prior to solar infrastructure installation.

    - If site conditions allow, it is recommended that corn stalks be uniformly spread at 4 to 5 tons per acre and disked into the soil to incorporate the corn stalks and provide ground cover, organic matter, and a more stable seedbed for seed installation.
    - Cornstalks are an ideal material source as they provide optimal soil structure to sandy soils for drill-seeding. Organic material from the cornstalks will help to increase organic matter and provide structure to the soil, serving as a soil organic amendment and stabilization mechanism.

- The construction sequence schedule will dictate some of the seedbed preparation recommendations, including whether corn stalks can be utilized. If solar infrastructure is in place prior to seed installation, the corn stalks may not be an option as the application process can cause damage to solar infrastructure.
- It is important to consider the limited rainfall and high invasive weed pressure on site when determining what type of, or whether fertilizer and/or amendments are necessary. Soil sample results indicate the soils have limited organic matter and available plant nutrients, therefore, it is recommended to apply a slow release fertilizer with nitrogen, phosphorus, and potassium at a rate of 600 pounds per acre. A slow-release fertilizer should provide gradual nutrient availability and organic material to support seeded vegetation growth while minimizing excessive immediately available nitrogen that may promote competitive weedy species growth.
- If fertilizer is utilized, it should be broadcast over the incorporated cornstalks/mulch.

Seedbed preparation activities and locations should be tracked using a GPS application for project reporting. Details should include location of undesirable plant species, locations for mowing and/or disking, and any other additional information.

3.1.3 Seed Installation

A temporary cover crop (Table 1) should be installed where temporary stabilization is required to meet SWPPP vegetation cover compliance. Temporary plant species germinate faster and expedite soil stabilization. Prior to installation, appropriate seedbed preparation shall be done as described in section 3.1.2. Following final construction completion, it is recommended to install the permanent seed mix. A nurse crop may be added if there is minimal ground cover from the previously installed temporary cover crop or native vegetation. Nurse crop species serve the same purpose as a cover crop; however, the seed

application rates are reduced to minimize resource competition with permanent seeded species. Nurse crop additions are addressed in section 3.1.4.

Table 1. Temporary cover species.

Common Name	Scientific Name	Nurse Crop #PLS/acre	Cover Crop #PLS/acre
Spring Temporary Seed Mix			
Spring Oats	*Avena sativa*	5.0	10.0
Annual Ryegrass	*Lolium multiflorum*	1.0	2.0
Winter/Dormant Temporary Seed Mix			
Winter Wheat	*Triticum aestivum*	8.0	15.0
Annual Ryegrass	*Lolium multiflorum*	1.0	2.0

Dormant and spring season seeding windows for perennial grass and flowering plants are preferred (Table 2). These species often require specific conditions for germination; therefore, installing seeds within the recommended seeding windows is important for achieving successful germination. In this region, the dormant season is preferred over the spring seeding window. This can allow time for winter moisture to build up in the soil and be readily accessible for seeded species once soil temperatures are warm enough for germination. Seeding should not be done when excessive soil moisture prevents equipment from properly operating. It is not recommended to seed in the summer months due to the hot and dry climate that can result in poor establishment or premature seedling death. Given the arid, drought conditions, acceptable establishment may require multiple growing seasons, and supplemental seeding may be necessary.

Table 2. Seed installation windows.

Optimal Seeding Windows	
Spring	February 1 - March 15
Fall	October 1 - December 15 or ground freezing

Seeding is often most successful when using a native grass seed drill, however, broadcast seeding is a suitable alternative for sites that do not allow access with a drill seeder, such as steep hills, rocky soils, or solar infrastructure. If using a broadcast method, the recommended seed mix should be double the drilling rate, although drill seeding is the recommended method for seeding. A drill seeder places the seed into the soil at a uniform depth and can typically be used on slopes less than 15 percent. The typical planting depth is approximately 1/8” to 1/4” for native grass and forb species. Native grass drills should be equipped with multiple seed boxes to account for diverse types of seed (fluffy/lightweight seed, small/dense seed). Drills should also have double-disc row openers to create a row for seed placement and a wheel press to help move and firm the soil over the seed.

3.1.4 Seed Mixes

A permanent seed mix consisting of rhizomatous and bunch-forming warm season grasses, along with legume species commonly adapted to the southern Colorado region, is provided in Table 3. The selected species are characterized by lower mature growth heights for compatibility with solar facility operation requirements, while minimizing the need for long-term vegetation management. In addition to meeting height constraints, the mix is designed to provide persistent, sustainable ground cover once established. Selected grass species are compatible to this region due to their adaptability to semi-arid conditions, including tolerance to low precipitation, periodic drought stress, sandy soil types, and minimal nutrient

availability. The combination of rhizomatous and bunchgrass species will promote lateral ground cover and vertical root development for adequate soil stabilization. The legume species will further contribute to soil health benefits through nitrogen fixation, which can help support long-term sustainability for the plant community.

For areas that need quick ground cover, such as bare ground areas, slopes, or soils prone to erosion, a nurse crop shall be added to the permanent seed mix. A nurse crop, such as winter wheat or oats (Table 1), will provide temporary ground cover while permanent vegetation establishes.

Table 3. Lamar DG permanent native and naturalized seed mix.

Common Name	Scientific Name	# PLS/acre	PLS/sq ft	% of Mix	Average growth height (in)
Blue Grama	*Bouteloua gracilis*	0.38	7	18%	12
Sideoats Grama	*Bouteloua curtipendula*	1.37	6	15%	18
Purple Threeawn	*Aristida purpurea L.*	0.04	4	11%	12
Little Bluestem	*Schizachyrium scoparium*	0.80	5	12%	24
Western Wheatgrass	*Pascopyrum smithii*	1.27	3	8%	24
Sand Dropseed	*Sporobolus cryptandrus*	0.06	8	19%	18
Bottlebrush Squirreltail	*Elymus elymoides*	0.91	4	10%	18
Red Clover	*Trifolium pratense*	0.44	2.8	7%	10
Total	--	**5.3**	**40**	**100%**	

Quantities for each species are provided in pounds of pure live seed (PLS). Seed mixes shall be approved by Sandhills Energy, Powers County, and other stakeholders prior to seeding activities to ensure species are suitable for the environment and project objectives. If packaged seed needs to be stored for any amount of time, seed shall be stored in a manner that minimizes exposure to heat, moisture, or other conditions that could deteriorate seed viability or cause germination before installation. Seeding activities should be tracked with a GPS application to provide working maps throughout the duration of the project.

3.1.5 Ground Stabilization

Straw mulch and crimping are beneficial for protecting recently seeded areas as it provides protection for seeds and soil during the establishment phase. If deemed necessary, mulch should be uniformly applied over recently seeded areas at a rate of 1.5-2 tons per acre. To prevent mulch, soil, and seeds from blowing or washing away, crimping should immediately follow to prevent off-site movement.

4.0 VEGETATION MANAGEMENT TECHNIQUES AND GUIDELINES

Management for installed vegetation and invasive plant species should be executed throughout the construction and establishment phase. Monitoring and controlling undesirable plants and weeds are critical to establishing and maintaining a functioning and sustainable permanent vegetation stand and should be conducted during the construction and post-construction phases to meet Project objectives using proper management techniques. Site assessments will help determine the safest, most efficient, and cost-effective method. There are several methods for managing desirable vegetation and controlling

weeds. The following techniques should be considered as part of the maintenance and monitoring phase, which are further outlined in the following sections.

1. Minimize spreading of invasive and noxious weeds.
    a. Clean equipment regularly, especially after moving through areas known to have invasive and noxious weeds (Best Management Practice).
    b. Limit traffic through areas known to have invasive and noxious weeds (Best Management Practice).
    c. Mow prior to invasive/noxious weeds forming flowers and viable seeds (Mechanical Control).
2. Control invasive weeds and Colorado listed noxious weeds (Appendix A).
    a. Monitor sites to provide early detection and control of invasive and noxious weeds. It is critical to native grass and forb management (Best Management Practice).
    b. Utilize spot spraying, when possible, to chemically control weedy species in and around panels, inverters, and combiner boxes instead of broadcast spraying (Best Management Practice and Chemical Control).
3. Target/spot treatments for invasive and noxious weeds.
    a. Employ weed management techniques only in areas with weed infestation (Best Management Practice).
    b. Avoid blanket herbicide applications in areas with desirable plants (Chemical and Best Management Practice).
    c. Accurately time all chemical and mechanical practices to reduce invasive and noxious weeds while promoting desirable plant propagation (Best Management Practice).
4. Control weeds before flowering.
    a. Control methods are more effective on younger plants (Best Management Practice).
    b. Less harmful to native grass prairie and native pollinator plant species (Cultural Practice).
5. Use registered herbicides according to label.

4.1 Mechanical Management for All Vegetation

Mechanical control can be highly effective in areas where desirable species are present. Mowing is one of the most effective and preferred strategies for managing weeds during the permanent vegetation establishment period. Mowing physically cuts undesirable weeds, which can weaken the plant and prevent or minimize seed production, helping prevent spreading. During the establishment period, areas that were seeded may need to be mowed to manage weedy species, but to also maintain vegetation heights. Several guidelines should be considered for mowing:

- Mow before weed species produce flowers and seed heads.
- Mow before vegetation (seeded vegetation and weedy species) reaches a maximum height of 18 inches. Due to the arid region, vegetation growth may be restricted; thus, mowing frequencies may be limited to one or two events per growing season and may be focused on managing weed species. Selective mowing to focus on areas with dense weed populations is recommended to prevent any negative impacts to small or stressed desirable vegetation.
- Do not mow areas to less than 6 inches during the perennial growing season.
- If mowing is needed at the end of the season, a late-fall mowing event is recommended to allow time for perennial grasses to produce mature seed. This will typically occur in late summer or fall, depending on the species and site conditions.
- If undesirable, weedy species populations are dense, taller than 18 inches, or are flowering, it is recommended that plants be mowed.

4.2 Chemical Control – Invasive Plant Species

Undesirable and noxious weeds can be effectively controlled by chemical methods using herbicides. Herbicide use may be the preferred method at this location since chemical control for the primarily broadleaf weed species (i.e. kochia and Russian

thistle) within the native grass community can be an effective way to suppress weeds and help promote native grass seed production. In addition, for areas where vegetation is not desired (i.e. perimeter fence lines, inverter pads, other electrical equipment), utilizing chemical control will allow for safer and more efficient energy production. The following guidelines should be implemented:

1. Use selective herbicides when other techniques, such as mowing, are ineffective or impractical.
2. Use only registered herbicides.
3. Apply according to product label and adhere to the Environmental Hazards section on label.
4. Choose products with low or no toxicity to bees.
5. Use the lowest effective pesticide application rate to control the target pest.
6. Use buffer zones between areas of pesticide application and sensitive species and habitats.
7. Applicators should be trained in the identification of both desirable and undesirable species and need to be licensed in the state of Colorado as a Pesticide Applicator/Operator, depending on local or company regulations.

4.2.1 Methods of Chemical Control

1. Broadcast herbicide treatment.
    a. With a backpack, hand, or UTV mounted tank sprayer, apply appropriate selective herbicide(s) for weed species identified in large swaths containing primarily weeds.
    b. Avoid areas with desirable plants.
2. Spot herbicide treatment.
    a. Spray isolated weed plants mixed among desirable plants to prevent spreading.
    b. Ensure adequate coverage by coating the entire plant.

4.3 Herbicide Options

The recommended herbicides provided in Table 4 are based on the species observed at the time of the site visit. Additional species may establish throughout the growing season, which may require additional herbicides to be considered for optimal control. The County should also be consulted for herbicide recommendations and timing.

Table 4. Invasive weeds and herbicide control recommendations.

Common Name	Scientific Name	Herbicide Options	Treatment Timing	Considerations
Kochia	*Kochia scoparia*	Dicamba, 2-4,D, fluroxypyr	Mid-spring before plants reach 6 inches tall	Optimal control when kochia and Russian thislte plants are actively growing. In seeded areas, do not apply before native grasses reach 2-3 leaf stage. Wait at least 30 days after spraying to seed in treated areas.
Russian thistle	*Salsola tragus*	Dicamba, 2-4,D	Mid to late-spring before plants reach 6 inches tall	
Kochia and Russian thistle		Glyphosate	Mid-spring before plants reach 6 inches tall	Non-selective, no residual herbicide. Control weeds in areas with no desirable vegetation present to preserve ground cover. Wait at least 5-7 days after spraying to seed in treated areas.

4.4 Best Management Practices

Best Management Practices (BMPs) involve education and implementing various control methods at the correct time and avoiding practices that harm native grass and/or spread invasive weeds. BMPs should always be followed, during and after the construction phase. These practices include the following:

1) Minimizing traffic into and out of areas with invasive and noxious weeds.
2) Monitoring to identify weeds prior to becoming a significant problem.
3) Educating weed management professionals to alternative weed management options.
4) Cleaning equipment after traveling through known areas with invasive and noxious weed populations.
5) Allowing native plant populations to propagate and spread.

5.0 VEGETATION MONITORING AND MAINTENANCE
POST-CONSTRUCTION AND ESTABLISHMENT PHASE: YEARS 0-3

During the post-construction establishment phase, especially in the first year after seed installation, monitoring will be critical for ensuring seeded grasses successfully establish, weedy species are timely managed, and desirable vegetation is preserved and managed properly. Site inspections should be conducted on a regular basis to provide timely management recommendations and execute action steps to ensure that vegetation establishment and current vegetation will meet performance standards set by CGP and SWPPP requirements.

5.1 Site Monitoring

Sandhills Energy will be responsible for hiring a qualified third-party vegetation management professional to conduct monitoring and management throughout the construction and post-construction phases. Throughout construction and during the first three years after construction completion, the site should be evaluated at least three times throughout the growing season.

- Early Spring (April/early-May)
- Early Summer (early-June)
- Late Summer (mid to late-August)

Site evaluations should be done by a qualified environmental professional or trained individual who is familiar with invasive and native species identification. The Project should be monitored for vegetation height maintenance, invasive weed presence, and the health and abundance of seeded plant species. In addition, soil erosion issues should be identified as these issues can make establishment a greater challenge and can be a direct correlation to poor native vegetation cover. Additional monitoring items may be added, as needed, once monitoring activities are underway. Detailed site assessments will help make timely informed management decisions to assist O&M teams. Additional evaluations may be necessary depending on annual moisture at the site. The following should be observed and documented to determine the appropriate maintenance activities:

- Weed species observed (annual, biennial, perennial, woody) and estimated cover.
- Weed growth stage, height, and density.
- Existing native desirable species growth stage and height.
- Level of success for temporary and permanent vegetation.
- Level of success for herbicide treatments (if any applied).
- Location and size of areas with no desirable vegetation growing to determine remedial seeding needs.
- Sediment and erosion issues, location, type, and magnitude.
- Tumbleweed accumulation along perimeter fence line and within solar infrastructure.

5.2 Vegetation Management

Monitoring and managing vegetation, both desirable and undesirable, is critical to maintaining a functioning and sustainable permanent vegetation stand. Weed management should be conducted based on the goals of the site and using integrated vegetation management techniques. The site assessments will help determine the safest, most efficient, and cost-effective methods. Well-established permanent vegetation will help to compete against invasive plant species, but management for

these species throughout the Project's lifetime must be anticipated. The following sections provide recommendations for management of seeded and/or existing desirable vegetation, as well as for invasive plant species.

5.3 Mowing

During the early establishment phase, mowing is the preferred method for invasive weed management and vegetation height maintenance in seeded areas. Based on environmental conditions and regional characteristics, frequent mowings are not anticipated; however, weather conditions need to be monitored as annual rainfall and site conditions will change from year to year. Selected plant species to be installed per this plan require infrequent mowing once established for the purpose of maintaining height limit requirements. However, invasive grass and broadleaf plants, such as downy brome and Russian thistle, are likely to emerge within the disturbed areas and can rapidly grow to a height that requires more frequent mowing. Following the guidelines set in the VWSMP can help to minimize overall mowing frequency.

Sites will likely need to be mowed at least once per year (i.e. late-spring or summer) to control weeds, reduce fire hazards, and meet vegetation height requirements. Depending on rainfall, weed pressure, and perennial vegetation, some areas of the sites may need a second mowing (i.e., if weeds are present, mowing is needed). Mowing should primarily target areas with elevated weed pressure rather than being applied uniformly across the site. Within the arrays, vegetation heights should not exceed 18 inches. Outside of the arrays, vegetation should not exceed 24 inches.

- The mower deck should be set at 6 to 8 inches to protect desirable species within the arrays. For areas outside of the arrays, the mower deck should be set to a minimum eight inches. Do not mow too short.
- Target mowing in areas with minimal to no desirable vegetation and dense weed pressure.
- Consider desirable vegetation maturity stages prior to executing to determine if alternative weed control methods, such as broadleaf herbicide application, need to be used to help promote grass species seed production.
- Do not mow at least 24 hours after a rain event preventing rutting and tracking.
- Mow prior to weeds flowering and 'going to seed' or when height is greater than 12 inches, if feasible.
- Limit mowing operations during drought conditions to avoid further stress on desirable vegetation.

5.4 Herbicide Treatments

During the establishment process, chemical control methods should be minimized and focused on controlling perennial invasive and/or noxious weeds. Selective herbicide treatments can provide faster, and more effective control compared to mechanical methods. Post construction and throughout the Projects' lifetime, non-selective herbicide treatments are recommended for keeping areas around inverters and combiner boxes, and along roadsides. Maintaining vegetation at shorter heights along the perimeter fence line can help prevent fire hazards by minimizing the amount of fuel for fires. Total vegetation applications should be made in these areas at least once per year. Selective, long-term residual applications should be made at the appropriate timing for target species. Treatments are warranted based on the following factors:

- The site is dominated by perennial noxious or invasive weeds and/or have minimal perennial grass establishment.
- Proper weed identification will inform treatment timings and what type of herbicide(s) to use.
- In areas with pre-existing vegetation and remedial seeding has not been done, selective spot treatments can be used as needed. The guidelines provided in the "Chemical Control" section should be followed. If perennial invasive plants are present in seeded areas, selective treatments should be considered to help eliminate the weeds from this area.

- After controlling large, dense stands of weeds, remedial seeding with the prescribed permanent seed mix will be required. Seeding should not be done until at least two weeks after an application is made as some herbicide products have a soil residual that can inhibit seed germination.
- If a firebreak along the perimeter fence line is required, it is recommended that an annual bare ground herbicide treatment be conducted. It is common for firebreaks to be 30-40 feet wide; however, with sandy soil conditions the width may need to be reduced to reduce chances of wind erosion. The site plans and County should be consulted to determine if there are specific fire break requirements.
- All herbicide treatments need to be documented and mapped on a GPS application for regulatory and monitoring purposes.

5.5 Supplemental Seeding

When perennial vegetation has not been established in areas where permanent seeding was done, remedial seeding will need to be done. The need for remedial seeding does not necessarily mean the initial seeding was a failure; rather it may mean that additional seed is needed to help fill in bare areas that have less than 70% vegetation coverage. Areas that may qualify for seeding include:

- Where localized broadcast herbicide applications were made and limited remnant desirable vegetation is present.
- Soil disturbed during construction.
- Varying soil conditions require alternative species. Soil conditions may include, alkalinity, salinity, soil texture, etc. Soil tests may need to be conducted in these areas to determine current conditions.
- Minimal or no vegetation has established after one full growing season.

Seeding equipment needs to be tailored to the specific site conditions and tasks. Seeding is often most successful when using a native grass seed drill, therefore, it is important to utilize smaller equipment that can access and maneuver operational sites. Areas needing re-seeded will need to be assessed for size, location, weed control, etc. to determine the best seedbed preparation, seeding techniques, and equipment.

5.6 Tumbleweed and Debris Management

Tumbleweed accumulation around and within the facility will likely be an issue that needs to be addressed over the Project's lifetime and incorporated into O&M activities. Although diligent weed management is recommended on site, tumbleweeds can be transported from adjacent pastures and roadsides by wind. Routine removal activities will likely be necessary to minimize fire hazards, maintain access to infrastructure, and prevent excessive plant accumulation along fencing that could result in structural damage or fence collapse due to the weight of accumulated biomass.

Removing plant material from the fence lines and within the arrays will be a timely process as it requires hand labor or specialized equipment to maneuver around facility infrastructure. Bi-weekly to monthly site inspections are recommended to monitor accumulation along the fence lines and within the arrays, particularly during the late summer and fall months. Removal activities may include, but are not limited to, the following:

- Hand removal of tumbleweeds underneath the arrays, around inverter pads, combiner boxes, and along perimeter fence lines.
- Use of rotary-mounted or mechanical attachment equipment operated along the perimeter of the fence line to shred or break up plants into smaller pieces. If large amounts of biomass are left on site, it is recommended that residue be collected and removed from the site and taken to an approved landfill or disposed of through controlled burning.

- Tumbleweeds and other plant material may be hand removed from the fence line and other solar infrastructure and stockpiled in designated areas away from the solar facility. If environmental conditions allow, (e.g. minimal wind, appropriate weather conditions, low fire risk) the piles may be disposed of through controlled burning. Any burning activities will need to be coordinated through the County, and a burning permit shall be acquired prior to implementation.
- Management decisions will be circumstantially dependent, meaning not every option will be ideal every time. It is recommended that the O&M team assess site-specific and environmental conditions and manual labor availability to help determine the best management option(s).

6.0 VEGETATION MONITORING AND MAINTENANCE
Long Term Monitoring/Maintenance (Years 4+)

The highest priority for vegetation maintenance is to achieve and maintain 70% or greater perennial vegetation cover, or as required by the CGP permit. Monitoring shall continue throughout the operational phase of the Project to determine whether vegetation establishment has met the objectives and if conditions are acceptable for submission of the Notice of Termination (NOT) for the Project's CGP permit. This site may require more than four years to reach acceptable vegetation coverage due to harsher environmental conditions; therefore, adaptive management must be expected by the O&M team and may require ongoing support from a third-party vegetation specialist.

A vegetation management specialist should develop an Annual Maintenance Plan to identify adaptive management needs to maintain and achieve vegetative cover. It should include monitoring that is completed at least twice per growing season to ensure vegetation management objectives are met and final stabilization is achieved according to the CGP and SWPPP NOT requirements. This plan should include operational requirements, annual monitoring assessments early in the growing season to meet site needs, and a calendar for maintenance activities via mechanical, chemical, or biological controls.

REFERENCES

Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at the following link: http://websoilsurvey.sc.egov.usda.gov/. Accessed March 26, 2026.

APPENDIX A. COLORADO NOXIOUS AND INVASIVE WEEDS LIST

Colorado Noxious Weeds (including Watch List), effective May, 2025

List A Species (27)

Common	*Scientific*
African rue	*(Peganum harmala)*
Bohemian knotweed	*(Fallopia x bohemicum)*
Camelthorn	*(Alhagi maurorum)*
Common crupina	*(Crupina vulgaris)*
Cypress spurge	*(Euphorbia cyparissias)*
Dyer's woad	*(Isatis tinctoria)*
Elongated mustard	*(Brassica elongata)*
Flowering rush	*(Butomus umbellatus)*
Giant knotweed	*(Fallopia sachalinensis)*
Giant reed	*(Arundo donax)*
Giant salvinia	*(Salvinia molesta)*
Hairy willow-herb	*(Epilobium hirsutum)*
Hydrilla	*(Hydrilla verticillata)*
Japanese knotweed	*(Fallopia japonica)*
Meadow knapweed	*(Centaurea x moncktonii)*
Mediterranean sage	*(Salvia aethiopis)*
Medusahead	*(Taeniatherum caput-medusae)*
Myrtle spurge	*(Euphorbia myrsinites)*
Orange hawkweed	*(Hieracium aurantiacum)*
Parrotfeather	*(Myriophyllum aquaticum)*
Purple loosestrife	*(Lythrum salicaria)*
Rush skeletonweed	*(Chondrilla juncea)*
Squarrose knapweed	*(Centaurea virgata)*
Tansy ragwort	*(Senecio jacobaea)*
Ventenata grass	*(Ventenata dubia)*
Yellow flag iris	*(Iris pseudacorus)*
Yellow starthistle	*(Centaurea solstitialis)*

List B Species (38)

Common	*Scientific*
Absinth wormwood	*(Artemisia absinthium)*
Black henbane	*(Hyoscyamus niger)*
Bouncingbet	*(Saponaria officinalis)*
Bull thistle	*(Cirsium vulgare)*
Canada thistle	*(Cirsium arvense)*
Chinese clematis	*(Clematis orientalis)*
Common tansy	*(Tanacetum vulgare)*
Common teasel	*(Dipsacus fullonum)*
Cutleaf teasel	*(Dipsacus laciniatus)*
Dalmatian toadflax, broad-leaved	*(Linaria dalmatica)*
Dalmatian toadflax, narrow-leaved	*(Linaria genistifolia)*
Dame's rocket	*(Hesperis matronalis)*
Diffuse knapweed	*(Centaurea diffusa)*
Eurasian watermilfoil	*(Myriophyllum spicatum)*
Hoary cress	*(Lepidium draba)*

List B Species (38) continued

Common	*Scientific*
Houndstongue	*(Cynoglossum officinale)*
Jointed goatgrass	*(Aegilops cylindrica)*
Leafy spurge	*(Euphorbia esula)*
Mayweed chamomile	*(Anthemis cotula)*
Moth mullein	*(Verbascum blattaria)*
Musk thistle	*(Carduus nutans)*
Oxeye daisy	*(Leucanthemum vulgare)*
Perennial pepperweed	*(Lepidium latifolium)*
Plumeless thistle	*(Carduus acanthoides)*
Russian knapweed	*(Rhaponticum repens)*
Russian-olive	*(Elaeagnus angustifolia)*
Salt cedar	*(T. chinensis)*
Salt cedar	*(Tamarix. ramosissima)*
Scentless chamomile	*(Tripleurospermum inodorum)*
Scotch thistle	*(O. tauricum)*
Scotch thistle	*(Onopordum acanthium)*
Spotted knapweed	*(Centaurea stoebe ssp. micranthos)*
Spotted x diffuse knapweed hybrid	*(Centaurea x psammogena)*
Sulfur cinquefoil	*(Potentilla recta)*
Wild caraway	*(Carum carvi)*
Yellow nutsedge	*(Cyperus esculentus)*
Yellow toadflax	*(Linaria vulgaris)*
Yellow x Dalmatian toadflax hybrid	*(Linaria vulgaris x L. dalmatica)*

List C Species (18)

Common	*Scientific*
Bulbous bluegrass	*(Poa bulbosa)*
Chicory	*(Cichorium intybus)*
Common burdock	*(Arctium minus)*
Common mullein	*(Verbascum thapsus)*
Common St. Johnswort	*(Hypericum perforatum)*
Downy brome, cheatgrass	*(Bromus tectorum)*
Field bindweed	*(Convolvulus arvensis)*
Halogeton	*(Halogeton glomeratus)*
Johnsongrass	*(Sorghum halepense)*
Perennial sowthistle	*(Sonchus arvensis)*
Poison hemlock	*(Conium maculatum)*
Puncturevine	*(Tribulus terrestris)*
Quackgrass	*(Elymus repens)*
Redstem filaree	*(Erodium cicutarium)*
Siberian elm	*(Ulmus pumila)*
Tree of Heaven	*(Ailanthus altissima)*
Velvetleaf	*(Abutilon theophrasti)*
Wild proso millet	*(Panicum miliaceum)*

Colorado Noxious Weeds (including Watch List), effective May, 2025

Watch List Species (18)

These species are not regulated by the Noxious Weed Act/Rule.

Common	***Scientific***
Baby's breath	*(Gypsophila paniculata)*
Caucasian bluestem	*(Bothriochloa bladhii)*
Common bugloss	*(Anchusa officinalis)*
Common reed	*(Phragmites australis)*
Garden loosestrife	*(Lysimachia vulgaris)*
Garlic mustard	*(Alliaria petiolata)*
Himalayan blackberry	*(Rubus armeniacus)*
Hoary alyssum	*(Berteroa incana L.)*
Meadow hawkweed	*(Hieracium caespitosum)*
Onionweed	*(Asphodelus fistulosus)*
Perennial Sweet Pea	*(Lathyrus latifolius)*
Scotch broom	*(Cytisus scoparius)*
Swainsonpea	*(Sphaerophysa salsula)*
Syrian beancaper	*(Zygophyllum fabago)*
Tall Oatgrass	*(Arrhenatherum elatius)*
White bryony	*(Bryonia alba)*
Yellow bluestem	*(Bothriochloa ischaemum)*
Yellow mignonette	*(Reseda lutea)*

Other Problematic Invasive Plant Species

*This list is not exhaustive of all the species that are considered invasive and may be present on the sites.

- Kochia (*Kochia scoparia*)
- Russian thistle (*Salsola tragus*)
- Redroot pigweed (*Amaranthus retroflexus*)
- Palmer amaranth (*Amaranthus palmeri*)
- Prostrate spurge (*Euphorbia maculata*)
- Dandelion (*Taraxacum officinale*)
- Common mallow (*Malva neglecta*)
- Field sandbur (*Cenchrus spinifex*)
- Large crabgrass (*Digitaria sanguinalis*)

APPENDIX B. SOIL SAMPLE TEST RESULTS

Table B1. Sample 1 results.

Analyte	Unit	Method	Exceedance Level	Concentration Level	SOIL TEST RATINGS Very Low | Low | Medium | Optimum | Very High
pH		USDA 60/EPA 9046	8.3	7.83	
Organic Matter	%OM	Walkley Black		0.56	
Nitrate-Nitrogen	mg/kg	HACH 10207	50	12.28	
Phosphorus	ppm	AB-DPTA	25	0	
Potassium	ppm	AB-DPTA	250	524.17	
EC	mmhos/cm	USDA 60/EPA 9046	4	0.76	
SAR	No Unit	EPA 6020B	6	0.24	
Texture		Hydrometer		Loamy Sand	

Table B2. Sample 2 results.

Analyte	Unit	Method	Exceedance Level	Concentration Level	SOIL TEST RATINGS Very Low | Low | Medium | Optimum | Very High
pH		USDA 60/EPA 9046	8.3	7.97	
Organic Matter	%OM	Walkley Black		0.5	
Nitrate-Nitrogen	mg/kg	HACH 10207	50	3	
Phosphorus	ppm	AB-DPTA	25	0	
Potassium	ppm	AB-DPTA	250	376.72	
EC	mmhos/cm	USDA 60/EPA 9046	4	0.2	
SAR	No Unit	EPA 6020B	6	0.03	
Texture		Hydrometer		Sand	

EXHIBIT Q - ENVIRONMENTAL REVIEW

Environmental Report

REPORT DATE: March 25, 2025

PROPERTY INFORMATION:
Lamar Solar Generation
Project
Prowers County, Colorado

PROJECT INFORMATION:
AEI Project No. 497462

PREPARED FOR:
Sandhills Energy
1403 Harney Street #200
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Appendix A Farmland Protection Policy Act, National Resources Conservation Service Letter for the Lamar Community Solar Site Project

Appendix B Cultural Resources Correspondence with the SHPO and Limited Site Form

Appendix C Information for Planning and Consultation Official Species List

Appendix D National Wetlands Inventory Map for the Lamar Project Area

Appendix E Federal Emergency Management Agency Flood Map

Acronyms and Abbreviations

AC	alternating current
AEI	AEI Consultants
APE	area of potential effects
Applicant	Clay Creek Energy, LLC
BGEPA	Bald and Golden Eagle Protection Act
BMPs	Best Management Practices
CDPHE	Colorado Department of Public Health and Environment
CFR	Code of Federal Regulations
City	City of Lamar
CODEX	Colorado's Conservation Data Explorer
Corps	U.S. Army Corps of Engineers
CRS	Colorado Revised Statutes
CWA	Clean Water Act
EO	Executive Order
EPA	U.S. Environmental Protection Agency
ER	Environmental Report
ERO	ERO Resources Corporation
ESA	Endangered Species Act
FPPA	Farmland Protection Policy Act
FEMA	Federal Emergency Management Agency
LPC	lesser-prairie chicken
MBTA	Migratory Bird Treaty Act
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O&M	operation and maintenance
PACE	Powering Affordable Clean Energy
project	Lamar Community Solar Project
project area	Prowers County, Colorado
RD	Rural Development
RECs	recognized environmental conditions
RD	Rural Development
RUS	Rural Utilities Service
Service	U.S. Fish and Wildlife Service
SHPO	State Historic Preservation Officer
Supreme Court	United States Supreme Court
THPO	Tribal Historic Preservation Officer
U.S.C.	United States Code
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
WOTUS	waters of the U.S.
WQCD	Water Quality Control Division

Lamar Solar Generation Project
Environmental Report
Prowers County, Colorado

1.0 Project Description and Location

Clay Creek Energy, LLC (Applicant) is seeking financial assistance from the U.S. Department of Agriculture (USDA) Rural Development (RD), Rural Utilities Service (RUS) under its Powering Affordable Clean Energy (PACE) Program for the Lamar Community Solar Project (project). The grant would support the development and construction of a 4.8 megawatt alternating current (AC) solar facility for the City of Lamar (City) in Prowers County, Colorado (project area).

The proposed project would cover approximately 33.7 acres of vacant private land (Figure 1). The project area abuts grazing land to the north and east, undeveloped land to the south, and County Road 50 to the west. The project area would be accessed via an existing dirt road running through the property off County Road 50. The project would connect to the City's municipal distribution system (Figure 2).

The PACE Program is part of an effort to increase investments in clean, affordable, and reliable energy to Americans under the Inflation Reduction Act. PACE funding provides up to 60 percent loan forgiveness to applicants, depending on the type of community, to be served by the project. The project is under a 40 percent loan forgiveness.

This Environmental Report (ER) has been prepared pursuant to the National Environmental Policy Act (NEPA) of 1969, as implemented by the regulations promulgated by the President's Council on Environmental Quality (40 Code of Federal Regulations [CFR] Parts 1500-1508). NEPA compliance is required to qualify for RUS financing as part of the PACE Program. The purpose of this ER is to analyze the potential environmental impacts of the proposed project and to determine whether to prepare an environmental impact statement or a finding of no significant impact.

Figure 1. Vicinity Map.

Figure 2. Existing Conditions.

1.1 Construction Methods

The Proposed Action would include solar arrays installed in the 33.7-acre project area (Figure 2). The project would include 12,9000 modules (First Solar Series 6+), 24 generating units, and Yaskawa Solectria XGI 1500-200 inverters. Per code regulations, the area occupied by the solar panels and components would be fenced using a chain link (7 feet high) to prevent wildlife from passing through (National Electrical Safety Code Section 19, Rule 190 and Section 11, Rule 110.A.1.a). No lighting would be used in the project area. In addition to the solar panels, inverters, and the perimeter fencing, the proposed equipment and components for the Proposed Action would consist of the following:

- Inverters;
- Steel pylons and steel racking;
- Distribution transformer;
- AC power cables;
- Direct current power cables;
- Fiber communication cables;
- Interconnection breaker;
- Interconnection switchgear;
- Interconnection metering enclosure;
- Communications enclosure; and
- Signage.

The Proposed Action would require utility-scale solar equipment, such as solar panels, inverters, mounting structures, and electrical infrastructure that are commercially available technology and that adhere to established industry standards. The project area benefits from relatively flat terrain, minimizing ground disturbance associated with excavation and grading. The land would be leveled slightly to drive pylons but would not be stripped. In high-traffic areas, native species would be replanted to mitigate impacts on vegetation (see Section *1.1.4 Site Restoration and Decommissioning*).

1.1.1 Construction Schedule

Construction is anticipated to begin in the third quarter of 2025 and to be completed by the fourth quarter of 2026. Construction would take place Monday through Friday during normal working hours (7:00 a.m. to 5:00 p.m.). No construction would take place in the evenings or during the weekends.

1.1.2 Operation and Maintenance

The daily operations of the Proposed Action would rely on remote monitoring to efficiently distribute generated power. All electricity produced would be integrated into the City's municipal distribution system, ensuring complete consumption by local loads.

The Applicant would employ a certified contractor to conduct operation and maintenance (O&M) of the facility. Prior to commissioning the facility, an O&M agreement would be established to govern upkeep procedures. The O&M contractor would conduct regular inspections, attend to any identified issues, and perform necessary repairs. The O&M contractor would also oversee site inspections, conduct tests, and

ensure the cleanliness of the array, as required. The Applicant would retain sole responsibility for managing all O&M activities associated with the City's municipal distribution system linked to the facility. Project facilities would be inspected periodically based on the O&M contract terms.

1.1.3 Transmission and Interconnection

The project would interconnect to the City's municipal distribution system. This action is not a part of the current funding phase and would be completed in the next phase of the project.

1.1.4 Site Restoration and Decommissioning

The project area would be reseeded with plant pollinators and perennial plant seeds to enhance crop pollination of nearby agricultural crops. The seeding would be monitored. The Applicant would be responsible for site restoration and decommissioning of the facility at the end of its life. This work would consist of removing and disposing of solar panels and structures along with associated equipment. The useful life of the solar array is expected to be 25 years, after which the Applicant would assume responsibility for its decommissioning. Site restoration is anticipated to be minor because the grade would not change from preconstruction elevations.

Decommissioning consists of removing and disposing of the solar panels and structures along with other associated equipment. The Applicant intends to recycle as many components as possible, including solar panels, as more than 90 percent of the components in solar systems are recyclable. They are made of three primary materials: glass, silicon, and metal. The Applicant is committed to environmentally responsible disposal practices to minimize any adverse impacts on the environment during the decommissioning process.

2.0 Environmental Review

This section describes the resources that could be affected by the construction and implementation of the project. For each resource, a description of the existing conditions and anticipated impacts, if any, are included. The following analysis was done in conformance with the environmental guidance, RD 1970 Environmental Policies and Procedures (USDA 2016) for the USDA RD program.

2.1 Land Use, Important Farmlands, and Soils

2.1.1 Land Use

The project area is southeast of the City and would cover approximately 33.7 acres of vacant private land (Figure 1). The project area abuts grazing land to the north and east, undeveloped land to the south, and County Road 50 to the west. The project would be accessed via an existing dirt road running through the property off County Road 50.

The project area is in the A-3 zoning district, which is designated as a Fragile Land Area. The standards for the A-3 zoning district are designed to protect the district according to the fragile character of the natural environment and to preserve and protect the present land use of the district (Prowers County 2013, 2023). Non-commercial solar energy facilities are permitted in the A-3 zoning district as a use by right.

The Proposed Action is categorized as a Solar Energy Facility, as defined in the Prowers County Zoning Regulations. Non-commercial solar energy facilities require a "Uses by Special Review" in the A-3 zoning district. This approval is contingent upon providing public notice and holding a hearing and approval of the Prowers County Planning Commission. The Planning Commission may impose conditions and safeguards to ensure these uses are consistent with the character of the surrounding area. The Proposed Action would be authorized for a period specified by the Planning Commission or until the land use is modified or discontinued, whichever comes first.

Although the project area is in the A-3 zoning district and would require approval from the Prowers County Planning Commission, the project would have minimal impacts on future land use in the area because future uses are subject to separate Prowers County reviews and approvals.

2.1.2 Important Farmlands and Soils

The Farmland Protection Policy Act (FPPA) is intended to minimize the impacts of federal actions on the unnecessary and irreversible conversion of farmland to nonagricultural use. FPPA ensures that, to the greatest extent possible, federal actions are compatible with state and local governments, private programs, and policies to protect farmland. For purposes of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland and can be forestland, pastureland, or cropland.

The Natural Resources Conservation Service (NRCS) has mapped the soils in the project area as Tivoli-Dune land complex and Vona soils, 1 to 3 percent slopes, eroded (Table 1) (U.S. Department of Agriculture, NRCS 2024). The project area is not classified as prime farmland.

Table 1. Soil classification.

Map Unit Symbol	Map Unit	Farmland	Acres
Tm	Tivoli-Dune land complex	Not prime farmland	32.1
VsB2	Vona soils, 1 to 3 percent slopes, eroded	Not prime farmland	1.5

Under the Proposed Action, soils would likely be disturbed during construction. Soil loss would occur directly from disturbance or indirectly via wind or water. Water that falls off the solar panels could also run to the panel dripline and fall on the soil surface, causing runoff downslope and soil erosion. However, a large portion of the project area is heavily disturbed and incompatible with agricultural uses (AEI Consultants [AEI] 2024). On January 7, 2024, the NRCS provided a letter confirming that "All aspects of this project will occur without the permanent conversion of farmland and is not subject to the FPPA" (Appendix A). Additionally, mitigation measures would be implemented to minimize soil disturbance and erosion (see *Section 3.0 Summary of Mitigation*). Therefore, the impacts from the Proposed Action on soils would be negligible.

2.2 Historic Preservation

Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulations under 36 CFR 800 require all federal agencies to consider effects of federal actions on historic properties. Historic properties are those cultural resources that are either listed in or eligible for listing in

the National Register of Historic Places (NRHP). During the Section 106 review, the federal agency considers effects on historic properties in the area of potential effects (APE). Cultural and historic resources include sites, buildings, structures, objects, districts, or areas of traditional religious and cultural importance.

A "cultural resource" is defined as an object, archaeological site, structure, or building constructed 50 or more years ago. A cultural resource listed in or eligible for listing in the NRHP (54 United States Code [U.S.C.] §300101 et seq.) (NHPA, 1966, as amended) or the State Register of Historic Places is a "historic property." Pursuant to Section 106 of the NHPA, federal agencies must consider the undertaking's (i.e., the Proposed Action) potential effects on historic properties prior to permitting, funding, or conducting ground-disturbing activities.

RUS is the lead agency for the project because the Applicant would receive financial assistance from the USDA RD RUS PACE Program. However, the USDA RD delegated its authority to their applicants pursuant to 36 CFR 800.2(c)(4) to comply with the four-step Section 106 process and advocates for applicants to interact directly with the State Historic Preservation Officer (SHPO) and Tribal Historic Preservation Officer (THPO) pursuant to the 2018 programmatic agreement among the USDA RD, National Conference of SHPOs, and the Advisory Council on Historic Preservation. The Applicant is, therefore, responsible for consulting with the SHPO and appropriate THPOs on the APE, identification efforts, and undertaking effects evaluation. The APE for the Proposed Action was defined by RUS to include construction and excavation activity required to construct, modify, improve, or maintain any facilities; any right-of-way or easement areas necessary for the construction, operation, and maintenance of the project; all areas used for excavation of borrow material and habitat creation; and all construction staging areas, access routes, utilities, spoil areas, and stockpiling areas (approximately 14.3 acres).

ERO Resources Corporation (ERO) conducted a Class III Cultural Resource Survey on December 9, 2024 of the APE to identify cultural resources and evaluate the potential effects of the limits of construction. The ERO limited results report documents the survey results that indicate "no cultural resources or historic properties are in the APE" (ERO 2024a; Appendix B). RUS submitted a letter to the SHPO on April 11, 2025 with a finding of no historic properties affected in accordance with 36 CFR § 800.4(d)(1) (Appendix B). The SHPO concurred with the finding on May 7, 2025 (Appendix B).

No historic properties are in the APE and, therefore, the Proposed Action would have no effects on historic properties.

2.3 Biological Resources

2.3.1 Threatened and Endangered Species

This section considers the wildlife and vegetation species in the project area including those listed as threatened or endangered by the Endangered Species Act (ESA). Also considered are potential effects on birds protected by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA).

2.3.1.1 Federally Listed Species

Federally threatened and endangered species are protected under the ESA of 1973, as amended (16 U.S.C. 1531 et seq.). Significant adverse effects on a federally listed species or its habitat require consultation with the U.S. Fish and Wildlife Service (Service) under Section 7 or Section 10 of the ESA.

Three threatened, endangered, and candidate species have the potential to occur in the project area (Table 2; Appendix C). ERO conducted habitat assessment surveys on October 1, 2024, to evaluate whether habitat requirements for each species and habitat characteristics were present in the project area (2024 site visit). The results of the 2024 site visit indicate that there is no potential habitat present (ERO 2024b). The eastern black rail is a species that is affected by continued or ongoing water depletions to the Arkansas River drainage system. Because of the lack of habitat and depletions, the proposed project would not affect this species. Although there was no evidence of the lesser-prairie chicken (LPC) in the project area during the 2024 site visit, due to the project area overlapping the LPC habitat range, this species is discussed in more detail below. The proposed project would not affect the monarch butterfly because of the lack of suitable habitat in the project area.

Table 2. Federally threatened, endangered, and candidate species potentially found in the project area or potentially affected by the project.

Common Name	Scientific Name	Status*	Habitat	Habitat Present or Potential to be Affected by Project?
Mammals				
Lesser-prairie chicken	*Tympanuchus pallidicinctus*	T	Shortgrass prairies dominated by sand sagebrush and bluestem grasses	No habitat
Birds				
Eastern black rail	*Laterallus jamaicensis* ssp. *jamaicensis*	T	Dense, heavily vegetated wetlands with moist soils or shallow water with access to adjacent upland grassland areas	No habitat
Invertebrates				
Monarch butterfly	*Danaus plexippus*	C	Dependent on milkweeds (*Asclepiadoidea*) as host plants and forage on blooming flowers; a summer resident	No habitat

*T = Federally Threatened Species; C = Candidate Species.
Source: Service 2025a.

2.3.1.1.1 Lesser-Prairie Chicken

The project area is 5.36 miles from the Crucial Habitat Assessment Tool priority and estimated occupied areas for the LPC. The project area is also in the NRCS action area for the LPC Initiative (NRCS 2024). The LPC requires prairie or grassland habitat for nesting and sand sagebrush and sandy soils as part of their habitat. While the project area includes sand sagebrush and sandy soils, it does not include prairie or grassland and, therefore, is unlikely to support the LPC. No individuals or evidence of LPC occurrence were observed during the 2024 site visit (ERO 2024b). The LPC is unlikely to occur in the project area but, due to the project area overlapping LPC range, the species is included here for reference.

The Proposed Action would not affect the eastern black rail or monarch butterfly because of the lack of suitable habitat in the project area.

2.3.2 State-Listed Species

Eleven threatened and endangered state-listed species or state species of concern with potential to occur in the project area are listed by Colorado's Conservation Data Explorer (CODEX 2025; Table 3).

Table 3. State-listed threatened and endangered species and species of concern potentially found in the project area or potentially affected by the project.

Common Name	Scientific Name	Status*	Habitat	Habitat Present or Potential to be Affected by Project?
Mammals				
Black-footed ferret	*Mustela nigripes*	SE	Grasslands or shrublands that support prairie dog colonies.	Yes. Shrublands are present and high potential for prairie dog colonies exists in the project area. Known in Prowers County.
Black-tailed prairie dog	*Cynomys ludovicianus*	SC	Great Plains east of the Rocky Mountains in dry, flat, sparsely vegetated grasslands. Prefers fine or medium textured soils.	Yes. Habitat is present in the project area.
Birds				
Burrowing owl	*Athene cunicularia*	ST	Grasslands, open fields, and plains with vegetation less than 4 inches. Relies on burrows made by ground-dwelling mammals.	No. While the burrowing owl is known to occur in Prowers County, vegetation in the project area is taller than 4 inches.
Ferruginous hawk	*Buteo regalis*	SC	Shrub-steppe, open grasslands, sagebrush areas, and open deserts. Nests in trees, rock outcrops, or artificial structures.	No. Suitable nesting habitat is not present in the project area.
Long-billed curlew	*Numenius americanus*	SC	Nests in shortgrass prairie habitats with lakes or reservoirs nearby for feeding. Avoids areas with shrubs.	No. Shortgrass prairies with water bodies are not present in the project area.

Common Name	Scientific Name	Status*	Habitat	Habitat Present or Potential to be Affected by Project?
Mountain plover	*Charadrius montanus*	SC	Open, flat tablelands and short, grazed grasslands. Nests in areas with 30 percent bare ground in sites historically used by prairie dogs, bison, and pronghorn.	No. Grasslands are not present in the project area.
Piping plover	*Charadrius melodus*	ST	Sandy lakeshore beaches, sandbars in riverbeds, or sandy wetland pastures.	No. Lakes, rivers, and wetlands are not present in the project area.
Western snowy plover	*Charadrius nivosus nivosus*	SC	Nests along shores, offshore islands, bays, estuaries, and rivers.	No. Lakes, bays, and rivers are not present in the project area.
Reptiles				
Texas horned lizard	*Phrynosoma cornutum*	SC	Arid to semiarid regions with sparse vegetation including grass, cactus, and brush or shrubs.	Yes. Habitat is present in the project area. Known to occur in southeast Colorado south of the Arkansas River.
Western massasauga	*Sistrurus tergeminus*	SC	Grasslands and marshlands on the edges of woodlands.	No. Grasslands and marshlands are not present in the project area.
Yellow mud turtle	*Kinosternon flavescens*	SC	Wetlands of far eastern plains of Colorado.	No. Wetlands are not present in the project area.

*ST = State Threatened Species; SE = State Endangered Species; SC = State Species of Concern.
Source: CODEX 2025.

2.3.3 Raptors and Migratory Birds

Migratory birds and raptors are protected under the MBTA and the BGEPA. The BGEPA prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The BGEPA defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb." The BGEPA affords eagles additional protections beyond those provided by the MBTA by making it unlawful to "disturb" eagles. In 2016, "disturb" under the BGEPA was defined to mean to "agitate or bother a bald or golden eagle to a degree that causes or is likely to cause, based on the best scientific information, (1) injury to an eagle; (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior."(Service 2016). Removing nests, destroying nests, or causing nest abandonment may constitute a violation of the MBTA and BGEPA.

In Colorado, most birds (except grouse species and nonnative Eurasian collared dove, European starling, house sparrow, and rock pigeon) are protected under the MBTA. The BGEPA prohibits the take of any eagle nest, whether active or inactive (16 U.S.C. 668-668c). In addition, Colorado Parks and Wildlife (CPW) has developed recommend seasonal buffer zones around raptor nests (CPW 2020). Buffer recommendations vary by species but typically range from a 0.25- to 0.5-mile radius for species likely to nest in or near the project area.

The project area contains habitat for migratory birds. A raptor survey was conducted at the site on October 1, 2024 (2024 site visit; ERO 2024). No active or inactive songbird or raptor nests were observed in the project area during the 2024 site visit; however, upland grasslands in and adjacent to the project area are potential nesting habitat for migratory birds. Bird species observed during the 2024 site visit included a horned lark (*Eremophila alpestris*) and a mourning dove (*Zenaida macroura*). No bald or golden eagles or their nests were observed during the field surveys.

2.3.4 Noxious Weeds

A noxious weed is a plant species that causes harm to agricultural land, natural ecosystems, or humans or livestock. Most noxious weeds were introduced (nonnative) as ornamental or landscaping plants or through accidental introduction. Typically, these weeds cause harm because they are aggressive and crowd out native species. To prevent the negative effects of noxious weeds on the economic and environmental values of Colorado, the Colorado Department of Agriculture maintains lists of noxious weeds categorized by the severity of potential effects and management requirements (Colorado Department of Agriculture 2023). These categories include List A (requires eradication), List B (requires implementation of plans to stop the spread of the species), and List C (requires the development of management plans to provide additional information where control is desired).

Soil disturbance associated with the Proposed Action would increase the risk of spread and introduction of noxious weeds. However, introduction of noxious plant species would be minimized by washing equipment prior to construction to prevent the introduction of invasive species seeds from earthmoving or hauling and minimizing soil disturbance (Table 4).

2.4 Wetlands and Waters of the U.S.

The Clean Water Act (CWA) protects the chemical, physical, and biological quality of waters of the U.S. (WOTUS). The U.S. Army Corps of Engineers (Corps) Regulatory Program administers and enforces Section 404 of the CWA. Under CWA Section 404, a Corps permit is required for the discharge of dredged or fill material into wetlands and other WOTUS (streams, ponds, and other waterbodies). On May 25, 2023, the United States Supreme Court (Supreme Court) modified the definition of "waters of the U.S.," reducing the jurisdiction of the CWA over wetlands adjacent to bodies of water that do not have a continuous surface connection to other known WOTUS. Under *Sackett v. Environmental Protection Agency*, No. 21-454, the Supreme Court decided the "Clean Water Act extends only to wetlands with a continuous surface connection to bodies that are 'waters of the U.S.' in their own right so that they are indistinguishable from those waters" (598 U.S. 27 [2023]). The amended rule reduces the jurisdiction of the CWA over wetlands adjacent to bodies of water that do not have a continuous surface connection to other known WOTUS, as well as streams that do not have continuous flowing or relatively permanent water. The amended rule removes the "significant nexus" standard that was created under *Rapanos v. United States*, removes interstate wetlands from the definition of WOTUS, and revises the definition of "adjacent" to mean "having a continuous surface connection." Wetlands that do not have a contiguous surface connection to a jurisdictional traditionally navigable water or tributary are no longer jurisdictional, as well as ephemeral streams that do not have relatively permanent water. While ERO may provide its opinion on the likely

jurisdictional status of wetlands and waters, the Corps will make the final determination of jurisdiction based on the current rulings.

To address the protection of state waters that are now no longer jurisdictional as a result of the ruling under *Sackett*, the Colorado Water Quality Control Division (WQCD) has enacted an implementation policy (Water Quality Control Division, Colorado Department of Health and the Environment 2023). The policy contemplates the WQCD, Colorado Department of Public Health and Environment (CDPHE) exercising enforcement discretion for discharges of dredged or fill material into state waters that are no longer subject to CWA Section 404 permitting. The implementation policy requires notification to the WQCD if a project would have required a CWA Section 404 Permit but no longer does as a result of *Sackett*. The extent and timing of notification to the WQCD is dependent on the level of CWA Section 404 permitting that would have been previously required. The implementation policy is intended to be in effect "until a state regulatory program can be developed." The WQCD currently is evaluating creating a statewide wetland program to protect those aquatic resources no longer federally protected.

Wetlands are vegetation communities on the landscape that support three wetland indicators: hydrophytic vegetation, hydric soils, and wetland hydrology. Riparian zones are associated with drainages, though they may not be wetlands and, typically, consist of tree, shrub, and understory communities uniquely adapted to stream corridors.

No wetlands or waters are shown on the U.S. Geological Survey (USGS) topographic quadrangle map, USGS National Hydrography Dataset or the Service's National Wetland Inventory as occurring in the project area (Appendix D; Service 2025b; USGS 2024a, 2024b). Additionally, no wetlands or waters were found in the project area during the 2024 site visit.

Construction activities would require minimal water for dust control and site preparation, resulting in short-term water usage. This use would be managed according to local regulations to prevent significant impacts on water quantity and quality. After construction, water use would return to preexisting levels, with minimal water needed for the O&M of the solar facility. Because of these factors, water resources do not warrant further detailed analysis for this project.

2.5 Floodplains

The project area is in an area of minimal flood hazard (Zone X) (Appendix E; Federal Emergency Management Agency [FEMA] 2024). Therefore, floodplains do not warrant further detailed analysis for this project.

2.6 Classified Lands

The project area is not in or near state and federal parks, monuments, natural landmarks, wilderness areas, wild and scenic rivers, state lands, or national forest land.

2.7 Coastal Resources

The project area is not in or near coastal areas and would not affect coastal resources.

2.8 Hazardous Materials

Hazardous materials, as the term is used below, generally includes, but is not limited to, materials that are regulated as solid waste, hazardous waste, radioactive materials, petroleum products, toxic substances, and other pollutants.

AEI Consultants (AEI) conducted a Phase I Environmental Site Assessment for the project area in accordance with ASTM International E1527-13 standards to identify recognized environmental conditions (RECs), which indicate the presence or potential presence of hazardous substances or petroleum products. The assessment included a review of historical and regulatory records, interviews with knowledgeable individuals, and a site reconnaissance. The review found no evidence of RECs, controlled RECs, or significant data gaps, and federal, state, and local records did not identify any incidents or sites of concern in or near the project area (AEI 2024).

The site reconnaissance confirmed that the project area is undeveloped and surrounded by agricultural and grazing land with a residential area to the west. No environmental concerns were observed on-site, and no indications of past releases or conditions posing a material threat of future releases are present. The assessment concluded that no RECs or significant environmental issues are associated with the project area.

2.9 Water Resources

The proposed project is subject to the following regulations: the CWA (33 U.S.C. §1251 et seq. [1972]), the Colorado Water Quality Control Act (Colorado Revised Statutes [CRS] §25-8-103), the Colorado Primary Drinking Water regulations, and WQCD CDPHE regulations. Groundwater from designated basins is regulated by the Colorado Groundwater Commission under the Groundwater Management Act (CRS 37-90 et seq.) and the Rules and Regulations for the Management and Control of Designated Groundwater (2-Code of Colorado Regulations 410-1).

The project area is in the Outlet Cray Creek Hydrological Unit (Hydrological Unit Code 9110200091306), which comprises approximately 48,729 acres (EPA 2025). Average annual precipitation near the project area (Lamar) is 15.21 inches (Western Regional Climate Center 2016). No mapped surface water features occur in the project area (see the *Wetlands and Waters of the U.S.* section) (Service 2025b). No special sources of water such as sole-source aquifers, wellhead protection areas, and other water sources that are vital in a region, occur in the project area.

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2.10 Air Quality

The Clean Air Act, last amended in 1990, requires the EPA to establish National Ambient Air Quality Standards (NAAQS) for six pollutants known as “criteria” pollutants. The criteria pollutants are carbon monoxide, ozone, nitrogen dioxide (NO_x), sulfur dioxide, particulate matter, and lead.

The NAAQS were developed for these pollutants to protect public health, including sensitive populations such as children, the elderly, and asthmatics, and secondary standards were developed to protect the welfare of the nation including protection against decreased visibility and damage to animals, crops, and vegetation. Concentrations of criteria pollutants in airsheds higher than the EPA standards are considered nonattainment areas. The airshed in Prowers County is in attainment or unclassifiable for the NAAQS, meaning none of the ambient concentrations of criteria pollutants exceed the air quality standards (EPA 2024).

The Proposed Action would generate short-term construction emissions during construction activities. Emissions of volatile organic compounds, NO_x, and fugitive dust would be generated because of construction equipment, material haul trucks, and construction worker vehicles. Construction activities are anticipated to last approximately 9 to 12 months during which construction emissions would vary day by day based on the types of construction activities occurring.

During project construction, air emissions would be generated from mobile sources (e.g., trucks and automobiles) and fugitive dust. Emissions from work vehicles and construction equipment would be temporary and transient in nature. Best Management Practices (BMPs), such as watering for fugitive dust control, would be implemented to reduce potential impacts. By implementing BMPs during project construction, the direct and indirect impacts on regional air quality due to the construction phase of the Proposed Action would be negligible. The direct and indirect impacts from construction are anticipated to be short-term, lasting 9 to 12 months. Air quality impacts are not anticipated during the operational phase of the Project.

3.0 Summary of Mitigation

Table 4 summarizes the proposed mitigation measures necessary to avoid or minimize any adverse effects on environmental resources under the Proposed Action.

Table 4. Proposed Action mitigation measures.

Mitigation Measure	Description
General/Notification	
G-1	The Applicant and its contractors would comply with all federal, state, and local environmental laws, orders, and regulations. The Applicant would comply with applicable City land use code provisions and land use change permit conditions of approval. Prior to construction, all construction leadership personnel would be instructed on the protection of cultural and ecological resources.
Air Quality	
AQ-1	The contractor would use such practicable methods and devices as are reasonably available to control, prevent, and otherwise minimize atmospheric emissions or discharges of air contaminants.
AQ-2	Possible construction-related dust disturbance, if severe, shall be controlled, where practical, by the periodic application of water to all disturbed areas.
AQ-3	Post-seeding mulch would be used during reclamation activities to help reduce wind erosion and blowing dust. The mulch/stabilization would be performed as soon as possible after completion of project activities to minimize potential fugitive dust generation as revegetation occurs.

Mitigation Measure	Description
AQ-4	Vehicles and equipment showing excessive emission of exhaust gases due to poor engine adjustments or other inefficient operating conditions shall not be operated until corrective adjustments or repairs are made.
Biological Resources	
BR-1	To avoid the destruction of potential migratory bird nests, vegetation removal should be conducted outside of the April 1 through September 15 breeding season. A preconstruction nest clearance survey would be conducted if vegetation clearing needs to occur during the breeding season to ensure no active nests are present.
Cultural Resources	
CR-1	Cultural Resources – Inadvertent Discovery: if any cultural resources are inadvertently unearthed or otherwise encountered during maintenance activities, pursuant to 36 CFR 800.13, work will cease in the area of the discovery until the resources can be identified and appropriate resource protection measures can be implemented. The Applicant would notify RUS officials immediately of any discoveries.
CR-2	Cultural Resources – Human Remains Inadvertent Discovery: pursuant to CRS Section 24-80-1302, the Applicant will immediately notify the RUS, county coroner or medical examiner, and sheriff or police chief of any discovery of suspected human skeletal remains. The Applicant will stop all activities in the vicinity of the discovery and protect it until the coroner has taken legal custody of the remains or the state archaeologist authorizes resumption of construction activities following disinterment and coordination with the Colorado Council on Indian Affairs.
Noxious Weeds	
NW-1	The introduction of noxious plant species would be minimized by washing equipment prior to construction to prevent the introduction of invasive species seeds from earthmoving or hauling and minimize soil disturbance.
Soils	
S-1	Movement of construction vehicles and equipment would be limited to the project area and access road.
Wastes, Hazardous and Solid	
WH-1	Fuels and lubricants would be stored in appropriate containers, and refueling would occur in designated areas at a minimum of 100 feet from any stream channels. All fuel and fluid spills in the staging areas would be handled in accordance with appropriate state and federal spill reporting and response requirements.
WH-2	A hazardous spill plan would be in place, stating the actions to be taken in the case of a spill, notification measures, and preventive measures to be implemented such as the placement of refueling facilities and the storage and handling of hazardous materials.
WH-3	Equipment shall be refueled and serviced only in designated staging areas.

4.0 References

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Appendix A Farmland Protection Policy Act, National Resources Conservation Service Letter for the Lamar Community Solar Site Project

NRCS

Natural Resources Conservation Service
Denver Federal Center
Building 56, Room 2604
P.O. Box 25426
Denver, CO 80225

SUBJECT: Farmland Protection Policy Act January 7, 2024

Lili Perreault
Environmental Planner
ERO Resource Corporation

RE: Lamar Community Solar Site Project

Dear Lili Perreault,

The Farmland Protection Policy Act (FPPA) is intended to minimize the impact federal programs have on the unnecessary and irreversible conversion of farmland to non-agricultural use. It assures that to the extent possible federal programs are administered to be compatible with state, local units of government, and private programs and policies to protect farmland.

For the purpose of the FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to the FPPA requirements does not have to be currently used for cropland. Projects are subject to the FPPA requirements if they may irreversibly convert farmland to non-agriculture use and are completed by a federal agency or with assistance from a federal agency.

All aspects of this project will occur without the permanent conversion of farmland and is not subject to the FPPA. NRCS encourages the use of accepted erosion control practices during the construction of this project.

If you have any further questions, please call at (970-361-3773).

Thank you,

Lalita Limpichart
Resource Soil Scientist
Lalita.limpichart@usda.gov

cc:
Eugene Backhaus - State Resource Conservationist, NRCS, Denver CO
Clint Evans – State Conservationist, NRCS, Denver CO
William Shoup – State Soil Scientist, NRCS, Denver CO

Appendix B Cultural Resources Correspondence with the SHPO and Limited Site Form

United States Department of Agriculture

Rural Development
Rural Utilities Service
1400 Independence Ave SW, Room 4018
Stop 1570,
Washington, DC, 20250
Voice 907.409.0203

6/4/2025

SHPO Dawn DiPrice
State Historic Preservation Office
1200 N. Broadway
Denver, CO 80203

Subject: United States Department of Agriculture (USDA) – Rural Development (RD)
Rural Utilities Service (RUS) Section 106 Finding Letter
Finding of No Historic Properties Affected
Lamar Community Solar Project
Prowers County, CO

Dear SHPO DiPrice,

Clay Creek Energy is seeking financial assistance from the USDA Rural Development (RD), Rural Utilities Service (RUS) under its= Powering Affordable Clean Energy (PACE) Program for their Lamar Community Solar Project. This Project will not be using the NPA.[1]

The proposed project is to develop and construct a 4.8 megawatt (MW) alternating current (AC) solar facility of the City of Lamar (City) in Prowers County, Colorado (project area).

The proposed project would cover approximately 33.7 acres of vacant private land. The project area abuts grazing land to the north and east, undeveloped land to the south, and County Road 50 to the west. The project would be accessed via an existing dirt road running through the property off County Road 50. The project would connect to the City's municipal distribution system.

The project would include 129,000 modules (First Solar Series 6+), 24 generating units, and Yaskawa Solectria XGI 1500-200 inverters. Per code regulations, the area occupied by the solar panels and components would be fenced using chain link (7-foot height) to prevent wildlife from passing through (National Electrical Safety Code Section19, Rule 190, and Section 11, Rule 110.A.1.a). No lighting would be used in the project area. In addition to the solar panels, inverters, and the perimeter fencing, the proposed equipment and components for the Proposed Action would consist of the following:

[1] *Nationwide Programmatic Agreement among the U.S. Department of Agriculture Rural Development Programs, National Conference of State Historic Preservation Officers, Tribal Signatories, and The Advisory Council on Historic Preservation for Sequencing Section 106* (NPA).

USDA is an equal opportunity provider and employer.

Rural Development
Rural Utilities Service
1400 Independence Ave SW, Room 4018
Stop 1570,
Washington, DC, 20250
Voice 907.409.0203

- steel pylons and steel racking
- distribution transformer
- AC power cables
- direct current power cables
- fiber communication cables
- interconnection breaker
- interconnection switchgear
- interconnection metering enclosure
- communications enclosure
- signage

The Proposed Action would require utility-scale solar equipment, such as solar panels, inverters, mounting structures, and electrical infrastructure—commercially available technology that adhere to established industry standards. The project area benefits from relatively flat terrain, which minimizes ground disturbance associated with excavation and grading. The land would be leveled slightly to drive pylons but would not be stripped.

If RUS elects to fund the Project construction work plan, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800.

RUS defines the area of potential effect (APE), as an area that includes all Project construction and excavation activity required to construct, modify, improve, or maintain any facilities; any right-of-way or easement areas necessary for the construction, operation, and maintenance of the Project; all areas used for excavation of borrow material and habitat creation; all construction staging areas, access routes, utilities, spoil areas, and stockpiling areas. Impacts that come from the undertaking at the same time and place with no intervening causes, are considered “direct” regardless of its specific type (e.g., whether it is visual, physical, auditory, etc.). “Indirect” effects to historic properties are those caused by the undertaking that are later in time or farther removed in distance but are still reasonably foreseeable.

The APE for the referenced project consists of the project construction area of approximately 33.7 acres of vacant private land and a 0.5 mile area surround the project construction area to account for potential visual effects from the project. The project area is located in a flat, open pastoral field with the Arkansas River flowing 4.3 miles north. Willow creek is located to the west, and Clay Creek to the east. The larger area is characterized by expansive farmland in the open plains. Additionally, The APE does not include federal and/or tribal land(s) as defined pursuant to 36 CFR § 800.16(x).

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The following Indian tribes are being notified about the Project: Apache Tribe of Oklahoma, Cheyenne and Arapaho Tribes, Oklahoma, Comanche Nation, Oklahoma, Fort Belknap Indian Community of the Fort Belknap Reservation of Montana, Northern Cheyenne Tribe of the Northern Cheyenne Indian Reservation, Montana, and the Osage Nation.

The enclosed report titled, "Lamar Community Solar Project Cultural Resources Survey", dated February 27, 2025 describes the results of the survey of the project construction area and desktop review of the APE . The desktop review reviews show no previously recorded cultural resources within the 0.5 mile APE, and no cultural resources were found during the survey of the project construction area. Based on the findings of this report, a finding of no historic properties affected in accordance with 36 CFR § 800.4(d)(1) is appropriate for the referenced project.

Accordingly, the RUS is submitting a finding of no historic properties affected in accordance with 36 CFR § 800.4(d)(1) and supporting documentation for review and consideration by your office. Please provide your concurrence or objection, **electronically** within 30 days of your receipt of this recommended finding. In accordance with 36 CFR § 800.3(c)(4), RUS will proceed to the next step in review if we do not receive a response from you within thirty days. Please direct any questions you may have to Phoebe Gilbert via email at Phoebe.Gilbert@usda.gov or 907-409-0203.

Sincerely,

PHOEBE GILBERT

Digitally signed by PHOEBE GILBERT
Date: 2025.06.04 12:06:47 -08'00'

Phoebe Gilbert, MA
Archeologist
Environmental and Historic Preservation Division
Rural Utilities Service
Rural Development
United States Department of Agriculture

Enclosure(s)

1. APE Map
2. Lamar Community Solar Project Cultural Resources Survey

From:	Gilbert, Phoebe - RD, AK
To:	Marco Giannakouros
Cc:	Edna Picciolini; Valerie Marshall; Brian Boerner; Balstad, Shawnn - RD, MN
Subject:	RE: [External Email]Section 106 Finding of No Historic Properties Affected Letter - Clay Creek Energy - Lamar Community Solar - PW.RD.NR2 - 6-5-2025
Date:	Wednesday, July 9, 2025 2:23:44 PM
Attachments:	image001.png USDA RD Standard Inadvertent Discovery Plan.pdf

External Email:

Hi Marco,

RUS has also completed its responsibilities under 54 USC 306108 for this project, the S106 is now closed for CO 58 Lamar Community Solar. Attached is the USDA RD Standard Inadvertent Discovery Clause. Please note that in the event of changes to the scale or scope of the project, there may be additional Section 106 responsibilities under certain circumstances set forth in 36 CFR Part 800.13.

Please submit the ER within 60 days to the INTAKE email SM.RD.RUS.EHPD.Intake@usda.gov. In the email to INTAKE, please clearly state that Phoebe Gilbert **concluded S106 on 7/7/25.**

Best of luck on this project!

Phoebe

Phoebe Gilbert
Archeologist
EHPD | WEP

USDA U.S. DEPARTMENT OF AGRICULTURE
Rural Utilities Service, Rural Development
1400 Independence Ave SW, Washington, DC, 20250
p: (907) 409-0203

From: Marco Giannakouros <marco@sandhillsenergy.com>
Sent: Thursday, June 5, 2025 2:25 PM
To: oahp@state.co.us <hc_oahp@state.co.us>
Cc: Edna Picciolini <epicciolini@aeiconsultants.com>; Valerie Marshall <vmarshall@aeiconsultants.com>; Gilbert, Phoebe - RD, AK <Phoebe.Gilbert@usda.gov>; Brian Boerner <brian@sandhillsenergy.com>
Subject: [External Email]Section 106 Finding of No Historic Properties Affected Letter - Clay Creek Energy - Lamar Community Solar - PW.RD.NR2 - 6-5-2025

[External Email]

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Hello,

Clay Creek Energy is seeking financial assistance from the USDA Rural Development (RD), Rural Utilities Service (RUS) under its Powering Affordable Clean Energy (PACE) Program for their Lamar Community Solar Project. The following files have been uploaded to MoveIT for your review:

Zip File: COM_CCE_Lamar_PW.RD.NR2

The following documents are in the zipped folder:

- CCE - RUS Finding Letter Concurrence - Cover Letter - Lamar, CO - 6-5-25
- CCE - 2025.06.04_FND_CO0058_Lamar Solar_ShPO
- 1. APE Map
- 2. Lamar Community Solar Project Cultural Resources Survey

Please provide your concurrence or objection, electronically within 30 days of receipt of this recommended finding to Phoebe Gilbert at Phoebe.Gilbert@usda.gov.

Marco Giannakouros Director, Procurement and Permitting
1403 Harney Street #200
Omaha, NE 68102
(563) 451-7558
LinkedIn | www.sandhillsenergy.com

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Appendix C Information for Planning and Consultation Official Species List

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Colorado Ecological Services Field Office
Denver Federal Center
P.O. Box 25486
Denver, CO 80225-0486
Phone: (303) 236-4773 Fax: (303) 236-4005

In Reply Refer To: 11/07/2024 19:26:59 UTC
Project Code: 2025-0016634
Project Name: LaMar Community Solar

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

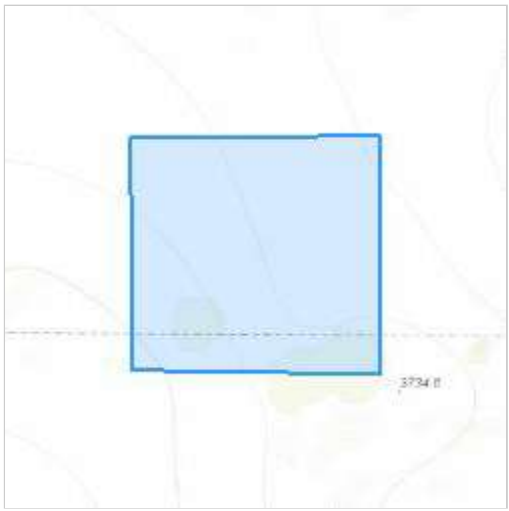
This species list is provided by:

Colorado Ecological Services Field Office
Denver Federal Center
P.O. Box 25486
Denver, CO 80225-0486
(303) 236-4773

PROJECT SUMMARY

Project Code: 2025-0016634
Project Name: LaMar Community Solar
Project Type: Power Gen - Solar
Project Description: Solar project
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.043440000000004,-102.5919772103038,14z



Counties: Prowers County, Colorado

ENDANGERED SPECIES ACT SPECIES

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

BIRDS

NAME	STATUS
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis*	Threatened
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/10477	
Lesser Prairie-chicken *Tympanuchus pallidicinctus*	Threatened
Population: Northern DPS	
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/1924	

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus*	Candidate
No critical habitat has been designated for this species.	
Species profile: https://ecos.fws.gov/ecp/species/9743	

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: ERO
Name: Lili Perreault
Address: 835 E Second Ave
City: Durango
State: CO
Zip: 81301
Email lperreault@eroresources.com
Phone: 9842895698

Appendix D National Wetlands Inventory Map for the Lamar Project Area

U.S. Fish and Wildlife Service
National Wetlands Inventory

Lamar wetland map



January 15, 2025

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Appendix E Federal Emergency Management Agency Flood Map

National Flood Hazard Layer FIRMette

FEMA



Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/5/2024 at 4:40 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

EXHIBIT R - TRAFFIC STUDY

April 9, 2026

Mr. Brian Schmidt
Interconnection Systems Inc.
Assistant Project Manager
brian@issolar.com

Re: Lamar Solar
CDOT Level 2 Traffic Assessment
Prowers County, Colorado

Dear Mr. Schmidt:

This traffic study letter documents the results of a Level 2 CDOT traffic assessment for the proposed Lamar Solar project located in Prowers County, Colorado. The purpose of this letter is to provide trip generation, trip distribution, and project traffic assignment for the construction phase of the proposed solar project to determine the anticipated increase in traffic attributable to the project. The development is located along the east side of a dirt road named CR 9.4/CR CC .5, identified as "Dirt Road Way" in this letter, just north of CR DD 8. A vicinity map illustrating the location of Lamar Solar is attached as **Figure 1**.

The project will consist of a 5.86 MW solar facility on approximately 43 acres of fenced area with supporting infrastructure. A conceptual site plan for the proposed development is attached. This traffic assessment identifies the amount of traffic associated with this development during both construction and operational phases, and the expected trip distribution and traffic assignment.

CONSTRUCTION ACTIVITY AND ACCESS

The construction activities each month may vary based on phasing and the size of the phase. This traffic study was prepared analyzing the peak construction traffic during the highest months of activity that will last approximately 3-4 months. Construction will generally follow these steps:

- Mobilization
- Civil/site preparation
- Cable plow/foundations construction
- Post install
- Racking install
- Substation construction
- Set major equipment
- Module installation
- Testing, commissioning, and energization
- Demobilization

Regional access to Lamar Solar will be provided by US Highway 50 (US-50) while primary and direct access will be provided by Dirt Road Way (CR 9.4/CC .5). Direct access will be

provided by a proposed by a single driveway along Dirt Road Way, approximately 2,250 feet north of CR DD 8.

Existing turning movement counts were conducted at the study intersection on Wednesday, March 25, 2026 during the weekday morning and afternoon peak hours. The counts were conducted during the morning and afternoon peak hours of adjacent street traffic in 15-minute intervals from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM on this count date. The existing intersection geometry and peak hour traffic volumes are shown in **Figure 2** with count sheets attached.

TRIP GENERATION

Site-generated traffic estimates are determined through a process known as trip generation. The number of trips for the Lamar Solar facility was based on anticipated construction activity and operations. In order to study the effect of construction traffic created by the solar facility, the expected trips during the peak period of construction were used as the basis for this study.

Construction Traffic Generation

The standard construction hours for the site will be from 7:00 am to 5:00 pm. It is anticipated that the peak construction period will include a maximum of 20 construction workers and four (4) heavy vehicles. The truck trip generation also includes the volume adjusted for the three (3) passenger car equivalents (PCE) per truck. Approximately two-thirds of the employees and trucks were assumed to enter during the morning peak hour and exit during the afternoon peak hour. The following **Table 1** identifies the peak construction activity trip generation for the construction of Lamar Solar facility.

Table 1 – Lamar Solar Traffic Generation

Land Use and Size	Weekday Vehicles Trips						
	Daily	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Heavy Duty Trucks (4)	*8*	*3*	0	*3*	0	3	3
PCE Trips	*24*	*9*	*0*	*9*	*0*	*9*	*9*
Passenger Vehicles (20)	40	14	1	15	1	14	15
Total Vehicles	**48**	**17**	**1**	**18**	**1**	**17**	**18**
Total PCE	***64***	***23***	***1***	***24***	***1***	***23***	***24***

As shown in the table above, Lamar Solar is expected to generate approximately 48 daily trips (24 round trips) with 18 of these trips occurring in the morning peak hour and afternoon peak hour during the peak construction activities. This volume of daily traffic of 48 trips is expected to be the highest volume generated during solar facility construction.

Solar Facility Operational Phase Traffic Generation

After the Lamar Solar project has been constructed, the number of trips generated by the solar plant is expected to be significantly less than during the construction period, approximately one vehicle per week (2 weekly trips). Therefore, traffic impacts related to the operation of the solar plant facility will be negligible and insignificant.

TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

Trip distribution is based on the anticipated arrival location of employees along with the delivery route to be used for truck traffic. The proposed haul route will utilize US-50 for travel from the east and west, connecting to CR 9.4 and continuing south to the project access. Exiting haul traffic will follow the same route back to US-50. The distribution for construction worker trips was derived based on distances to nearby cities/towns and populations. Therefore 80% of traffic has been assigned to/from the west and 20% to/from the east. Attached **Figure 3** illustrates the anticipated project trip distribution and the project traffic assignment (including passenger car equivalent (PCE)) for construction activities.

CDOT ACCESS PERMIT

The threshold for requiring an access permit along CDOT roadways occurs when project traffic is anticipated to increase the existing access traffic volume by more than 20 percent, or a new access is created or modified along a CDOT roadway. The project will add more than 20 percent to the south leg of the existing traffic volumes at the US-50 and CR 9.4 access intersection and therefore may require a CDOT temporary access permit.

Auxiliary turn lanes along CDOT controlled highways are to be implemented based on volume threshold requirements set forth in the State Highway Access Code. Further, turn lane lengths should be designed based on the State Highway Access Code. US-50 is categorized as a R-A: Regional Highway and has a varied posted speed limit of 55 miles per hour west of the US-50 and CR 9.4 intersection and 65 miles per hour east of the US-50 and CR 9.4 intersection. According to the State Highway Access Code for category R-A: Regional Highway roadways, the turn lane warrants are as follows:

- A left turn deceleration lane with taper and storage length is required for any access with a projected peak hour left ingress turning volume greater than 10 vph. The taper length will be included within the required deceleration length.
- A right turn deceleration lane and taper length is required for any access with a projected peak hour right ingress turning volume greater than 25 vph. The taper length will be included within the required deceleration length.
- A right turn acceleration lane and taper length is required for any access with a projected peak hour right turning volume greater than 50 vph when the posted speed on the highway is greater than 40 mph. The taper length will be included within the required acceleration length. A right turn acceleration lane may also be required at a signalized intersection if a free right turn is needed to maintain an appropriate level of service in the intersection.

Based on the peak construction traffic volume with passenger car equivalent, turn lane requirements at the US-50 and CR 9.4 intersection are as follows:

- A westbound left turn deceleration lane is not warranted at the US-50 and CR 9.4 intersection based on projected traffic volumes being six (6) westbound lefts during the morning peak hour and the threshold being 10 vehicles per hour (vph). However, a westbound left turn lane is already provided.

- An eastbound right turn deceleration lane is not warranted at the US-50 and CR 9.4 intersection based on projected traffic volumes being 19 eastbound rights during the morning peak hour and the threshold being 25 vph. Like the westbound left turn lane, an eastbound right turn lane is already provided at this intersection.
- A northbound right turn acceleration lane is not warranted at the US-50 and CR 9.4 intersection based on projected traffic volumes being six (6) northbound rights during the afternoon peak hour and the threshold being 50 vph.

CONCLUSIONS AND RECOMMENDATIONS

In summary, the Lamar Solar construction activity traffic shows a very low traffic volume assigned to the surrounding street network. Further, trips are negligible during the operational phase of the solar facility. Based on these results, Lamar Solar will have a minimal traffic impact to the surrounding roadway network. Turn lanes are not warranted at the US-50 and CR 9.4 intersection with the addition of construction project traffic. Of note, the eastbound right turn lane, westbound left turn lane, and northbound to eastbound acceleration lane are currently provided. Since the construction traffic from the site will temporarily increase the access volume to US-50 at CR 9.4, a temporary CDOT access permit may be required. If you have any questions or require anything further, please feel free to call me at (720) 738-3435.

Sincerely,

KIMLEY-HORN AND ASSOCIATES, INC.

Mary Gormley, P.E., PTOE, RSP_1
Project Manager



Figures

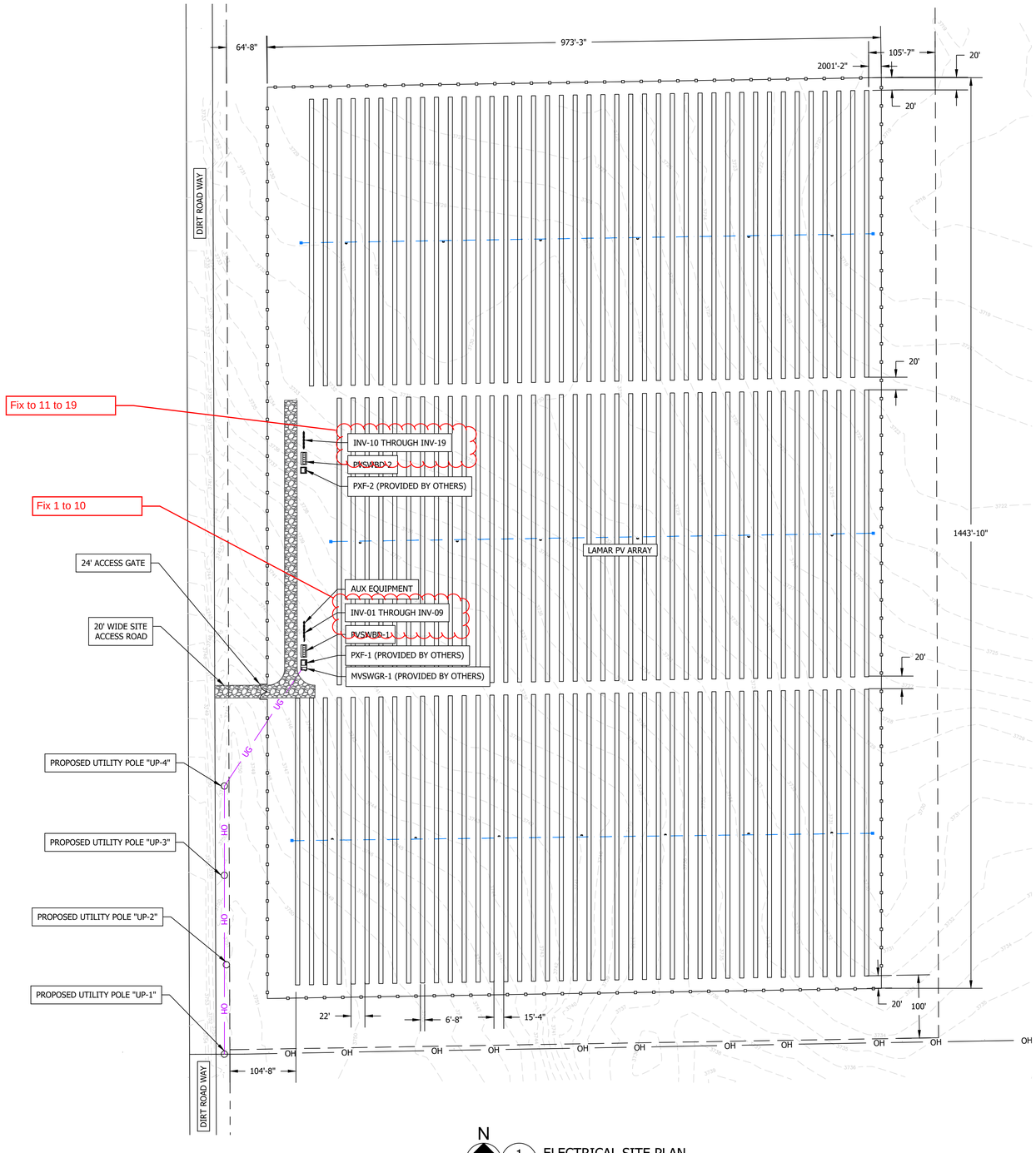
Conceptual Site Plan

PROJECT SUMMARY	
DC SYSTEM SIZE:	5.86 MWDC
AC SYSTEM SIZE:	4.75 MWAC
DC/AC RATIO:	1.23
PV MODULE MANUFACTURER:	FIRST SOLAR
PV MODULE MODEL:	FS-6445A-P-B-2
MODULE WATTAGE:	445 W
MODULES PER STRING:	6
TOTAL MODULES:	13,176
TOTAL STRINGS:	2,196
INVERTER MANUFACTURER:	CPS
INVERTER MODEL:	CPS SCH250K-T-US-600-CWB
INVERTER RATING:	250 KW
TOTAL INVERTER QUANTITY:	19

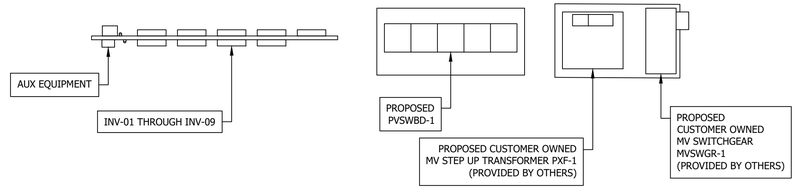
NO.	REVISION/RECORD OF ISSUE	BY	ENGR	DATE
A	10% ELECTRICAL DRAWINGS	BPW	DTG	01/13/2026
B	10% ELECTRICAL DRAWINGS	DTG	DTG	01/21/2026
C	30% ELECTRICAL DRAWINGS	MDL	DTG	02/20/2026

LEGEND

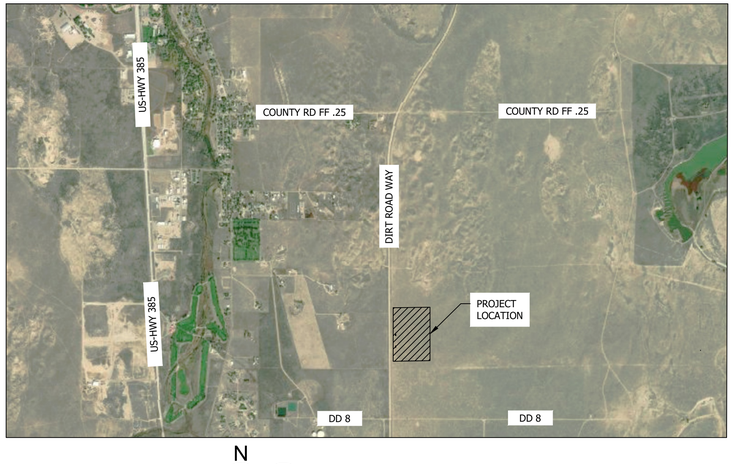
- 18X6 RACKING
- COMBINER BOX
- CAB SYSTEM END PIER
- CAB SYSTEM
- PROJECT BOUNDARY LINE
- PERIMETER FENCE LINE
- EXISTING OVERHEAD LINE
- OVERHEAD MV WIRE
- UTILITY PROVIDED UNDERGROUND MV WIRE



N 1 E1.0 ELECTRICAL SITE PLAN
SCALE: 1" = 100'
50'-0" 0 100'-0"



N 3 E1.0 EQUIPMENT PAD LAYOUT
SCALE: 1" = 10'
5'-0" 0 10'-0"



N 2 E1.0 VICINITY MAP
SCALE: 1" = 2000'
1000'-0" 0 2000'-0"

30% DESIGN NOT FOR CONSTRUCTION

Sandhills ENERGY

ISI SOLAR

PSE ENGINEERS & CONSULTANTS
2424 Rimrock Rd., Suite 300
Madison, WI 53713
Tel: 866.825.8895 www.powersystem.org

NOTICE:
THIS DRAWING IS DISTRIBUTED UPON THE CONDITION THAT IT IS NOT TO BE REPRODUCED OR BE COPIED, IN WHOLE OR IN PART WITHOUT THE EXPRESSED WRITTEN CONSENT OF POWER SYSTEM ENGINEERING, INC.

PSE PROJECT NUMBER: NE0192512-40

ORIGINAL DATE:	ENGR:
01/13/2026	DTG
DRAWN BY:	CHK'D/APPD BY:
BPW	OOI

LAMAR SOLAR
38.0237°, -102.3534°
LAMAR, CO 81052

ELECTRICAL SITE PLAN

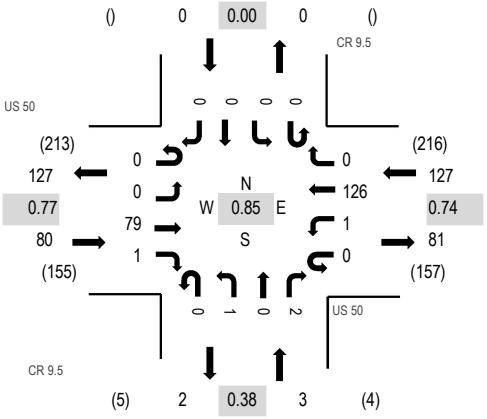
DRAWING NUMBER	REVISION
E1.0	C

Existing Traffic Counts

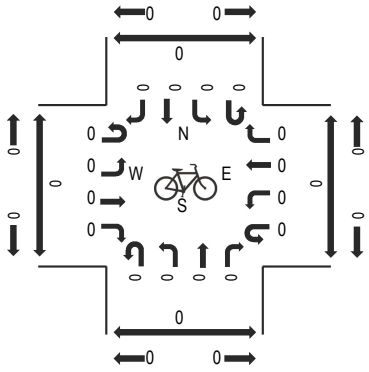
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 CR 9.5 & US 50 AM
Date: Wednesday, March 25, 2026
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

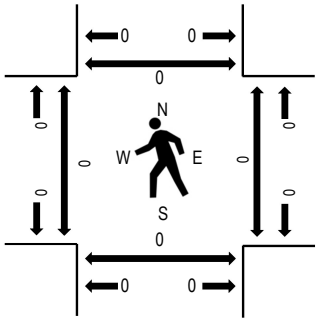
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

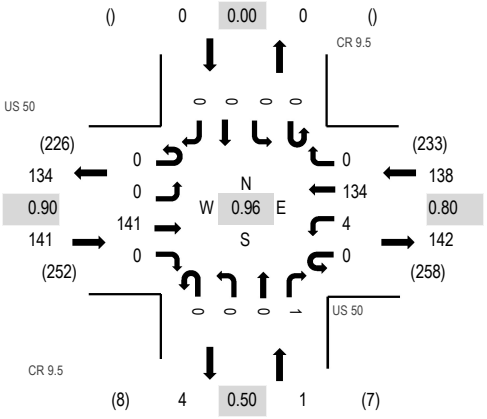
Traffic Counts - Motorized Vehicles

Interval Start Time	US 50 Eastbound				US 50 Westbound				CR 9.5 Northbound				CR 9.5 Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	26	0	0	0	23	0	0	1	0	1	0	0	0	0	51	210	0	0	0	0
7:15 AM	0	0	18	0	0	1	21	0	0	0	0	1	0	0	0	0	41	209	0	0	0	0
7:30 AM	0	0	19	1	0	0	36	0	0	0	0	0	0	0	0	0	56	200	0	0	0	0
7:45 AM	0	0	16	0	0	0	46	0	0	0	0	0	0	0	0	0	62	183	0	0	0	0
8:00 AM	0	0	18	0	0	1	31	0	0	0	0	0	0	0	0	0	50	165	0	0	0	0
8:15 AM	0	0	17	0	0	0	15	0	0	0	0	0	0	0	0	0	32		0	0	0	0
8:30 AM	0	0	17	0	0	1	21	0	0	0	0	0	0	0	0	0	39		0	0	0	0
8:45 AM	0	0	23	0	0	1	19	0	0	0	0	1	0	0	0	0	44		0	0	0	0
Count Total	0	0	154	1	0	4	212	0	0	1	0	3	0	0	0	0	375		0	0	0	0
Peak Hour	0	0	79	1	0	1	126	0	0	1	0	2	0	0	0	0	210		0	0	0	0

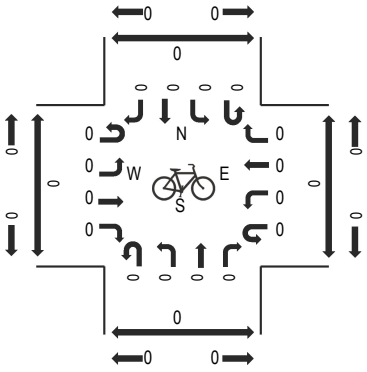
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 1 CR 9.5 & US 50 PM
Date: Wednesday, March 25, 2026
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

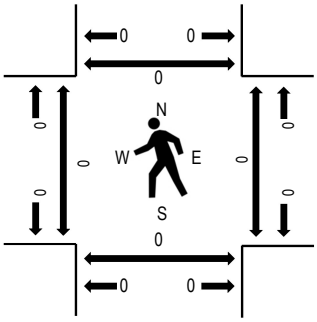
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	US 50 Eastbound				US 50 Westbound				CR 9.5 Northbound				CR 9.5 Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	0	24	0	0	1	22	0	0	1	0	0	0	0	0	0	48	252	0	0	0	0
4:15 PM	0	0	34	0	0	1	30	0	0	0	0	0	0	0	0	0	65	272	0	0	0	0
4:30 PM	0	0	34	0	0	1	32	0	0	0	0	0	0	0	0	0	67	280	0	0	0	0
4:45 PM	0	0	29	0	0	1	42	0	0	0	0	0	0	0	0	0	72	266	0	0	0	0
5:00 PM	0	0	39	0	0	1	28	0	0	0	0	0	0	0	0	0	68	240	0	0	0	0
5:15 PM	0	0	39	0	0	1	32	0	0	0	0	1	0	0	0	0	73		0	0	0	0
5:30 PM	0	0	32	0	0	1	18	0	0	0	0	2	0	0	0	0	53		0	0	0	0
5:45 PM	0	0	21	0	0	1	21	0	0	0	0	3	0	0	0	0	46		0	0	0	0
Count Total	0	0	252	0	0	8	225	0	0	1	0	6	0	0	0	0	492		0	0	0	0
Peak Hour	0	0	141	0	0	4	134	0	0	0	0	1	0	0	0	0	280		0	0	0	0

EXHIBIT S - SYSTEM IMPACT STUDY

4.8MW Solar Interconnection Impact Study

LAMAR, COLORADO

Requested by:
Arkansas River Power Authority
P.O. Box 70
Lamar, CO 81052

Prepared for:
Sandhills Energy, LLC
1403 Harney Street, Suite 200
Omaha, NE 68102

CLP ENGINEERING, LLC
6312 South Fiddlers Green Circle, Suite 200-E
01/13/2025

Proprietary

REVISION HISTORY

Revision	Date	Description	Author	Approval
A	01/13/2025	Issued for Review	BHS	DHS

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SOLAR INTERCONNECTION IMPACT STUDY

CLP Engineering, LLC (CLPE) has performed an interconnection study for the Arkansas River Power Authority (ARPA) and Sandhills Energy, LLC (Sandhills) to assess the impact of connecting approximately 4.8MW of solar energy production on the existing City of Lamar, CO electric distribution system as shown in the table below. The electrical distribution system is owned, operated, and maintained by Lamar Light and Power (LLP). Herein CLP provides the study model, analysis, results, and recommendations.

Table 1: Proposed Solar Generation

Location	PV Module			Inverter		
Wind Turbine Generation Radial (Feeder LP SE)	Rating (W DC)	Quantity	Total (kW DC)	Rating (kW AC)	Quantity	Total (kW AC)
	455	12,810	5,828.6	200	24	4,800
	First Solar 455W FS-6455A-C			Solectria XGI-1500-200 (480V)		

SECTION 1.0 EXECUTIVE SUMMARY

Sandhills has worked with ARPA and the LLP electrical department to define the location and sizing for the new 4.8MW photovoltaic (PV) solar generation site. The site is located just northeast of the existing 6-million and LAMSO substations along the county access road on the east side of town. The PV solar generation facility is proposed for interconnection with the wind turbine generation radial tap on the LLP Light Plant 24.9kV Southeast feeder.

Load flow and short circuit analyses were performed using the ETAP electrical model that CLPE previously developed for ARPA and LLP. The new lines and related electrical apparatuses were added to the model. The solar arrays and inverters were modeled using the datasheets that were provided to CLPE by Sandhills Energy.

The following are the key findings and results from the study:

Load Flow

- All existing equipment ratings are adequate to distribute the PV solar power throughout the distribution system and substations.
- There are many configurations the system can be put in, including normal switching, that result in a high likelihood of pushing power back into the transmission system. Curtailment, control schemes, transfer trip schemes, etc. must be considered as a part of the project to eliminate reverse power flow situations.

Short Circuit

- No distribution or substation equipment is at risk of being exposed to damaging fault currents from the addition of the PV solar to the system.

Distribution System Interconnection

- The utility interconnection scope of work including budgetary estimate and list of materials is outlined in Section 5.3. The proposed location for interconnection with the system is adequate and does not require modifications to the existing distribution feeder equipment.

Recommendations:

- **A transfer trip scheme where communications from the incoming utility metering point can trip off the solar PV recloser is required. Without this scheme, there is a high likelihood of back feeding the transmission system.**
- **Further discussions with the transmission provider are required to determine the amount and duration of reverse power flow onto their system that would be acceptable. Transfer scheme reaction times and power flow set-points must be further discussed and designed with all parties.**

SECTION 2.0 MODEL DEVELOPMENT

The software used to simulate the LLP electrical distribution system is ETAP v22.5.0. The ETAP model of the LLP electrical distribution system was modified to incorporate the new solar generation facility and its interconnection to the existing system.

2.1 METHODOLOGIES AND ASSUMPTIONS

- Peak capacity values were used for the solar panel models based upon provided data sheet values. Solar conditions are assumed to be at ~1000 W/m^2 and 30° C for the maximum solar injection into the LLP distribution system.
- The PV solar arrays and system were incorporated into the ETAP model with a combination of series and parallel solar modules per the design documents provided by Sandhills. The real-world solar generation was assessed at peak output along with wind turbine generation peak output to ensure conservative assessment of the system capabilities. Real-world generation output will be variable in comparison to the ETAP model due to weather, age, temperature, and other variables. Refer to Appendix A for the Interconnection One-line.
- Various switching scenarios and loading conditions were configured for the analysis.
- The different loading conditions include minimum and maximum loading conditions per LLP substation feeder metering data.
- PV generation daylight hours for loading assessment are between 0700 to 1900 hours for a total daytime loading hours count of 6,564.
- Per direction from LLP, the wind and solar will both be connected through the existing generation tap line and recloser to the LP Southeast feeder. Either can be run independently or together, but all renewable generation will flow through the single point of interconnection.
- The loading data compares peak PV solar generation and wind turbine generation output against minimum and maximum loading scenarios to ensure system stability for all loading possible on the system.

- Per the Sandhills provided datasheets for the PV solar inverters, it is assumed that solar generation power factor will be coordinated with Lamar and ARPA to prevent excessive reactive power demands on the transmission utility service.
- **The following is a key assumption to ensure the system operates as anticipated with no additional impacts to the current system operation. From the manufacturer information and the preliminary design documents provided, the PV solar facility and interconnection with the multi-point grounded distribution system will be in compliance with IEEE 1547-2018: IEEE Standard for Interconnected and Interoperability of Distributed Energy Resources and Associated Electrical Power Systems Interfaces and IEEE Std C62.92.1 - IEEE Guide for the Application of Neutral Grounding in Electrical Utility Systems.**
- See Section 5.3 for a list of the equipment and materials for the utility interconnection scope.

2.2 SYSTEM LOADING

System loading was analyzed against historical values provided by ARPA to determine risk of reverse power flow back onto the transmission utility's system. The system load profile from 1/1/2023 through 6/30/2024 in one-hour increments is represented in Figure 1. The portion of the total system loading that was powered by the transmission utility services is shown in Figure 2. Figure 3 provides the summed historical plotted data for the wind turbine generators. The Light Plant and LAMSO substation load profiles are plotted and represented in Figure 4.

The loading data for maximum, average and minimum loading on the system has been incorporated into the ETAP model load flow analysis. In addition, the average wind turbine generation outputs for those same loading categories was used to realistically assess combined wind and solar generation output. LLP has 6MW of installed wind turbine generation capacity, but one unit is currently out of service due to broken equipment and is not slated for repair at this time. Deployable maximum wind generation is currently 4.5MW for a total renewable energy generation combined maximum output onto the LLP system of 9.3MW.

The normal substation the solar and wind turbine generation is planned to route power through is the Light Plant substation, although the system can be switched around to feed the LAMSO substation if required. The Light Plant substation total load was below 9.3MW for 4,956 (76%) of the 6,564 total operational hours when wind and solar could be generating onto the system together. LAMSO substation daylight load under normal configuration is always less than 9.3MW. The total LLP distribution system loading was below 9.3MW for a total of 302 (4.6%) of the 6,564 total daylight operational hours when wind and solar could be generating onto the system together. More details outlining the risk of reverse power flow onto the transmission systems are located in Section 3.2 and Section 6.0.

Figure 1: LLP Distribution System - 18 Month Load Profile (Total System Load)

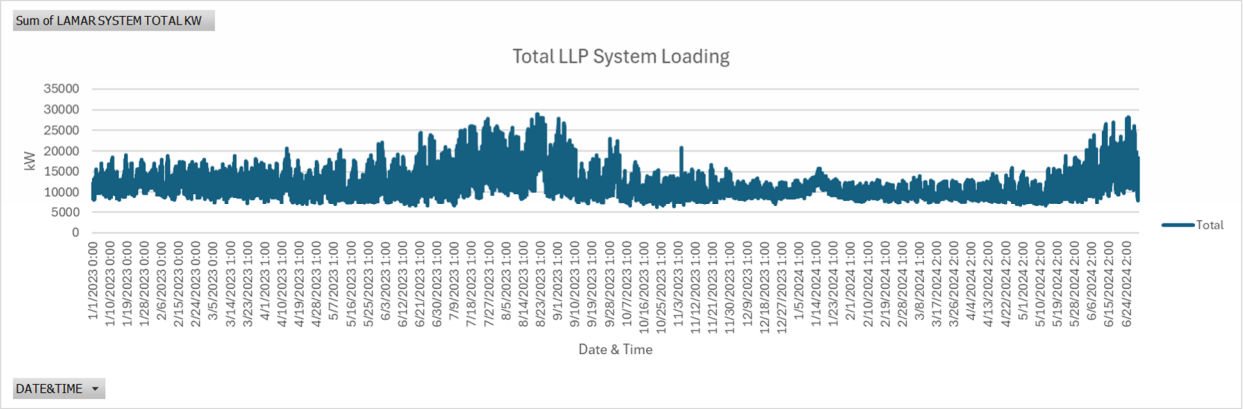


Figure 2: LLP Distribution System - 18 Month Load Profile (Transmission Only)

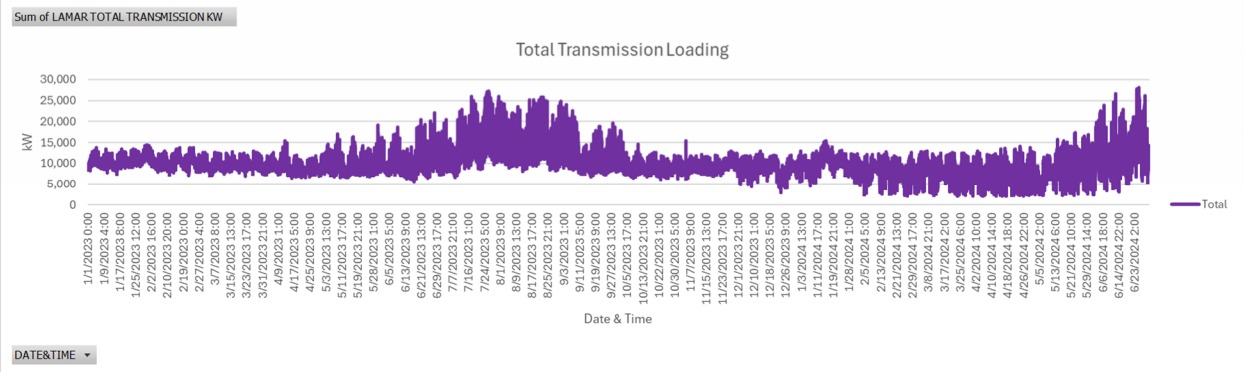


Figure 3: LLP Distribution System - 18 Month Load Profile (Wind Turbine Generators)

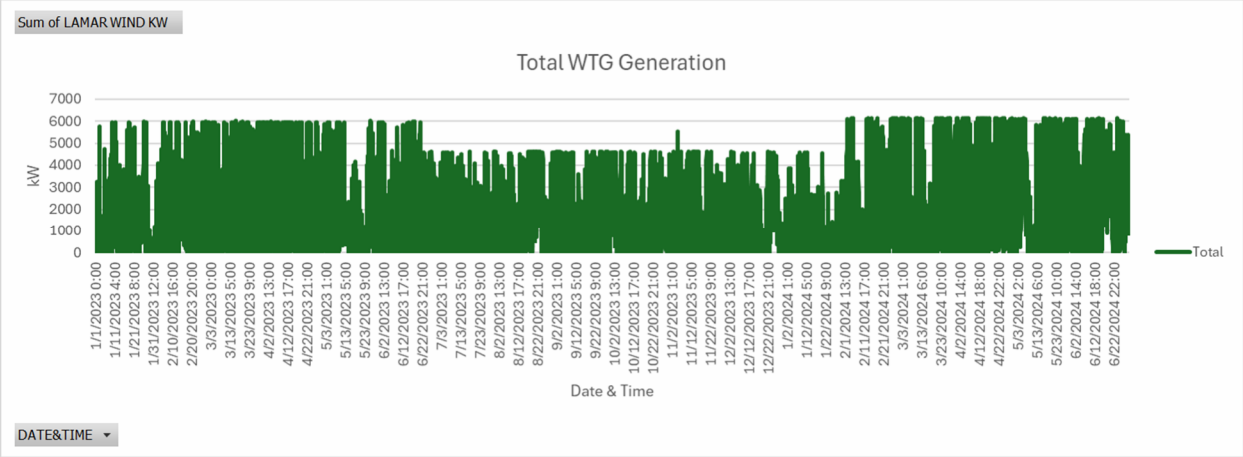
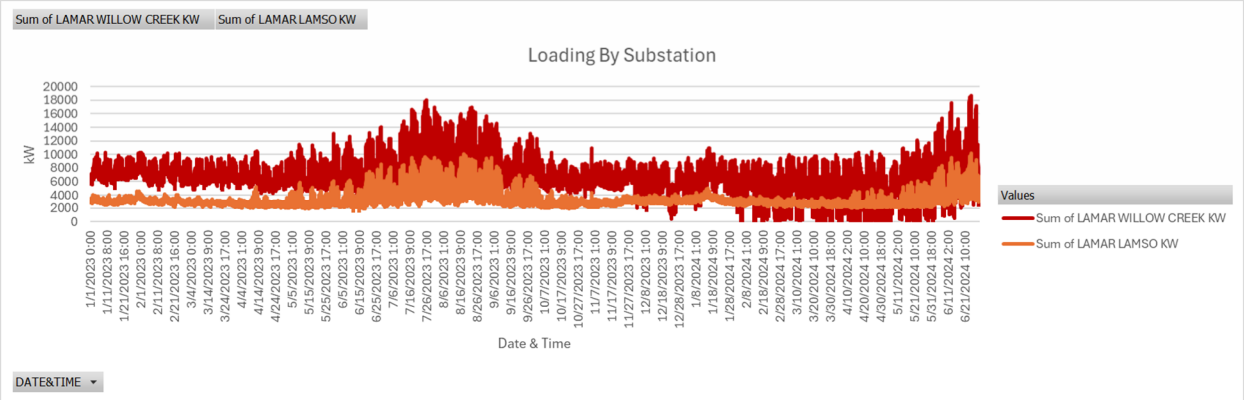


Figure 4: LLP Distribution System - 18 Month Load Profile (Substations)



SECTION 3.0 LOAD FLOW ANALYSIS

The primary purpose of the load flow calculations were to determine whether the solar PV system causes any overloading conditions on the LLP distribution system. The load flow analysis included examining voltage drops and loading on various 24.9kV buses as well as both overhead and underground conductors that may be impacted by the addition of the solar generation facility. The analysis also included power flow in and out of the LLP grid based on the minimum and maximum loading of the distribution system. The system loading was also assessed against historical wind turbine generation contributions to assess risks of reverse power flow onto the Tristate transmission systems.

The analysis accounts for power flow in the system for different switching and loading configurations of the electrical distribution system. Voltage drop calculations evaluate the line losses and relative voltage profile throughout the system. Equipment loading values are compared with industry standard and manufacturer specified maximum capability ratings. Since the generation proposed will be solar, only the hours from sunrise to sunset were evaluated for the loading conditions.

3.1 LOADING CATEGORIES AND STUDY CASES

The following load categories used in this analysis were defined as:

- Maximum Daylight Hours Load
  - System Total: 28,990 kW
  - LAMSO Substation: 9,490 kW
  - Light Plant Substation: 16,000 kW
  - Wind Turbine Generators (Typical): 3,500 kW
    - (4,500kW max as of the time of this study)
- Average Daylight Hours Load
  - System Total: 13,250 kW
  - LAMSO Substation: 3,525 kW
  - Light Plant Substation: 8,455 kW

  - Wind Turbine Generators (Typical): 1,270 kW
- Minimum Daylight Hours Load
  - System Total: 6,870 kW
  - LAMSO Substation: 2,030 kW
  - Light Plant Substation: 4,640 kW
  - Wind Turbine Generators (Typical): 200 kW

The study cases parameters for each load categories are:

- Generation Category: Design (100% Output Capability)
- Diversity Factor: None
- Transformer Global Impedance Tolerance: 7.5%
- Cable Length Tolerance: 5%
- Transmission Line Length Tolerance: 5%

3.2 RESULTS

Load flow was simulated for maximum, average, and minimum loading under the normal switching configuration with and without PV solar generation. Additionally, one alternate switching configuration was assessed with the three load categories to account for when both the southeast and southwest feeders are alternately fed from the LAMSO substation along with the solar and wind generation assets on feeders L1 and L2. The Light Plant substation is serviced by a TriState 69kV transmission service from the Willow Creek substation circuit breaker. The LAMSO substation is serviced by a TriState 115kV transmission service with the point of service located at the substation.

All backup generation assets on the LLP system have been retired and decommissioned. There are no other distribution level generation assets included in this report other than the new 4.8MW PV solar and existing 4.5MW wind turbine generation. The following outlines key aspects of the load flow analysis pertaining to voltage, loading, and power flow.

- Overall voltage profiles fluctuated within less than 1% on the 24.9kV and 69kV systems for maximum, average, and minimum loading. Refer to Appendix C provided with the report for voltage drop results.
- There were no overloading conditions observed on the existing system components due to the additional solar generation. Refer to Appendix C provided with the report for bus loading results.
- The following outlines system load flow during the distribution system's normal switched state.
  - The lowest measured power demand delivered by the transmission utility to the LLP substation was 202kW, when the total system load was only 8,939kW. At this time, the LLP substation loading was 6,159kW and the LAMSO sub was 2,780kW.With the wind turbine generators contributing 5,993kW this resulted in the incoming power from the transmission provider of only 202kW. If the 4.8MW PV solar site was generating at more than 4.2% of nameplate capability there would have been reverse

power flow onto the transmission system. If the entire distribution system was fed from the LLP substation (in an instance LAMSO was offline or not connected), the remaining demand available for PV solar generation would be only 2,946kW, 61% of the nameplate capacity.

- The lowest measured daylight hours system demand was 6,870kW, with 0kW being generated onto the system by the wind turbine generators at that time of measurement. LLP substation accounted for 4,640kW of the total demand. During this time period if the 4.8MW PV solar facility was generating onto the distribution system it would be limited to 96% of nameplate capacity before being at risk of reverse power flow onto the transmission system.
- With a LLP substation minimum daylight hours loading of 202kW, the risk of reverse power flow with unmonitored and controlled generation curtailment is high. This risk is potentially increased during alternate switching configurations if system loads have to be shifted to the LAMSO substation.

- **Due to the system and substation loading situations outlined above, it is critical that the PV solar facility and wind turbine generation controls actively monitor or are actively coordinated against the system demand to curtail generation and prevent reverse power flow on to the transmission systems in order to maximize hours of both assets.**
- **All alternate switching by LLP of the distribution system must account for real time generation and load flow conditions to prevent reverse power flow onto the transmission system.**
- Refer to Table 2 below for the real power flow for the different loading scenarios as assessed in the ETAP model. The results from the wind turbine and PV solar contributions worst case directional power flow are provided. Real world values could be different due to the variability of the resources.
- Refer to Appendix C provided with the report for comprehensive system load flow results.

Table 2: Real Power Load Flow (kW) on LLP Distribution System

Location	Without Generation			With WTG, Without Solar			With WTG And Solar		
	Min Loading *(kW)	Avg Loading *(kW)	Max Loading *(kW)	Min Loading *(kW)	Avg Loading *(kW)	Max Loading *(kW)	Min Loading *(kW)	Avg Loading *(kW)	Max Loading *(kW)
System Total	+6,870	+13,250	+28,990	+2,370	+8,750	+24,490	***-2,430***	+3,950	+19,690
LLP 24.9kV	+4,640	+8,455	+16,000	+140	+3,955	+11,500	***-4,660***	***-845***	+6,700
LLP 24.9kV	+950	+1,665	+3,200	+950	+1,665	+3,200	+950	+1,665	+3,200
LLP 24.9kV	+1,460	+2,665	+5,210	+1,460	+2,665	+5,210	+1,460	+2,665	+5,210
LLP E 24.9kV	+930	+1,770	+3,380	+930	+1,770	+3,380	+930	+1,770	+3,380
LLP SE 24.9kV	+170	+285	+510	***-4,330***	***-4,215***	***-3,990***	***-9,310***	***-9,015***	***-8,790***
LLP 24.9-4.16kV XFMR	+1,130	+2,070	+3,700	+1,130	+2,070	+3,700	+1,130	+2,070	+3,700
Generation Recloser	0	0	0	***-4,500***	***-4,500***	***-4,500***	***-9300***	***-9,300***	***-9,300***
LAMSO 69kV	+2,030	+3,525	+9,490	+2,030	+3,525	+9,490	+2,030	+3,525	+9,490
LAMSO L1 24.9kV	+127	+235	+601	+129	+235	+604	+129	+235	+604
LAMSO L2 24.9kV	+1,888	+3,425	+8,799	+1,891	+3,425	+8,799	+1,891	+3,425	+8,799
LAMSO L3 24.9kV	+15	+34	+90	+17	+34	+93	+17	+34	+93

***(+) sign denotes forward power flow through the distribution system device.**
(-) sign denotes reverse power flow through the distribution system device.

SECTION 4.0 SHORT-CIRCUIT ANALYSIS

Short circuit analysis determines the levels of current that will flow in the system should a fault occur. The results included in the report are the ½ cycle RMS asymmetrical (momentary) maximum fault currents as well as the 30-cycle minimum short circuit values for different types of faults. The objective is to identify any significant increase in fault duties caused by the addition of solar generation. All simulations were conducted using the maximum loading condition.

The short circuit analysis was conducted by calculating faults on the following equipment:

- LP and LAMSO substation main 115kV, 69kV, and 24.9kV buses
- Generation overhead tap line recloser and solar interconnection location
- 24.9kV Southeast and L1 feeders
- Wind turbine generator transformers
- PV solar facility equipment

The faults applied in the analysis assessed the worst-case conditions for three-phase bolted faults and line-to-ground faults. The value of short circuit currents resulted by the addition of the solar generation for utility paralleled operation were then compared with the existing system fault current values to evaluate the differences.

Short-circuit study was performed with the following objectives:

- Calculate the maximum and momentary duty short circuit on each applicable bus in the system model and compare the data against the existing configuration to confirm the system's ability to take on new generation.
- Evaluate the adequacy of device ratings under the configurations which will yield the highest fault current contributions.
- Evaluate the system fault currents for worst case scenarios when operating in parallel with the normal primary utility. The available fault currents on the system are lower when it is being powered from the backup generators at the power plant than from the transmission utility.

4.1 RESULTS

All fault current increases with solar interconnected and generating with the wind turbine generators into the distribution system at the substation level increased less than 10% of the no generation fault levels. The fault levels at the wind turbine equipment increased the most, rising as much as 65% due to the proximity of the PV solar facility to the wind turbine generators compared to the LLP substation. All worst-case fault levels for all distribution equipment with or without solar and wind generation were found to be within industry standard equipment ratings. Tables 4 & 5 provides a summary of the results for buses closest to the interconnection points, at various points on the 24.9kV LP Southeast Feeder as well as the substation main buses. Refer to Appendix D provided with the report for more detailed short circuit results.

Table 3: Maximum Short Circuit (kA)

Location	Nominal (kV)	3-Phase without Generation	3-Phase w/ Solar & WTG	Line-Ground without Generation	Line-Ground w/ Solar & WTG
LP 69kV Bus	69	4.782	4.939	4.368	4.450
LP 24.9kV Bus	24.9	5.106	5.601	4.653	4.934
LAMSO 115kV Bus	115	5.555	5.555	5.545	5.545
LAMSO 24.9kV Bus	24.9	5.267	5.267	5.221	5.221
LP SE, LAMSO L1 Tie	24.9	2.110	2.644	1.506	1.701
Generation Recloser	24.9	2.166	2.726	1.552	1.759
Main Line Tap Pole	24.9	2.166	2.726	1.552	1.759
Solar 27kV PMS	24.9	2.083	2.626	1.481	1.681
Solar XFMR 1 Secondary	0.48	0.000	42.14	0.000	47.51
Solar XFMR 2 Secondary	0.48	0.000	42.14	0.000	47.51
WTG Transformers Pri	24.9	0.997	1.641	0.670	0.808

Table 4: Minimum Short Circuit (kA)

Location	Nominal (kV)	3-Phase without Generation	3-Phase w/ Solar & WTG	Line-Ground without Generation	Line-Ground w/ Solar & WTG
LP 69kV Bus	69	4.376	4.376	4.037	4.062
LP 24.9kV Bus	24.9	3.868	3.868	3.757	3.833
LAMSO 115kV Bus	115	5.500	5.500	5.500	5.500
LAMSO 24.9kV Bus	24.9	4.635	4.635	4.635	4.635
LP SE, LAMSO L1 Tie	24.9	1.779	1.779	1.316	1.387
Generation Recloser	24.9	1.823	1.823	1.355	1.430
Main Line Tap Pole	24.9	1.823	1.823	1.355	1.430
Solar 27kV PMS	24.9	1.758	1.758	1.295	1.370
Solar XFMR 1 Secondary	0.48	0.000	33.596	0.000	41.192
Solar XFMR 2 Secondary	0.48	0.000	33.596	0.000	41.192
WTG Transformers Pri	24.9	0.875	0.949	0.598	0.614

SECTION 5.0 CAPACITY, RELIABILITY, AND INTERCONNECTION SCOPE OF WORK

5.1 CAPACITY

The calculations from the load flow analysis and evaluation confirm that the existing 24.9kV 4/0ACSR generation radial overhead line is adequately sized to carry the full load combination of both the new 4.8MW PV solar generation facility and the existing 4.5MW of utilizable wind turbine generation.

All distribution components on the 24.9kV feeders are rated adequately to support the addition of the 4.8MW of PV solar generation to the system. All distribution feeder components are adequately rated to handle the increase in available fault currents.

All equipment in the Light Plant and LAMSO substations are adequately rated for the increase in renewable generation on the 24.9kV system. All substation equipment and components are adequately rated to handle the increase in available fault currents.

5.2 RELIABILITY

Key observations regarding the reliability of the proposed solar generation interconnection:

- The 24.9kV LP Southeast feeder has two sources, the primary being the circuit breaker at the Light Plant substation. The second source is the LAMSO L1 feeder tie at the normally open gang operated switch north of the 6-million substation. All switching for alternate sources and loading is performed manually in the event of abnormal system events and operation.
- A fault event on the 24.9kV LP Southeast Feeder main line will trip the substation feeder circuit breaker. A fault event on the generation radial tap will trip the overhead generation recloser.
- The PV solar site interconnection point is approximately 0.2 circuit miles from the generation radial tap on the LP SE feeder main line.
- The solar site interconnection point is approximately 4.25 circuit miles from the Light Plant substation. The feeder combination runs alongside roadways and through urban corridors as well as rural open areas. There is one canal crossing and minimal vegetation.
- The solar site interconnection point is approximately 0.58 circuit miles from the LAMSO substation and is routed through open fields with minimal vegetation.

5.3 UTILITY INFRASTRUCTURE SCOPE AND BUDGETARY ESTIMATE

LLP's scope of work to accommodate the interconnection infrastructure of the proposed solar site from the point of interconnection to the point of supply includes procurement and construction of the following:

- Installation of (3) new 35ft tangent poles with insulators, arms, guying and hardware.
- Installation of 500 circuit linear feet (~2,100 single conductor linear feet including slack/sag) of three phase with neutral 4/0ACSR overhead conductors.
- Installation of (1) 35ft riser dead end pole complete with arms, insulators, 6" riser materials, guying and grounding.
- Installation of (1) three phase 35kV 600A gang operated load break switch.
- Installation of (3) 27kV (22KV MCOV) Surge Arresters
- Installation of (3) 35kV 600A Pot Heads.
- Trench and Install 50 linear feet of 6" Schedule 40 PVC underground conduit with turnups (confirm with Sandhills for coordination of conduits into their MV equipment).
- Installation of 100 circuit linear feet (~300 single conductor linear feet including slack) of 35KV 4/0 CU EPR 100% 1/3CN LLDPE cable.
- Installation of (3) 35kV 600A dead break elbows.

All quantities represented above are approximate and do not account for miscellaneous materials such as bolts, braces, and other general hardware. A GIS site plan is provided in Appendix A.

The budgetary cost to complete the utility side interconnection infrastructure construction ranges from approximately $74,000 to $111,000 depending on the amount of work performed internally by LLP versus subcontracted. The work should take approximately 28 to 34 weeks to procure the materials and complete construction.

Any additional work required for transfer trip schemes, generation curtailment, and remote supervisory controls is pending detailed design and discussions with the transmission utility.

SECTION 6.0 CONCLUSION

Upon completing the system impact study, the following results can be realized:

Load Flow:

The real power load flow and short circuit results obtained from the impact study indicate that the additional solar generation of 4.8MW will not have a negative impact on the LLP distribution system regarding system normal power flow. PV solar generation and wind turbine generation are variable in real time. This study assessed the worst-case scenario of full generation from either or both assets compared to the historical system and substation loading to determine the risks of reverse power flow onto the TriState transmission lines. From the calculations and assessment, it was determined that there is a high risk of reverse power flow, and controls to monitor generation to loading are required to optimize the performance of generation assets, and if necessary curtail solar and/or wind generation to prevent feeding power back to TriState. Additional options to maximize generation output during periods of light system load could include new controls and monitoring on the distribution system to perform load shifting within the feeders and substations. One example being the automated and supervised shifting of load from the LAMSO substation and feeders to the LP substation and feeders to increase the load normally seen by the renewable assets during minimum system loading.

Attention must be given to switching the system when power generation is occurring. There are many scenarios where power my flow back onto the transmission system. Detailed consideration during switching planning and time of day/year loading must be considered.

Short Circuit:

All existing distribution and substation equipment is adequately rated to handle the increases in fault currents from the addition of the PV solar generation facility into the existing distribution system.

Capacity:

All existing conductors, cables, and equipment are sized adequately to handle the increased capacity requirements for the generation power flow on the system.

Reliability:

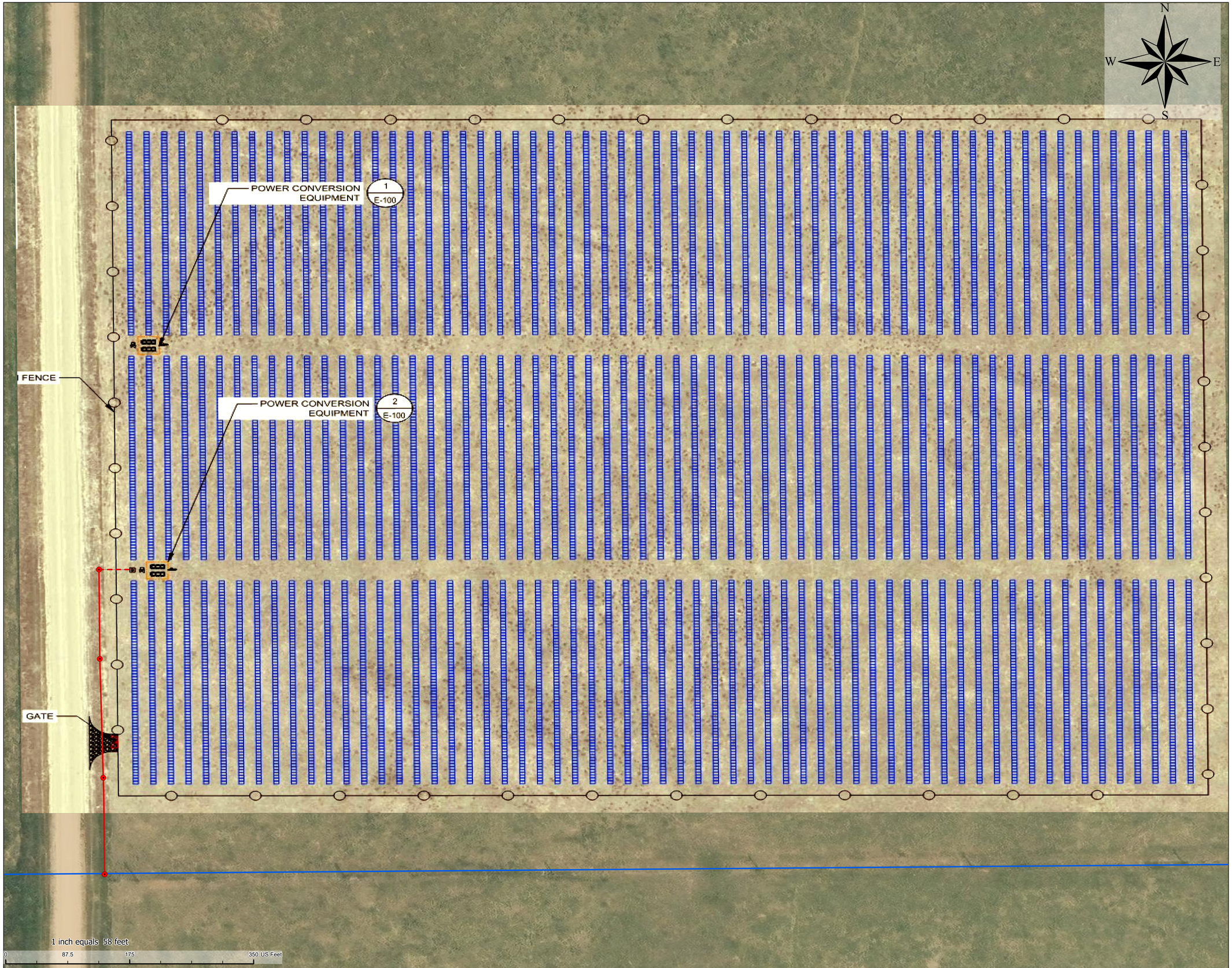
There are no concerns with reducing system reliability by adding the PV solar generation to the LLP distribution system.

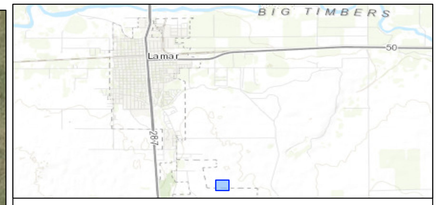
All PV solar facility equipment and interconnections shall be designed, constructed, programmed, operated, and maintained in accordance with IEEE 1547-2018 and IEEE Std C62.92.1 to ensure voltage, frequency, and current magnitudes are maintained within manufacturer equipment tolerances during normal operations as well as fault events on the distribution system.

It is recommended that the LLP electrical department, ARPA, and Sandhills Energy coordinate to monitor and record PV solar real power (kW) generation against transmission utility real and reactive (kVAR) power provided to ensure distribution system reactive power consumption and primary source power factor are not impacted. Historically, PV solar generation systems provide primarily real power, with the transmission provider having to continue providing the system reactive power. The PV inverters included in the Sandhills design are capable of four-quadrant power generation, making any necessary corrections to system power factor addressable through device/equipment settings.

End of Impact Study

APPENDIX A: GIS Site Plan Drawing





CLP Engineering

Arkansas River Power Authority
Lamar Power Solar Analysis
Lamar, CO

Design Layers
- Poles

VOLTAGE,OWNER,ID
- 25,CITY OF LAMAR - (CO),WIND

Power Lines-All

Circuit_Name
- Solar Addition
- Solar Addition (UNG)

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Page 1 of 1
Revision: A
Monday, December 23, 2024

Created By CLP Engineering Inc
POC – Dalton Shaffer, DHS@clpinc.com

This map is for reference only. Although every effort has been made to ensure the accuracy of information, errors and conditions originating from physical sources used to develop the database may be reflected on this map. GIS Office shall not be liable for any errors, omissions, or damages that result from inappropriate use of this document.

APPENDIX B: One Line Drawing

PROWERS LINE
TO LAS ANIMAS

69KV BUS

24.9KV BUS

7

5

69KV
RING BUS

6

4

69KV

LLP XFMR 1
7.5/8.4/10.5 MVA
69KV-24.9/14.4KV
7.72 %Z
OA/FA/FA

LLP XFMR 2
15/20/25 MVA
69KV-24.9/14.4KV
7.6 %Z
OA/FA/FA

TO WILLOW
CREEK SUB

LLP LIGHT
PLANT SUBSTATION

1 SOUTHWEST FEEDER

2 TO 24.9Y/14.4KV WEST FEEDER

3 TO 24.9Y/14.4KV EAST FEEDER

4 SOUTHEAST FEEDER

5 TO 3 MVAR CAP BANK

6 TO 30MVA GENERATOR
XFMR (DECOMMISSIONED)

7 TO 6 MVAR CAP BANK

(NOTE 7)

TO WALMART SERVICE TRANSFORMER

TO HOSPITAL EAST

(NOTE 6)

SW-PV
G.O.L.B

52

F-PV-SUT

PV SOLAR STEP-UP
TRANSFORMER 1
2500 KVA
24.9KV - 480Y/277V
5.75 %Z

F-PV-SUT

PV SOLAR STEP-UP
TRANSFORMER 2
2500 KVA
24.9KV - 480Y/277V
5.75 %Z

TO 2.4MW PV
SOLAR LV
EQUIPMENT

(NOTE 5)

TO 2.4MW PV
SOLAR LV
EQUIPMENT

LLP
DISTRIBUTION
SYSTEM

REC

WTG GND XFMR
1000KVA
24.9Y/14.4KV
480V
15.2%Z

N.O.

TO 6 MILLION SUB
(STEP DOWN TO 4.16KV)

TO SANTA FE SUB
(STEP DOWN TO 4.16KV)

TO HIGH SCHOOL SUB
(STEP DOWN TO 4.16KV)

N.O.

TO HIGH SCHOOL

TO TRACTOR SUPPLY

TO HOSPITAL WEST

TO COLLEGE SUB
(STEP DOWN TO 4.16KV)

WTG XFMR #1
1750KVA
24.9Y/14.4KV
575/332V
5.7%Z

WTG XFMR #2
1750KVA
24.9Y/14.4KV
575/332V
5.7%Z

WTG XFMR #3
1750KVA
24.9Y/14.4KV
575/332V
5.7%Z

WTG XFMR #4
1750KVA
24.9Y/14.4KV
575/332V
5.7%Z

WTG
UNIT 1
1500KW

WTG
UNIT 2
1500KW

WTG
UNIT 3
1500KW

WTG
UNIT 4
1500KW

TO WILLOW
CREEK SUB

LLP LAMSO
SUBSTATION

24.9KV BUS

L1

L1 FEEDER

115KV

L115

L25

L2

L2 FEEDER

LAMSO XFMR
24/32/40 MVA
115KV-24.9/14.4KV
8.63 %Z
OA/FA/FA

L3

TO AT&T TOWER (L3 FEEDER)

TO
LA JUNTA

-	--
-	--
-	--
-	--
-	--
ARPA-LAM-E-SLD-001	LLP SYSTEM ONE-LINE
DWG NO.	TITLE
REFERENCE DRAWINGS	

LEGEND

- POWER TRANSFORMER
- # MV CIRCUIT BREAKER
- REC MV RECLOSER
- LOAD BREAK SWITCH
- WTG WIND TURBINE GENERATOR
- FUSE
- UNDERGROUND DISTRIBUTION CABLE
- OVERHEAD DISTRIBUTION CONDUCTORS
- NEW EQUIPMENT

NOTES

1. SWITCHING DEVICES ARE ASSUMED NORMALLY CLOSED (N.C) UNLESS OTHERWISE MARKED NORMAL OPEN (N.O.).
2. LAMAR/LUB POD FOR THE LLP 69KV LINE IS AT WILLOW CREEK.
3. LAMAR/LUB POD FOR LAMSO IS AT THE 69KV LINE IN LAMSO.
4. WTG GROUNDING TRANSFORMER IS CONNECTED WYE PRIMARY WITH NO LV SECONDARY TERMINATIONS.
5. NEW ASSETS ARE SHOWN IN RED. EXISTING ASSETS ARE SHOWN IN BLACK.
6. POINT OF SERVICE (DEMARCATION) BETWEEN UTILITY OWNED EQUIPMENT AND SOLAR PROVIDER OWNED EQUIPMENT IS LOCATED AT THE 15KV PAD MOUNTED POWER OPERATED SWITCH LINE TERMINATIONS.
7. POINT OF INTERCONNECTION WITH EXISTING DISTRIBUTION SYSTEM.

ARPA Bringing the Power to You — Arkansas River Power Authority

CLP Engineering — "Providing field-hardened engineering solutions"

CONCEPT DRAWING - NOT FOR CONSTRUCTION

REV	STATUS	DESCRIPTION	DATE (MM/DD/YYYY)	DRAWN	CHECKED	APPROVED
-		--	--	---	---	---
-		--	--	---	---	---
-		--	--	---	---	---
A	IFR	ISSUE FOR REVIEW	12/31/2024	BHS	BHS	BHS

SITE: LAMAR, CO	
PROJECT: 4.8MW PV SOLAR ANALYSIS	
TITLE: INTERCONNECTION ONE-LINE	REV A
PROJECT #: 63010-SIS	SCALE: NTS
DRAWING #: LAM-E-SLD-002	SHEET 1 OF 1

APPENDIX C: Load Flow ETAP Results

LOAD_FLOW_REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Bus1	4.160	99.800	-5.4	0.000	0.000	0.000	0.000	BUS_5KV_LLP_2	0.000	0.000	0.0	0.0	
Bus2	4.160	88.975	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.000	0.000	0.0	0.0	
BUS_5KV-LLP_01	4.160	99.871	-5.4	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	-1.685	-0.842	261.8	89.5	
								BUS_5KV_LLP_02	0.144	0.077	22.7	88.0	
								Pole MS-9-1	0.559	0.276	86.7	89.7	
								Pole MS-4-1	0.274	0.133	42.4	90.0	
								Pole MS-4-31	0.708	0.355	110.1	89.4	
BUS_5KV_LLP_01	4.160	99.808	-5.4	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.546	-0.307	87.1	87.2	
								BUS_5KV_LLP_PLTLDCTR	0.296	0.183	48.5	85.0	
								Pole MS-8-1	0.250	0.123	38.8	89.7	
BUS_5KV_LLP_2	4.160	99.800	-5.4	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.341	-0.168	52.9	89.7	
								Bus1	0.000	0.000	0.0	0.0	
								Pole MS-2-182	0.341	0.168	52.9	89.7	
BUS_5KV_LLP_02	4.160	99.850	-5.4	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	0.547	0.306	87.1	87.2	
								BUS_5KV_XFMR_02	-1.973	-0.997	307.2	89.3	
								BUS_5KV-LLP_01	-0.144	-0.078	22.7	87.9	
								BUS_5KV_LLP_2	0.342	0.168	52.9	89.7	
								Pole CS-1-90	0.365	0.176	56.4	90.1	
								Pole MS-3-87	0.863	0.424	133.7	89.7	
BUS_5KV_LLP_PLTLDCTR	4.160	99.761	-5.4	0.000	0.000	0.296	0.184	BUS_5KV_LLP_01	-0.296	-0.184	48.5	85.0	
BUS_5KV_XFMR_02	4.160	99.994	-5.3	0.000	0.000	0.000	0.000	BUS_5KV-LLP_01	1.687	0.843	261.7	89.5	
								BUS_5KV_LLP_02	1.975	0.999	307.2	89.2	
								BUS_25kV_SUB_02	-3.662	-1.842	568.9	89.3	1.875
BUS_5_NEOPLAN	4.160	98.671	-5.4	0.000	0.000	0.361	0.175	Pole CS-1-90	-0.361	-0.175	56.4	90.0	
BUS_6M_5kV	4.160	99.841	-3.4	0.000	0.000	0.000	0.000	BUS_6M_SEC	-0.602	-0.291	92.9	90.0	
								Pole 6M-1-1	0.191	0.093	29.5	89.9	
								Pole 6M-E-1	0.411	0.198	63.4	90.1	
BUS_6M_25kV	24.900	99.978	-2.1	0.000	0.000	0.000	0.000	BUS_L1_01	-0.603	-0.308	15.7	89.1	
								L-25-LAM-L1-02~	0.000	0.000	0.0	0.0	
								BUS_6M_SEC	0.603	0.309	15.7	89.0	
BUS_6M_SEC	4.160	98.913	-3.2	0.000	0.000	0.000	0.000	BUS_6M_5kV	0.603	0.294	94.1	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_6M_25kV	-0.603	-0.294	94.1	89.9	
BUS-25kV-BEEFCITY	24.900	96.712	-2.4	0.000	0.000	0.474	0.294	BUS-25kV-MCCLAVE	-0.474	-0.294	13.4	85.0	
BUS-25kV-BIG-BEND	24.900	98.774	-2.6	0.000	0.000	0.491	0.304	BUS_25kV_W-10	-0.491	-0.304	13.6	85.0	
BUS-25KV-E-10	24.900	97.179	-13.4	0.000	0.000	2.193	1.359	BUS_25kV_E-09	-2.193	-1.359	61.6	85.0	
BUS-25kV-HS-01	24.900	94.368	-3.3	0.000	0.000	0.146	0.091	BUS_HIS_25kV	-0.146	-0.091	4.2	85.0	
BUS-25kV-MCCLAVE	24.900	96.810	-2.4	0.000	0.000	0.563	0.349	BUS_25kV_W-11	-1.038	-0.640	29.2	85.1	
								BUS-25kV-BEEFCITY	0.474	0.291	13.3	85.2	
BUS-25kV-TS-01	24.900	94.646	-3.2	0.000	0.000	0.147	0.091	BUS_TS_25kV	-0.147	-0.091	4.2	85.0	
BUS-25kV-TS-AREA	24.900	94.653	-3.2	0.000	0.000	0.147	0.091	BUS_TSA_25kV	-0.147	-0.091	4.2	85.0	
BUS-25kV-WILEY	24.900	98.819	-2.6	0.000	0.000	0.583	0.361	BUS_25kV_W-10	-0.583	-0.361	16.1	85.0	
BUS_25kV_03	24.900	100.084	-3.5	0.000	0.000	0.000	0.000	L-25-XFMR-03~	0.000	-0.001	0.0	0.0	
								BUS_25kV_SUB_01	-11.991	-7.145	323.4	85.9	
								BUS_25kV_SUB_02	11.991	7.145	323.4	85.9	
BUS_25kV_BRISTOL	24.900	96.387	-9.4	0.000	0.000	0.144	0.089	BUS_25kV_E-07	-0.144	-0.089	4.1	85.0	
BUS_25kV_CO-BEEF	24.900	98.680	-2.5	0.000	0.000	0.998	0.618	BUS_25kV_W-08	-0.998	-0.618	27.6	85.0	
BUS_25kV_DECHANT	24.900	92.805	-4.7	0.000	0.000	0.202	0.125	BUS_25kV_E-05	-0.202	-0.125	6.0	85.0	
BUS_25kV_E_01	24.900	100.084	-3.5	0.000	0.000	0.000	0.000	BUS_25kV_E-02	3.365	2.270	94.0	82.9	
								BUS_25kV_SUB_01	-3.365	-2.270	94.0	82.9	
BUS_25kV_E-02	24.900	99.955	-3.5	0.000	0.000	0.000	0.000	BUS_25kV_E_01	-3.361	-2.266	94.0	82.9	
								BUS_25kV_SUTRAK	0.127	0.079	3.5	85.0	
								BUS_25kV_E-03	3.234	2.187	90.6	82.8	
BUS_25kV_E-03	24.900	99.819	-3.6	0.000	0.000	0.000	0.000	BUS_25kV_E-02	-3.230	-2.184	90.6	82.8	
								BUS_25kV_SWL	0.153	0.094	4.2	85.1	
								BUS_25kV_E-04	3.078	2.090	86.4	82.7	
BUS_25kV_E-04	24.900	95.899	-4.2	0.000	0.000	0.000	0.000	BUS_25kV_E-03	-2.978	-2.000	86.7	83.0	
								BUS_25kV_E-05	2.978	2.000	86.7	83.0	
								L-25-LLP-E-06~	0.000	-0.001	0.0	0.0	
BUS_25kV_E-05	24.900	92.813	-4.7	0.000	0.000	0.000	0.000	BUS_25kV_E-04	-2.899	-1.928	87.0	83.3	
								BUS_25kV_DECHANT	0.202	0.125	5.9	85.1	
								BUS_25kV_E-06	2.697	1.803	81.0	83.1	
BUS_25kV_E-06	24.900	100.355	-8.8	0.000	0.000	0.000	0.000	BUS_25kV_E-05	-2.669	-1.719	73.4	84.1	
								BUS_25kV_E-07	2.669	1.719	73.4	84.1	
BUS_25kV_E-07	24.900	96.395	-9.4	0.000	0.000	0.000	0.000	BUS_25kV_E-06	-2.583	-1.649	73.7	84.3	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_BRISTOL	0.144	0.088	4.1	85.3	
								BUS_25kV_E-08	2.440	1.561	69.7	84.2	
BUS_25kV_E-08	24.900	94.367	-9.8	0.000	0.000	0.000	0.000	BUS_25kV_E-07	-2.398	-1.528	69.9	84.3	
								BUS_25kV_HARTMAN	0.139	0.081	3.9	86.4	
								BUS_25kV_E-09	2.259	1.447	65.9	84.2	
BUS_25kV_E-09	24.900	99.797	-12.9	0.000	0.000	0.000	0.000	BUS_25kV_E-08	-2.241	-1.391	61.3	85.0	
								BUS-25KV-E-10	2.241	1.391	61.3	85.0	
BUS_25kV_HARTMAN	24.900	94.324	-9.8	0.000	0.000	0.139	0.086	BUS_25kV_E-08	-0.139	-0.086	4.0	85.0	
BUS_25kV_KMART	24.900	99.804	-3.6	0.000	0.000	0.000	0.000	BUS_25kV_W-2	0.000	0.000	0.0	0.0	
BUS_25kV_KORMAN	24.900	95.896	-4.2	0.000	0.000	1.606	0.995	BUS_25kV_W-04	-1.606	-0.995	45.7	85.0	
BUS_25kV_ROAD 13	24.900	91.770	-4.9	0.000	0.000	0.000	0.000	BUS_25kV_W-05	0.000	0.000	0.0	0.0	
BUS_25kV_SUB_01	24.900	100.084	-3.5	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	-10.512	-6.403	285.2	85.4	5.000
								BUS_LLP_69kV_01	-5.326	-3.244	144.5	85.4	5.000
								BUS_25kV_E_01	3.365	2.270	94.0	82.9	
								BUS_25_LLP_SE_01	0.482	0.233	12.4	90.0	
								BUS_25kV_03	11.991	7.145	323.4	85.9	
BUS_25kV_SUB_02	24.900	100.084	-3.5	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	3.672	1.995	96.8	87.9	
								BUS_25kV_SW_01	3.128	1.737	82.9	87.4	
								BUS_25kV_W-01	5.191	3.414	143.9	83.6	
								BUS_25kV_03	-11.991	-7.145	323.4	85.9	
BUS_25kV_SUTRAK	24.900	99.955	-3.5	0.000	0.000	0.127	0.079	BUS_25kV_E-02	-0.127	-0.079	3.5	85.0	
BUS_25kV_SWL	24.900	99.816	-3.6	0.000	0.000	0.153	0.095	BUS_25kV_E-03	-0.153	-0.095	4.2	85.0	
BUS_25kV_SW_01	24.900	100.084	-3.5	0.000	0.000	0.000	0.000	BUS_25kV_W-2	3.128	1.737	82.9	87.4	
								BUS_25kV_SUB_02	-3.128	-1.737	82.9	87.4	
BUS_25kV_W-01	24.900	100.084	-3.5	0.000	0.000	0.000	0.000	BUS_25kV_W-02	5.191	3.414	143.9	83.6	
								BUS_25kV_SUB_02	-5.191	-3.414	143.9	83.6	
BUS_25kV_W-2	24.900	99.804	-3.6	0.000	0.000	0.000	0.000	BUS_25kV_SW_01	-3.121	-1.731	82.9	87.5	
								BUS_SAF_25kV	3.121	1.731	82.9	87.5	
								BUS_25kV_KMART	0.000	0.000	0.0	0.0	
BUS_25kV_W-02	24.900	99.731	-3.6	0.000	0.000	0.000	0.000	BUS_25kV_W-01	-5.176	-3.398	143.9	83.6	
								BUS_25kV_W-03	5.176	3.399	144.0	83.6	
								Line15~	0.000	-0.001	0.0	0.0	
BUS_25kV_W-03	24.900	98.901	-3.7	0.000	0.000	0.000	0.000	BUS_25kV_W-02	-5.140	-3.362	144.0	83.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_W-04	5.140	3.362	144.0	83.7	
								L-25-LLP-W-03~	0.000	0.000	0.0	0.0	
BUS_25kV_W-04	24.900	96.026	-4.2	0.000	0.000	0.000	0.000	BUS_25kV_W-03	-5.018	-3.232	144.1	84.1	
								BUS_25kV_KORMAN	1.608	0.996	45.7	85.0	
								BUS_25kV_W-05	3.411	2.237	98.5	83.6	
BUS_25kV_W-05	24.900	91.769	-4.9	0.000	0.000	0.000	0.000	BUS_25kV_W-04	-3.287	-2.116	98.8	84.1	
								BUS_25kV_ROAD 13	0.000	-0.007	0.2	0.0	
								BUS_25kV_W-06	3.287	2.123	98.9	84.0	
BUS_25kV_W-06	24.900	99.588	-2.5	0.000	0.000	0.000	0.000	BUS_25kV_W-05	-3.156	-1.910	85.9	85.5	
								BUS_25kV_W-07	3.156	1.910	85.9	85.5	
BUS_25kV_W-07	24.900	99.240	-2.5	0.000	0.000	0.000	0.000	BUS_25kV_W-06	-3.147	-1.902	85.9	85.6	
								BUS_25kV_W-08	1.004	0.613	27.5	85.3	
								BUS_25kV_W-09	2.143	1.289	58.4	85.7	
BUS_25kV_W-08	24.900	99.236	-2.5	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-1.004	-0.613	27.5	85.3	
								BUS_25kV_CO-BEEF	1.004	0.613	27.5	85.3	
BUS_25kV_W-09	24.900	98.914	-2.6	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-2.137	-1.286	58.5	85.7	
								BUS_25kV_W-10	1.076	0.661	29.6	85.2	
								BUS_25kV_W-11	1.062	0.624	28.9	86.2	
BUS_25kV_W-10	24.900	98.892	-2.6	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-1.075	-0.661	29.6	85.2	
								BUS-25kV-WILEY	0.584	0.360	16.1	85.1	
								BUS-25kV-BIG-BEND	0.492	0.301	13.5	85.3	
BUS_25kV_W-11	24.900	98.900	-2.6	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-1.062	-0.625	28.9	86.2	
								BUS-25kV-MCCLAVE	1.062	0.625	28.9	86.2	
BUS_25_LLP_SE_01	24.900	100.084	-3.5	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	0.482	0.233	12.4	90.0	
								BUS_25kV_SUB_01	-0.482	-0.233	12.4	90.0	
BUS_25_LLP_SE_02	24.900	100.002	-3.5	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_01	-0.482	-0.237	12.4	89.8	
								BUS_25_LLP_SE_03	0.400	0.247	10.9	85.1	
								BUS_25_LLP_SE_04	0.082	-0.010	1.9	-99.2	
BUS_25_LLP_SE_03	24.900	99.986	-3.5	0.000	0.000	0.399	0.248	BUS_25_LLP_SE_02	-0.399	-0.248	10.9	85.0	
BUS_25_LLP_SE_04	24.900	99.993	-3.6	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	-0.082	0.006	1.9	-99.7	
								Pole MS-7-17	0.082	0.037	2.1	91.1	
								BUS_WTG_SOL	0.000	-0.043	1.0	0.0	
BUS_ATT	24.900	99.867	-2.2	0.000	0.000	0.093	0.058	BUS_L3_SEC	-0.093	-0.058	2.5	85.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_CLG_4kV	4.160	99.740	-6.1	0.000	0.000	0.000	0.000	Pole CS-2-1	1.476	0.727	229.0	89.7	
								Pole CS-1-1	1.321	0.674	206.4	89.1	
								Pole CS-3-1	0.872	0.431	135.3	89.6	
								Pole CS-4-1	0.819	0.409	127.3	89.5	
								BUS_CLG_SEC	-4.488	-2.241	698.1	89.5	
BUS_CLG_25kV	24.900	94.947	-3.2	0.000	0.000	0.000	0.000	BUS_L2_SEC	-8.441	-4.739	236.4	87.2	
								BUS_HSP_25kV	3.918	2.186	109.6	87.3	
								BUS_CLG_SEC	4.522	2.553	126.8	87.1	
BUS_CLG_SEC	4.160	93.126	-4.9	0.000	0.000	0.000	0.000	BUS_CLG_4kV	4.510	2.367	759.1	88.5	
								BUS_CLG_25kV	-4.510	-2.367	759.1	88.5	
BUS_HIS_25kV	24.900	94.374	-3.3	0.000	0.000	0.000	0.000	BUS_TS_25kV	-3.497	-1.938	98.2	87.5	
								BUS-25kV-HS-01	0.146	0.090	4.2	85.2	
								BUS_HSC_25kV	3.351	1.848	94.0	87.6	
BUS_HSC_4kV	4.160	99.881	-6.0	0.000	0.000	0.000	0.000	Pole HS-1-001	0.097	0.047	15.0	89.9	
								Pole HS-2-1	1.282	0.630	198.5	89.8	
								Pole HS-3-1	0.876	0.428	135.4	89.9	
								Pole HS-4-1	1.067	0.531	165.6	89.5	
								BUS_HSC_SEC	-3.323	-1.635	514.6	89.7	
BUS_HSC_25kV	24.900	94.122	-3.3	0.000	0.000	0.000	0.000	BUS_HIS_25kV	-3.344	-1.841	94.0	87.6	
								BUS_HSC_SEC	3.344	1.841	94.0	87.6	
BUS_HSC_SEC	4.160	92.353	-5.1	0.000	0.000	0.000	0.000	BUS_HSC_4kV	3.335	1.705	562.8	89.0	
								BUS_HSC_25kV	-3.335	-1.705	562.8	89.0	
BUS_HSP_25kV	24.900	94.801	-3.2	0.000	0.000	0.000	0.000	BUS_CLG_25kV	-3.913	-2.181	109.6	87.3	
								Pole CS-5-21	0.109	0.049	2.9	91.1	
								BUS_TSA_25kV	3.805	2.132	106.7	87.2	
BUS_L1_01	24.900	99.999	-2.1	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.604	0.308	15.7	89.1	
								BUS_LAMSO_25kV	-0.604	-0.308	15.7	89.1	
BUS_L2_SEC	24.900	99.999	-2.1	0.000	0.000	0.000	0.000	BUS_CLG_25kV	8.799	5.138	236.3	86.4	
								BUS_LAMSO_25kV	-8.799	-5.138	236.3	86.4	
BUS_L3_SEC	24.900	99.999	-2.1	0.000	0.000	0.000	0.000	BUS_ATT	0.093	0.026	2.2	96.4	
								BUS_LAMSO_25kV	-0.093	-0.026	2.2	96.4	
BUS_LAMSO_25kV	24.900	99.999	-2.1	0.000	0.000	0.000	0.000	BUS_LAMSO_115kV	-9.496	-5.471	254.1	86.6	2.500
								BUS_L1_01	0.604	0.308	15.7	89.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_L2_SEC	8.799	5.138	236.3	86.4	
								BUS_L3_SEC	0.093	0.026	2.2	96.4	
* BUS_LAMSO_115kV	115.000	100.000	0.0	9.517	5.968	0.000	0.000	BUS_LAMSO_25kV	9.517	5.968	56.4	84.7	
BUS_LLP_69kV_01	69.000	99.463	-0.2	0.000	0.000	0.000	0.000	BUS_25kV_SUB_01	10.561	7.310	108.0	82.2	
								BUS_25kV_SUB_01	5.351	3.704	54.7	82.2	
								BUS_LLP_69kV_03	-7.956	-5.507	81.4	82.2	
								BUS_LLP_69kV_04	-7.956	-5.507	81.4	82.2	
BUS_LLP_69kV_02	69.000	99.463	-0.2	0.000	0.000	0.000	0.000	Line51~	0.000	-0.507	4.3	0.0	
								BUS_LLP_69kV_03	-7.956	-5.000	79.0	84.7	
								BUS_LLP_69kV_04	7.956	5.507	81.4	82.2	
BUS_LLP_69kV_03	69.000	99.463	-0.2	0.000	0.000	0.000	0.000	BUS_WC_69KV_01	-15.911	-10.507	160.4	83.4	
								BUS_LLP_69kV_01	7.956	5.507	81.4	82.2	
								BUS_LLP_69kV_02	7.956	5.000	79.0	84.7	
BUS_LLP_69kV_04	69.000	99.463	-0.2	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	7.956	5.507	81.4	82.2	
								BUS_LLP_69kV_02	-7.956	-5.507	81.4	82.2	
BUS_SAF_4kV	4.160	100.196	-5.8	0.000	0.000	0.000	0.000	SF-2-30	0.301	0.147	46.3	89.9	
								Pole MS-1-1	0.219	0.107	33.7	89.9	
								SF-1-1	2.187	1.124	340.6	88.9	
								SF-2-1	0.395	0.195	61.0	89.7	
								BUS_SAF_SEC	-3.101	-1.572	481.6	89.2	
BUS_SAF_25kV	24.900	99.671	-3.6	0.000	0.000	0.000	0.000	BUS_25kV_W-2	-3.118	-1.728	82.9	87.5	
								L-25-LLP-SW-03~	0.000	-0.004	0.1	0.0	
								BUS_SAF_SEC	3.118	1.732	83.0	87.4	
BUS_SAF_SEC	4.160	98.094	-5.1	0.000	0.000	0.000	0.000	BUS_SAF_4kV	3.111	1.626	496.6	88.6	
								BUS_SAF_25kV	-3.111	-1.626	496.6	88.6	
BUS_SW_8.5EES23	24.900	100.004	-3.6	0.000	0.000	0.000	0.000	BUS_WTG_SOL	0.000	0.000	0.0	0.0	
BUS_TSA_25kV	24.900	94.659	-3.2	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-3.800	-2.127	106.7	87.3	
								BUS-25kV-TS-AREA	0.147	0.091	4.2	85.2	
								BUS_TS_25kV	3.653	2.037	102.4	87.3	
BUS_TS_25kV	24.900	94.652	-3.2	0.000	0.000	0.000	0.000	BUS_TSA_25kV	-3.653	-2.037	102.4	87.3	
								BUS-25kV-TS-01	0.147	0.091	4.2	85.2	
								BUS_HIS_25kV	3.506	1.946	98.2	87.4	
* BUS_WC_69KV_01	69.000	100.000	0.0	15.964	10.551	0.000	0.000	BUS_LLP_69kV_03	15.964	10.551	160.1	83.4	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_WTG6	24.900	100.005	-3.6	0.000	0.000	0.000	0.000	BUS_WTG_SOL	0.000	0.033	0.8	0.0	
								P_526_2	0.000	-0.002	0.0	0.0	
								L_25_WTG_2~	0.000	-0.032	0.7	0.0	
BUS_WTG_SOL	24.900	100.004	-3.6	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	0.000	0.035	0.8	0.0	
								BUS_SW_8.5EES23	0.000	-0.001	0.0	0.0	
								BUS_WTG6	0.000	-0.034	0.8	0.0	
Pole 6M-1-1	4.160	99.415	-3.4	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.190	-0.093	29.5	89.9	
								Pole 6M-1-2	0.167	0.082	26.0	89.9	
								SEC_6M-1-1	0.023	0.011	3.5	89.9	
Pole 6M-1-2	4.160	99.154	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-1	-0.167	-0.081	26.0	89.9	
								Pole 6M-1-3	0.022	0.011	3.5	89.9	
								Pole 6M-1-4	0.145	0.070	22.5	89.9	
Pole 6M-1-3	4.160	99.149	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.022	-0.011	3.5	89.9	
								SEC_6M-1-2	0.022	0.011	3.5	89.9	
Pole 6M-1-4	4.160	98.770	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.144	-0.070	22.5	89.9	
								Pole 6M-1-5	0.009	0.005	1.5	89.8	
								Pole 6M-1-6	0.135	0.066	21.0	89.9	
Pole 6M-1-5	4.160	98.765	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-4	-0.009	-0.005	1.5	89.8	
Pole 6M-1-6	4.160	98.659	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-4	-0.134	-0.065	21.0	89.9	
								Pole 6M-1-7	0.019	0.009	2.9	89.9	
								Pole 6M-1-9	0.116	0.056	18.1	89.9	
Pole 6M-1-7	4.160	98.621	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-6	-0.019	-0.009	2.9	89.8	
								Pole 6M-1-8	0.009	0.005	1.5	89.8	
Pole 6M-1-8	4.160	98.616	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-7	-0.009	-0.005	1.5	89.8	
Pole 6M-1-9	4.160	98.516	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-6	-0.116	-0.056	18.1	89.9	
								Pole 6M-1-10	0.106	0.052	16.6	89.9	
Pole 6M-1-10	4.160	98.477	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-9	-0.106	-0.052	16.6	89.9	
								Pole 6M-1-11	0.106	0.052	16.6	89.9	
Pole 6M-1-11	4.160	98.443	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-10	-0.106	-0.052	16.6	89.9	
								Pole 6M-1-12	0.097	0.047	15.2	89.9	
Pole 6M-1-12	4.160	98.380	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-11	-0.097	-0.047	15.2	89.9	
								Pole 6M-1-13	0.009	0.005	1.5	90.0	
								Pole 6M-1-14	0.087	0.043	13.7	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-1-13	4.160	98.329	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-12	-0.009	-0.005	1.5	89.8	
Pole 6M-1-14	4.160	98.237	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-12	-0.087	-0.043	13.7	89.9	
								Pole 6M-1-15	0.078	0.038	12.2	89.9	
Pole 6M-1-15	4.160	98.198	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-14	-0.078	-0.038	12.2	89.9	
								Pole 6M-1-16	0.069	0.033	10.8	89.9	
Pole 6M-1-16	4.160	98.071	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-15	-0.068	-0.033	10.8	89.9	
								Pole 6M-1-17	0.031	0.015	4.9	89.9	
								Pole 6M-1-20	0.037	0.018	5.8	89.9	
Pole 6M-1-17	4.160	98.070	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-16	-0.031	-0.015	4.9	89.9	
								Pole 6M-1-18	0.022	0.011	3.5	89.9	
Pole 6M-1-18	4.160	98.043	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-17	-0.022	-0.011	3.5	89.9	
								Pole 6M-1-19	0.022	0.011	3.5	89.9	
Pole 6M-1-19	4.160	98.030	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-18	-0.022	-0.011	3.5	89.9	
								SEC_6M-1-12	0.022	0.011	3.5	89.9	
Pole 6M-1-20	4.160	97.999	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-16	-0.037	-0.018	5.8	89.9	
								Pole 6M-1-21	0.019	0.009	2.9	89.9	
								Pole 6M-1-23	0.019	0.009	2.9	89.9	
Pole 6M-1-21	4.160	97.991	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-20	-0.019	-0.009	2.9	89.9	
								Pole 6M-1-22	0.009	0.005	1.5	89.9	
Pole 6M-1-22	4.160	97.967	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-21	-0.009	-0.005	1.5	89.8	
Pole 6M-1-23	4.160	97.986	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-20	-0.019	-0.009	2.9	89.9	
								Pole 6M-1-24	0.019	0.009	2.9	89.8	
								LINE 6M-26~	0.000	0.000	0.0	0.0	
Pole 6M-1-24	4.160	97.984	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-23	-0.019	-0.009	2.9	89.8	
								Pole 6M-1-25	0.009	0.005	1.5	89.8	
Pole 6M-1-25	4.160	97.980	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-24	-0.009	-0.005	1.5	89.8	
Pole 6M-E-1	4.160	94.339	-3.3	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.388	-0.188	63.4	90.0	
								Pole 6M-E-2	0.033	0.016	5.4	89.9	
								Pole 6M-E-30	0.355	0.172	58.1	90.0	
Pole 6M-E-2	4.160	94.286	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-1	-0.033	-0.016	5.4	89.9	
								SEC_6M-E-2	0.033	0.016	5.4	89.9	
Pole 6M-E-3	4.160	93.243	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.032	-0.016	5.3	89.9	
								SEC_6M-E-3	0.032	0.016	5.3	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-E-4	4.160	93.251	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.319	-0.155	52.7	90.0	
								Pole 6M-E-3	0.032	0.016	5.3	89.9	
								Pole 6M-E-5	0.287	0.139	47.4	90.0	
Pole 6M-E-5	4.160	92.689	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.285	-0.138	47.4	90.0	
								Pole 6M-E-6	0.253	0.123	42.1	90.0	
								SEC_6M-E-1	0.032	0.016	5.3	89.9	
Pole 6M-E-6	4.160	92.142	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-5	-0.251	-0.122	42.1	90.0	
								Pole 6M-E-7	0.220	0.106	36.8	90.0	
								SEC_6M-E-4	0.032	0.015	5.3	89.9	
Pole 6M-E-7	4.160	91.312	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-6	-0.218	-0.106	36.8	90.0	
								Pole 6M-E-8	0.031	0.015	5.3	89.9	
								Pole 6M-E-9	0.187	0.090	31.5	90.0	
Pole 6M-E-8	4.160	91.275	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.031	-0.015	5.3	89.9	
								SEC_6M-E-5	0.031	0.015	5.3	89.9	
Pole 6M-E-9	4.160	89.929	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.184	-0.089	31.5	90.0	
								Pole 6M-E-10	0.061	0.030	10.4	89.9	
								Pole 6M-E-13	0.123	0.060	21.1	90.0	
Pole 6M-E-10	4.160	89.700	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-9	-0.061	-0.030	10.4	89.9	
								Pole 6M-E-11	0.030	0.015	5.2	89.9	
								SEC_6M-E-6	0.030	0.015	5.2	89.9	
Pole 6M-E-11	4.160	89.584	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-10	-0.030	-0.015	5.2	89.9	
								SEC_6M-E-7	0.030	0.015	5.2	89.9	
Pole 6M-E-12	4.160	89.691	-3.2	0.000	0.000	0.008	0.004	Pole 6M-E-13	-0.008	-0.004	1.4	89.8	
Pole 6M-E-13	4.160	89.695	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-12	0.008	0.004	1.4	89.8	
								Pole 6M-E-9	-0.123	-0.060	21.1	90.0	
								Pole 6M-E-15	0.115	0.056	19.7	90.0	
Pole 6M-E-14	4.160	89.435	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.030	-0.015	5.2	89.9	
								SEC_6M-E-8	0.030	0.015	5.2	89.9	
Pole 6M-E-15	4.160	89.475	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-14	0.030	0.015	5.2	89.9	
								Pole 6M-E-13	-0.114	-0.055	19.7	90.0	
								Pole 6M-E-18	0.084	0.041	14.5	90.0	
Pole 6M-E-18	4.160	89.286	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.084	-0.041	14.5	90.0	
								Pole 6M-E-19	0.030	0.015	5.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole 6M-E-20	0.054	0.026	9.3	90.0	
Pole 6M-E-19	4.160	89.266	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.030	-0.015	5.2	89.9	
								SEC_6M-E-10	0.030	0.015	5.2	89.9	
Pole 6M-E-20	4.160	89.224	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.054	-0.026	9.3	90.0	
								Pole 6M-E-21	0.024	0.011	4.1	90.2	
								SEC_6M-E-11	0.030	0.015	5.2	89.9	
Pole 6M-E-21	4.160	89.212	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-20	-0.024	-0.011	4.1	90.2	
								Pole 6M-E-22	0.008	0.004	1.4	90.2	
								Pole 6M-E-23	0.016	0.008	2.7	90.2	
Pole 6M-E-22	4.160	89.138	-3.2	0.000	0.000	0.008	0.004	Pole 6M-E-21	-0.008	-0.004	1.4	89.8	
Pole 6M-E-23	4.160	89.010	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.008	0.004	1.4	90.0	
								Pole 6M-E-21	-0.016	-0.008	2.7	90.0	
								Pole 6M-E-24	0.008	0.004	1.4	90.0	
Pole 6M-E-24	4.160	88.973	-3.2	0.000	0.000	0.008	0.004	Pole 6M-E-23	-0.008	-0.004	1.4	89.8	
Pole 6M-E-25	4.160	88.971	-3.2	0.000	0.000	0.008	0.004	Pole 6M-E-26	-0.008	-0.004	1.4	89.8	
Pole 6M-E-26	4.160	88.975	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-23	-0.008	-0.004	1.4	89.9	
								Pole 6M-E-25	0.008	0.004	1.4	89.8	
								Bus2	0.000	0.000	0.0	0.0	
Pole 6M-E-29	4.160	93.850	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.033	-0.016	5.4	89.9	
								SEC_6M-E-13	0.033	0.016	5.4	89.9	
Pole 6M-E-30	4.160	93.858	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	0.321	0.156	52.7	90.0	
								Pole 6M-E-29	0.033	0.016	5.4	89.9	
								Pole 6M-E-1	-0.353	-0.171	58.1	90.0	
Pole CS-1-1	4.160	98.712	-6.3	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-1.311	-0.662	206.4	89.3	
								Pole CS-1-2	1.311	0.662	206.4	89.3	
Pole CS-1-2	4.160	98.358	-6.4	0.000	0.000	0.000	0.000	PRI_PM_16	0.171	0.085	26.9	89.5	
								Pole CS-1-1	-1.307	-0.658	206.4	89.3	
								Pole CS-1-3	1.115	0.562	176.2	89.3	
								Pole HS-2-85	0.021	0.010	3.3	89.8	
Pole CS-1-3	4.160	97.617	-6.6	0.000	0.000	0.000	0.000	Pole CS-1-4	0.031	0.015	4.9	89.8	
								Pole CS-1-5	0.031	0.015	4.9	89.8	
								Pole HS-3-86	0.010	0.005	1.6	89.8	
								Pole CS-1-2	-1.109	-0.555	176.2	89.4	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-6	1.037	0.519	164.9	89.4	
Pole CS-1-4	4.160	97.603	-6.6	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.031	-0.015	4.9	89.8	
								SEC_CS-1-1	0.031	0.015	4.9	89.8	
Pole CS-1-5	4.160	97.607	-6.6	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.031	-0.015	4.9	89.8	
								SEC_CS-1-2	0.031	0.015	4.9	89.8	
Pole CS-1-6	4.160	96.925	-6.7	0.000	0.000	0.000	0.000	Pole HS-3-88	0.030	0.015	4.9	89.8	
								Pole CS-1-3	-1.031	-0.513	164.9	89.5	
								Pole CS-1-9	1.000	0.498	160.0	89.5	
Pole CS-1-9	4.160	96.746	-6.8	0.000	0.000	0.000	0.000	PRI_PM_17	0.150	0.075	24.0	89.5	
								Pole CS-1-6	-0.999	-0.496	160.0	89.6	
								Pole CS-1-10	0.849	0.422	136.0	89.6	
Pole CS-1-10	4.160	96.407	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.847	-0.419	136.0	89.6	
								Pole CS-1-11	0.847	0.419	136.0	89.6	
								L-SUB-FDR-EQ#20-1-84~	0.000	0.000	0.0	0.0	
Pole CS-1-11	4.160	96.372	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-10	-0.847	-0.419	136.0	89.6	
								Pole CS-1-12	0.847	0.419	136.0	89.6	
Pole CS-1-12	4.160	96.230	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-13	0.030	0.015	4.8	89.8	
								Pole CS-1-11	-0.846	-0.418	136.0	89.7	
								Pole CS-1-14	0.816	0.403	131.2	89.7	
Pole CS-1-13	4.160	96.227	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-12	-0.030	-0.015	4.8	89.8	
								SEC_CS-1-7	0.030	0.015	4.8	89.8	
Pole CS-1-14	4.160	96.092	-6.9	0.000	0.000	0.010	0.005	Pole CS-1-17	0.090	0.044	14.5	89.8	
								Pole CS-1-12	-0.815	-0.402	131.2	89.7	
								Pole CS-1-16	0.715	0.353	115.1	89.7	
Pole CS-1-15	4.160	95.982	-7.0	0.000	0.000	0.000	0.000	Pole CS-1-16	-0.030	-0.015	4.8	89.8	
								SEC_CS-1-9	0.030	0.015	4.8	89.8	
Pole CS-1-16	4.160	95.985	-7.0	0.000	0.000	0.000	0.000	Pole CS-1-15	0.030	0.015	4.8	89.8	
								Pole CS-1-14	-0.714	-0.352	115.1	89.7	
								Pole CS-1-21	0.684	0.337	110.3	89.7	
Pole CS-1-17	4.160	96.036	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-14	-0.090	-0.044	14.5	89.8	
								Pole CS-1-18	0.060	0.029	9.6	89.8	
								Pole CS-1-20	0.030	0.015	4.8	89.8	
Pole CS-1-18	4.160	96.028	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.060	-0.029	9.6	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-19	0.030	0.015	4.8	89.8	
								SEC_CS-1-10	0.030	0.015	4.8	89.8	
Pole CS-1-19	4.160	96.019	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-18	-0.030	-0.015	4.8	89.8	
								SEC_CS-1-11	0.030	0.015	4.8	89.8	
Pole CS-1-20	4.160	96.032	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.030	-0.015	4.8	89.8	
								SEC_CS-1-12	0.030	0.015	4.8	89.8	
Pole CS-1-21	4.160	95.880	-7.0	0.000	0.000	0.010	0.005	Pole CS-1-16	-0.683	-0.337	110.3	89.7	
								Pole CS-1-22	0.673	0.332	108.7	89.7	
Pole CS-1-22	4.160	95.780	-7.0	0.000	0.000	0.010	0.005	Pole CS-1-23	0.030	0.015	4.8	89.8	
								Pole CS-1-21	-0.673	-0.331	108.7	89.7	
								Pole CS-1-24	0.633	0.312	102.3	89.7	
Pole CS-1-23	4.160	95.768	-7.0	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.030	-0.015	4.8	89.8	
								SEC_CS-1-15	0.030	0.015	4.8	89.8	
Pole CS-1-24	4.160	95.653	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.632	-0.311	102.3	89.7	
								Pole CS-1-25	0.603	0.296	97.4	89.7	
								SEC_CS-1-16	0.030	0.015	4.8	89.8	
Pole CS-1-25	4.160	95.533	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-28	0.286	0.140	46.3	89.8	
								Pole CS-1-55	0.296	0.146	47.9	89.7	
								Pole CS-1-24	-0.602	-0.296	97.4	89.8	
								Pole CS-1-26	0.020	0.010	3.2	89.8	
Pole CS-1-26	4.160	95.531	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-25	-0.020	-0.010	3.2	89.8	
								Pole CS-1-27	0.010	0.005	1.6	89.8	
Pole CS-1-27	4.160	95.529	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-26	-0.010	-0.005	1.6	89.8	
Pole CS-1-28	4.160	95.514	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-25	-0.286	-0.140	46.3	89.8	
								Pole CS-1-29	0.276	0.136	44.7	89.8	
Pole CS-1-29	4.160	95.436	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-28	-0.276	-0.135	44.7	89.8	
								Pole CS-1-32	0.256	0.126	41.5	89.8	
								Pole CS-1-31	0.020	0.010	3.2	89.8	
Pole CS-1-30	4.160	95.432	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-31	-0.010	-0.005	1.6	89.8	
Pole CS-1-31	4.160	95.434	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-30	0.010	0.005	1.6	89.8	
								Pole CS-1-29	-0.020	-0.010	3.2	89.8	
Pole CS-1-32	4.160	95.365	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-29	-0.256	-0.126	41.5	89.8	
								Pole CS-1-33	0.246	0.121	39.9	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-1-33	4.160	95.254	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-32	-0.246	-0.121	39.9	89.8	
								Pole CS-1-36	0.216	0.106	35.1	89.8	
								Pole CS-1-35	0.020	0.010	3.2	89.8	
Pole CS-1-34	4.160	95.250	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-35	-0.010	-0.005	1.6	89.8	
Pole CS-1-35	4.160	95.252	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-34	0.010	0.005	1.6	89.8	
								Pole CS-1-33	-0.020	-0.010	3.2	89.8	
Pole CS-1-36	4.160	95.158	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-33	-0.216	-0.106	35.1	89.8	
								Pole CS-1-37	0.206	0.101	33.5	89.8	
Pole CS-1-37	4.160	95.114	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-36	-0.206	-0.101	33.5	89.8	
								Pole CS-1-38	0.196	0.096	31.9	89.8	
Pole CS-1-38	4.160	95.066	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-37	-0.196	-0.096	31.9	89.8	
								Pole CS-1-39	0.187	0.091	30.3	89.8	
Pole CS-1-39	4.160	95.026	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-40	0.049	0.024	8.0	89.8	
								Pole CS-1-38	-0.187	-0.091	30.3	89.8	
								Pole CS-1-43	0.137	0.067	22.4	89.8	
Pole CS-1-40	4.160	94.987	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.049	-0.024	8.0	89.8	
								Pole CS-1-41	0.020	0.010	3.2	89.8	
								SEC_CS-1-29	0.029	0.014	4.8	89.8	
Pole CS-1-41	4.160	94.983	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-40	-0.020	-0.010	3.2	89.8	
								Pole CS-1-42	0.010	0.005	1.6	89.8	
Pole CS-1-42	4.160	94.980	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-41	-0.010	-0.005	1.6	89.8	
Pole CS-1-43	4.160	95.014	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.137	-0.067	22.4	89.8	
								Pole CS-1-44	0.108	0.053	17.6	89.8	
								SEC_CS-1-32	0.029	0.014	4.8	89.8	
Pole CS-1-44	4.160	94.998	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-43	-0.108	-0.053	17.6	89.8	
								Pole CS-1-45	0.098	0.048	16.0	89.8	
Pole CS-1-45	4.160	94.983	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-44	-0.098	-0.048	16.0	89.8	
								Pole CS-1-46	0.088	0.043	14.4	89.8	
Pole CS-1-46	4.160	94.966	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-45	-0.088	-0.043	14.4	89.8	
								Pole CS-1-47	0.078	0.038	12.8	89.8	
Pole CS-1-47	4.160	94.943	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-46	-0.078	-0.038	12.8	89.8	
								Pole CS-1-48	0.069	0.034	11.2	89.8	
Pole CS-1-48	4.160	94.930	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-47	-0.069	-0.034	11.2	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-49	0.059	0.029	9.6	89.8	
Pole CS-1-49	4.160	94.922	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-48	-0.059	-0.029	9.6	89.8	
								Pole CS-1-50	0.049	0.024	8.0	89.8	
Pole CS-1-50	4.160	94.913	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-49	-0.049	-0.024	8.0	89.8	
								Pole CS-1-51	0.039	0.019	6.4	89.8	
Pole CS-1-51	4.160	94.906	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-50	-0.039	-0.019	6.4	89.8	
								Pole CS-1-52	0.029	0.014	4.8	89.8	
Pole CS-1-52	4.160	94.898	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-51	-0.029	-0.014	4.8	89.8	
								Pole CS-1-53	0.020	0.010	3.2	89.8	
Pole CS-1-53	4.160	94.894	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-52	-0.020	-0.010	3.2	89.8	
								Pole CS-1-54	0.010	0.005	1.6	89.8	
Pole CS-1-54	4.160	94.893	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-53	-0.010	-0.005	1.6	89.8	
								L-SUB-FDR-EQ#20-1-86~	0.000	0.000	0.0	0.0	
Pole CS-1-55	4.160	95.421	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-25	-0.295	-0.145	47.9	89.7	
								Pole CS-1-56	0.010	0.005	1.6	89.8	
								Pole CS-1-58	0.286	0.141	46.3	89.7	
Pole CS-1-56	4.160	95.419	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-55	-0.010	-0.005	1.6	89.8	
Pole CS-1-57	4.160	95.294	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-58	-0.275	-0.135	44.7	89.7	
								Pole CS-1-60	0.275	0.135	44.7	89.7	
								L-SUB-FDR-EQ#18-1-173~	0.000	0.000	0.0	0.0	
Pole CS-1-58	4.160	95.351	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-57	0.276	0.136	44.7	89.7	
								Pole CS-1-55	-0.285	-0.140	46.3	89.7	
Pole CS-1-59	4.160	95.223	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-61	-0.030	-0.014	4.8	89.8	
								SEC_CS-1-46	0.030	0.014	4.8	89.8	
Pole CS-1-60	4.160	95.243	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-57	-0.275	-0.135	44.7	89.8	
								Pole CS-1-61	0.265	0.130	43.1	89.7	
Pole CS-1-61	4.160	95.225	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-59	0.030	0.014	4.8	89.8	
								Pole CS-1-60	-0.265	-0.130	43.1	89.8	
								Pole CS-1-62	0.236	0.116	38.3	89.7	
Pole CS-1-62	4.160	95.190	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-61	-0.236	-0.116	38.3	89.8	
								Pole CS-1-63	0.226	0.111	36.7	89.8	
Pole CS-1-63	4.160	95.155	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-62	-0.226	-0.111	36.7	89.8	
								Pole CS-1-64	0.216	0.106	35.1	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-1-64	4.160	95.121	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-63	-0.216	-0.106	35.1	89.8	
								Pole CS-1-65	0.000	0.000	0.0	0.0	
								Pole CS-1-66	0.216	0.106	35.1	89.8	
Pole CS-1-65	4.160	95.121	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-64	0.000	0.000	0.0	0.0	
Pole CS-1-66	4.160	95.050	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-64	-0.216	-0.106	35.1	89.8	
								Pole CS-1-67	0.206	0.101	33.5	89.8	
Pole CS-1-67	4.160	95.025	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-66	-0.206	-0.101	33.5	89.8	
								Pole CS-1-68	0.196	0.096	31.9	89.8	
Pole CS-1-68	4.160	94.997	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-67	-0.196	-0.096	31.9	89.8	
								Pole CS-1-69	0.167	0.082	27.1	89.8	
								SEC_CS-1-53	0.029	0.014	4.8	89.8	
Pole CS-1-69	4.160	94.971	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-68	-0.167	-0.082	27.1	89.8	
								Pole CS-1-70	0.157	0.077	25.5	89.8	
Pole CS-1-70	4.160	94.938	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-69	-0.157	-0.077	25.5	89.8	
								Pole CS-1-71	0.147	0.072	23.9	89.8	
Pole CS-1-71	4.160	94.915	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-70	-0.147	-0.072	23.9	89.8	
								Pole CS-1-72	0.137	0.067	22.3	89.8	
Pole CS-1-72	4.160	94.891	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-71	-0.137	-0.067	22.3	89.8	
								Pole CS-1-73	0.127	0.062	20.7	89.8	
Pole CS-1-73	4.160	94.866	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-72	-0.127	-0.062	20.7	89.8	
								Pole CS-1-74	0.010	0.005	1.6	89.8	
								Pole CS-1-75	0.117	0.058	19.1	89.8	
Pole CS-1-74	4.160	94.866	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-73	-0.010	-0.005	1.6	89.8	
Pole CS-1-75	4.160	94.798	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-73	-0.117	-0.057	19.1	89.8	
								Pole CS-1-76	0.049	0.024	8.0	89.8	
								Pole CS-1-86	0.068	0.034	11.2	89.8	
Pole CS-1-76	4.160	94.785	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-75	-0.049	-0.024	8.0	89.8	
								Pole CS-1-77	0.039	0.019	6.4	89.8	
Pole CS-1-77	4.160	94.771	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-76	-0.039	-0.019	6.4	89.8	
								Pole CS-1-78	0.029	0.014	4.8	89.8	
Pole CS-1-78	4.160	94.765	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-77	-0.029	-0.014	4.8	89.8	
								Pole CS-1-79	0.020	0.010	3.2	89.8	
Pole CS-1-79	4.160	94.760	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-78	-0.020	-0.010	3.2	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-80	0.010	0.005	1.6	89.8	
Pole CS-1-80	4.160	94.759	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-79	-0.010	-0.005	1.6	89.8	
Pole CS-1-81	4.160	94.673	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-82	-0.029	-0.014	4.8	89.8	
								Pole CS-1-88	0.020	0.010	3.2	89.8	
Pole CS-1-82	4.160	94.680	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-81	0.029	0.014	4.8	89.8	
								Pole CS-1-83	-0.039	-0.019	6.4	89.8	
Pole CS-1-83	4.160	94.694	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-82	0.039	0.019	6.4	89.8	
								Pole CS-1-84	-0.049	-0.024	8.0	89.8	
Pole CS-1-84	4.160	94.707	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-83	0.049	0.024	8.0	89.8	
								Pole CS-1-85	-0.059	-0.029	9.6	89.8	
Pole CS-1-85	4.160	94.738	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-84	0.059	0.029	9.6	89.8	
								Pole CS-1-86	-0.068	-0.034	11.2	89.8	
Pole CS-1-86	4.160	94.764	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-75	-0.068	-0.034	11.2	89.8	
								Pole CS-1-85	0.068	0.034	11.2	89.8	
Pole CS-1-87	4.160	94.664	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-88	-0.010	-0.005	1.6	89.8	
Pole CS-1-88	4.160	94.666	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-81	-0.020	-0.010	3.2	89.8	
								Pole CS-1-87	0.010	0.005	1.6	89.8	
Pole CS-1-90	4.160	99.630	-5.4	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.364	-0.176	56.4	90.0	
								BUS_5_NEOPLAN	0.364	0.176	56.4	90.0	
Pole CS-2-1	4.160	99.430	-6.2	0.000	0.000	0.000	0.000	Pole CS-2-2	1.473	0.723	229.0	89.8	
								BUS_CLG_4kV	-1.473	-0.723	229.0	89.8	
Pole CS-2-2	4.160	99.119	-6.2	0.000	0.000	0.011	0.005	Pole CS-2-1	-1.469	-0.719	229.0	89.8	
								Pole CS-2-3	0.032	0.015	4.9	89.8	
								Pole CS-2-5	1.427	0.698	222.4	89.8	
Pole CS-2-3	4.160	99.107	-6.2	0.000	0.000	0.021	0.010	Pole CS-2-2	-0.032	-0.015	4.9	89.8	
								Pole CS-2-4	0.011	0.005	1.6	89.8	
Pole CS-2-4	4.160	99.103	-6.2	0.000	0.000	0.011	0.005	Pole CS-2-3	-0.011	-0.005	1.6	89.8	
Pole CS-2-5	4.160	98.817	-6.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	1.423	0.694	222.4	89.9	
								Pole CS-2-2	-1.423	-0.694	222.4	89.9	
Pole CS-2-7	4.160	94.852	-5.7	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.994	-0.496	162.5	89.5	
								Pole CS-2-8	0.994	0.496	162.5	89.5	
Pole CS-2-8	4.160	94.631	-5.8	0.000	0.000	0.000	0.000	Pole CS-2-7	-0.992	-0.493	162.5	89.5	
								Pole CS-2-9	0.068	0.033	11.1	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-2-12	0.895	0.446	146.6	89.5	
								SEC_CS-2-5	0.029	0.014	4.8	89.8	
Pole CS-2-9	4.160	94.617	-5.8	0.000	0.000	0.010	0.005	Pole CS-2-8	-0.068	-0.033	11.1	89.8	
								Pole CS-2-10	0.058	0.029	9.5	89.8	
Pole CS-2-10	4.160	94.611	-5.8	0.000	0.000	0.000	0.000	Pole CS-2-9	-0.058	-0.029	9.5	89.8	
								Pole CS-2-11	0.029	0.014	4.8	89.8	
								SEC_CS-2-7	0.029	0.014	4.8	89.8	
Pole CS-2-11	4.160	94.602	-5.8	0.000	0.000	0.000	0.000	Pole CS-2-10	-0.029	-0.014	4.8	89.8	
								SEC_CS-2-8	0.029	0.014	4.8	89.8	
Pole CS-2-12	4.160	94.518	-5.8	0.000	0.000	0.010	0.005	Pole CS-2-8	-0.894	-0.445	146.6	89.5	
								Pole CS-2-13	0.884	0.440	145.0	89.5	
Pole CS-2-13	4.160	94.391	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-12	-0.883	-0.439	145.0	89.6	
								Pole CS-2-14	0.039	0.019	6.3	89.9	
								Pole CS-2-20	0.844	0.420	138.7	89.5	
Pole CS-2-14	4.160	94.384	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-13	-0.039	-0.019	6.3	89.9	
								Pole CS-2-15	0.029	0.014	4.8	89.8	
								Pole CS-2-16	0.010	0.005	1.6	90.3	
Pole CS-2-15	4.160	94.380	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.029	-0.014	4.8	89.8	
								SEC_CS-2-10	0.029	0.014	4.8	89.8	
Pole CS-2-16	4.160	94.381	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.010	-0.005	1.6	90.3	
								Pole CS-2-17	0.010	0.005	1.6	90.3	
Pole CS-2-17	4.160	94.379	-5.9	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
								Pole CS-2-16	-0.010	-0.005	1.6	90.3	
								Pole CS-2-18	0.010	0.005	1.6	89.8	
Pole CS-2-18	4.160	94.376	-5.9	0.000	0.000	0.010	0.005	Pole CS-2-17	-0.010	-0.005	1.6	89.8	
Pole CS-2-20	4.160	94.276	-5.9	0.000	0.000	0.000	0.000	PRI_PM_21	0.144	0.072	23.6	89.5	
								Pole CS-2-13	-0.844	-0.419	138.7	89.6	
								Pole CS-2-21	0.700	0.347	115.0	89.6	
Pole CS-2-21	4.160	93.920	-6.0	0.000	0.000	0.000	0.000	PRI_PM_20	0.143	0.071	23.6	89.5	
								Pole CS-2-20	-0.698	-0.345	115.0	89.6	
								Pole CS-2-22	0.555	0.274	91.4	89.7	
Pole CS-2-22	4.160	93.773	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-21	-0.554	-0.273	91.4	89.7	
								Pole CS-2-23	0.544	0.269	89.9	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-23	4.160	93.715	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-22	-0.544	-0.269	89.9	89.7	
								Pole CS-2-24	0.157	0.078	26.0	89.7	
								Pole CS-2-35	0.387	0.191	63.9	89.7	
Pole CS-2-24	4.160	93.649	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-23	-0.157	-0.078	26.0	89.7	
								Pole CS-2-25	0.148	0.073	24.4	89.7	
Pole CS-2-25	4.160	93.631	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-24	-0.148	-0.073	24.4	89.7	
								Pole CS-2-26	0.138	0.068	22.8	89.6	
Pole CS-2-26	4.160	93.596	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-25	-0.138	-0.068	22.8	89.6	
								Pole CS-2-27	0.128	0.064	21.2	89.6	
Pole CS-2-27	4.160	93.553	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-28	0.057	0.028	9.5	89.9	
								Pole CS-2-26	-0.128	-0.063	21.2	89.6	
								PRI_PM_1-1	0.071	0.035	11.8	89.4	
Pole CS-2-28	4.160	93.527	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.057	-0.028	9.5	89.8	
								Pole CS-2-29	0.057	0.028	9.5	89.8	
Pole CS-2-29	4.160	93.519	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-28	-0.057	-0.028	9.5	89.8	
								Pole CS-2-30	0.048	0.023	7.9	89.8	
Pole CS-2-30	4.160	93.509	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-29	-0.048	-0.023	7.9	89.8	
								Pole CS-2-31	0.038	0.019	6.3	89.8	
Pole CS-2-31	4.160	93.500	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-30	-0.038	-0.019	6.3	89.8	
								Pole CS-2-32	0.029	0.014	4.7	89.8	
Pole CS-2-32	4.160	93.493	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-31	-0.029	-0.014	4.7	89.8	
								Pole CS-2-33	0.019	0.009	3.2	89.8	
Pole CS-2-33	4.160	93.489	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-32	-0.019	-0.009	3.2	89.8	
								Pole CS-2-34	0.010	0.005	1.6	89.8	
Pole CS-2-34	4.160	93.487	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-33	-0.010	-0.005	1.6	89.8	
Pole CS-2-35	4.160	93.596	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-23	-0.386	-0.191	63.9	89.7	
								Pole CS-2-36	0.386	0.191	63.9	89.7	
Pole CS-2-36	4.160	93.323	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-35	-0.385	-0.190	63.9	89.7	
								Pole CS-2-37	0.385	0.190	63.9	89.7	
Pole CS-2-37	4.160	93.174	-6.0	0.000	0.000	0.000	0.000	PRI_PM_19	0.157	0.078	26.1	89.4	
								Pole CS-2-36	-0.384	-0.190	63.9	89.7	
								Pole CS-2-38	0.029	0.014	4.7	89.8	
								Pole CS-2-41	0.199	0.098	33.1	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-38	4.160	93.170	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-37	-0.029	-0.014	4.7	89.8	
								Pole CS-2-39	0.019	0.009	3.2	89.8	
Pole CS-2-39	4.160	93.156	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-38	-0.019	-0.009	3.2	89.8	
								Pole CS-2-40	0.010	0.005	1.6	89.8	
Pole CS-2-40	4.160	93.152	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-39	-0.010	-0.005	1.6	89.8	
Pole CS-2-41	4.160	93.122	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-37	-0.199	-0.098	33.1	89.8	
								Pole CS-2-42	0.190	0.093	31.5	89.8	
Pole CS-2-42	4.160	93.046	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-41	-0.190	-0.093	31.5	89.8	
								Pole CS-2-43	0.009	0.005	1.6	89.8	
								Pole CS-2-44	0.180	0.088	29.9	89.8	
Pole CS-2-43	4.160	93.044	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-42	-0.009	-0.005	1.6	89.8	
Pole CS-2-44	4.160	92.990	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-42	-0.180	-0.088	29.9	89.8	
								Pole CS-2-45	0.047	0.023	7.9	89.8	
								Pole CS-2-50	0.019	0.009	3.2	89.8	
								Pole CS-2-52	0.114	0.056	18.9	89.8	
Pole CS-2-45	4.160	92.984	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-44	-0.047	-0.023	7.9	89.8	
								Pole CS-2-46	0.038	0.019	6.3	89.8	
Pole CS-2-46	4.160	92.975	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-45	-0.038	-0.019	6.3	89.8	
								Pole CS-2-47	0.028	0.014	4.7	89.8	
Pole CS-2-47	4.160	92.968	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-46	-0.028	-0.014	4.7	89.8	
								Pole CS-2-48	0.019	0.009	3.1	89.8	
Pole CS-2-48	4.160	92.960	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-47	-0.019	-0.009	3.1	89.8	
								Pole CS-2-49	0.009	0.005	1.6	89.8	
Pole CS-2-49	4.160	92.958	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-48	-0.009	-0.005	1.6	89.8	
Pole CS-2-50	4.160	92.985	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-44	-0.019	-0.009	3.2	89.8	
								Pole CS-2-51	0.009	0.005	1.6	89.8	
Pole CS-2-51	4.160	92.983	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-50	-0.009	-0.005	1.6	89.8	
Pole CS-2-52	4.160	92.947	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-44	-0.114	-0.056	18.9	89.8	
								Pole CS-2-56	0.038	0.019	6.3	89.8	
								Pole CS-2-58	0.019	0.009	3.1	89.8	
								Pole CS-2-61	0.057	0.028	9.4	89.8	
Pole CS-2-53	4.160	92.927	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-54	-0.009	-0.005	1.6	89.8	
Pole CS-2-54	4.160	92.928	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-53	0.009	0.005	1.6	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-2-55	-0.019	-0.009	3.1	89.8	
Pole CS-2-55	4.160	92.933	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-54	0.019	0.009	3.1	89.8	
								Pole CS-2-56	-0.028	-0.014	4.7	89.8	
Pole CS-2-56	4.160	92.940	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-52	-0.038	-0.019	6.3	89.8	
								Pole CS-2-55	0.028	0.014	4.7	89.8	
Pole CS-2-57	4.160	92.936	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-58	-0.009	-0.005	1.6	89.8	
Pole CS-2-58	4.160	92.940	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-57	0.009	0.005	1.6	89.8	
								Pole CS-2-52	-0.019	-0.009	3.1	89.8	
Pole CS-2-60	4.160	92.915	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-61	-0.047	-0.023	7.9	89.8	
								Pole CS-2-62	0.038	0.019	6.3	89.8	
Pole CS-2-61	4.160	92.937	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-52	-0.057	-0.028	9.4	89.8	
								Pole CS-2-60	0.047	0.023	7.9	89.8	
Pole CS-2-62	4.160	92.899	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-60	-0.038	-0.019	6.3	89.8	
								Pole CS-2-63	0.028	0.014	4.7	89.8	
Pole CS-2-63	4.160	92.887	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-62	-0.028	-0.014	4.7	89.8	
								Pole CS-2-64	0.019	0.009	3.1	89.8	
Pole CS-2-64	4.160	92.882	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-63	-0.019	-0.009	3.1	89.8	
								Pole CS-2-65	0.009	0.005	1.6	89.8	
Pole CS-2-65	4.160	92.880	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-64	-0.009	-0.005	1.6	89.8	
Pole CS-2-66	4.160	98.695	-6.3	0.000	0.000	0.000	0.000	Pole CS-3-10	-0.031	-0.015	4.9	89.8	
								L-SUB-FDR-EQ#18-1-237~	0.000	0.000	0.0	0.0	
								SEC_CS-2-46	0.031	0.015	4.9	89.8	
Pole CS-2-73	4.160	96.448	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-27	-0.030	-0.015	4.8	89.8	
								SEC_CS-2-49	0.030	0.015	4.8	89.8	
Pole CS-3-1	4.160	98.998	-6.3	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-0.867	-0.425	135.3	89.8	
								Pole CS-3-2	0.221	0.108	34.4	89.8	
								Pole CS-3-21	0.646	0.317	100.9	89.8	
Pole CS-3-2	4.160	98.934	-6.3	0.000	0.000	0.011	0.005	Pole CS-3-3	0.084	0.041	13.1	89.8	
								Pole CS-3-1	-0.220	-0.108	34.4	89.8	
								Pole CS-3-11	0.126	0.062	19.7	89.8	
Pole CS-3-3	4.160	98.915	-6.3	0.000	0.000	0.011	0.005	Pole CS-3-2	-0.084	-0.041	13.1	89.8	
								Pole CS-3-4	0.073	0.036	11.5	89.8	
Pole CS-3-4	4.160	98.872	-6.3	0.000	0.000	0.011	0.005	Pole CS-3-3	-0.073	-0.036	11.5	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-5	0.063	0.031	9.8	89.8	
Pole CS-3-5	4.160	98.836	-6.3	0.000	0.000	0.000	0.000	Pole CS-3-4	-0.063	-0.031	9.8	89.8	
								Pole CS-3-6	0.063	0.031	9.8	89.8	
Pole CS-3-6	4.160	98.798	-6.3	0.000	0.000	0.010	0.005	Pole CS-3-5	-0.063	-0.031	9.8	89.8	
								Pole CS-3-7	0.052	0.026	8.2	89.8	
Pole CS-3-7	4.160	98.779	-6.3	0.000	0.000	0.000	0.000	Pole CS-3-6	-0.052	-0.026	8.2	89.8	
								Pole CS-3-8	0.052	0.026	8.2	89.8	
Pole CS-3-8	4.160	98.764	-6.3	0.000	0.000	0.010	0.005	Pole CS-3-7	-0.052	-0.026	8.2	89.8	
								Pole CS-3-9	0.042	0.020	6.6	89.8	
Pole CS-3-9	4.160	98.724	-6.3	0.000	0.000	0.000	0.000	Pole CS-3-8	-0.042	-0.020	6.6	89.8	
								Pole CS-3-10	0.042	0.020	6.6	89.8	
Pole CS-3-10	4.160	98.699	-6.3	0.000	0.000	0.010	0.005	Pole CS-2-66	0.031	0.015	4.9	89.8	
								Pole CS-3-9	-0.042	-0.020	6.6	89.8	
Pole CS-3-11	4.160	98.916	-6.3	0.000	0.000	0.011	0.005	Pole CS-3-2	-0.126	-0.062	19.7	89.8	
								Pole CS-3-12	0.115	0.056	18.0	89.8	
Pole CS-3-12	4.160	98.783	-6.3	0.000	0.000	0.021	0.010	Pole CS-3-11	-0.115	-0.056	18.0	89.8	
								Pole CS-3-13	0.094	0.046	14.7	89.8	
Pole CS-3-13	4.160	98.757	-6.3	0.000	0.000	0.010	0.005	Pole CS-3-12	-0.094	-0.046	14.7	89.8	
								Pole CS-3-14	0.084	0.041	13.1	89.8	
Pole CS-3-14	4.160	98.690	-6.3	0.000	0.000	0.010	0.005	Pole CS-3-13	-0.084	-0.041	13.1	89.8	
								Pole CS-3-15	0.073	0.036	11.5	89.8	
Pole CS-3-15	4.160	98.637	-6.3	0.000	0.000	0.021	0.010	Pole CS-3-14	-0.073	-0.036	11.5	89.8	
								Pole CS-3-16	0.052	0.026	8.2	89.8	
Pole CS-3-16	4.160	98.581	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-15	-0.052	-0.026	8.2	89.8	
								Pole CS-3-17	0.042	0.020	6.6	89.8	
Pole CS-3-17	4.160	98.571	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-16	-0.042	-0.020	6.6	89.8	
								Pole CS-3-18	0.031	0.015	4.9	89.8	
Pole CS-3-18	4.160	98.555	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-17	-0.031	-0.015	4.9	89.8	
								Pole CS-3-19	0.021	0.010	3.3	89.8	
Pole CS-3-19	4.160	98.546	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-18	-0.021	-0.010	3.3	89.8	
								Pole CS-3-20	0.010	0.005	1.6	89.8	
Pole CS-3-20	4.160	98.544	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-19	-0.010	-0.005	1.6	89.8	
Pole CS-3-21	4.160	98.851	-6.3	0.000	0.000	0.011	0.005	Pole CS-3-1	-0.645	-0.317	100.9	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-22	0.635	0.312	99.3	89.8	
Pole CS-3-22	4.160	98.318	-6.2	0.000	0.000	0.000	0.000	PRI_PM_25	0.085	0.043	13.5	89.5	
								Pole CS-3-21	-0.631	-0.310	99.3	89.7	
								Pole CS-3-23	0.546	0.268	85.8	89.8	
Pole CS-3-23	4.160	97.990	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-29	0.534	0.262	84.2	89.8	
								Pole CS-3-22	-0.544	-0.267	85.8	89.8	
Pole CS-3-24	4.160	97.203	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-32	-0.041	-0.020	6.5	89.8	
								Pole CS-3-25	0.031	0.015	4.9	89.8	
Pole CS-3-25	4.160	97.194	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-24	-0.031	-0.015	4.9	89.8	
								Pole CS-3-26	0.020	0.010	3.2	89.8	
Pole CS-3-26	4.160	97.187	-6.2	0.000	0.000	0.020	0.010	Pole CS-3-25	-0.020	-0.010	3.2	89.8	
Pole CS-3-27	4.160	96.460	-6.2	0.000	0.000	0.010	0.005	Pole CS-2-73	0.030	0.015	4.8	89.8	
								Pole CS-3-34	-0.040	-0.020	6.5	89.8	
Pole CS-3-28	4.160	96.158	-6.2	0.000	0.000	0.020	0.010	Pole CS-3-35	-0.020	-0.010	3.2	89.8	
Pole CS-3-29	4.160	97.692	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-23	-0.532	-0.261	84.2	89.8	
								Pole CS-3-30	0.501	0.246	79.3	89.8	
								SEC_CS-2-47	0.031	0.015	4.9	89.8	
Pole CS-3-30	4.160	97.479	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-29	-0.500	-0.245	79.3	89.8	
								Pole CS-3-31	0.084	0.042	13.4	89.5	
								Pole CS-3-32	0.416	0.203	65.9	89.8	
Pole CS-3-31	4.160	97.473	-6.2	0.000	0.000	0.000	0.000	PRI_PM_26	0.084	0.042	13.4	89.5	
								Pole CS-3-30	-0.084	-0.042	13.4	89.5	
Pole CS-3-32	4.160	97.215	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-30	-0.415	-0.203	65.9	89.8	
								Pole CS-3-33	0.374	0.183	59.4	89.8	
								Pole CS-3-24	0.041	0.020	6.5	89.8	
Pole CS-3-33	4.160	97.095	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-32	-0.374	-0.183	59.4	89.8	
								Pole CS-3-34	0.343	0.168	54.6	89.8	
								SEC_CS-2-48	0.031	0.015	4.9	89.8	
Pole CS-3-34	4.160	96.477	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-33	-0.341	-0.167	54.6	89.8	
								Pole CS-3-35	0.301	0.147	48.1	89.8	
								Pole CS-3-27	0.040	0.020	6.5	89.8	
Pole CS-3-35	4.160	96.164	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-34	-0.300	-0.147	48.1	89.8	
								Pole CS-3-52	0.279	0.137	44.9	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-28	0.020	0.010	3.2	89.8	
Pole CS-3-36	4.160	95.327	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-37	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-246~	0.000	0.000	0.0	0.0	
Pole CS-3-37	4.160	95.327	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-36	0.000	0.000	0.0	0.0	
								Pole CS-3-38	-0.010	-0.005	1.6	89.8	
Pole CS-3-38	4.160	95.328	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-37	0.010	0.005	1.6	89.8	
								Pole CS-3-39	-0.020	-0.010	3.2	89.8	
Pole CS-3-39	4.160	95.339	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-38	0.020	0.010	3.2	89.8	
								Pole CS-3-40	-0.030	-0.015	4.8	89.8	
Pole CS-3-40	4.160	95.348	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-39	0.030	0.015	4.8	89.8	
								Pole CS-3-41	-0.040	-0.019	6.4	89.8	
Pole CS-3-41	4.160	95.368	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-40	0.040	0.019	6.4	89.8	
								Pole CS-3-42	-0.049	-0.024	8.0	89.8	
Pole CS-3-42	4.160	95.385	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-41	0.049	0.024	8.0	89.8	
								Pole CS-3-43	-0.059	-0.029	9.6	89.8	
Pole CS-3-43	4.160	95.415	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-42	0.059	0.029	9.6	89.8	
								Pole CS-3-45	-0.079	-0.039	12.8	89.8	
								Pole CS-3-44	0.010	0.005	1.6	89.8	
Pole CS-3-44	4.160	95.414	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-43	-0.010	-0.005	1.6	89.8	
Pole CS-3-45	4.160	95.457	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-43	0.079	0.039	12.8	89.8	
								Pole CS-3-50	-0.099	-0.048	16.0	89.8	
								Pole CS-3-46	0.010	0.005	1.6	89.8	
								Pole CS-3-47	0.010	0.005	1.6	89.8	
Pole CS-3-46	4.160	95.455	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-45	-0.010	-0.005	1.6	89.8	
Pole CS-3-47	4.160	95.455	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-45	-0.010	-0.005	1.6	89.8	
Pole CS-3-48	4.160	95.510	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-50	-0.010	-0.005	1.6	89.8	
Pole CS-3-49	4.160	95.510	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-50	-0.010	-0.005	1.6	89.8	
Pole CS-3-50	4.160	95.511	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-45	0.099	0.048	16.0	89.8	
								Pole CS-3-51	-0.119	-0.058	19.2	89.8	
								Pole CS-3-48	0.010	0.005	1.6	89.8	
								Pole CS-3-49	0.010	0.005	1.6	89.8	
Pole CS-3-51	4.160	95.521	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-50	0.119	0.058	19.2	89.8	
								Pole CS-3-63	-0.198	-0.097	32.0	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-66	0.079	0.039	12.8	89.8	
								Pole CS-3-74	0.000	0.000	0.0	0.0	
Pole CS-3-52	4.160	96.001	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-35	-0.279	-0.137	44.9	89.8	
								Pole CS-3-59	0.249	0.122	40.1	89.8	
								Pole CS-3-53	0.030	0.015	4.8	89.8	
Pole CS-3-53	4.160	95.991	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-52	-0.030	-0.015	4.8	89.8	
								Pole CS-3-54	0.020	0.010	3.2	89.8	
Pole CS-3-54	4.160	95.986	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-53	-0.020	-0.010	3.2	89.8	
								Pole CS-3-55	0.010	0.005	1.6	89.8	
Pole CS-3-55	4.160	95.983	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-54	-0.010	-0.005	1.6	89.8	
Pole CS-3-56	4.160	95.863	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-57	-0.010	-0.005	1.6	89.8	
Pole CS-3-57	4.160	95.870	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-56	0.010	0.005	1.6	89.8	
								Pole CS-3-58	-0.020	-0.010	3.2	89.8	
Pole CS-3-58	4.160	95.880	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-57	0.020	0.010	3.2	89.8	
								Pole CS-3-59	-0.030	-0.015	4.8	89.8	
Pole CS-3-59	4.160	95.885	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-52	-0.249	-0.122	40.1	89.8	
								Pole CS-3-60	0.219	0.107	35.3	89.8	
								Pole CS-3-58	0.030	0.015	4.8	89.8	
Pole CS-3-60	4.160	95.784	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-59	-0.219	-0.107	35.3	89.8	
								Pole CS-3-62	0.219	0.107	35.3	89.8	
Pole CS-3-61	4.160	95.680	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-62	-0.208	-0.102	33.7	89.8	
								Pole CS-3-63	0.198	0.097	32.0	89.8	
Pole CS-3-62	4.160	95.731	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-61	0.208	0.102	33.7	89.8	
								Pole CS-3-60	-0.218	-0.107	35.3	89.8	
Pole CS-3-63	4.160	95.603	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-61	-0.198	-0.097	32.0	89.8	
								Pole CS-3-51	0.198	0.097	32.0	89.8	
								Pole CS-3-75	0.000	0.000	0.0	0.0	
Pole CS-3-66	4.160	95.506	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-51	-0.079	-0.039	12.8	89.8	
								Pole CS-3-67	0.069	0.034	11.2	89.8	
Pole CS-3-67	4.160	95.487	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-66	-0.069	-0.034	11.2	89.8	
								Pole CS-3-68	0.059	0.029	9.6	89.8	
Pole CS-3-68	4.160	95.468	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-67	-0.059	-0.029	9.6	89.8	
								Pole CS-3-69	0.050	0.024	8.0	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-3-69	4.160	95.453	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-68	-0.049	-0.024	8.0	89.8	
								Pole CS-3-70	0.040	0.019	6.4	89.8	
Pole CS-3-70	4.160	95.441	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-69	-0.040	-0.019	6.4	89.8	
								Pole CS-3-71	0.030	0.015	4.8	89.8	
Pole CS-3-71	4.160	95.432	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-70	-0.030	-0.015	4.8	89.8	
								Pole CS-3-72	0.020	0.010	3.2	89.8	
Pole CS-3-72	4.160	95.425	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-71	-0.020	-0.010	3.2	89.8	
								Pole CS-3-73	0.010	0.005	1.6	89.8	
Pole CS-3-73	4.160	95.422	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-72	-0.010	-0.005	1.6	89.8	
Pole CS-3-74	4.160	95.521	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-51	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-276~	0.000	0.000	0.0	0.0	
Pole CS-3-75	4.160	95.603	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-63	0.000	0.000	0.0	0.0	
Pole CS-4-1	4.160	99.164	-6.2	0.000	0.000	0.011	0.005	Pole CS-4-11	0.783	0.389	122.4	89.6	
								Pole CS-4-3	0.021	0.010	3.3	89.8	
								BUS_CLG_4kV	-0.815	-0.405	127.3	89.6	
Pole CS-4-2	4.160	98.113	-6.2	0.000	0.000	0.010	0.005	Pole CS-4-11	-0.604	-0.300	95.4	89.6	
								Pole CS-4-6	0.594	0.295	93.8	89.6	
Pole CS-4-3	4.160	99.163	-6.2	0.000	0.000	0.011	0.005	Pole CS-4-1	-0.021	-0.010	3.3	89.8	
								Pole CS-4-4	0.011	0.005	1.6	89.9	
Pole CS-4-4	4.160	99.153	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-3	-0.011	-0.005	1.6	89.8	
								Pole CS-4-5	0.011	0.005	1.6	89.8	
								L-SUB-FDR-EQ#18-1-283~	0.000	0.000	0.0	0.0	
Pole CS-4-5	4.160	99.151	-6.2	0.000	0.000	0.011	0.005	Pole CS-4-4	-0.011	-0.005	1.6	89.8	
Pole CS-4-6	4.160	97.661	-6.2	0.000	0.000	0.000	0.000	PRI_PM_22	0.169	0.084	26.8	89.5	
								Pole CS-4-2	-0.591	-0.294	93.8	89.5	
								Pole CS-4-7	0.422	0.210	67.0	89.6	
Pole CS-4-7	4.160	97.511	-6.2	0.000	0.000	0.021	0.010	Pole CS-4-6	-0.422	-0.209	67.0	89.6	
								Pole CS-4-8	0.401	0.199	63.8	89.6	
Pole CS-4-8	4.160	97.359	-6.2	0.000	0.000	0.010	0.005	Pole CS-4-7	-0.401	-0.199	63.8	89.6	
								Pole CS-4-9	0.390	0.194	62.1	89.6	
Pole CS-4-9	4.160	97.239	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-8	-0.390	-0.194	62.1	89.6	
								Pole CS-4-12	0.031	0.015	4.9	89.8	
								Pole CS-4-13	0.359	0.179	57.3	89.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-4-11	4.160	98.574	-6.2	0.000	0.000	0.000	0.000	PRI_PM_11	0.171	0.086	27.0	89.5	
								Pole CS-4-1	-0.778	-0.387	122.4	89.5	
								Pole CS-4-2	0.607	0.301	95.4	89.6	
Pole CS-4-12	4.160	97.233	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.031	-0.015	4.9	89.8	
								SEC_CS-4-8	0.031	0.015	4.9	89.8	
Pole CS-4-13	4.160	97.107	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.359	-0.178	57.3	89.5	
								Pole CS-4-14	0.359	0.178	57.3	89.5	
Pole CS-4-14	4.160	96.964	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-13	-0.358	-0.178	57.3	89.5	
								Pole CS-4-15	0.358	0.178	57.3	89.5	
Pole CS-4-15	4.160	96.025	-6.1	0.000	0.000	0.000	0.000	Pole CS-4-14	-0.355	-0.177	57.3	89.5	
								Pole CS-4-16	0.355	0.177	57.3	89.5	
Pole CS-4-16	4.160	94.551	-6.1	0.000	0.000	0.000	0.000	Pole CS-4-15	-0.349	-0.174	57.3	89.5	
								Pole CS-4-18	0.019	0.010	3.2	89.8	
								Pole CS-4-20	0.330	0.165	54.1	89.5	
Pole CS-4-17	4.160	94.542	-6.1	0.000	0.000	0.010	0.005	Pole CS-4-18	-0.010	-0.005	1.6	89.8	
Pole CS-4-18	4.160	94.545	-6.1	0.000	0.000	0.000	0.000	Pole CS-4-17	0.010	0.005	1.6	89.8	
								Pole CS-4-16	-0.019	-0.010	3.2	89.8	
								Pole CS-4-19	0.010	0.005	1.6	89.8	
Pole CS-4-19	4.160	94.537	-6.1	0.000	0.000	0.010	0.005	Pole CS-4-18	-0.010	-0.005	1.6	89.8	
Pole CS-4-20	4.160	94.368	-6.1	0.000	0.000	0.000	0.000	PRI_PM_23	0.160	0.080	26.3	89.4	
								Pole CS-4-16	-0.329	-0.164	54.1	89.5	
								Pole CS-4-21	0.169	0.085	27.8	89.5	
Pole CS-4-21	4.160	94.260	-6.1	0.000	0.000	0.010	0.005	Pole CS-4-20	-0.169	-0.084	27.8	89.5	
								Pole CS-4-22	0.159	0.080	26.2	89.4	
Pole CS-4-22	4.160	94.190	-6.1	0.000	0.000	0.000	0.000	PRI_PM_24	0.159	0.080	26.2	89.4	
								Pole CS-4-21	-0.159	-0.080	26.2	89.4	
Pole CS-5-18	24.940	94.639	-3.2	0.000	0.000	0.015	0.008	Pole CS-5-19	-0.015	-0.008	0.4	89.6	
Pole CS-5-19	24.940	94.639	-3.2	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-9	0.047	0.021	1.3	90.9	
								Pole CS-5-18	0.015	0.008	0.4	89.8	
								Pole CS-5-20	-0.062	-0.029	1.7	90.6	
Pole CS-5-20	24.940	94.639	-3.2	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-8	0.046	0.022	1.3	90.3	
								Pole CS-5-19	0.062	0.029	1.7	90.7	
								Pole CS-5-21	-0.109	-0.051	2.9	90.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-5-21	24.940	94.645	-3.2	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-0.109	-0.050	2.9	90.8	
								Pole CS-5-20	0.109	0.050	2.9	90.8	
Pole HS-1-001	4.160	99.824	-6.0	0.000	0.000	0.013	0.006	BUS_HSC_4kV	-0.097	-0.047	15.0	89.9	
								Pole HS-1-4	0.084	0.041	13.0	89.9	
Pole HS-1-4	4.160	99.805	-6.0	0.000	0.000	0.019	0.009	Pole HS-1-001	-0.084	-0.041	13.0	89.9	
								Pole HS-1-16	0.065	0.032	10.0	89.9	
Pole HS-1-16	4.160	99.791	-6.0	0.000	0.000	0.039	0.019	Pole HS-1-17	0.026	0.013	4.0	89.9	
								Pole HS-1-4	-0.065	-0.032	10.0	89.9	
Pole HS-1-17	4.160	99.785	-6.0	0.000	0.000	0.006	0.003	Pole HS-1-16	-0.026	-0.013	4.0	89.9	
								Pole HS-1-19	0.019	0.009	3.0	89.9	
Pole HS-1-19	4.160	99.781	-6.0	0.000	0.000	0.019	0.009	Pole HS-1-17	-0.019	-0.009	3.0	89.9	
Pole HS-2-1	4.160	99.556	-6.0	0.000	0.000	0.011	0.005	BUS_HSC_4kV	-1.278	-0.628	198.5	89.8	
								Pole HS-2-2	1.267	0.622	196.9	89.8	
Pole HS-2-2	4.160	99.184	-6.0	0.000	0.000	0.011	0.005	Pole HS-2-1	-1.263	-0.620	196.9	89.8	
								Pole HS-2-3	1.252	0.615	195.2	89.8	
Pole HS-2-3	4.160	98.859	-6.0	0.000	0.000	0.011	0.005	Pole HS-2-2	-1.248	-0.613	195.2	89.7	
								Pole HS-2-4	1.237	0.608	193.6	89.7	
Pole HS-2-4	4.160	98.536	-6.0	0.000	0.000	0.000	0.000	Pole HS-2-3	-1.233	-0.606	193.6	89.7	
								Pole HS-2-5	1.202	0.591	188.7	89.7	
								SEC_HS-2-4	0.031	0.015	4.9	89.8	
Pole HS-2-5	4.160	98.190	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-4	-1.198	-0.589	188.7	89.7	
								Pole HS-2-6	1.167	0.574	183.8	89.7	
								SEC_HS-2-5	0.031	0.015	4.9	89.8	
Pole HS-2-6	4.160	97.894	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-5	-1.163	-0.572	183.8	89.7	
								Pole HS-2-7	1.132	0.557	178.9	89.7	
								SEC_HS-2-6	0.031	0.015	4.9	89.8	
Pole HS-2-7	4.160	97.572	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-6	-1.128	-0.555	178.9	89.7	
								Pole HS-2-8	1.098	0.540	174.0	89.7	
								SEC_HS-2-7	0.031	0.015	4.9	89.8	
Pole HS-2-8	4.160	97.258	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-7	-1.094	-0.539	174.0	89.7	
								Pole HS-2-9	0.768	0.379	122.3	89.7	
								Pole HS-2-50	0.326	0.159	51.7	89.8	
Pole HS-2-9	4.160	97.050	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-8	-0.767	-0.378	122.3	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-10	0.757	0.373	120.6	89.7	
Pole HS-2-10	4.160	96.859	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-9	-0.755	-0.373	120.6	89.7	
								Pole HS-2-11	0.745	0.368	119.0	89.7	
Pole HS-2-11	4.160	96.651	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-10	-0.743	-0.367	119.0	89.7	
								Pole HS-2-12	0.713	0.352	114.2	89.7	
								SEC_HS-2-10	0.030	0.015	4.8	89.8	
Pole HS-2-12	4.160	96.518	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-11	-0.712	-0.352	114.2	89.7	
								Pole HS-2-86	0.702	0.347	112.6	89.6	
Pole HS-2-13	4.160	96.317	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-14	0.100	0.049	16.1	89.8	
								Pole HS-2-24	0.270	0.132	43.4	89.8	
								Pole HS-2-86	-0.371	-0.181	59.5	89.8	
Pole HS-2-14	4.160	96.284	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-13	-0.100	-0.049	16.1	89.8	
								Pole HS-2-15	0.090	0.044	14.5	89.8	
Pole HS-2-15	4.160	96.251	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-14	-0.090	-0.044	14.5	89.8	
								Pole HS-2-16	0.080	0.039	12.9	89.8	
Pole HS-2-16	4.160	96.216	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-15	-0.080	-0.039	12.9	89.8	
								Pole HS-2-17	0.070	0.034	11.3	89.8	
Pole HS-2-17	4.160	96.194	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-16	-0.070	-0.034	11.3	89.8	
								Pole HS-2-18	0.060	0.029	9.7	89.8	
Pole HS-2-18	4.160	96.179	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-17	-0.060	-0.029	9.7	89.8	
								Pole HS-2-19	0.050	0.025	8.1	89.8	
Pole HS-2-19	4.160	96.166	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-18	-0.050	-0.025	8.1	89.8	
								Pole HS-2-20	0.040	0.020	6.4	89.8	
Pole HS-2-20	4.160	96.143	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-19	-0.040	-0.020	6.4	89.8	
								Pole HS-2-21	0.030	0.015	4.8	89.8	
Pole HS-2-21	4.160	96.135	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-20	-0.030	-0.015	4.8	89.8	
								Pole HS-2-22	0.020	0.010	3.2	89.8	
Pole HS-2-22	4.160	96.129	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-21	-0.020	-0.010	3.2	89.8	
								Pole HS-2-23	0.010	0.005	1.6	89.8	
Pole HS-2-23	4.160	96.126	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-22	-0.010	-0.005	1.6	89.8	
Pole HS-2-24	4.160	96.092	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-13	-0.270	-0.132	43.4	89.8	
								Pole HS-2-25	0.230	0.112	36.9	89.8	
								Pole HS-2-26	0.030	0.015	4.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-2-25	4.160	96.016	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.229	-0.112	36.9	89.8	
								Pole HS-2-27	0.229	0.112	36.9	89.8	
Pole HS-2-26	4.160	96.067	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.030	-0.015	4.8	89.8	
								SEC_HS-2-23	0.030	0.015	4.8	89.8	
Pole HS-2-27	4.160	95.941	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-25	-0.229	-0.112	36.9	89.8	
								Pole HS-2-28	0.229	0.112	36.9	89.8	
Pole HS-2-28	4.160	95.817	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-27	-0.229	-0.112	36.9	89.8	
								Pole HS-2-29	0.080	0.039	12.8	89.8	
								Pole HS-2-35	0.149	0.073	24.1	89.8	
Pole HS-2-29	4.160	95.791	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-28	-0.080	-0.039	12.8	89.8	
								Pole HS-2-30	0.070	0.034	11.2	89.8	
Pole HS-2-30	4.160	95.783	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-31	0.040	0.020	6.4	89.8	
								Pole HS-2-29	-0.070	-0.034	11.2	89.8	
								SEC_HS-2-25	0.030	0.015	4.8	89.8	
Pole HS-2-31	4.160	95.777	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-30	-0.040	-0.020	6.4	89.8	
								Pole HS-2-32	0.030	0.015	4.8	89.8	
Pole HS-2-32	4.160	95.769	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-31	-0.030	-0.015	4.8	89.8	
								Pole HS-2-33	0.020	0.010	3.2	89.8	
Pole HS-2-33	4.160	95.762	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-32	-0.020	-0.010	3.2	89.8	
								Pole HS-2-34	0.010	0.005	1.6	89.8	
Pole HS-2-34	4.160	95.760	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-33	-0.010	-0.005	1.6	89.8	
Pole HS-2-35	4.160	95.736	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-28	-0.149	-0.073	24.1	89.8	
								Pole HS-2-36	0.060	0.029	9.6	89.8	
								Pole HS-2-42	0.080	0.039	12.8	89.8	
								Pole HS-2-48	0.010	0.005	1.6	89.8	
Pole HS-2-36	4.160	95.712	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-35	-0.060	-0.029	9.6	89.8	
								Pole HS-2-37	0.050	0.024	8.0	89.8	
Pole HS-2-37	4.160	95.699	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-36	-0.050	-0.024	8.0	89.8	
								Pole HS-2-38	0.040	0.019	6.4	89.8	
Pole HS-2-38	4.160	95.689	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-37	-0.040	-0.019	6.4	89.8	
								Pole HS-2-39	0.030	0.015	4.8	89.8	
Pole HS-2-39	4.160	95.682	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-38	-0.030	-0.015	4.8	89.8	
								Pole HS-2-40	0.020	0.010	3.2	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-2-40	4.160	95.677	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-39	-0.020	-0.010	3.2	89.8	
								Pole HS-2-41	0.010	0.005	1.6	89.8	
Pole HS-2-41	4.160	95.675	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-40	-0.010	-0.005	1.6	89.8	
Pole HS-2-42	4.160	95.693	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-35	-0.079	-0.039	12.8	89.8	
								Pole HS-2-43	0.070	0.034	11.2	89.8	
								Pole HS-2-49	0.010	0.005	1.6	89.8	
Pole HS-2-43	4.160	95.674	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-42	-0.070	-0.034	11.2	89.8	
								Pole HS-2-44	0.040	0.019	6.4	89.8	
								SEC_HS-2-36	0.030	0.015	4.8	89.8	
Pole HS-2-44	4.160	95.664	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-43	-0.040	-0.019	6.4	89.8	
								Pole HS-2-45	0.030	0.015	4.8	89.8	
Pole HS-2-45	4.160	95.655	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-44	-0.030	-0.015	4.8	89.8	
								Pole HS-2-46	0.020	0.010	3.2	89.8	
Pole HS-2-46	4.160	95.651	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-45	-0.020	-0.010	3.2	89.8	
								Pole HS-2-47	0.010	0.005	1.6	89.8	
Pole HS-2-47	4.160	95.649	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-46	-0.010	-0.005	1.6	89.8	
Pole HS-2-48	4.160	95.734	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-35	-0.010	-0.005	1.6	89.8	
Pole HS-2-49	4.160	95.688	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-42	-0.010	-0.005	1.6	89.8	
								L-SUB-FDR-EQ#18-1-278~	0.000	0.000	0.0	0.0	
Pole HS-2-50	4.160	97.085	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-8	-0.325	-0.159	51.7	89.8	
								Pole HS-2-51	0.315	0.154	50.1	89.8	
Pole HS-2-51	4.160	96.916	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-50	-0.314	-0.154	50.1	89.8	
								Pole HS-2-52	0.051	0.025	8.1	89.8	
								Pole HS-2-57	0.264	0.129	42.0	89.8	
Pole HS-2-52	4.160	96.911	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-51	-0.051	-0.025	8.1	89.8	
								Pole HS-2-53	0.041	0.020	6.5	89.8	
Pole HS-2-53	4.160	96.905	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-52	-0.041	-0.020	6.5	89.8	
								Pole HS-2-54	0.030	0.015	4.9	89.8	
Pole HS-2-54	4.160	96.899	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-53	-0.030	-0.015	4.9	89.8	
								Pole HS-2-55	0.020	0.010	3.2	89.8	
Pole HS-2-55	4.160	96.897	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-54	-0.020	-0.010	3.2	89.8	
								Pole HS-2-56	0.010	0.005	1.6	89.8	
Pole HS-2-56	4.160	96.894	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-55	-0.010	-0.005	1.6	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-2-57	4.160	96.775	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-51	-0.263	-0.129	42.0	89.8	
								Pole HS-2-58	0.101	0.050	16.2	89.8	
								Pole HS-2-76	0.162	0.079	25.8	89.8	
Pole HS-2-58	4.160	96.760	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-57	-0.101	-0.050	16.2	89.8	
								Pole HS-2-67	0.091	0.045	14.6	89.8	
Pole HS-2-59	4.160	96.725	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-67	-0.081	-0.040	12.9	89.8	
								Pole HS-2-60	0.071	0.035	11.3	89.8	
Pole HS-2-60	4.160	96.711	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-59	-0.071	-0.035	11.3	89.8	
								Pole HS-2-61	0.061	0.030	9.7	89.8	
Pole HS-2-61	4.160	96.699	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-60	-0.061	-0.030	9.7	89.8	
								Pole HS-2-62	0.051	0.025	8.1	89.8	
Pole HS-2-62	4.160	96.684	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-61	-0.051	-0.025	8.1	89.8	
								Pole HS-2-63	0.040	0.020	6.5	89.8	
Pole HS-2-63	4.160	96.677	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-62	-0.040	-0.020	6.5	89.8	
								Pole HS-2-64	0.030	0.015	4.8	89.8	
Pole HS-2-64	4.160	96.672	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-63	-0.030	-0.015	4.8	89.8	
								Pole HS-2-65	0.020	0.010	3.2	89.8	
Pole HS-2-65	4.160	96.668	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-64	-0.020	-0.010	3.2	89.8	
								Pole HS-2-66	0.010	0.005	1.6	89.8	
Pole HS-2-66	4.160	96.665	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-65	-0.010	-0.005	1.6	89.8	
								L-SUB-FDR-EQ#18-1-301~	0.000	0.000	0.0	0.0	
Pole HS-2-67	4.160	96.739	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-59	0.081	0.040	12.9	89.8	
								Pole HS-2-58	-0.091	-0.045	14.6	89.8	
Pole HS-2-68	4.160	96.617	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-69	-0.010	-0.005	1.6	89.8	
Pole HS-2-69	4.160	96.619	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-68	0.010	0.005	1.6	89.8	
								Pole HS-2-70	-0.020	-0.010	3.2	89.8	
Pole HS-2-70	4.160	96.623	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-69	0.020	0.010	3.2	89.8	
								Pole HS-2-71	-0.030	-0.015	4.8	89.8	
Pole HS-2-71	4.160	96.632	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-70	0.030	0.015	4.8	89.8	
								Pole HS-2-72	-0.040	-0.020	6.5	89.8	
Pole HS-2-72	4.160	96.640	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-71	0.040	0.020	6.5	89.8	
								Pole HS-2-73	-0.051	-0.025	8.1	89.8	
Pole HS-2-73	4.160	96.650	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-72	0.051	0.025	8.1	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-74	-0.061	-0.030	9.7	89.8	
Pole HS-2-74	4.160	96.660	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-73	0.061	0.030	9.7	89.8	
								Pole HS-2-75	-0.071	-0.035	11.3	89.8	
Pole HS-2-75	4.160	96.677	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-74	0.071	0.035	11.3	89.8	
								Pole HS-2-76	-0.081	-0.040	12.9	89.8	
Pole HS-2-76	4.160	96.689	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-75	0.081	0.040	12.9	89.8	
								Pole HS-2-57	-0.162	-0.079	25.8	89.8	
								Pole HS-2-77	0.081	0.040	12.9	89.8	
Pole HS-2-77	4.160	96.643	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-76	-0.081	-0.040	12.9	89.8	
								Pole HS-2-78	0.051	0.025	8.1	89.8	
								SEC_HS-2-67	0.030	0.015	4.8	89.8	
Pole HS-2-78	4.160	96.609	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-77	-0.050	-0.025	8.1	89.8	
								Pole HS-2-79	0.010	0.005	1.6	89.8	
								Pole HS-2-80	0.040	0.020	6.5	89.8	
Pole HS-2-79	4.160	96.602	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-78	-0.010	-0.005	1.6	89.8	
Pole HS-2-80	4.160	96.582	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-78	-0.040	-0.020	6.5	89.8	
								Pole HS-2-81	0.030	0.015	4.8	89.8	
Pole HS-2-81	4.160	96.568	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-80	-0.030	-0.015	4.8	89.8	
								Pole HS-2-82	0.020	0.010	3.2	89.8	
Pole HS-2-82	4.160	96.549	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-81	-0.020	-0.010	3.2	89.8	
								Pole HS-2-83	0.010	0.005	1.6	89.8	
Pole HS-2-83	4.160	96.542	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-82	-0.010	-0.005	1.6	89.8	
Pole HS-2-84	4.160	98.344	-6.4	0.000	0.000	0.010	0.005	Pole HS-2-85	-0.010	-0.005	1.6	89.8	
Pole HS-2-85	4.160	98.352	-6.4	0.000	0.000	0.010	0.005	Pole HS-2-84	0.010	0.005	1.6	89.8	
								Pole CS-1-2	-0.021	-0.010	3.3	89.8	
Pole HS-2-86	4.160	96.386	-5.9	0.000	0.000	0.000	0.000	PRI_PM_10	0.330	0.165	53.1	89.5	
								Pole HS-2-12	-0.701	-0.346	112.6	89.6	
								Pole HS-2-13	0.371	0.182	59.5	89.8	
Pole HS-3-1	4.160	99.784	-6.0	0.000	0.000	0.011	0.005	BUS_HSC_4kV	-0.875	-0.427	135.4	89.9	
								Pole HS-3-2	0.864	0.422	133.8	89.9	
Pole HS-3-2	4.160	99.500	-6.0	0.000	0.000	0.011	0.005	Pole HS-3-1	-0.862	-0.421	133.8	89.9	
								Pole HS-3-3	0.851	0.416	132.1	89.9	
Pole HS-3-3	4.160	99.089	-6.0	0.000	0.000	0.011	0.005	Pole HS-3-2	-0.848	-0.414	132.1	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-3-4	0.837	0.409	130.5	89.8	
Pole HS-3-4	4.160	98.809	-6.0	0.000	0.000	0.010	0.005	Pole HS-3-3	-0.835	-0.408	130.5	89.8	
								Pole HS-3-5	0.824	0.403	128.9	89.8	
Pole HS-3-5	4.160	98.532	-6.0	0.000	0.000	0.010	0.005	Pole HS-3-4	-0.822	-0.402	128.9	89.8	
								Pole HS-3-6	0.811	0.397	127.2	89.8	
Pole HS-3-6	4.160	98.342	-6.0	0.000	0.000	0.010	0.005	Pole HS-3-5	-0.810	-0.396	127.2	89.8	
								Pole HS-3-7	0.799	0.391	125.6	89.8	
Pole HS-3-7	4.160	98.114	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-6	-0.798	-0.390	125.6	89.8	
								Pole HS-3-8	0.787	0.385	123.9	89.8	
Pole HS-3-8	4.160	97.951	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-7	-0.786	-0.384	123.9	89.8	
								Pole HS-3-9	0.776	0.379	122.3	89.8	
Pole HS-3-9	4.160	97.738	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-8	-0.774	-0.378	122.3	89.8	
								Pole HS-3-10	0.764	0.373	120.7	89.8	
Pole HS-3-10	4.160	97.527	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-9	-0.762	-0.373	120.7	89.8	
								Pole HS-3-11	0.752	0.368	119.1	89.8	
Pole HS-3-11	4.160	97.378	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-10	-0.750	-0.367	119.1	89.8	
								Pole HS-3-12	0.740	0.362	117.4	89.8	
Pole HS-3-12	4.160	97.241	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-11	-0.739	-0.362	117.4	89.8	
								Pole HS-3-13	0.729	0.357	115.8	89.8	
Pole HS-3-13	4.160	97.042	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-12	-0.727	-0.356	115.8	89.8	
								Pole HS-3-14	0.717	0.351	114.2	89.8	
Pole HS-3-14	4.160	96.898	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-13	-0.716	-0.350	114.2	89.8	
								Pole HS-3-15	0.706	0.345	112.6	89.8	
Pole HS-3-15	4.160	96.729	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-14	-0.705	-0.345	112.6	89.8	
								Pole HS-3-16	0.695	0.340	111.0	89.8	
Pole HS-3-16	4.160	96.565	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-15	-0.693	-0.339	111.0	89.8	
								Pole HS-3-17	0.683	0.334	109.3	89.8	
Pole HS-3-17	4.160	96.424	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-16	-0.682	-0.334	109.3	89.8	
								Pole HS-3-18	0.441	0.216	70.7	89.8	
								Pole HS-3-23	0.241	0.118	38.6	89.8	
Pole HS-3-18	4.160	96.122	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-17	-0.440	-0.215	70.7	89.8	
								Pole HS-3-28	0.050	0.025	8.1	89.8	
								Pole HS-3-29	0.260	0.127	41.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-3-46	0.130	0.064	20.9	89.8	
Pole HS-3-19	4.160	96.150	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-20	-0.200	-0.098	32.2	89.8	
								Pole HS-3-30	0.190	0.093	30.6	89.8	
Pole HS-3-20	4.160	96.197	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-19	0.200	0.098	32.2	89.8	
								Pole HS-3-21	-0.210	-0.103	33.8	89.8	
Pole HS-3-21	4.160	96.289	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-20	0.210	0.103	33.8	89.8	
								Pole HS-3-22	-0.221	-0.108	35.4	89.8	
Pole HS-3-22	4.160	96.335	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-21	0.221	0.108	35.4	89.8	
								Pole HS-3-23	-0.231	-0.113	37.0	89.8	
Pole HS-3-23	4.160	96.375	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-17	-0.241	-0.118	38.6	89.8	
								Pole HS-3-22	0.231	0.113	37.0	89.8	
Pole HS-3-24	4.160	96.087	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-25	-0.010	-0.005	1.6	89.8	
Pole HS-3-25	4.160	96.091	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-24	0.010	0.005	1.6	89.8	
								Pole HS-3-26	-0.020	-0.010	3.2	89.8	
Pole HS-3-26	4.160	96.097	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-25	0.020	0.010	3.2	89.8	
								Pole HS-3-27	-0.030	-0.015	4.8	89.8	
Pole HS-3-27	4.160	96.105	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-26	0.030	0.015	4.8	89.8	
								Pole HS-3-28	-0.040	-0.020	6.4	89.8	
Pole HS-3-28	4.160	96.115	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-27	0.040	0.020	6.4	89.8	
								Pole HS-3-18	-0.050	-0.025	8.1	89.8	
Pole HS-3-29	4.160	95.944	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-18	-0.259	-0.127	41.8	89.8	
								Pole HS-3-34	0.040	0.020	6.4	89.8	
								Pole HS-3-35	0.100	0.049	16.1	89.8	
								Pole HS-3-59	0.120	0.059	19.3	89.8	
Pole HS-3-30	4.160	96.107	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-19	-0.190	-0.093	30.6	89.8	
								Pole HS-3-85	0.180	0.088	28.9	89.8	
Pole HS-3-31	4.160	95.917	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-32	-0.010	-0.005	1.6	89.8	
Pole HS-3-32	4.160	95.919	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-31	0.010	0.005	1.6	89.8	
								Pole HS-3-33	-0.020	-0.010	3.2	89.8	
Pole HS-3-33	4.160	95.924	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-32	0.020	0.010	3.2	89.8	
								Pole HS-3-34	-0.030	-0.015	4.8	89.8	
Pole HS-3-34	4.160	95.930	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-29	-0.040	-0.020	6.4	89.8	
								Pole HS-3-33	0.030	0.015	4.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-35	4.160	95.876	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.100	-0.049	16.1	89.8	
								Pole HS-3-37	0.020	0.010	3.2	89.8	
								Pole HS-3-38	0.080	0.039	12.8	89.8	
Pole HS-3-36	4.160	95.867	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-37	-0.010	-0.005	1.6	89.8	
Pole HS-3-37	4.160	95.869	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-35	-0.020	-0.010	3.2	89.8	
								Pole HS-3-36	0.010	0.005	1.6	89.8	
Pole HS-3-38	4.160	95.822	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-35	-0.080	-0.039	12.9	89.8	
								Pole HS-3-43	0.070	0.034	11.2	89.8	
Pole HS-3-39	4.160	95.752	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-44	0.020	0.010	3.2	89.8	
								Pole HS-3-40	-0.030	-0.015	4.8	89.8	
Pole HS-3-40	4.160	95.757	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-39	0.030	0.015	4.8	89.8	
								Pole HS-3-41	-0.040	-0.019	6.4	89.8	
Pole HS-3-41	4.160	95.766	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-40	0.040	0.019	6.4	89.8	
								Pole HS-3-42	-0.050	-0.024	8.0	89.8	
Pole HS-3-42	4.160	95.776	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-41	0.050	0.024	8.0	89.8	
								Pole HS-3-43	-0.060	-0.029	9.6	89.8	
Pole HS-3-43	4.160	95.789	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-42	0.060	0.029	9.6	89.8	
								Pole HS-3-38	-0.070	-0.034	11.2	89.8	
Pole HS-3-44	4.160	95.730	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-39	-0.020	-0.010	3.2	89.8	
								Pole HS-3-45	0.010	0.005	1.6	89.8	
Pole HS-3-45	4.160	95.726	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-44	-0.010	-0.005	1.6	89.8	
Pole HS-3-46	4.160	96.105	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-18	-0.130	-0.064	20.9	89.8	
								Pole HS-3-47	0.120	0.059	19.3	89.8	
Pole HS-3-47	4.160	96.086	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-46	-0.120	-0.059	19.3	89.8	
								Pole HS-3-48	0.110	0.054	17.7	89.8	
Pole HS-3-48	4.160	96.053	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-47	-0.110	-0.054	17.7	89.8	
								Pole HS-3-49	0.100	0.049	16.1	89.8	
Pole HS-3-49	4.160	96.027	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-50	0.090	0.044	14.5	89.8	
								Pole HS-3-48	-0.100	-0.049	16.1	89.8	
Pole HS-3-50	4.160	96.011	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-49	-0.090	-0.044	14.5	89.8	
								Pole HS-3-51	0.080	0.039	12.9	89.8	
Pole HS-3-51	4.160	95.992	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-50	-0.080	-0.039	12.9	89.8	
								Pole HS-3-52	0.070	0.034	11.3	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-52	4.160	95.973	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-51	-0.070	-0.034	11.3	89.8	
								Pole HS-3-53	0.060	0.029	9.6	89.8	
Pole HS-3-53	4.160	95.965	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-58	0.050	0.024	8.0	89.8	
								Pole HS-3-52	-0.060	-0.029	9.6	89.8	
Pole HS-3-54	4.160	95.923	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-55	-0.010	-0.005	1.6	89.8	
Pole HS-3-55	4.160	95.927	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-54	0.010	0.005	1.6	89.8	
								Pole HS-3-56	-0.020	-0.010	3.2	89.8	
Pole HS-3-56	4.160	95.931	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-55	0.020	0.010	3.2	89.8	
								Pole HS-3-57	-0.030	-0.015	4.8	89.8	
Pole HS-3-57	4.160	95.937	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-56	0.030	0.015	4.8	89.8	
								Pole HS-3-58	-0.040	-0.020	6.4	89.8	
Pole HS-3-58	4.160	95.959	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-53	-0.050	-0.024	8.0	89.8	
								Pole HS-3-57	0.040	0.020	6.4	89.8	
Pole HS-3-59	4.160	95.859	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.119	-0.059	19.3	89.8	
								Pole HS-3-60	0.090	0.044	14.4	89.8	
								SEC_HS-3-55	0.030	0.015	4.8	89.8	
Pole HS-3-60	4.160	95.820	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-59	-0.090	-0.044	14.4	89.8	
								Pole HS-3-61	0.080	0.039	12.8	89.8	
Pole HS-3-61	4.160	95.789	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-60	-0.080	-0.039	12.8	89.8	
								Pole HS-3-62	0.050	0.024	8.0	89.8	
								SEC_HS-3-57	0.030	0.015	4.8	89.8	
Pole HS-3-62	4.160	95.771	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-61	-0.050	-0.024	8.0	89.8	
								Pole HS-3-63	0.040	0.019	6.4	89.8	
Pole HS-3-63	4.160	95.756	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-62	-0.040	-0.019	6.4	89.8	
								Pole HS-3-64	0.010	0.005	1.6	89.8	
								SEC_HS-3-59	0.030	0.015	4.8	89.8	
Pole HS-3-64	4.160	95.753	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-63	-0.010	-0.005	1.6	89.8	
Pole HS-3-65	4.160	95.860	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-66	-0.010	-0.005	1.6	89.8	
Pole HS-3-66	4.160	95.864	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-65	0.010	0.005	1.6	89.8	
								Pole HS-3-67	-0.020	-0.010	3.2	89.8	
Pole HS-3-67	4.160	95.877	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-66	0.020	0.010	3.2	89.8	
								Pole HS-3-68	-0.030	-0.015	4.8	89.8	
Pole HS-3-68	4.160	95.885	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-67	0.030	0.015	4.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-3-69	-0.040	-0.020	6.4	89.8	
Pole HS-3-69	4.160	95.896	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-68	0.040	0.020	6.4	89.8	
								Pole HS-3-70	-0.050	-0.024	8.0	89.8	
Pole HS-3-70	4.160	95.929	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-69	0.050	0.024	8.0	89.8	
								Pole HS-3-71	-0.060	-0.029	9.6	89.8	
Pole HS-3-71	4.160	95.967	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-70	0.060	0.029	9.6	89.8	
								Pole MS-1-81	-0.070	-0.034	11.3	89.8	
Pole HS-3-74	4.160	95.896	-5.9	0.000	0.000	0.020	0.010	Pole HS-3-75	-0.020	-0.010	3.2	89.8	
Pole HS-3-75	4.160	95.901	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-74	0.020	0.010	3.2	89.8	
								Pole HS-3-76	-0.030	-0.015	4.8	89.8	
Pole HS-3-76	4.160	95.914	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-75	0.030	0.015	4.8	89.8	
								Pole HS-3-77	-0.040	-0.020	6.4	89.8	
Pole HS-3-77	4.160	95.928	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-76	0.040	0.020	6.4	89.8	
								Pole HS-3-78	-0.050	-0.024	8.0	89.8	
Pole HS-3-78	4.160	95.946	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-77	0.050	0.024	8.0	89.8	
								Pole HS-3-79	-0.060	-0.029	9.6	89.8	
Pole HS-3-79	4.160	96.002	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-78	0.060	0.029	9.6	89.8	
								Pole MS-1-81	-0.070	-0.034	11.3	89.8	
Pole HS-3-80	4.160	96.016	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-81	0.030	0.015	4.8	89.8	
								Pole HS-3-85	-0.040	-0.020	6.4	89.8	
Pole HS-3-81	4.160	95.990	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-82	0.020	0.010	3.2	89.8	
								Pole HS-3-80	-0.030	-0.015	4.8	89.8	
Pole HS-3-82	4.160	95.976	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-83	0.010	0.005	1.6	89.8	
								Pole HS-3-81	-0.020	-0.010	3.2	89.8	
Pole HS-3-83	4.160	95.972	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-82	-0.010	-0.005	1.6	89.8	
Pole HS-3-85	4.160	96.043	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-80	0.040	0.020	6.4	89.8	
								Pole MS-1-81	0.140	0.069	22.5	89.8	
								Pole HS-3-30	-0.180	-0.088	28.9	89.8	
Pole HS-3-86	4.160	97.616	-6.6	0.000	0.000	0.010	0.005	Pole CS-1-3	-0.010	-0.005	1.6	89.8	
Pole HS-3-88	4.160	96.911	-6.7	0.000	0.000	0.010	0.005	Pole CS-1-6	-0.030	-0.015	4.9	89.8	
								Pole HS-3-89	0.020	0.010	3.2	89.8	
Pole HS-3-89	4.160	96.907	-6.7	0.000	0.000	0.010	0.005	Pole HS-3-88	-0.020	-0.010	3.2	89.8	
								Pole HS-3-90	0.010	0.005	1.6	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-90	4.160	96.904	-6.7	0.000	0.000	0.010	0.005	Pole HS-3-89	-0.010	-0.005	1.6	89.8	
Pole HS-4-1	4.160	99.185	-6.1	0.000	0.000	0.011	0.005	BUS_HSC_4kV	-1.061	-0.524	165.6	89.7	
								Pole HS-4-2	1.050	0.519	163.9	89.7	
Pole HS-4-2	4.160	99.054	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-12	0.601	0.297	93.9	89.6	
								Pole HS-4-1	-1.049	-0.517	163.9	89.7	
								Pole HS-4-3	0.448	0.220	70.0	89.8	
Pole HS-4-3	4.160	98.842	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-44	0.153	0.075	23.9	89.8	
								Pole HS-4-53	0.098	0.048	15.4	89.8	
								Pole HS-4-2	-0.448	-0.219	70.0	89.8	
								Pole HS-4-4	0.196	0.096	30.7	89.8	
Pole HS-4-4	4.160	98.794	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-58	0.065	0.032	10.2	89.8	
								Pole HS-4-3	-0.196	-0.096	30.7	89.8	
								Pole HS-4-5	0.131	0.064	20.5	89.8	
Pole HS-4-5	4.160	98.751	-6.2	0.000	0.000	0.022	0.011	Pole HS-4-55	0.022	0.011	3.4	89.8	
								Pole HS-4-4	-0.131	-0.064	20.5	89.8	
								Pole HS-4-6	0.087	0.043	13.7	89.8	
Pole HS-4-6	4.160	98.722	-6.3	0.000	0.000	0.011	0.005	Pole HS-4-56	0.022	0.011	3.4	89.8	
								Pole HS-4-5	-0.087	-0.043	13.7	89.8	
								Pole HS-4-7	0.054	0.027	8.5	89.8	
Pole HS-4-7	4.160	98.704	-6.3	0.000	0.000	0.000	0.000	Pole HS-4-6	-0.054	-0.027	8.5	89.8	
								Pole HS-4-8	0.054	0.027	8.5	89.8	
Pole HS-4-8	4.160	98.686	-6.3	0.000	0.000	0.011	0.005	Pole HS-4-7	-0.054	-0.027	8.5	89.8	
								Pole HS-4-9	0.044	0.021	6.8	89.8	
Pole HS-4-9	4.160	98.679	-6.3	0.000	0.000	0.011	0.005	Pole HS-4-8	-0.044	-0.021	6.8	89.8	
								Pole HS-4-10	0.033	0.016	5.1	89.8	
Pole HS-4-10	4.160	98.674	-6.3	0.000	0.000	0.000	0.000	Pole HS-4-9	-0.033	-0.016	5.1	89.8	
								Pole HS-4-11	0.000	0.000	0.0	0.0	
								SEC_HS-4-7	0.033	0.016	5.1	89.8	
Pole HS-4-11	4.160	98.674	-6.3	0.000	0.000	0.000	0.000	Pole HS-4-10	0.000	0.000	0.0	0.0	
Pole HS-4-12	4.160	98.861	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-2	-0.600	-0.297	93.9	89.6	
								Pole HS-4-13	0.589	0.291	92.2	89.6	
Pole HS-4-13	4.160	98.747	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-12	-0.588	-0.291	92.2	89.6	
								Pole HS-4-14	0.577	0.286	90.5	89.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-4-14	4.160	98.586	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-13	-0.576	-0.285	90.5	89.6	
								Pole HS-4-15	0.565	0.280	88.8	89.6	
Pole HS-4-15	4.160	98.424	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-14	-0.564	-0.279	88.8	89.6	
								Pole HS-4-19	0.554	0.274	87.1	89.6	
Pole HS-4-16	4.160	96.615	-6.1	0.000	0.000	0.000	0.000	PRI_PM_15	0.332	0.166	53.3	89.4	
								Pole HS-4-33	-0.332	-0.166	53.3	89.4	
Pole HS-4-17	4.160	98.183	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-19	-0.541	-0.268	85.4	89.6	
								Pole HS-4-18	0.509	0.252	80.3	89.6	
								SEC_HS-4-13	0.032	0.016	5.1	89.8	
Pole HS-4-18	4.160	98.087	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-17	-0.508	-0.252	80.3	89.6	
								Pole HS-4-20	0.498	0.247	78.6	89.6	
Pole HS-4-19	4.160	98.340	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-15	-0.553	-0.274	87.1	89.6	
								Pole HS-4-17	0.542	0.269	85.4	89.6	
Pole HS-4-20	4.160	97.967	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-18	-0.497	-0.247	78.6	89.6	
								Pole HS-4-21	0.486	0.241	76.9	89.6	
Pole HS-4-21	4.160	97.855	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-20	-0.486	-0.241	76.9	89.6	
								Pole HS-4-22	0.475	0.236	75.2	89.6	
Pole HS-4-22	4.160	97.656	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-21	-0.474	-0.235	75.2	89.6	
								Pole HS-4-23	0.463	0.230	73.5	89.6	
Pole HS-4-23	4.160	97.534	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-22	-0.463	-0.230	73.5	89.6	
								Pole HS-4-24	0.452	0.225	71.8	89.6	
Pole HS-4-24	4.160	97.448	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-23	-0.452	-0.224	71.8	89.6	
								Pole HS-4-26	0.032	0.016	5.1	89.8	
								Pole HS-4-27	0.420	0.209	66.7	89.5	
Pole HS-4-26	4.160	97.437	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-24	-0.032	-0.016	5.1	89.8	
								SEC_HS-4-21	0.032	0.016	5.1	89.8	
Pole HS-4-27	4.160	97.356	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-24	-0.419	-0.209	66.7	89.5	
								Pole HS-4-28	0.409	0.203	65.0	89.5	
Pole HS-4-28	4.160	97.264	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-27	-0.408	-0.203	65.0	89.5	
								Pole HS-4-29	0.397	0.198	63.4	89.5	
Pole HS-4-29	4.160	96.994	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-28	-0.396	-0.197	63.4	89.5	
								Pole HS-4-31	0.386	0.192	61.7	89.5	
Pole HS-4-30	4.160	96.756	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-31	-0.385	-0.192	61.7	89.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-32	0.374	0.187	60.0	89.5	
Pole HS-4-31	4.160	96.903	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-29	-0.385	-0.192	61.7	89.5	
								Pole HS-4-30	0.385	0.192	61.7	89.5	
Pole HS-4-32	4.160	96.688	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-30	-0.374	-0.186	60.0	89.5	
								Pole HS-4-33	0.363	0.181	58.3	89.5	
Pole HS-4-33	4.160	96.650	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-32	-0.363	-0.181	58.3	89.5	
								Pole HS-4-16	0.332	0.166	53.3	89.5	
								Pole HS-4-64	0.032	0.015	5.0	89.8	
								L-SUB-FDR-EQ#20-1-96~	0.000	0.000	0.0	0.0	
Pole HS-4-34	4.160	98.652	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-35	-0.022	-0.011	3.4	89.8	
								Pole HS-4-45	0.011	0.005	1.7	89.8	
Pole HS-4-35	4.160	98.660	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-36	-0.033	-0.016	5.1	89.8	
								Pole HS-4-34	0.022	0.011	3.4	89.8	
Pole HS-4-36	4.160	98.684	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-37	-0.044	-0.021	6.8	89.8	
								Pole HS-4-35	0.033	0.016	5.1	89.8	
Pole HS-4-37	4.160	98.704	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-38	-0.055	-0.027	8.5	89.8	
								Pole HS-4-36	0.044	0.021	6.8	89.8	
Pole HS-4-38	4.160	98.714	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-39	-0.065	-0.032	10.2	89.8	
								Pole HS-4-37	0.055	0.027	8.5	89.8	
Pole HS-4-39	4.160	98.721	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-40	-0.098	-0.048	15.4	89.8	
								Pole HS-4-38	0.065	0.032	10.2	89.8	
								SEC_HS-4-32	0.033	0.016	5.1	89.8	
Pole HS-4-40	4.160	98.736	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-41	-0.109	-0.053	17.1	89.8	
								Pole HS-4-39	0.098	0.048	15.4	89.8	
Pole HS-4-41	4.160	98.761	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-42	-0.120	-0.059	18.8	89.8	
								Pole HS-4-40	0.109	0.053	17.1	89.8	
Pole HS-4-42	4.160	98.792	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-43	-0.131	-0.064	20.5	89.8	
								Pole HS-4-41	0.120	0.059	18.8	89.8	
Pole HS-4-43	4.160	98.809	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-44	-0.142	-0.070	22.2	89.8	
								Pole HS-4-42	0.131	0.064	20.5	89.8	
Pole HS-4-44	4.160	98.825	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-3	-0.153	-0.075	23.9	89.8	
								Pole HS-4-43	0.142	0.070	22.2	89.8	
Pole HS-4-45	4.160	98.647	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-34	-0.011	-0.005	1.7	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-4-47	4.160	98.719	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-48	-0.011	-0.005	1.7	89.8	
								HS-4-33~	0.000	0.000	0.0	0.0	
Pole HS-4-48	4.160	98.725	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-47	0.011	0.005	1.7	89.9	
								Pole HS-4-49	-0.044	-0.021	6.8	89.8	
								SEC_HS-4-44	0.033	0.016	5.1	89.8	
Pole HS-4-49	4.160	98.735	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-48	0.044	0.021	6.8	89.8	
								Pole HS-4-50	-0.055	-0.027	8.5	89.8	
Pole HS-4-50	4.160	98.746	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-49	0.055	0.027	8.5	89.8	
								Pole HS-4-51	-0.065	-0.032	10.2	89.8	
Pole HS-4-51	4.160	98.777	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-50	0.065	0.032	10.2	89.8	
								Pole HS-4-52	-0.076	-0.037	11.9	89.8	
Pole HS-4-52	4.160	98.795	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-51	0.076	0.037	11.9	89.8	
								Pole HS-4-53	-0.087	-0.043	13.7	89.8	
Pole HS-4-53	4.160	98.820	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-52	0.087	0.043	13.7	89.8	
								Pole HS-4-3	-0.098	-0.048	15.4	89.8	
Pole HS-4-54	4.160	98.738	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-55	-0.011	-0.005	1.7	89.8	
Pole HS-4-55	4.160	98.741	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-54	0.011	0.005	1.7	89.8	
								Pole HS-4-5	-0.022	-0.011	3.4	89.8	
Pole HS-4-56	4.160	98.718	-6.3	0.000	0.000	0.011	0.005	Pole HS-4-6	-0.022	-0.011	3.4	89.8	
								Pole HS-4-57	0.011	0.005	1.7	89.8	
Pole HS-4-57	4.160	98.715	-6.3	0.000	0.000	0.011	0.005	Pole HS-4-56	-0.011	-0.005	1.7	89.8	
Pole HS-4-58	4.160	98.735	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-4	-0.065	-0.032	10.2	89.8	
								Pole HS-4-59	0.055	0.027	8.5	89.8	
Pole HS-4-59	4.160	98.711	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-58	-0.055	-0.027	8.5	89.8	
								Pole HS-4-60	0.011	0.005	1.7	89.8	
								Pole HS-4-61	0.033	0.016	5.1	89.8	
Pole HS-4-60	4.160	98.709	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-59	-0.011	-0.005	1.7	89.8	
Pole HS-4-61	4.160	98.694	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-59	-0.033	-0.016	5.1	89.8	
								Pole HS-4-62	0.022	0.011	3.4	89.8	
Pole HS-4-62	4.160	98.681	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-61	-0.022	-0.011	3.4	89.8	
								Pole HS-4-63	0.011	0.005	1.7	89.8	
Pole HS-4-63	4.160	98.679	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-62	-0.011	-0.005	1.7	89.8	
Pole HS-4-64	4.160	96.642	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-65	0.011	0.005	1.7	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-33	-0.032	-0.015	5.0	89.8	
								Pole HS-4-66	0.021	0.010	3.4	89.8	
Pole HS-4-65	4.160	96.640	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-64	-0.011	-0.005	1.7	89.8	
Pole HS-4-66	4.160	96.640	-6.1	0.000	0.000	0.021	0.010	Pole HS-4-64	-0.021	-0.010	3.4	89.8	
								Pole HS-4-67	0.000	0.000	0.0	0.0	
Pole HS-4-67	4.160	96.640	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-66	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#20-1-90~	0.000	0.000	0.0	0.0	
Pole MS-1-1	4.160	100.150	-5.8	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.219	-0.107	33.7	89.9	
								Pole MS-1-2	0.159	0.077	24.5	89.9	
								Pole MS-1-76	0.060	0.029	9.2	89.9	
								L-SUB-FDR-EQ#12-9~	0.000	0.000	0.0	0.0	
Pole MS-1-2	4.160	100.116	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-1	-0.159	-0.077	24.5	89.9	
								Pole MS-1-3	0.154	0.075	23.7	89.9	
Pole MS-1-3	4.160	100.090	-5.8	0.000	0.000	0.000	0.000	Pole MS-1-2	-0.154	-0.075	23.7	89.9	
								Pole MS-1-17	0.114	0.055	17.5	89.9	
								Pole MS-1-5	0.040	0.020	6.2	89.9	
Pole MS-1-5	4.160	100.075	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-3	-0.040	-0.020	6.2	89.9	
								Pole MS-1-7	0.035	0.017	5.4	89.9	
Pole MS-1-7	4.160	100.065	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-5	-0.035	-0.017	5.4	89.9	
								Pole MS-1-9	0.030	0.015	4.6	89.9	
Pole MS-1-8	4.160	100.051	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-9	-0.025	-0.012	3.8	89.9	
								Pole MS-1-10	0.020	0.010	3.0	89.9	
Pole MS-1-9	4.160	100.057	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-8	0.025	0.012	3.8	89.9	
								Pole MS-1-7	-0.030	-0.015	4.6	89.9	
Pole MS-1-10	4.160	100.046	-5.8	0.000	0.000	0.000	0.000	Pole MS-1-8	-0.020	-0.010	3.0	89.9	
								Pole MS-1-11	0.015	0.008	2.4	89.9	
								SEC_MS-1-17	0.004	0.002	0.6	90.0	
Pole MS-1-11	4.160	100.041	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-10	-0.015	-0.008	2.4	89.9	
								Pole MS-1-13	0.010	0.005	1.6	89.9	
Pole MS-1-13	4.160	100.038	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-11	-0.010	-0.005	1.6	89.9	
								Pole MS-1-15	0.005	0.003	0.8	89.9	
Pole MS-1-15	4.160	100.035	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-13	-0.005	-0.003	0.8	89.9	
Pole MS-1-17	4.160	100.065	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-3	-0.113	-0.055	17.5	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-1-19	0.108	0.053	16.7	89.9	
Pole MS-1-18	4.160	100.035	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-19	-0.108	-0.053	16.7	89.9	
								Pole MS-1-28	0.103	0.050	15.9	89.9	
Pole MS-1-19	4.160	100.047	-5.8	0.000	0.000	0.000	0.000	Pole MS-1-18	0.108	0.053	16.7	89.9	
								Pole MS-1-17	-0.108	-0.053	16.7	89.9	
								L-SUB-FDR-EQ#16-12~	0.000	0.000	0.0	0.0	
Pole MS-1-28	4.160	100.007	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-18	-0.103	-0.050	15.9	89.9	
								Pole MS-1-50	0.057	0.028	8.8	89.9	
								Pole MS-1-30	0.041	0.020	6.4	89.9	
Pole MS-1-30	4.160	99.994	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-28	-0.041	-0.020	6.4	89.9	
								Pole MS-1-32	0.036	0.018	5.6	89.9	
Pole MS-1-32	4.160	99.983	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-30	-0.036	-0.018	5.6	89.9	
								Pole MS-1-34	0.031	0.015	4.8	89.9	
Pole MS-1-34	4.160	99.971	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-32	-0.031	-0.015	4.8	89.9	
								Pole MS-1-36	0.026	0.013	4.0	89.9	
Pole MS-1-36	4.160	99.961	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-34	-0.026	-0.013	4.0	89.9	
								Pole MS-1-38	0.021	0.010	3.2	89.9	
Pole MS-1-38	4.160	99.953	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-36	-0.021	-0.010	3.2	89.9	
								Pole MS-1-40	0.015	0.008	2.4	89.9	
Pole MS-1-40	4.160	99.947	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-38	-0.015	-0.008	2.4	89.9	
								Pole MS-1-42	0.010	0.005	1.6	89.9	
Pole MS-1-42	4.160	99.944	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-40	-0.010	-0.005	1.6	89.9	
								Pole MS-1-46	0.005	0.003	0.8	89.9	
Pole MS-1-46	4.160	99.942	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-42	-0.005	-0.003	0.8	89.9	
Pole MS-1-50	4.160	99.985	-5.9	0.000	0.000	0.000	0.000	Pole MS-1-28	-0.057	-0.028	8.8	89.9	
								Pole MS-1-70	0.015	0.008	2.4	89.9	
								Pole MS-1-52	0.041	0.020	6.4	89.9	
Pole MS-1-52	4.160	99.971	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-50	-0.041	-0.020	6.4	89.9	
								Pole MS-1-54	0.036	0.018	5.6	89.9	
Pole MS-1-54	4.160	99.960	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-52	-0.036	-0.018	5.6	89.9	
								Pole MS-1-56	0.031	0.015	4.8	89.9	
Pole MS-1-56	4.160	99.951	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-54	-0.031	-0.015	4.8	89.9	
								Pole MS-1-58	0.026	0.013	4.0	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-58	4.160	99.942	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-56	-0.026	-0.013	4.0	89.9	
								Pole MS-1-60	0.021	0.010	3.2	89.9	
Pole MS-1-60	4.160	99.937	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-58	-0.021	-0.010	3.2	89.9	
								Pole MS-1-62	0.015	0.008	2.4	89.9	
Pole MS-1-62	4.160	99.932	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-60	-0.015	-0.008	2.4	89.9	
								Pole MS-1-64	0.010	0.005	1.6	89.9	
Pole MS-1-64	4.160	99.931	-5.9	0.000	0.000	0.000	0.000	Pole MS-1-62	-0.010	-0.005	1.6	89.9	
								Pole MS-1-66	0.005	0.003	0.8	89.9	
								Pole MS-1-68	0.005	0.003	0.8	89.9	
Pole MS-1-66	4.160	99.930	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-64	-0.005	-0.003	0.8	89.9	
Pole MS-1-68	4.160	99.927	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-64	-0.005	-0.003	0.8	89.9	
Pole MS-1-70	4.160	99.983	-5.9	0.000	0.000	0.005	0.003	Pole MS-1-50	-0.015	-0.008	2.4	89.9	
								Pole MS-1-72	0.010	0.005	1.6	89.9	
Pole MS-1-72	4.160	99.981	-5.9	0.000	0.000	0.010	0.005	Pole MS-1-70	-0.010	-0.005	1.6	89.9	
Pole MS-1-73	4.160	100.073	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-74	-0.036	-0.018	5.6	89.9	
								Pole MS-1-79	0.031	0.015	4.8	89.9	
Pole MS-1-74	4.160	100.084	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-73	0.036	0.018	5.6	89.9	
								Pole MS-1-75	-0.041	-0.020	6.4	89.9	
Pole MS-1-75	4.160	100.117	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-74	0.041	0.020	6.4	89.9	
								Pole MS-1-76	-0.046	-0.023	7.2	89.9	
Pole MS-1-76	4.160	100.131	-5.8	0.000	0.000	0.013	0.006	Pole MS-1-75	0.046	0.023	7.2	89.9	
								Pole MS-1-1	-0.060	-0.029	9.2	89.9	
Pole MS-1-79	4.160	100.060	-5.8	0.000	0.000	0.000	0.000	Pole MS-1-73	-0.031	-0.015	4.8	89.9	
								Pole MS-1-80	0.010	0.005	1.6	89.9	
								Pole MS-1-84	0.021	0.010	3.2	89.9	
Pole MS-1-80	4.160	100.057	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-79	-0.010	-0.005	1.6	89.9	
								Pole MS-1-82	0.005	0.003	0.8	89.9	
Pole MS-1-81	4.160	96.013	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-71	0.070	0.034	11.3	89.8	
								Pole HS-3-79	0.070	0.034	11.3	89.8	
								Pole HS-3-85	-0.140	-0.068	22.5	89.8	
Pole MS-1-82	4.160	100.055	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-80	-0.005	-0.003	0.8	89.9	
Pole MS-1-84	4.160	100.052	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-79	-0.021	-0.010	3.2	89.9	
								Pole MS-1-86	0.015	0.008	2.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-86	4.160	100.045	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-84	-0.015	-0.008	2.4	89.9	
								Pole MS-1-87	0.010	0.005	1.6	89.9	
Pole MS-1-87	4.160	100.037	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-86	-0.010	-0.005	1.6	89.9	
								Pole MS-1-88	0.005	0.003	0.8	89.9	
Pole MS-1-88	4.160	100.036	-5.8	0.000	0.000	0.005	0.003	Pole MS-1-87	-0.005	-0.003	0.8	89.9	
Pole MS-2-1	4.160	99.239	-5.6	0.000	0.000	0.000	0.000	Pole MS-2-180	-0.036	-0.018	5.6	89.9	
								Pole MS-2-2	0.024	0.012	3.7	90.0	
								SEC_MS-2-8	0.012	0.006	1.9	89.9	
Pole MS-2-2	4.160	99.229	-5.6	0.000	0.000	0.000	0.000	Pole MS-2-1	-0.024	-0.012	3.7	89.9	
								Pole MS-2-3	0.012	0.006	1.9	90.0	
								SEC_MS-2-37	0.012	0.006	1.9	89.9	
Pole MS-2-3	4.160	99.218	-5.6	0.000	0.000	0.000	0.000	Pole MS-2-2	-0.012	-0.006	1.9	90.0	
								L-SUB-FDR-EQ#16-173~	0.000	0.000	0.0	0.0	
								SEC_MS-2-38	0.012	0.006	1.9	89.9	
Pole MS-2-4	4.160	99.289	-5.6	0.000	0.000	0.000	0.000	PRI_PM_8	0.139	0.069	21.7	89.6	
								Pole MS-2-180	0.036	0.018	5.6	90.0	
								Pole MS-2-182	-0.175	-0.086	27.3	89.7	
Pole MS-2-90	4.160	99.418	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-182	-0.165	-0.080	25.7	89.9	
								Pole MS-2-91	0.148	0.072	23.0	89.9	
								SEC_MS-2-36	0.012	0.006	1.9	89.9	
Pole MS-2-91	4.160	99.277	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-90	-0.148	-0.072	23.0	89.9	
								Pole MS-2-92	0.143	0.069	22.2	89.9	
Pole MS-2-92	4.160	99.238	-5.5	0.000	0.000	0.000	0.000	Pole MS-2-91	-0.143	-0.069	22.2	89.9	
								Pole MS-2-93	0.131	0.064	20.3	89.9	
								SEC_MS-2-39	0.012	0.006	1.9	89.9	
Pole MS-2-93	4.160	99.201	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-92	-0.131	-0.064	20.3	89.9	
								Pole MS-2-94	0.126	0.061	19.5	89.9	
Pole MS-2-94	4.160	99.172	-5.5	0.000	0.000	0.000	0.000	Pole MS-2-93	-0.126	-0.061	19.5	89.9	
								Pole MS-2-95	0.113	0.055	17.7	89.9	
								SEC_MS-2-40	0.012	0.006	1.9	89.9	
Pole MS-2-95	4.160	99.088	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-94	-0.113	-0.055	17.7	89.9	
								Pole MS-2-96	0.108	0.053	16.9	89.9	
Pole MS-2-96	4.160	99.026	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-95	-0.108	-0.053	16.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-2-98	0.103	0.050	16.1	89.9	
Pole MS-2-98	4.160	99.004	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-96	-0.103	-0.050	16.1	89.9	
								Pole MS-2-100	0.098	0.048	15.3	89.9	
Pole MS-2-100	4.160	98.991	-5.5	0.000	0.000	0.000	0.000	Pole MS-2-98	-0.098	-0.048	15.3	89.9	
								Pole MS-2-102	0.086	0.042	13.4	89.9	
								SEC_MS-2-41	0.012	0.006	1.9	89.9	
Pole MS-2-102	4.160	98.977	-5.5	0.000	0.000	0.000	0.000	Pole MS-2-100	-0.086	-0.042	13.4	89.9	
								Pole MS-2-103	0.086	0.042	13.4	89.9	
Pole MS-2-103	4.160	98.961	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-102	-0.086	-0.042	13.4	89.9	
								Pole MS-2-107	0.081	0.039	12.6	89.9	
Pole MS-2-107	4.160	98.918	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-103	-0.081	-0.039	12.6	89.9	
								Pole MS-2-108	0.076	0.037	11.8	89.9	
Pole MS-2-108	4.160	98.900	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-107	-0.076	-0.037	11.8	89.9	
								Pole MS-2-109	0.071	0.034	11.0	89.9	
Pole MS-2-109	4.160	98.882	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-108	-0.071	-0.034	11.0	89.9	
								Pole MS-2-110	0.066	0.032	10.3	89.9	
Pole MS-2-110	4.160	98.864	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-109	-0.066	-0.032	10.3	89.9	
								Pole MS-2-111	0.061	0.030	9.5	89.9	
Pole MS-2-111	4.160	98.845	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-110	-0.061	-0.030	9.5	89.9	
								Pole MS-2-112	0.056	0.027	8.7	89.9	
Pole MS-2-112	4.160	98.833	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-111	-0.056	-0.027	8.7	89.9	
								Pole MS-2-113	0.051	0.025	7.9	89.9	
Pole MS-2-113	4.160	98.822	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-112	-0.051	-0.025	7.9	89.9	
								Pole MS-2-115	0.045	0.022	7.1	89.9	
Pole MS-2-115	4.160	98.809	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-113	-0.045	-0.022	7.1	89.9	
								Pole MS-2-116	0.040	0.020	6.3	89.9	
Pole MS-2-116	4.160	98.792	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-115	-0.040	-0.020	6.3	89.9	
								Pole MS-2-117	0.035	0.017	5.5	89.9	
Pole MS-2-117	4.160	98.771	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-116	-0.035	-0.017	5.5	89.9	
								Pole MS-2-118	0.030	0.015	4.7	89.9	
Pole MS-2-118	4.160	98.753	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-117	-0.030	-0.015	4.7	89.9	
								Pole MS-2-120	0.025	0.012	3.9	89.9	
Pole MS-2-120	4.160	98.744	-5.5	0.000	0.000	0.005	0.002	Pole MS-2-118	-0.025	-0.012	3.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-2-121	0.020	0.010	3.2	89.9	
Pole MS-2-121	4.160	98.731	-5.5	0.000	0.000	0.010	0.005	Pole MS-2-120	-0.020	-0.010	3.2	89.9	
								Pole MS-2-122	0.010	0.005	1.6	89.9	
Pole MS-2-122	4.160	98.728	-5.5	0.000	0.000	0.010	0.005	Pole MS-2-121	-0.010	-0.005	1.6	89.9	
								L-SUB-FDR-EQ#16-97~	0.000	0.000	0.0	0.0	
Pole MS-2-180	4.160	99.253	-5.6	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.036	-0.018	5.6	90.0	
								Pole MS-2-1	0.036	0.018	5.6	89.9	
								L-SUB-FDR-EQ#12-13~	0.000	0.000	0.0	0.0	
Pole MS-2-182	4.160	99.463	-5.5	0.000	0.000	0.000	0.000	Pole MS-2-4	0.175	0.087	27.3	89.6	
								BUS_5KV_LLP_2	-0.341	-0.167	52.9	89.8	
								Pole MS-2-90	0.165	0.080	25.7	89.9	
Pole MS-3-1	4.160	99.527	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-2	0.012	0.006	1.9	89.9	
								Pole MS-3-88	-0.232	-0.113	35.9	89.9	
								Pole MS-3-3	0.220	0.107	34.0	89.9	
Pole MS-3-2	4.160	99.526	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-1	-0.012	-0.006	1.9	89.9	
								SEC_MS-3-1	0.012	0.006	1.9	89.9	
Pole MS-3-3	4.160	99.404	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-4	0.219	0.107	34.0	89.9	
								Pole MS-3-1	-0.219	-0.107	34.0	89.9	
Pole MS-3-4	4.160	99.379	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-3	-0.219	-0.107	34.0	89.9	
								Pole MS-3-5	0.214	0.104	33.3	89.9	
Pole MS-3-5	4.160	99.355	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-4	-0.214	-0.104	33.3	89.9	
								Pole MS-3-6	0.209	0.102	32.5	89.9	
Pole MS-3-6	4.160	99.327	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-5	-0.209	-0.102	32.5	89.9	
								Pole MS-3-7	0.197	0.096	30.6	89.9	
								SEC_MS-3-2	0.012	0.006	1.9	89.9	
Pole MS-3-7	4.160	99.249	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-6	-0.197	-0.096	30.6	89.9	
								Pole MS-3-8	0.192	0.093	29.8	89.9	
Pole MS-3-8	4.160	99.214	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-7	-0.192	-0.093	29.8	89.9	
								Pole MS-3-9	0.180	0.087	27.9	89.9	
								SEC_MS-3-3	0.012	0.006	1.9	89.9	
Pole MS-3-9	4.160	99.183	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-8	-0.179	-0.087	27.9	89.9	
								Pole MS-3-10	0.174	0.085	27.1	89.9	
Pole MS-3-10	4.160	99.123	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-9	-0.174	-0.085	27.1	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-11	0.169	0.082	26.3	89.9	
Pole MS-3-11	4.160	99.102	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-10	-0.169	-0.082	26.3	89.9	
								Pole MS-3-12	0.164	0.080	25.5	89.9	
Pole MS-3-12	4.160	99.082	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-11	-0.164	-0.080	25.5	89.9	
								Pole MS-3-13	0.159	0.077	24.8	89.9	
Pole MS-3-13	4.160	99.011	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-12	-0.159	-0.077	24.8	89.9	
								Pole MS-3-14	0.154	0.075	24.0	89.9	
Pole MS-3-14	4.160	98.983	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-13	-0.154	-0.075	24.0	89.9	
								Pole MS-3-15	0.149	0.072	23.2	89.9	
Pole MS-3-15	4.160	98.919	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-14	-0.149	-0.072	23.2	89.9	
								Pole MS-3-16	0.143	0.070	22.4	89.9	
Pole MS-3-16	4.160	98.901	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-15	-0.143	-0.070	22.4	89.9	
								Pole MS-3-17	0.138	0.067	21.6	89.9	
Pole MS-3-17	4.160	98.872	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-16	-0.138	-0.067	21.6	89.9	
								Pole MS-3-18	0.133	0.065	20.8	89.9	
Pole MS-3-18	4.160	98.848	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-17	-0.133	-0.065	20.8	89.9	
								Pole MS-3-19	0.047	0.023	7.4	89.9	
								Pole MS-3-26	0.086	0.042	13.4	89.9	
Pole MS-3-19	4.160	98.838	-5.4	0.000	0.000	0.010	0.005	Pole MS-3-18	-0.047	-0.023	7.4	89.9	
								Pole MS-3-20	0.037	0.018	5.8	89.9	
Pole MS-3-20	4.160	98.830	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-19	-0.037	-0.018	5.8	89.9	
								Pole MS-3-21	0.032	0.016	5.0	89.9	
Pole MS-3-21	4.160	98.815	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-20	-0.032	-0.016	5.0	89.9	
								Pole MS-3-22	0.027	0.013	4.2	89.9	
Pole MS-3-22	4.160	98.807	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-21	-0.027	-0.013	4.2	89.9	
								Pole MS-3-23	0.022	0.011	3.4	89.9	
Pole MS-3-23	4.160	98.800	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-22	-0.022	-0.011	3.4	89.9	
								Pole MS-3-24	0.017	0.008	2.7	89.9	
Pole MS-3-24	4.160	98.794	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-23	-0.017	-0.008	2.7	89.9	
								Pole MS-3-25	0.012	0.006	1.9	89.9	
Pole MS-3-25	4.160	98.789	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-24	-0.012	-0.006	1.9	89.9	
								L-SUB-FDR-EQ#16-133~	0.000	0.000	0.0	0.0	
								SEC_MS-3-22	0.012	0.006	1.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-26	4.160	98.815	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-27	0.020	0.010	3.2	89.9	
								Pole MS-3-18	-0.086	-0.042	13.4	89.9	
								Pole MS-3-31	0.061	0.029	9.5	89.9	
Pole MS-3-27	4.160	98.806	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-26	-0.020	-0.010	3.2	89.9	
								Pole MS-3-28	0.015	0.007	2.4	89.9	
Pole MS-3-28	4.160	98.803	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-27	-0.015	-0.007	2.4	89.9	
								Pole MS-3-29	0.010	0.005	1.6	89.9	
Pole MS-3-29	4.160	98.797	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-28	-0.010	-0.005	1.6	89.9	
								Pole MS-3-30	0.005	0.002	0.8	89.9	
Pole MS-3-30	4.160	98.796	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-29	-0.005	-0.002	0.8	89.9	
Pole MS-3-31	4.160	98.784	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-26	-0.061	-0.029	9.5	89.9	
								Pole MS-3-32	0.056	0.027	8.7	89.9	
Pole MS-3-32	4.160	98.776	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-31	-0.056	-0.027	8.7	89.9	
								Pole MS-3-33	0.050	0.025	7.9	89.9	
Pole MS-3-33	4.160	98.766	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-32	-0.050	-0.025	7.9	89.9	
								Pole MS-3-34	0.045	0.022	7.1	89.9	
Pole MS-3-34	4.160	98.758	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-36	0.035	0.017	5.5	89.9	
								Pole MS-3-33	-0.045	-0.022	7.1	89.9	
								Pole MS-3-35	0.005	0.002	0.8	89.9	
Pole MS-3-35	4.160	98.757	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-34	-0.005	-0.002	0.8	89.9	
Pole MS-3-36	4.160	98.742	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-34	-0.035	-0.017	5.5	89.9	
								Pole MS-3-37	0.030	0.015	4.7	89.9	
Pole MS-3-37	4.160	98.728	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-36	-0.030	-0.015	4.7	89.9	
								Pole MS-3-39	0.020	0.010	3.2	89.9	
								Pole MS-3-38	0.010	0.005	1.6	89.9	
Pole MS-3-38	4.160	98.725	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-37	-0.010	-0.005	1.6	89.9	
								Pole MS-3-43	0.005	0.002	0.8	90.0	
Pole MS-3-39	4.160	98.722	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-37	-0.020	-0.010	3.2	89.9	
								Pole MS-3-40	0.015	0.007	2.4	89.9	
Pole MS-3-40	4.160	98.719	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-39	-0.015	-0.007	2.4	89.9	
								Pole MS-3-41	0.010	0.005	1.6	89.9	
Pole MS-3-41	4.160	98.717	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-40	-0.010	-0.005	1.6	89.9	
								Pole MS-3-42	0.005	0.002	0.8	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-42	4.160	98.716	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-41	-0.005	-0.002	0.8	89.9	
Pole MS-3-43	4.160	98.723	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-38	-0.005	-0.002	0.8	89.9	
								LINE MS-3-11~	0.000	0.000	0.0	0.0	
Pole MS-3-44	4.160	98.411	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-46	0.030	0.015	4.8	89.9	
								Pole MS-3-45	0.000	0.000	0.0	0.0	
								Pole MS-3-54	-0.030	-0.015	4.8	89.9	
Pole MS-3-45	4.160	98.411	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-44	0.000	0.000	0.0	0.0	
Pole MS-3-46	4.160	98.407	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-44	-0.030	-0.015	4.8	89.9	
								Pole MS-3-47	0.030	0.015	4.8	89.9	
Pole MS-3-47	4.160	98.400	-5.4	0.000	0.000	0.008	0.004	Pole MS-3-46	-0.030	-0.015	4.8	89.9	
								Pole MS-3-48	0.023	0.011	3.6	89.9	
Pole MS-3-48	4.160	98.388	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-47	-0.023	-0.011	3.6	89.9	
								Pole MS-3-51	0.010	0.005	1.6	89.9	
								Pole MS-3-50	0.013	0.006	2.0	89.9	
Pole MS-3-49	4.160	98.384	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-50	-0.005	-0.002	0.8	89.9	
Pole MS-3-50	4.160	98.385	-5.4	0.000	0.000	0.008	0.004	Pole MS-3-48	-0.013	-0.006	2.0	89.9	
								Pole MS-3-49	0.005	0.002	0.8	89.9	
Pole MS-3-51	4.160	98.383	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-48	-0.010	-0.005	1.6	89.9	
								Pole MS-3-53	0.005	0.002	0.8	89.9	
								Pole MS-3-52	0.005	0.002	0.8	89.9	
Pole MS-3-52	4.160	98.380	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-51	-0.005	-0.002	0.8	89.9	
Pole MS-3-53	4.160	98.382	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-51	-0.005	-0.002	0.8	89.9	
Pole MS-3-54	4.160	98.426	-5.4	0.000	0.000	0.000	0.000	PRI_PM_18	0.171	0.085	26.9	89.5	
								Pole MS-3-57	0.005	0.002	0.8	89.9	
								Pole MS-3-44	0.030	0.015	4.8	89.9	
								Pole MS-3-58	-0.206	-0.103	32.5	89.5	
Pole MS-3-55	4.160	99.207	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-90	0.124	0.061	19.3	89.9	
								Pole MS-3-71	0.462	0.229	72.1	89.6	
								Pole MS-3-79	-0.586	-0.290	91.4	89.7	
Pole MS-3-57	4.160	98.423	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-54	-0.005	-0.002	0.8	89.9	
Pole MS-3-58	4.160	98.542	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-59	0.010	0.005	1.6	89.9	
								Pole MS-3-61	-0.216	-0.108	34.0	89.6	
								Pole MS-3-54	0.206	0.103	32.5	89.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-59	4.160	98.540	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-58	-0.010	-0.005	1.6	89.9	
								Pole MS-3-60	0.005	0.002	0.8	90.0	
Pole MS-3-60	4.160	98.537	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-59	-0.005	-0.002	0.8	89.9	
Pole MS-3-61	4.160	98.673	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-58	0.217	0.108	34.0	89.6	
								Pole MS-3-64	-0.227	-0.113	35.6	89.6	
								Pole MS-3-62	0.010	0.005	1.6	89.9	
Pole MS-3-62	4.160	98.671	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-61	-0.010	-0.005	1.6	89.9	
								Pole MS-3-63	0.005	0.002	0.8	89.9	
Pole MS-3-63	4.160	98.669	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-62	-0.005	-0.002	0.8	89.9	
Pole MS-3-64	4.160	98.734	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-61	0.227	0.113	35.6	89.6	
								Pole MS-3-70	-0.262	-0.130	41.1	89.6	
								Pole MS-3-65	0.030	0.015	4.7	89.9	
Pole MS-3-65	4.160	98.725	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-64	-0.030	-0.015	4.7	89.9	
								Pole MS-3-66	0.025	0.012	3.9	89.9	
Pole MS-3-66	4.160	98.721	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-65	-0.025	-0.012	3.9	89.9	
								Pole MS-3-67	0.010	0.005	1.6	89.9	
								Pole MS-3-69	0.010	0.005	1.6	89.9	
Pole MS-3-67	4.160	98.715	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-66	-0.010	-0.005	1.6	89.9	
								Pole MS-3-68	0.005	0.002	0.8	89.9	
Pole MS-3-68	4.160	98.714	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-67	-0.005	-0.002	0.8	89.9	
Pole MS-3-69	4.160	98.719	-5.4	0.000	0.000	0.010	0.005	Pole MS-3-66	-0.010	-0.005	1.6	89.9	
Pole MS-3-70	4.160	98.905	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-64	0.263	0.130	41.1	89.6	
								Pole MS-3-71	-0.263	-0.130	41.1	89.6	
								L-SUB-FDR-EQ#16-177~	0.000	0.000	0.0	0.0	
Pole MS-3-71	4.160	99.092	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-55	-0.461	-0.229	72.1	89.6	
								Pole MS-3-70	0.263	0.130	41.1	89.6	
								Pole MS-3-72	0.198	0.098	31.0	89.5	
Pole MS-3-72	4.160	99.065	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-71	-0.198	-0.098	31.0	89.5	
								Pole MS-3-73	0.193	0.096	30.2	89.5	
Pole MS-3-73	4.160	99.047	-5.4	0.000	0.000	0.000	0.000	PRI_PM_7	0.172	0.086	27.0	89.5	
								Pole MS-3-72	-0.193	-0.096	30.2	89.5	
								Pole MS-3-74	0.020	0.010	3.2	89.9	
Pole MS-3-74	4.160	99.045	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-73	-0.020	-0.010	3.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-75	0.015	0.007	2.4	89.9	
Pole MS-3-75	4.160	99.035	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-74	-0.015	-0.007	2.4	89.9	
								Pole MS-3-76	0.010	0.005	1.6	89.9	
Pole MS-3-76	4.160	99.031	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-75	-0.010	-0.005	1.6	89.9	
								Pole MS-3-77	0.005	0.002	0.8	89.9	
Pole MS-3-77	4.160	99.030	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-76	-0.005	-0.002	0.8	89.9	
Pole MS-3-79	4.160	99.353	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-55	0.587	0.290	91.4	89.7	
								Pole MS-3-82	0.041	0.020	6.4	89.9	
								Pole MS-3-87	-0.628	-0.310	97.8	89.7	
Pole MS-3-80	4.160	99.325	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-81	-0.031	-0.015	4.8	89.9	
								Pole MS-3-83	0.026	0.013	4.0	89.9	
Pole MS-3-81	4.160	99.337	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-80	0.031	0.015	4.8	89.9	
								Pole MS-3-82	-0.036	-0.017	5.6	89.9	
Pole MS-3-82	4.160	99.345	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-81	0.036	0.017	5.6	89.9	
								Pole MS-3-79	-0.041	-0.020	6.4	89.9	
Pole MS-3-83	4.160	99.321	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-80	-0.026	-0.013	4.0	89.9	
								Pole MS-3-84	0.021	0.010	3.2	89.9	
Pole MS-3-84	4.160	99.317	-5.4	0.000	0.000	0.005	0.002	Pole MS-3-83	-0.021	-0.010	3.2	89.9	
								Pole MS-3-85	0.015	0.008	2.4	89.9	
Pole MS-3-85	4.160	99.311	-5.4	0.000	0.000	0.008	0.004	Pole MS-3-84	-0.015	-0.008	2.4	89.9	
								Pole MS-3-86	0.008	0.004	1.2	89.9	
Pole MS-3-86	4.160	99.309	-5.4	0.000	0.000	0.008	0.004	Pole MS-3-85	-0.008	-0.004	1.2	89.9	
Pole MS-3-87	4.160	99.701	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-79	0.630	0.311	97.8	89.7	
								Pole MS-3-88	0.232	0.113	35.9	89.9	
								BUS_5KV_LLP_02	-0.862	-0.424	133.7	89.7	
Pole MS-3-88	4.160	99.573	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-87	-0.232	-0.113	35.9	89.9	
								Pole MS-3-1	0.232	0.113	35.9	89.9	
Pole MS-3-90	4.160	99.176	-5.4	0.000	0.000	0.015	0.008	Pole MS-3-55	-0.124	-0.061	19.3	89.9	
								Pole MS-3-92	0.109	0.053	16.9	89.9	
Pole MS-3-92	4.160	99.097	-5.4	0.000	0.000	0.015	0.008	Pole MS-3-95	0.093	0.045	14.5	89.9	
								Pole MS-3-90	-0.109	-0.053	16.9	89.9	
Pole MS-3-95	4.160	99.064	-5.4	0.000	0.000	0.008	0.004	Pole MS-3-96	0.008	0.004	1.2	89.9	
								Pole MS-4-36	0.078	0.038	12.1	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-92	-0.093	-0.045	14.5	89.9	
Pole MS-3-96	4.160	99.060	-5.4	0.000	0.000	0.008	0.004	Pole MS-3-95	-0.008	-0.004	1.2	89.9	
Pole MS-3-97	4.160	98.926	-5.4	0.000	0.000	0.008	0.004	Pole MS-3-98	0.052	0.025	8.1	89.9	
								Pole MS-4-36	-0.059	-0.029	9.3	89.9	
Pole MS-3-98	4.160	98.912	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-99	0.052	0.025	8.1	89.9	
								Pole MS-3-97	-0.052	-0.025	8.1	89.9	
Pole MS-3-99	4.160	98.897	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-100	0.018	0.009	2.8	89.9	
								Pole MS-3-101	0.034	0.016	5.2	89.9	
								Pole MS-3-98	-0.052	-0.025	8.1	89.9	
Pole MS-3-100	4.160	98.888	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-99	-0.018	-0.009	2.8	89.9	
								SEC_MS-3-49	0.018	0.009	2.8	89.9	
Pole MS-3-101	4.160	98.874	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-102	0.018	0.009	2.8	89.9	
								Pole MS-3-103	0.015	0.007	2.4	89.9	
								Pole MS-3-99	-0.034	-0.016	5.2	89.9	
Pole MS-3-102	4.160	98.871	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-101	-0.018	-0.009	2.8	89.9	
								SEC_MS-3-65	0.018	0.009	2.8	89.9	
Pole MS-3-103	4.160	98.869	-5.4	0.000	0.000	0.015	0.008	Pole MS-3-101	-0.015	-0.008	2.4	89.9	
Pole MS-4-1	4.160	99.801	-5.4	0.000	0.000	0.005	0.003	BUS_5KV-LLP_01	-0.274	-0.133	42.4	90.0	
								Pole MS-4-2	0.042	0.021	6.6	89.9	
								Pole MS-4-7	0.227	0.110	35.0	90.0	
Pole MS-4-2	4.160	99.790	-5.4	0.000	0.000	0.005	0.003	Pole MS-4-1	-0.042	-0.021	6.6	89.9	
								Pole MS-4-3	0.037	0.018	5.8	89.9	
Pole MS-4-3	4.160	99.788	-5.4	0.000	0.000	0.000	0.000	Pole MS-4-2	-0.037	-0.018	5.8	89.9	
								Pole MS-4-5	0.025	0.012	3.9	89.9	
								SEC_MS-3-73	0.012	0.006	1.9	89.9	
Pole MS-4-5	4.160	99.783	-5.4	0.000	0.000	0.013	0.006	Pole MS-4-3	-0.025	-0.012	3.9	89.9	
								Pole MS-4-6	0.012	0.006	1.9	89.9	
Pole MS-4-6	4.160	99.780	-5.4	0.000	0.000	0.000	0.000	Pole MS-4-5	-0.012	-0.006	1.9	89.9	
								SEC_MS-3-74	0.012	0.006	1.9	89.9	
Pole MS-4-7	4.160	99.673	-5.4	0.000	0.000	0.000	0.000	Pole MS-4-1	-0.226	-0.110	35.0	90.0	
								Pole MS-4-8	0.226	0.110	35.0	90.0	
Pole MS-4-8	4.160	99.422	-5.4	0.000	0.000	0.005	0.002	Pole MS-4-7	-0.226	-0.109	35.0	90.0	
								Pole MS-4-9	0.061	0.030	9.5	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-16	0.160	0.077	24.7	90.0	
Pole MS-4-9	4.160	99.407	-5.4	0.000	0.000	0.008	0.004	Pole MS-4-8	-0.061	-0.030	9.5	89.9	
								Pole MS-4-10	0.053	0.026	8.3	89.9	
Pole MS-4-10	4.160	99.393	-5.4	0.000	0.000	0.000	0.000	Pole MS-4-9	-0.053	-0.026	8.3	89.9	
								Pole MS-4-11	0.041	0.020	6.4	89.9	
								SEC_MS-3-75	0.012	0.006	1.9	89.9	
Pole MS-4-11	4.160	99.373	-5.4	0.000	0.000	0.015	0.008	Pole MS-4-10	-0.041	-0.020	6.4	89.9	
								Pole MS-4-12	0.026	0.013	4.0	89.9	
Pole MS-4-12	4.160	99.366	-5.4	0.000	0.000	0.005	0.002	Pole MS-4-11	-0.026	-0.013	4.0	89.9	
								Pole MS-4-13	0.021	0.010	3.2	89.9	
Pole MS-4-13	4.160	99.356	-5.4	0.000	0.000	0.008	0.004	Pole MS-4-12	-0.021	-0.010	3.2	89.9	
								Pole MS-4-14	0.013	0.006	2.0	89.9	
Pole MS-4-14	4.160	99.354	-5.4	0.000	0.000	0.008	0.004	Pole MS-4-13	-0.013	-0.006	2.0	89.9	
								Pole MS-4-15	0.005	0.002	0.8	89.9	
Pole MS-4-15	4.160	99.354	-5.4	0.000	0.000	0.005	0.002	Pole MS-4-14	-0.005	-0.002	0.8	89.9	
Pole MS-4-16	4.160	99.246	-5.4	0.000	0.000	0.008	0.004	Pole MS-4-17	0.152	0.073	23.5	90.0	
								Pole MS-4-8	-0.159	-0.077	24.7	90.0	
Pole MS-4-17	4.160	99.164	-5.4	0.000	0.000	0.000	0.000	Pole MS-4-16	-0.151	-0.073	23.5	90.0	
								Pole MS-4-18	0.133	0.064	20.7	90.0	
								SEC_MS-3-66	0.018	0.009	2.8	89.9	
Pole MS-4-18	4.160	99.084	-5.4	0.000	0.000	0.015	0.008	Pole MS-4-17	-0.133	-0.064	20.7	90.0	
								Pole MS-4-20	0.118	0.057	18.3	90.0	
Pole MS-4-20	4.160	99.038	-5.4	0.000	0.000	0.000	0.000	Pole MS-4-18	-0.118	-0.057	18.3	90.0	
								Pole MS-4-21	0.099	0.048	15.4	90.1	
								SEC_MS-3-76	0.018	0.009	2.8	89.9	
Pole MS-4-21	4.160	98.797	-5.4	0.000	0.000	0.008	0.004	Pole MS-4-20	-0.099	-0.048	15.4	90.1	
								Pole MS-4-22	0.091	0.044	14.2	90.1	
Pole MS-4-22	4.160	98.715	-5.4	0.000	0.000	0.008	0.004	Pole MS-4-21	-0.091	-0.044	14.2	90.1	
								Pole MS-4-23	0.084	0.040	13.0	90.1	
Pole MS-4-23	4.160	98.635	-5.4	0.000	0.000	0.008	0.004	Pole MS-4-22	-0.084	-0.040	13.0	90.1	
								Pole MS-4-25	0.076	0.037	11.9	90.1	
Pole MS-4-24	4.160	97.882	-5.3	0.000	0.000	0.000	0.000	Pole MS-4-25	-0.068	-0.033	10.7	90.1	
								Pole MS-4-39	0.008	0.004	1.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-41	0.060	0.029	9.5	90.1	
Pole MS-4-25	4.160	98.451	-5.4	0.000	0.000	0.008	0.004	Pole MS-4-23	-0.076	-0.036	11.9	90.1	
								Pole MS-4-24	0.068	0.033	10.7	90.1	
Pole MS-4-31	4.160	99.785	-5.4	0.000	0.000	0.000	0.000	Pole MS-5-1	0.708	0.354	110.1	89.4	
								BUS_5KV-LLP_01	-0.708	-0.354	110.1	89.4	
Pole MS-4-36	4.160	98.998	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-97	0.060	0.029	9.3	89.9	
								Pole MS-3-95	-0.078	-0.038	12.1	89.9	
								SEC_MS-3-45	0.018	0.009	2.8	89.9	
Pole MS-4-39	4.160	97.879	-5.3	0.000	0.000	0.008	0.004	Pole MS-4-24	-0.008	-0.004	1.2	89.9	
Pole MS-4-40	4.160	97.839	-5.3	0.000	0.000	0.008	0.004	Pole MS-4-41	-0.023	-0.011	3.6	89.9	
								Pole MS-4-42	0.015	0.007	2.4	89.9	
Pole MS-4-41	4.160	97.852	-5.3	0.000	0.000	0.000	0.000	Pole MS-4-24	-0.060	-0.029	9.5	90.1	
								Pole MS-4-40	0.023	0.011	3.6	89.9	
								Pole MS-4-44	0.038	0.018	5.9	90.2	
Pole MS-4-42	4.160	97.823	-5.3	0.000	0.000	0.008	0.004	Pole MS-4-40	-0.015	-0.007	2.4	89.9	
								Pole MS-4-43	0.008	0.004	1.2	89.9	
Pole MS-4-43	4.160	97.809	-5.3	0.000	0.000	0.008	0.004	Pole MS-4-42	-0.008	-0.004	1.2	89.9	
Pole MS-4-44	4.160	97.162	-5.3	0.000	0.000	0.000	0.000	Pole MS-4-41	-0.037	-0.018	5.9	90.0	
								Pole MS-4-45	0.007	0.004	1.2	89.9	
								Pole MS-4-46	0.030	0.014	4.7	90.0	
Pole MS-4-45	4.160	97.155	-5.3	0.000	0.000	0.007	0.004	Pole MS-4-44	-0.007	-0.004	1.2	89.9	
Pole MS-4-46	4.160	97.127	-5.3	0.000	0.000	0.000	0.000	Pole MS-4-44	-0.030	-0.014	4.7	90.0	
								Pole MS-4-47	0.007	0.004	1.2	89.9	
								Pole MS-4-48	0.007	0.004	1.2	89.9	
								Pole MS-4-50	0.015	0.007	2.4	90.2	
Pole MS-4-47	4.160	97.125	-5.3	0.000	0.000	0.007	0.004	Pole MS-4-46	-0.007	-0.004	1.2	89.9	
Pole MS-4-48	4.160	97.125	-5.3	0.000	0.000	0.007	0.004	Pole MS-4-46	-0.007	-0.004	1.2	89.9	
Pole MS-4-49	4.160	97.079	-5.3	0.000	0.000	0.007	0.004	Pole MS-4-50	-0.007	-0.004	1.2	89.9	
Pole MS-4-50	4.160	97.080	-5.3	0.000	0.000	0.000	0.000	Pole MS-4-46	-0.015	-0.007	2.4	90.1	
								Pole MS-4-49	0.007	0.004	1.2	89.9	
								Pole MS-4-52	0.007	0.004	1.2	90.3	
Pole MS-4-51	4.160	97.054	-5.3	0.000	0.000	0.007	0.004	Pole MS-4-52	-0.007	-0.004	1.2	89.9	
Pole MS-4-52	4.160	97.070	-5.3	0.000	0.000	0.000	0.000	Pole MS-4-50	-0.007	-0.004	1.2	90.2	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-51	0.007	0.004	1.2	90.0	
								LINE MS-4-53~	0.000	0.000	0.0	0.0	
Pole MS-5-1	4.160	98.294	-5.7	0.000	0.000	0.008	0.004	Pole MS-4-31	-0.699	-0.345	110.1	89.7	
								Pole MS-5-2	0.692	0.341	108.9	89.7	
Pole MS-5-2	4.160	98.115	-5.8	0.000	0.000	0.008	0.004	Pole MS-5-1	-0.691	-0.340	108.9	89.7	
								Pole MS-5-3	0.030	0.015	4.8	89.9	
								Pole MS-5-7	0.653	0.321	102.9	89.7	
Pole MS-5-3	4.160	98.106	-5.8	0.000	0.000	0.008	0.004	Pole MS-5-2	-0.030	-0.015	4.8	89.9	
								Pole MS-5-4	0.023	0.011	3.6	89.9	
Pole MS-5-4	4.160	98.093	-5.8	0.000	0.000	0.008	0.004	Pole MS-5-3	-0.023	-0.011	3.6	89.9	
								Pole MS-5-5	0.015	0.007	2.4	89.9	
Pole MS-5-5	4.160	98.089	-5.8	0.000	0.000	0.008	0.004	Pole MS-5-4	-0.015	-0.007	2.4	89.9	
								Pole MS-5-6	0.008	0.004	1.2	89.9	
Pole MS-5-6	4.160	98.087	-5.8	0.000	0.000	0.008	0.004	Pole MS-5-5	-0.008	-0.004	1.2	89.9	
Pole MS-5-7	4.160	97.817	-5.9	0.000	0.000	0.000	0.000	Pole MS-5-2	-0.651	-0.320	102.9	89.8	
								Pole MS-5-11	0.108	0.053	17.0	89.9	
								Pole MS-5-24	0.543	0.267	85.9	89.7	
Pole MS-5-8	4.160	97.730	-5.9	0.000	0.000	0.008	0.004	Pole MS-5-9	-0.085	-0.041	13.4	89.9	
								Pole MS-5-14	0.078	0.038	12.3	89.9	
Pole MS-5-9	4.160	97.750	-5.9	0.000	0.000	0.008	0.004	Pole MS-5-8	0.085	0.041	13.4	89.9	
								Pole MS-5-10	-0.093	-0.045	14.6	89.9	
Pole MS-5-10	4.160	97.776	-5.9	0.000	0.000	0.008	0.004	Pole MS-5-9	0.093	0.045	14.6	89.9	
								Pole MS-5-11	-0.100	-0.049	15.8	89.9	
Pole MS-5-11	4.160	97.803	-5.9	0.000	0.000	0.008	0.004	Pole MS-5-7	-0.108	-0.053	17.0	89.9	
								Pole MS-5-10	0.100	0.049	15.8	89.9	
Pole MS-5-12	4.160	97.658	-5.9	0.000	0.000	0.008	0.004	Pole MS-5-13	-0.062	-0.030	9.9	89.9	
								Pole MS-5-16	0.055	0.027	8.7	89.9	
Pole MS-5-13	4.160	97.701	-5.9	0.000	0.000	0.008	0.004	Pole MS-5-12	0.062	0.030	9.9	89.9	
								Pole MS-5-14	-0.070	-0.034	11.1	89.9	
Pole MS-5-14	4.160	97.713	-5.9	0.000	0.000	0.008	0.004	Pole MS-5-8	-0.078	-0.038	12.3	89.9	
								Pole MS-5-13	0.070	0.034	11.1	89.9	
Pole MS-5-15	4.160	97.641	-5.9	0.000	0.000	0.008	0.004	Pole MS-5-16	-0.043	-0.021	6.8	89.9	
								Pole MS-5-17	0.036	0.017	5.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-16	4.160	97.647	-5.9	0.000	0.000	0.000	0.000	Pole MS-5-15	0.043	0.021	6.8	89.9	
								Pole MS-5-12	-0.055	-0.027	8.7	89.9	
								SEC_MS-5-15	0.012	0.006	1.9	89.9	
Pole MS-5-17	4.160	97.636	-5.9	0.000	0.000	0.000	0.000	Pole MS-5-15	-0.036	-0.017	5.6	89.9	
								Pole MS-5-18	0.018	0.009	2.8	89.9	
								SEC_MS-5-16	0.018	0.009	2.8	89.9	
Pole MS-5-18	4.160	97.634	-5.9	0.000	0.000	0.000	0.000	Pole MS-5-17	-0.018	-0.009	2.8	89.9	
								Pole MS-5-19	0.000	0.000	0.0	0.0	
								SEC_MS-5-17	0.018	0.009	2.8	89.9	
Pole MS-5-19	4.160	97.634	-5.9	0.000	0.000	0.000	0.000	Pole MS-5-18	0.000	0.000	0.0	0.0	
Pole MS-5-24	4.160	97.568	-5.9	0.000	0.000	0.000	0.000	Pole MS-5-7	-0.542	-0.266	85.9	89.8	
								Pole MS-5-25	0.028	0.014	4.5	89.9	
								Pole MS-5-29	0.091	0.045	14.5	89.9	
								Pole MS-5-41	0.422	0.207	66.9	89.8	
Pole MS-5-25	4.160	97.562	-5.9	0.000	0.000	0.005	0.002	Pole MS-5-24	-0.028	-0.014	4.5	89.9	
								Pole MS-5-26	0.023	0.011	3.7	89.9	
Pole MS-5-26	4.160	97.557	-5.9	0.000	0.000	0.000	0.000	Pole MS-5-25	-0.023	-0.011	3.7	89.9	
								Pole MS-5-28	0.012	0.006	1.9	89.9	
								SEC_MS-5-23	0.012	0.006	1.9	89.9	
Pole MS-5-27	4.160	97.450	-6.0	0.000	0.000	0.005	0.002	Pole MS-5-41	-0.414	-0.203	65.7	89.8	
								Pole MS-5-151	0.409	0.201	65.0	89.8	
Pole MS-5-28	4.160	97.550	-5.9	0.000	0.000	0.000	0.000	Pole MS-5-26	-0.012	-0.006	1.9	89.9	
								SEC_MS-5-25	0.012	0.006	1.9	89.9	
Pole MS-5-29	4.160	97.549	-5.9	0.000	0.000	0.000	0.000	Pole MS-5-24	-0.091	-0.045	14.5	89.9	
								Pole MS-5-30	0.074	0.036	11.6	89.9	
								SEC_MS-5-26	0.018	0.009	2.8	89.9	
Pole MS-5-30	4.160	97.512	-5.9	0.000	0.000	0.005	0.002	Pole MS-5-29	-0.074	-0.036	11.6	89.9	
								Pole MS-5-31	0.069	0.033	10.9	89.9	
Pole MS-5-31	4.160	97.487	-5.9	0.000	0.000	0.007	0.004	Pole MS-5-30	-0.069	-0.033	10.9	89.9	
								Pole MS-5-32	0.061	0.030	9.7	89.9	
Pole MS-5-32	4.160	97.470	-5.9	0.000	0.000	0.000	0.000	Pole MS-5-31	-0.061	-0.030	9.7	89.9	
								Pole MS-5-33	0.049	0.024	7.8	89.9	
								SEC_MS-5-29	0.012	0.006	1.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-33	4.160	97.459	-5.9	0.000	0.000	0.000	0.000	Pole MS-5-32	-0.049	-0.024	7.8	89.9	
								Pole MS-5-34	0.032	0.015	5.0	89.9	
								SEC_MS-5-30	0.018	0.009	2.8	89.9	
Pole MS-5-34	4.160	97.453	-5.9	0.000	0.000	0.005	0.002	Pole MS-5-33	-0.032	-0.015	5.0	89.9	
								Pole MS-5-35	0.027	0.013	4.2	89.9	
Pole MS-5-35	4.160	97.446	-5.9	0.000	0.000	0.000	0.000	Pole MS-5-34	-0.027	-0.013	4.2	89.9	
								Pole MS-5-36	0.015	0.007	2.4	89.9	
								SEC_MS-5-32	0.012	0.006	1.9	89.9	
Pole MS-5-36	4.160	97.439	-5.9	0.000	0.000	0.000	0.000	Pole MS-5-35	-0.015	-0.007	2.4	89.9	
								Pole MS-5-37	0.015	0.007	2.4	89.9	
Pole MS-5-37	4.160	97.436	-5.9	0.000	0.000	0.007	0.004	Pole MS-5-36	-0.015	-0.007	2.4	89.9	
								Pole MS-5-38	0.007	0.004	1.2	89.9	
Pole MS-5-38	4.160	97.433	-5.9	0.000	0.000	0.007	0.004	Pole MS-5-37	-0.007	-0.004	1.2	89.9	
								Pole MS-5-39	0.000	0.000	0.0	0.0	
Pole MS-5-39	4.160	97.433	-5.9	0.000	0.000	0.000	0.000	Pole MS-5-38	0.000	0.000	0.0	0.0	
Pole MS-5-40	4.160	97.172	-6.0	0.000	0.000	0.007	0.004	Pole MS-5-151	-0.409	-0.200	65.0	89.8	
								Pole MS-5-42	0.005	0.002	0.8	89.9	
								Pole MS-5-44	0.078	0.038	12.4	89.9	
								Pole MS-5-55	0.318	0.156	50.6	89.8	
Pole MS-5-41	4.160	97.475	-5.9	0.000	0.000	0.007	0.004	Pole MS-5-27	0.414	0.203	65.7	89.8	
								Pole MS-5-24	-0.422	-0.207	66.9	89.8	
Pole MS-5-42	4.160	97.170	-6.0	0.000	0.000	0.005	0.002	Pole MS-5-40	-0.005	-0.002	0.8	89.9	
Pole MS-5-43	4.160	97.144	-6.0	0.000	0.000	0.007	0.004	Pole MS-5-44	-0.070	-0.034	11.2	89.9	
								Pole MS-5-45	0.063	0.031	10.0	89.9	
Pole MS-5-44	4.160	97.157	-6.0	0.000	0.000	0.007	0.004	Pole MS-5-40	-0.078	-0.038	12.4	89.9	
								Pole MS-5-43	0.070	0.034	11.2	89.9	
Pole MS-5-45	4.160	97.135	-6.0	0.000	0.000	0.000	0.000	Pole MS-5-43	-0.063	-0.031	10.0	89.9	
								Pole MS-5-46	0.051	0.025	8.1	89.9	
								SEC_MS-5-40	0.012	0.006	1.8	89.9	
Pole MS-5-46	4.160	97.121	-6.0	0.000	0.000	0.005	0.002	Pole MS-5-45	-0.051	-0.025	8.1	89.9	
								Pole MS-5-47	0.046	0.023	7.4	89.9	
Pole MS-5-47	4.160	97.112	-6.0	0.000	0.000	0.007	0.004	Pole MS-5-46	-0.046	-0.023	7.4	89.9	
								Pole MS-5-48	0.039	0.019	6.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-48	4.160	97.097	-6.0	0.000	0.000	0.007	0.004	Pole MS-5-47	-0.039	-0.019	6.2	89.9	
								Pole MS-5-49	0.031	0.015	5.0	89.9	
Pole MS-5-49	4.160	97.089	-6.0	0.000	0.000	0.007	0.004	Pole MS-5-48	-0.031	-0.015	5.0	89.9	
								Pole MS-5-50	0.024	0.012	3.8	89.9	
Pole MS-5-50	4.160	97.077	-6.0	0.000	0.000	0.000	0.000	Pole MS-5-49	-0.024	-0.012	3.8	89.9	
								Pole MS-5-51	0.012	0.006	2.0	89.9	
								SEC_MS-5-45	0.012	0.006	1.8	89.9	
Pole MS-5-51	4.160	97.075	-6.0	0.000	0.000	0.005	0.002	Pole MS-5-50	-0.012	-0.006	2.0	89.9	
								Pole MS-5-52	0.007	0.004	1.2	89.9	
Pole MS-5-52	4.160	97.071	-6.0	0.000	0.000	0.007	0.004	Pole MS-5-51	-0.007	-0.004	1.2	89.9	
								Pole MS-5-149	0.000	0.000	0.0	0.0	
Pole MS-5-55	4.160	97.093	-6.0	0.000	0.000	0.007	0.004	Pole MS-5-40	-0.318	-0.156	50.6	89.8	
								Pole MS-5-68	0.311	0.152	49.4	89.8	
Pole MS-5-56	4.160	96.876	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-68	-0.303	-0.148	48.3	89.9	
								Pole MS-5-57	0.059	0.029	9.5	89.9	
								Pole MS-5-64	0.022	0.011	3.5	89.9	
								Pole MS-5-67	0.214	0.104	34.1	89.9	
Pole MS-5-57	4.160	96.861	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-56	-0.059	-0.029	9.5	89.9	
								Pole MS-5-58	0.052	0.025	8.3	89.9	
Pole MS-5-58	4.160	96.845	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-57	-0.052	-0.025	8.3	89.9	
								Pole MS-5-59	0.044	0.022	7.1	89.9	
Pole MS-5-59	4.160	96.836	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-58	-0.044	-0.022	7.1	89.9	
								Pole MS-5-60	0.037	0.018	5.9	89.9	
Pole MS-5-60	4.160	96.825	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-59	-0.037	-0.018	5.9	89.9	
								Pole MS-5-61	0.030	0.014	4.7	89.9	
Pole MS-5-61	4.160	96.821	-6.1	0.000	0.000	0.015	0.007	Pole MS-5-60	-0.030	-0.014	4.7	89.9	
								Pole MS-5-62	0.015	0.007	2.4	89.9	
Pole MS-5-62	4.160	96.818	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-61	-0.015	-0.007	2.4	89.9	
								Pole MS-5-63	0.007	0.004	1.2	89.9	
Pole MS-5-63	4.160	96.816	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-62	-0.007	-0.004	1.2	89.9	
Pole MS-5-64	4.160	96.873	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-56	-0.022	-0.011	3.5	89.9	
								Pole MS-5-65	0.015	0.007	2.4	89.9	
Pole MS-5-65	4.160	96.870	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-64	-0.015	-0.007	2.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-66	0.007	0.004	1.2	89.9	
Pole MS-5-66	4.160	96.861	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-65	-0.007	-0.004	1.2	89.9	
Pole MS-5-67	4.160	96.778	-6.1	0.000	0.000	0.000	0.000	Pole MS-5-56	-0.214	-0.104	34.1	89.9	
								Pole MS-5-69	0.054	0.026	8.6	89.9	
								Pole MS-5-78	0.049	0.024	7.8	89.9	
								Pole MS-5-86	0.110	0.054	17.6	89.9	
Pole MS-5-68	4.160	96.952	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-56	0.303	0.148	48.3	89.8	
								Pole MS-5-55	-0.310	-0.152	49.4	89.8	
Pole MS-5-69	4.160	96.766	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-67	-0.054	-0.026	8.6	89.9	
								Pole MS-5-70	0.047	0.023	7.5	89.9	
Pole MS-5-70	4.160	96.745	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-69	-0.047	-0.023	7.5	89.9	
								Pole MS-5-71	0.039	0.019	6.3	89.9	
Pole MS-5-71	4.160	96.740	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-70	-0.039	-0.019	6.3	89.9	
								Pole MS-5-72	0.032	0.016	5.1	89.9	
Pole MS-5-72	4.160	96.739	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-71	-0.032	-0.016	5.1	89.9	
								Pole MS-5-73	0.025	0.012	3.9	89.9	
Pole MS-5-73	4.160	96.732	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-72	-0.025	-0.012	3.9	89.9	
								Pole MS-5-74	0.017	0.008	2.7	89.9	
Pole MS-5-74	4.160	96.728	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-73	-0.017	-0.008	2.7	89.9	
								Pole MS-5-75	0.010	0.005	1.6	89.9	
Pole MS-5-75	4.160	96.726	-6.1	0.000	0.000	0.005	0.002	Pole MS-5-74	-0.010	-0.005	1.6	89.9	
								Pole MS-5-76	0.005	0.002	0.8	89.9	
Pole MS-5-76	4.160	96.725	-6.1	0.000	0.000	0.005	0.002	Pole MS-5-75	-0.005	-0.002	0.8	89.9	
								Line MS-5-79~	0.000	0.000	0.0	0.0	
Pole MS-5-77	4.160	96.756	-6.1	0.000	0.000	0.005	0.002	Pole MS-5-78	-0.044	-0.021	7.0	89.9	
								Pole MS-5-79	0.039	0.019	6.3	89.9	
Pole MS-5-78	4.160	96.766	-6.1	0.000	0.000	0.005	0.002	Pole MS-5-67	-0.049	-0.024	7.8	89.9	
								Pole MS-5-77	0.044	0.021	7.0	89.9	
Pole MS-5-79	4.160	96.754	-6.1	0.000	0.000	0.005	0.002	Pole MS-5-77	-0.039	-0.019	6.3	89.9	
								Pole MS-5-80	0.034	0.017	5.5	89.9	
Pole MS-5-80	4.160	96.738	-6.1	0.000	0.000	0.005	0.002	Pole MS-5-79	-0.034	-0.017	5.5	89.9	
								Pole MS-5-81	0.029	0.014	4.7	89.9	
Pole MS-5-81	4.160	96.730	-6.1	0.000	0.000	0.005	0.002	Pole MS-5-80	-0.029	-0.014	4.7	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-82	0.025	0.012	3.9	89.9	
Pole MS-5-82	4.160	96.728	-6.1	0.000	0.000	0.005	0.002	Pole MS-5-81	-0.025	-0.012	3.9	89.9	
								Pole MS-5-83	0.020	0.010	3.1	89.9	
Pole MS-5-83	4.160	96.726	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-82	-0.020	-0.010	3.1	89.9	
								Pole MS-5-84	0.012	0.006	2.0	89.9	
Pole MS-5-84	4.160	96.725	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-83	-0.012	-0.006	2.0	89.9	
								Pole MS-5-85	0.005	0.002	0.8	90.0	
Pole MS-5-85	4.160	96.717	-6.1	0.000	0.000	0.005	0.002	Pole MS-5-84	-0.005	-0.002	0.8	89.9	
Pole MS-5-86	4.160	96.726	-6.1	0.000	0.000	0.000	0.000	Pole MS-5-67	-0.110	-0.054	17.6	89.9	
								Pole MS-5-89	0.015	0.007	2.3	89.9	
								Pole MS-5-90	0.034	0.017	5.5	89.9	
								Pole MS-5-96	0.061	0.030	9.8	89.8	
Pole MS-5-87	4.160	96.720	-6.1	0.000	0.000	0.005	0.002	Pole MS-5-88	-0.005	-0.002	0.8	89.9	
Pole MS-5-88	4.160	96.720	-6.1	0.000	0.000	0.005	0.002	Pole MS-5-87	0.005	0.002	0.8	89.9	
								Pole MS-5-89	-0.010	-0.005	1.6	89.9	
Pole MS-5-89	4.160	96.722	-6.1	0.000	0.000	0.005	0.002	Pole MS-5-86	-0.015	-0.007	2.3	89.9	
								Pole MS-5-88	0.010	0.005	1.6	89.9	
Pole MS-5-90	4.160	96.717	-6.1	0.000	0.000	0.005	0.002	Pole MS-5-86	-0.034	-0.017	5.5	89.9	
								Pole MS-5-91	0.029	0.014	4.7	89.9	
Pole MS-5-91	4.160	96.708	-6.1	0.000	0.000	0.005	0.002	Pole MS-5-90	-0.029	-0.014	4.7	89.9	
								Pole MS-5-92	0.025	0.012	3.9	89.9	
Pole MS-5-92	4.160	96.700	-6.1	0.000	0.000	0.005	0.002	Pole MS-5-91	-0.025	-0.012	3.9	89.9	
								Pole MS-5-93	0.020	0.010	3.1	89.9	
Pole MS-5-93	4.160	96.695	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-92	-0.020	-0.010	3.1	89.9	
								Pole MS-5-94	0.012	0.006	2.0	89.9	
Pole MS-5-94	4.160	96.692	-6.1	0.000	0.000	0.007	0.004	Pole MS-5-93	-0.012	-0.006	2.0	89.9	
								Pole MS-5-95	0.005	0.002	0.8	89.9	
Pole MS-5-95	4.160	96.691	-6.1	0.000	0.000	0.005	0.002	Pole MS-5-94	-0.005	-0.002	0.8	89.9	
Pole MS-5-96	4.160	96.701	-6.1	0.000	0.000	0.000	0.000	Pole MS-5-86	-0.061	-0.030	9.8	89.8	
								Pole MS-5-111	0.061	0.030	9.8	89.8	
Pole MS-5-106	4.160	99.986	-5.8	0.000	0.000	0.057	0.028	Pole MS-5-108	-0.218	-0.106	33.7	89.9	
								Pole MS-5-122	0.161	0.078	24.8	89.9	
Pole MS-5-107	4.160	100.116	-5.8	0.000	0.000	0.005	0.003	Pole MS-5-108	-0.023	-0.011	3.5	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-109	0.017	0.008	2.7	89.9	
Pole MS-5-108	4.160	100.121	-5.8	0.000	0.000	0.000	0.000	Pole MS-5-107	0.023	0.011	3.5	89.9	
								Pole MS-5-106	0.218	0.106	33.7	89.9	
								SF-2-30	-0.241	-0.117	37.1	89.9	
Pole MS-5-109	4.160	100.112	-5.8	0.000	0.000	0.005	0.003	Pole MS-5-107	-0.017	-0.008	2.7	89.9	
								Pole MS-5-110	0.012	0.006	1.9	89.9	
Pole MS-5-110	4.160	100.108	-5.8	0.000	0.000	0.000	0.000	Pole MS-5-109	-0.012	-0.006	1.9	89.9	
								SEC_MS-5-99	0.012	0.006	1.9	89.9	
Pole MS-5-111	4.160	96.676	-6.1	0.000	0.000	0.000	0.000	Pole MS-5-96	-0.061	-0.030	9.8	89.8	
								Pole MS-5-124	0.061	0.030	9.8	89.8	
Pole MS-5-122	4.160	99.876	-5.8	0.000	0.000	0.073	0.035	Pole MS-5-106	-0.161	-0.078	24.8	89.9	
								Pole MS-5-123	0.088	0.043	13.6	89.9	
Pole MS-5-123	4.160	99.819	-5.8	0.000	0.000	0.000	0.000	Pole MS-5-122	-0.088	-0.043	13.6	89.9	
								Pole MS-5-134	0.072	0.035	11.2	89.9	
								Pole MS-5-135	0.016	0.008	2.4	89.9	
Pole MS-5-124	4.160	96.651	-6.2	0.000	0.000	0.000	0.000	Pole MS-5-111	-0.061	-0.030	9.8	89.8	
								Pole MS-5-139	0.061	0.030	9.8	89.8	
Pole MS-5-125	4.160	99.683	-5.8	0.000	0.000	0.005	0.002	Pole MS-5-126	-0.005	-0.002	0.8	89.9	
								Line MS-5-129~	0.000	0.000	0.0	0.0	
Pole MS-5-126	4.160	99.684	-5.8	0.000	0.000	0.008	0.004	Pole MS-5-125	0.005	0.002	0.8	89.9	
								Pole MS-5-127	-0.013	-0.006	2.0	89.9	
Pole MS-5-127	4.160	99.687	-5.8	0.000	0.000	0.008	0.004	Pole MS-5-126	0.013	0.006	2.0	89.9	
								Pole MS-5-128	-0.021	-0.010	3.2	89.9	
Pole MS-5-128	4.160	99.691	-5.8	0.000	0.000	0.008	0.004	Pole MS-5-127	0.021	0.010	3.2	89.9	
								Pole MS-5-129	-0.028	-0.014	4.4	89.9	
Pole MS-5-129	4.160	99.704	-5.8	0.000	0.000	0.008	0.004	Pole MS-5-128	0.028	0.014	4.4	89.9	
								Pole MS-5-130	-0.036	-0.018	5.6	89.9	
Pole MS-5-130	4.160	99.711	-5.8	0.000	0.000	0.005	0.002	Pole MS-5-129	0.036	0.018	5.6	89.9	
								Pole MS-5-131	-0.041	-0.020	6.4	89.9	
Pole MS-5-131	4.160	99.730	-5.8	0.000	0.000	0.005	0.003	Pole MS-5-130	0.041	0.020	6.4	89.9	
								Pole MS-5-132	-0.047	-0.023	7.2	89.9	
Pole MS-5-132	4.160	99.741	-5.8	0.000	0.000	0.005	0.003	Pole MS-5-131	0.047	0.023	7.2	89.9	
								Pole MS-5-137	-0.052	-0.025	8.0	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-133	4.160	99.791	-5.8	0.000	0.000	0.005	0.003	Pole MS-5-137	0.060	0.029	9.2	89.9	
								Pole MS-5-134	-0.065	-0.032	10.0	89.9	
Pole MS-5-134	4.160	99.804	-5.8	0.000	0.000	0.008	0.004	Pole MS-5-133	0.065	0.032	10.0	89.9	
								Pole MS-5-123	-0.072	-0.035	11.2	89.9	
Pole MS-5-135	4.160	99.804	-5.8	0.000	0.000	0.008	0.004	Pole MS-5-123	-0.016	-0.008	2.4	89.9	
								Pole MS-5-136	0.008	0.004	1.2	89.9	
Pole MS-5-136	4.160	99.796	-5.8	0.000	0.000	0.008	0.004	Pole MS-5-135	-0.008	-0.004	1.2	89.9	
Pole MS-5-137	4.160	99.764	-5.8	0.000	0.000	0.008	0.004	Pole MS-5-133	-0.060	-0.029	9.2	89.9	
								Pole MS-5-132	0.052	0.025	8.0	89.9	
Pole MS-5-139	4.160	96.639	-6.2	0.000	0.000	0.061	0.030	Pole MS-5-124	-0.061	-0.030	9.8	89.8	
Pole MS-5-149	4.160	97.071	-6.0	0.000	0.000	0.000	0.000	Pole MS-5-52	0.000	0.000	0.0	0.0	
Pole MS-5-151	4.160	97.361	-6.0	0.000	0.000	0.000	0.000	Pole MS-5-40	0.409	0.201	65.0	89.8	
								Pole MS-5-27	-0.409	-0.201	65.0	89.8	
Pole MS-7-16	24.940	99.823	-3.6	0.000	0.000	0.000	0.000	Pole MS-7-18	-0.031	-0.015	0.8	90.0	
								SEC_MS-7-9	0.031	0.015	0.8	90.0	
Pole MS-7-17	24.940	99.827	-3.6	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	-0.082	-0.039	2.1	90.5	
								Pole MS-7-18	0.082	0.039	2.1	90.5	
Pole MS-7-18	24.940	99.824	-3.6	0.000	0.000	0.000	0.000	Pole MS-7-19	0.051	0.025	1.3	90.0	
								Pole MS-7-16	0.031	0.015	0.8	90.1	
								Pole MS-7-17	-0.082	-0.040	2.1	90.0	
Pole MS-7-19	24.940	99.823	-3.6	0.000	0.000	0.051	0.027	Pole MS-7-18	-0.051	-0.027	1.3	88.7	
Pole MS-8-1	4.160	99.750	-5.4	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	-0.250	-0.123	38.8	89.7	
								Pole MS-8-2	0.250	0.123	38.8	89.7	
Pole MS-8-2	4.160	99.582	-5.4	0.000	0.000	0.005	0.002	Pole MS-8-1	-0.250	-0.123	38.8	89.7	
								Pole MS-8-3	0.244	0.120	38.0	89.7	
Pole MS-8-3	4.160	99.525	-5.5	0.000	0.000	0.005	0.002	Pole MS-8-2	-0.244	-0.120	38.0	89.7	
								Pole MS-8-4	0.239	0.118	37.2	89.7	
Pole MS-8-4	4.160	99.499	-5.5	0.000	0.000	0.000	0.000	Pole MS-8-3	-0.239	-0.118	37.2	89.7	
								Pole MS-8-5	0.215	0.106	33.4	89.7	
								SEC_MS-8-3	0.024	0.012	3.8	89.9	
Pole MS-8-5	4.160	99.470	-5.5	0.000	0.000	0.005	0.002	Pole MS-8-4	-0.215	-0.106	33.4	89.7	
								Pole MS-8-6	0.210	0.103	32.6	89.7	
Pole MS-8-6	4.160	99.422	-5.5	0.000	0.000	0.005	0.002	Pole MS-8-5	-0.210	-0.103	32.6	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-8-7	0.205	0.101	31.8	89.7	
Pole MS-8-7	4.160	99.398	-5.5	0.000	0.000	0.010	0.005	Pole MS-8-6	-0.205	-0.101	31.8	89.7	
								Pole MS-8-8	0.194	0.096	30.3	89.7	
Pole MS-8-8	4.160	99.375	-5.5	0.000	0.000	0.000	0.000	Pole MS-8-7	-0.194	-0.096	30.3	89.7	
								Pole MS-8-9	0.037	0.018	5.7	89.8	
								Pole MS-8-10	0.158	0.078	24.6	89.7	
Pole MS-8-9	4.160	99.367	-5.5	0.000	0.000	0.000	0.000	Pole MS-8-8	-0.037	-0.018	5.7	89.8	
								SEC_MS-8-8	0.037	0.018	5.7	89.8	
Pole MS-8-10	4.160	99.333	-5.5	0.000	0.000	0.005	0.002	Pole MS-8-8	-0.158	-0.078	24.6	89.7	
								Pole MS-8-11	0.153	0.075	23.8	89.7	
Pole MS-8-11	4.160	99.294	-5.5	0.000	0.000	0.008	0.004	Pole MS-8-10	-0.152	-0.075	23.8	89.7	
								Pole MS-8-12	0.145	0.072	22.6	89.7	
Pole MS-8-12	4.160	99.259	-5.5	0.000	0.000	0.008	0.004	Pole MS-8-11	-0.145	-0.071	22.6	89.7	
								Pole MS-8-13	0.137	0.068	21.4	89.6	
Pole MS-8-13	4.160	99.251	-5.5	0.000	0.000	0.008	0.004	Pole MS-8-12	-0.137	-0.068	21.4	89.6	
								Pole MS-8-14	0.129	0.064	20.2	89.6	
Pole MS-8-14	4.160	99.231	-5.5	0.000	0.000	0.008	0.004	Pole MS-8-15	0.121	0.060	19.0	89.6	
								Pole MS-8-13	-0.129	-0.064	20.2	89.6	
Pole MS-8-15	4.160	99.213	-5.5	0.000	0.000	0.000	0.000	PRI_PM_9	0.121	0.060	19.0	89.6	
								Pole MS-8-14	-0.121	-0.060	19.0	89.6	
Pole MS-9-1	4.160	99.781	-5.4	0.000	0.000	0.008	0.004	BUS_5KV-LLP_01	-0.559	-0.276	86.7	89.7	
								Pole MS-9-2	0.551	0.272	85.5	89.7	
Pole MS-9-2	4.160	99.662	-5.4	0.000	0.000	0.000	0.000	Pole MS-9-1	-0.550	-0.271	85.5	89.7	
								Pole MS-9-12	0.550	0.271	85.5	89.7	
Pole MS-9-12	4.160	99.437	-5.5	0.000	0.000	0.000	0.000	Pole MS-9-2	-0.549	-0.270	85.5	89.7	
								Pole MS-9-13	0.549	0.270	85.5	89.7	
Pole MS-9-13	4.160	99.398	-5.5	0.000	0.000	0.000	0.000	Pole MS-9-12	-0.549	-0.270	85.5	89.7	
								Pole MS-9-14	0.549	0.270	85.5	89.7	
Pole MS-9-14	4.160	99.331	-5.5	0.000	0.000	0.005	0.002	Pole MS-9-13	-0.549	-0.270	85.5	89.7	
								Pole MS-9-15	0.544	0.267	84.7	89.7	
Pole MS-9-15	4.160	99.231	-5.5	0.000	0.000	0.000	0.000	Pole MS-9-14	-0.543	-0.267	84.7	89.8	
								Pole MS-9-16	0.519	0.255	80.9	89.8	
								SEC_MS-9-12	0.024	0.012	3.7	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-9-16	4.160	99.122	-5.6	0.000	0.000	0.005	0.002	Pole MS-9-15	-0.519	-0.255	80.9	89.8	
								Pole MS-9-17	0.514	0.252	80.1	89.8	
Pole MS-9-17	4.160	99.053	-5.6	0.000	0.000	0.000	0.000	Pole MS-9-16	-0.514	-0.252	80.1	89.8	
								Pole MS-9-18	0.144	0.070	22.4	89.9	
								Pole MS-9-33	0.370	0.182	57.7	89.8	
Pole MS-9-18	4.160	99.045	-5.6	0.000	0.000	0.000	0.000	Pole MS-9-17	-0.144	-0.070	22.4	89.9	
								Pole MS-9-19	0.120	0.058	18.7	89.9	
								SEC_MS-9-14	0.024	0.012	3.7	89.9	
Pole MS-9-19	4.160	99.024	-5.6	0.000	0.000	0.005	0.002	Pole MS-9-18	-0.120	-0.058	18.7	89.9	
								Pole MS-9-20	0.115	0.056	17.9	89.9	
Pole MS-9-20	4.160	98.992	-5.6	0.000	0.000	0.008	0.004	Pole MS-9-19	-0.115	-0.056	17.9	89.9	
								Pole MS-9-21	0.107	0.052	16.7	89.9	
Pole MS-9-21	4.160	98.966	-5.6	0.000	0.000	0.000	0.000	Pole MS-9-20	-0.107	-0.052	16.7	89.9	
								Pole MS-9-23	0.083	0.040	12.9	89.9	
								SEC_MS-9-17	0.024	0.012	3.7	89.9	
Pole MS-9-22	4.160	98.613	-5.7	0.000	0.000	0.000	0.000	Pole MS-9-42	-0.265	-0.130	41.5	89.8	
								Pole MS-9-43	0.037	0.018	5.7	89.9	
								Pole MS-9-47	0.228	0.112	35.8	89.8	
Pole MS-9-23	4.160	98.959	-5.6	0.000	0.000	0.008	0.004	Pole MS-9-21	-0.083	-0.040	12.9	89.9	
								Pole MS-9-24	0.075	0.037	11.7	89.9	
Pole MS-9-24	4.160	98.951	-5.6	0.000	0.000	0.015	0.008	Pole MS-9-23	-0.075	-0.037	11.7	89.9	
								Pole MS-9-25	0.060	0.029	9.3	89.9	
Pole MS-9-25	4.160	98.946	-5.6	0.000	0.000	0.000	0.000	Pole MS-9-24	-0.060	-0.029	9.3	89.9	
								Pole MS-9-26	0.024	0.012	3.7	89.9	
								Pole MS-9-28	0.036	0.017	5.6	89.9	
Pole MS-9-26	4.160	98.936	-5.6	0.000	0.000	0.000	0.000	Pole MS-9-27	0.000	0.000	0.0	0.0	
								Pole MS-9-25	-0.024	-0.012	3.7	89.9	
								SEC_MS-9-22	0.024	0.012	3.7	89.9	
Pole MS-9-27	4.160	98.936	-5.6	0.000	0.000	0.000	0.000	Pole MS-9-26	0.000	0.000	0.0	0.0	
Pole MS-9-28	4.160	98.939	-5.6	0.000	0.000	0.005	0.002	Pole MS-9-25	-0.036	-0.017	5.6	89.9	
								Pole MS-9-29	0.031	0.015	4.8	89.9	
Pole MS-9-29	4.160	98.934	-5.6	0.000	0.000	0.008	0.004	Pole MS-9-28	-0.031	-0.015	4.8	89.9	
								Pole MS-9-30	0.023	0.011	3.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-9-30	4.160	98.930	-5.6	0.000	0.000	0.008	0.004	Pole MS-9-29	-0.023	-0.011	3.6	89.9	
								Pole MS-9-31	0.015	0.008	2.4	89.9	
Pole MS-9-31	4.160	98.928	-5.6	0.000	0.000	0.008	0.004	Pole MS-9-30	-0.015	-0.008	2.4	89.9	
								Pole MS-9-32	0.008	0.004	1.2	89.9	
Pole MS-9-32	4.160	98.927	-5.6	0.000	0.000	0.008	0.004	Pole MS-9-31	-0.008	-0.004	1.2	89.9	
Pole MS-9-33	4.160	98.982	-5.6	0.000	0.000	0.008	0.004	Pole MS-9-17	-0.370	-0.181	57.7	89.8	
								Pole MS-9-34	0.362	0.178	56.5	89.8	
Pole MS-9-34	4.160	98.926	-5.6	0.000	0.000	0.008	0.004	Pole MS-9-33	-0.362	-0.177	56.5	89.8	
								Pole MS-9-35	0.354	0.174	55.3	89.8	
Pole MS-9-35	4.160	98.882	-5.6	0.000	0.000	0.000	0.000	Pole MS-9-34	-0.354	-0.174	55.3	89.8	
								Pole MS-9-36	0.008	0.004	1.2	89.9	
								Pole MS-9-37	0.346	0.170	54.1	89.8	
Pole MS-9-36	4.160	98.881	-5.6	0.000	0.000	0.008	0.004	Pole MS-9-35	-0.008	-0.004	1.2	89.9	
Pole MS-9-37	4.160	98.864	-5.6	0.000	0.000	0.000	0.000	Pole MS-9-35	-0.346	-0.170	54.1	89.8	
								Pole MS-9-38	0.322	0.158	50.4	89.8	
								SEC_MS-9-31	0.024	0.012	3.7	89.9	
Pole MS-9-38	4.160	98.824	-5.6	0.000	0.000	0.000	0.000	Pole MS-9-37	-0.322	-0.158	50.4	89.8	
								Pole MS-9-39	0.286	0.140	44.7	89.8	
								SEC_MS-9-32	0.036	0.018	5.7	89.8	
Pole MS-9-39	4.160	98.744	-5.6	0.000	0.000	0.000	0.000	Pole MS-9-38	-0.286	-0.140	44.7	89.8	
								Pole MS-9-40	0.005	0.002	0.8	89.9	
								Pole MS-9-41	0.281	0.137	43.9	89.8	
Pole MS-9-40	4.160	98.743	-5.6	0.000	0.000	0.005	0.002	Pole MS-9-39	-0.005	-0.002	0.8	89.9	
Pole MS-9-41	4.160	98.706	-5.7	0.000	0.000	0.008	0.004	Pole MS-9-39	-0.281	-0.137	43.9	89.8	
								Pole MS-9-42	0.273	0.134	42.7	89.8	
Pole MS-9-42	4.160	98.640	-5.7	0.000	0.000	0.008	0.004	Pole MS-9-22	0.265	0.130	41.5	89.8	
								Pole MS-9-41	-0.273	-0.134	42.7	89.8	
Pole MS-9-43	4.160	98.610	-5.7	0.000	0.000	0.005	0.002	Pole MS-9-22	-0.037	-0.018	5.7	89.9	
								Pole MS-9-44	0.031	0.015	4.9	89.9	
Pole MS-9-44	4.160	98.604	-5.7	0.000	0.000	0.000	0.000	Pole MS-9-43	-0.031	-0.015	4.9	89.9	
								Pole MS-9-45	0.008	0.004	1.2	89.9	
								Pole MS-9-46	0.024	0.012	3.7	89.9	
Pole MS-9-45	4.160	98.603	-5.7	0.000	0.000	0.008	0.004	Pole MS-9-44	-0.008	-0.004	1.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-9-46	4.160	98.597	-5.7	0.000	0.000	0.000	0.000	Pole MS-9-44	-0.024	-0.012	3.7	89.9	
								SEC_MS-9-37	0.024	0.012	3.7	89.9	
Pole MS-9-47	4.160	98.584	-5.7	0.000	0.000	0.000	0.000	Pole MS-9-22	-0.228	-0.112	35.8	89.8	
								Pole MS-9-48	0.205	0.100	32.1	89.8	
								SEC_MS-9-38	0.024	0.012	3.7	89.9	
Pole MS-9-48	4.160	98.554	-5.7	0.000	0.000	0.000	0.000	Pole MS-9-47	-0.205	-0.100	32.1	89.8	
								Pole MS-9-49	0.168	0.082	26.4	89.8	
								SEC_MS-9-39	0.036	0.018	5.7	89.8	
Pole MS-9-49	4.160	98.508	-5.7	0.000	0.000	0.000	0.000	Pole MS-9-48	-0.168	-0.082	26.4	89.8	
								Pole MS-9-50	0.132	0.065	20.7	89.8	
								SEC_MS-9-40	0.036	0.018	5.7	89.8	
Pole MS-9-50	4.160	98.489	-5.7	0.000	0.000	0.000	0.000	Pole MS-9-49	-0.132	-0.065	20.7	89.8	
								Pole MS-9-51	0.096	0.047	15.1	89.8	
								SEC_MS-9-41	0.036	0.018	5.7	89.8	
Pole MS-9-51	4.160	98.473	-5.7	0.000	0.000	0.000	0.000	Pole MS-9-50	-0.096	-0.047	15.1	89.8	
								Pole MS-9-52	0.060	0.029	9.4	89.8	
								SEC_MS-9-42	0.036	0.018	5.7	89.8	
Pole MS-9-52	4.160	98.458	-5.7	0.000	0.000	0.000	0.000	Pole MS-9-51	-0.060	-0.029	9.4	89.8	
								Pole MS-9-53	0.024	0.012	3.7	89.9	
								SEC_MS-9-43	0.036	0.018	5.7	89.8	
Pole MS-9-53	4.160	98.456	-5.7	0.000	0.000	0.000	0.000	Pole MS-9-52	-0.024	-0.012	3.7	89.9	
								Pole MS-9-54	0.000	0.000	0.0	0.0	
								SEC_MS-9-44	0.024	0.012	3.7	89.9	
Pole MS-9-54	4.160	98.456	-5.7	0.000	0.000	0.000	0.000	Pole MS-9-53	0.000	0.000	0.0	0.0	
PRI_PM_1	4.160	98.094	-6.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-0.076	-0.038	12.1	89.4	
								SEC_PM_1	0.076	0.038	12.1	89.4	
PRI_PM_1-1	4.160	93.541	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.071	-0.035	11.8	89.4	
								SEC_PM_1-1	0.071	0.035	11.8	89.4	
PRI_PM_2	4.160	97.246	-6.1	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-0.075	-0.038	12.0	89.4	
								SEC_PM_2	0.075	0.038	12.0	89.4	
PRI_PM_3	4.160	96.540	-6.0	0.000	0.000	0.000	0.000	UG_JUNC-CS-3	-0.075	-0.037	12.0	89.4	
								SEC_PM_3	0.075	0.037	12.0	89.4	
PRI_PM_4	4.160	95.325	-6.5	0.000	0.000	0.000	0.000	SF-1-60	-0.226	-0.114	36.9	89.2	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_PM_4	0.226	0.114	36.9	89.2	
PRI_PM_5	4.160	95.935	-5.9	0.000	0.000	0.000	0.000	UG_JUNC-CS-5	-0.074	-0.037	11.9	89.4	
								SEC_PM_5	0.074	0.037	11.9	89.4	
PRI_PM_6	4.160	95.369	-5.8	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.073	-0.037	11.9	89.4	
								SEC_PM_6	0.073	0.037	11.9	89.4	
PRI_PM_7	4.160	99.023	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-73	-0.172	-0.086	27.0	89.4	
								SEC_PM_7	0.172	0.086	27.0	89.4	
PRI_PM_8	4.160	99.270	-5.5	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.139	-0.069	21.7	89.6	
								SEC_PM_8	0.139	0.069	21.7	89.6	
PRI_PM_9	4.160	99.196	-5.5	0.000	0.000	0.000	0.000	Pole MS-8-15	-0.121	-0.060	19.0	89.6	
								SEC_PM_9	0.121	0.060	19.0	89.6	
PRI_PM_10	4.160	96.340	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-86	-0.330	-0.165	53.1	89.4	
								PRI_PM_28	0.165	0.082	26.6	89.5	
								SEC_PM_10	0.165	0.082	26.6	89.4	
PRI_PM_11	4.160	98.550	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-11	-0.171	-0.086	27.0	89.4	
								SEC_PM_11	0.171	0.086	27.0	89.4	
PRI_PM_12	4.160	95.452	-6.5	0.000	0.000	0.000	0.000	SF-1-59	-0.227	-0.115	36.9	89.2	
								SEC_PM_12	0.227	0.115	36.9	89.2	
PRI_PM_13	4.160	94.289	-6.4	0.000	0.000	0.000	0.000	SF-1-40	-0.426	-0.215	70.2	89.2	
								SEC_PM_13	0.426	0.215	70.2	89.2	
PRI_PM_14	4.160	95.085	-6.4	0.000	0.000	0.000	0.000	SF-1-17	-0.323	-0.162	52.8	89.4	
								SEC_PM_14	0.323	0.162	52.8	89.4	
PRI_PM_15	4.160	96.569	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-16	-0.331	-0.166	53.3	89.4	
								SEC_PM_15	0.331	0.166	53.3	89.4	
PRI_PM_16	4.160	98.335	-6.4	0.000	0.000	0.000	0.000	Pole CS-1-2	-0.171	-0.085	26.9	89.4	
								SEC_PM_16	0.171	0.085	26.9	89.4	
PRI_PM_17	4.160	96.725	-6.8	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.150	-0.075	24.0	89.5	
								SEC_PM_17	0.150	0.075	24.0	89.5	
PRI_PM_18	4.160	98.402	-5.3	0.000	0.000	0.000	0.000	Pole MS-3-54	-0.171	-0.085	26.9	89.4	
								SEC_PM_18	0.171	0.085	26.9	89.4	
PRI_PM_19	4.160	93.152	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-37	-0.157	-0.078	26.1	89.4	
								SEC_PM_19	0.157	0.078	26.1	89.4	
PRI_PM_20	4.160	93.899	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-21	-0.143	-0.071	23.6	89.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_PM_20	0.143	0.071	23.6	89.5	
PRI_PM_21	4.160	94.256	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-20	-0.144	-0.072	23.6	89.5	
								SEC_PM_21	0.144	0.072	23.6	89.5	
PRI_PM_22	4.160	97.637	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-6	-0.169	-0.084	26.8	89.4	
								SEC_PM_22	0.169	0.084	26.8	89.4	
PRI_PM_23	4.160	94.345	-6.1	0.000	0.000	0.000	0.000	Pole CS-4-20	-0.160	-0.080	26.3	89.4	
								SEC_PM_23	0.160	0.080	26.3	89.4	
PRI_PM_24	4.160	94.168	-6.1	0.000	0.000	0.000	0.000	Pole CS-4-22	-0.159	-0.080	26.2	89.4	
								SEC_PM_24	0.159	0.080	26.2	89.4	
PRI_PM_25	4.160	98.306	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-22	-0.085	-0.043	13.5	89.4	
								SEC_PM_25	0.085	0.043	13.5	89.4	
PRI_PM_26	4.160	97.461	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-31	-0.084	-0.042	13.4	89.4	
								SEC_PM_26	0.084	0.042	13.4	89.4	
PRI_PM_28	4.160	96.317	-5.9	0.000	0.000	0.000	0.000	PRI_PM_10	-0.165	-0.082	26.6	89.4	
								SEC_PM_28	0.165	0.082	26.6	89.4	
PV-PMS-Pri	24.900	100.005	-3.6	0.000	0.000	0.000	0.000	P_526_2	0.000	0.000	0.0	0.0	
P_526_2	24.900	100.005	-3.6	0.000	0.000	0.000	0.000	PV-PMS-Pri	0.000	-0.001	0.0	0.0	
								BUS_WTG6	0.000	0.001	0.0	0.0	
SEC_6M-1-1	0.208	98.648	-3.6	0.000	0.000	0.022	0.011	Pole 6M-1-1	-0.022	-0.011	70.0	90.0	
SEC_6M-1-2	0.208	98.383	-3.6	0.000	0.000	0.022	0.011	Pole 6M-1-3	-0.022	-0.011	69.9	90.0	
SEC_6M-1-12	0.208	97.269	-3.6	0.000	0.000	0.022	0.011	Pole 6M-1-19	-0.022	-0.011	69.4	90.0	
SEC_6M-E-1	0.208	92.107	-3.4	0.000	0.000	0.032	0.015	Pole 6M-E-5	-0.032	-0.015	106.3	90.0	
SEC_6M-E-2	0.208	93.697	-3.5	0.000	0.000	0.033	0.016	Pole 6M-E-2	-0.033	-0.016	107.3	90.0	
SEC_6M-E-3	0.208	92.658	-3.5	0.000	0.000	0.032	0.016	Pole 6M-E-3	-0.032	-0.016	106.7	90.0	
SEC_6M-E-4	0.208	91.561	-3.4	0.000	0.000	0.031	0.015	Pole 6M-E-6	-0.031	-0.015	105.9	90.0	
SEC_6M-E-5	0.208	90.697	-3.4	0.000	0.000	0.031	0.015	Pole 6M-E-8	-0.031	-0.015	105.4	90.0	
SEC_6M-E-6	0.208	89.127	-3.4	0.000	0.000	0.030	0.015	Pole 6M-E-10	-0.030	-0.015	104.4	90.0	
SEC_6M-E-7	0.208	89.012	-3.4	0.000	0.000	0.030	0.015	Pole 6M-E-11	-0.030	-0.015	104.3	90.0	
SEC_6M-E-8	0.208	88.863	-3.4	0.000	0.000	0.030	0.015	Pole 6M-E-14	-0.030	-0.015	104.2	90.0	
SEC_6M-E-10	0.208	88.695	-3.4	0.000	0.000	0.030	0.014	Pole 6M-E-19	-0.030	-0.014	104.1	90.0	
SEC_6M-E-11	0.208	88.654	-3.4	0.000	0.000	0.030	0.014	Pole 6M-E-20	-0.030	-0.014	104.1	90.0	
SEC_6M-E-13	0.208	93.263	-3.5	0.000	0.000	0.032	0.016	Pole 6M-E-29	-0.032	-0.016	107.1	90.0	
SEC_CS-1-1	0.208	111.384	-6.8	0.000	0.000	0.031	0.015	Pole CS-1-4	-0.031	-0.015	84.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_CS-1-2	0.208	111.389	-6.8	0.000	0.000	0.031	0.015	Pole CS-1-5	-0.031	-0.015	84.5	90.0	
SEC_CS-1-7	0.208	109.809	-7.2	0.000	0.000	0.030	0.014	Pole CS-1-13	-0.030	-0.014	83.7	90.0	
SEC_CS-1-9	0.208	109.528	-7.2	0.000	0.000	0.030	0.014	Pole CS-1-15	-0.030	-0.014	83.6	90.0	
SEC_CS-1-10	0.208	109.580	-7.2	0.000	0.000	0.030	0.014	Pole CS-1-18	-0.030	-0.014	83.6	90.0	
SEC_CS-1-11	0.208	109.570	-7.2	0.000	0.000	0.030	0.014	Pole CS-1-19	-0.030	-0.014	83.6	90.0	
SEC_CS-1-12	0.208	109.585	-7.2	0.000	0.000	0.030	0.014	Pole CS-1-20	-0.030	-0.014	83.6	90.0	
SEC_CS-1-15	0.208	109.283	-7.3	0.000	0.000	0.030	0.014	Pole CS-1-23	-0.030	-0.014	83.4	90.0	
SEC_CS-1-16	0.208	109.152	-7.3	0.000	0.000	0.030	0.014	Pole CS-1-24	-0.030	-0.014	83.4	90.0	
SEC_CS-1-29	0.208	108.388	-7.4	0.000	0.000	0.029	0.014	Pole CS-1-40	-0.029	-0.014	83.0	90.0	
SEC_CS-1-32	0.208	108.419	-7.4	0.000	0.000	0.029	0.014	Pole CS-1-43	-0.029	-0.014	83.0	90.0	
SEC_CS-1-46	0.208	108.659	-7.4	0.000	0.000	0.029	0.014	Pole CS-1-59	-0.029	-0.014	83.1	90.0	
SEC_CS-1-53	0.208	108.400	-7.5	0.000	0.000	0.029	0.014	Pole CS-1-68	-0.029	-0.014	83.0	90.0	
SEC_CS-2-5	0.208	107.980	-6.1	0.000	0.000	0.029	0.014	Pole CS-2-8	-0.029	-0.014	82.8	90.0	
SEC_CS-2-7	0.208	107.958	-6.1	0.000	0.000	0.029	0.014	Pole CS-2-10	-0.029	-0.014	82.8	90.0	
SEC_CS-2-8	0.208	107.947	-6.1	0.000	0.000	0.029	0.014	Pole CS-2-11	-0.029	-0.014	82.8	90.0	
SEC_CS-2-10	0.208	107.693	-6.1	0.000	0.000	0.029	0.014	Pole CS-2-15	-0.029	-0.014	82.6	90.0	
SEC_CS-2-46	0.208	112.635	-6.5	0.000	0.000	0.031	0.015	Pole CS-2-66	-0.031	-0.015	85.2	90.0	
SEC_CS-2-47	0.208	111.486	-6.5	0.000	0.000	0.031	0.015	Pole CS-3-29	-0.031	-0.015	84.6	90.0	
SEC_CS-2-48	0.208	110.802	-6.5	0.000	0.000	0.030	0.015	Pole CS-3-33	-0.030	-0.015	84.2	90.0	
SEC_CS-2-49	0.208	110.062	-6.5	0.000	0.000	0.030	0.014	Pole CS-2-73	-0.030	-0.014	83.8	90.0	
SEC_CS-4-8	0.208	110.961	-6.4	0.000	0.000	0.030	0.015	Pole CS-4-12	-0.030	-0.015	84.3	90.0	
SEC_CS-5-10	0.240	93.808	-3.7	0.000	0.000	0.046	0.022	UG-JUNC-CS-5-8	-0.046	-0.022	131.3	90.0	
SEC_CS-5-12	0.240	94.594	-3.3	0.000	0.000	0.047	0.023	UG-JUNC-CS-5-9	-0.047	-0.023	132.0	90.0	
SEC_HS-2-4	0.208	112.453	-6.2	0.000	0.000	0.031	0.015	Pole HS-2-4	-0.031	-0.015	85.1	90.0	
SEC_HS-2-5	0.208	112.057	-6.2	0.000	0.000	0.031	0.015	Pole HS-2-5	-0.031	-0.015	84.9	90.0	
SEC_HS-2-6	0.208	111.717	-6.2	0.000	0.000	0.031	0.015	Pole HS-2-6	-0.031	-0.015	84.7	90.0	
SEC_HS-2-7	0.208	111.349	-6.2	0.000	0.000	0.031	0.015	Pole HS-2-7	-0.031	-0.015	84.5	90.0	
SEC_HS-2-10	0.208	110.294	-6.2	0.000	0.000	0.030	0.015	Pole HS-2-11	-0.030	-0.015	84.0	90.0	
SEC_HS-2-23	0.208	109.625	-6.2	0.000	0.000	0.030	0.014	Pole HS-2-26	-0.030	-0.014	83.6	90.0	
SEC_HS-2-25	0.208	109.300	-6.2	0.000	0.000	0.030	0.014	Pole HS-2-30	-0.030	-0.014	83.4	90.0	
SEC_HS-2-36	0.208	109.176	-6.2	0.000	0.000	0.030	0.014	Pole HS-2-43	-0.030	-0.014	83.4	90.0	
SEC_HS-2-67	0.208	110.285	-6.2	0.000	0.000	0.030	0.015	Pole HS-2-77	-0.030	-0.015	83.9	90.0	
SEC_HS-3-55	0.208	109.387	-6.2	0.000	0.000	0.030	0.014	Pole HS-3-59	-0.030	-0.014	83.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_HS-3-57	0.208	109.307	-6.2	0.000	0.000	0.030	0.014	Pole HS-3-61	-0.030	-0.014	83.4	90.0	
SEC_HS-3-59	0.208	109.269	-6.2	0.000	0.000	0.030	0.014	Pole HS-3-63	-0.030	-0.014	83.4	90.0	
SEC_HS-4-7	0.208	112.560	-6.5	0.000	0.000	0.032	0.016	Pole HS-4-10	-0.032	-0.016	88.7	90.0	
SEC_HS-4-13	0.208	111.998	-6.4	0.000	0.000	0.032	0.016	Pole HS-4-17	-0.032	-0.016	88.4	90.0	
SEC_HS-4-21	0.208	111.144	-6.4	0.000	0.000	0.032	0.015	Pole HS-4-26	-0.032	-0.015	87.9	90.0	
SEC_HS-4-32	0.208	112.613	-6.5	0.000	0.000	0.032	0.016	Pole HS-4-39	-0.032	-0.016	88.7	90.0	
SEC_HS-4-44	0.208	112.618	-6.5	0.000	0.000	0.032	0.016	Pole HS-4-48	-0.032	-0.016	88.7	90.0	
SEC_MS-1-17	0.208	99.908	-5.9	0.000	0.000	0.004	0.002	Pole MS-1-10	-0.004	-0.002	12.6	90.0	
SEC_MS-2-8	0.208	98.828	-5.7	0.000	0.000	0.012	0.006	Pole MS-2-1	-0.012	-0.006	37.5	90.0	
SEC_MS-2-36	0.208	99.007	-5.6	0.000	0.000	0.012	0.006	Pole MS-2-90	-0.012	-0.006	37.5	90.0	
SEC_MS-2-37	0.208	98.818	-5.7	0.000	0.000	0.012	0.006	Pole MS-2-2	-0.012	-0.006	37.5	90.0	
SEC_MS-2-38	0.208	98.807	-5.7	0.000	0.000	0.012	0.006	Pole MS-2-3	-0.012	-0.006	37.5	90.0	
SEC_MS-2-39	0.208	98.827	-5.6	0.000	0.000	0.012	0.006	Pole MS-2-92	-0.012	-0.006	37.5	90.0	
SEC_MS-2-40	0.208	98.762	-5.6	0.000	0.000	0.012	0.006	Pole MS-2-94	-0.012	-0.006	37.5	90.0	
SEC_MS-2-41	0.208	98.581	-5.6	0.000	0.000	0.012	0.006	Pole MS-2-100	-0.012	-0.006	37.4	90.0	
SEC_MS-3-1	0.208	99.115	-5.5	0.000	0.000	0.012	0.006	Pole MS-3-2	-0.012	-0.006	37.5	90.0	
SEC_MS-3-2	0.208	98.916	-5.5	0.000	0.000	0.012	0.006	Pole MS-3-6	-0.012	-0.006	37.5	90.0	
SEC_MS-3-3	0.208	98.803	-5.5	0.000	0.000	0.012	0.006	Pole MS-3-8	-0.012	-0.006	37.5	90.0	
SEC_MS-3-22	0.208	98.379	-5.5	0.000	0.000	0.012	0.006	Pole MS-3-25	-0.012	-0.006	37.4	90.0	
SEC_MS-3-45	0.208	98.374	-5.5	0.000	0.000	0.018	0.009	Pole MS-4-36	-0.018	-0.009	56.9	90.0	
SEC_MS-3-49	0.208	98.264	-5.5	0.000	0.000	0.018	0.009	Pole MS-3-100	-0.018	-0.009	56.8	90.0	
SEC_MS-3-65	0.208	98.248	-5.5	0.000	0.000	0.018	0.009	Pole MS-3-102	-0.018	-0.009	56.8	90.0	
SEC_MS-3-66	0.208	98.540	-5.5	0.000	0.000	0.018	0.009	Pole MS-4-17	-0.018	-0.009	56.9	90.0	
SEC_MS-3-73	0.208	99.375	-5.5	0.000	0.000	0.012	0.006	Pole MS-4-3	-0.012	-0.006	37.6	90.0	
SEC_MS-3-74	0.208	99.368	-5.5	0.000	0.000	0.012	0.006	Pole MS-4-6	-0.012	-0.006	37.6	90.0	
SEC_MS-3-75	0.208	98.981	-5.5	0.000	0.000	0.012	0.006	Pole MS-4-10	-0.012	-0.006	37.5	90.0	
SEC_MS-3-76	0.208	98.414	-5.5	0.000	0.000	0.018	0.009	Pole MS-4-20	-0.018	-0.009	56.9	90.0	
SEC_MS-5-15	0.208	97.240	-6.0	0.000	0.000	0.012	0.006	Pole MS-5-16	-0.012	-0.006	37.1	90.0	
SEC_MS-5-16	0.208	97.017	-6.0	0.000	0.000	0.018	0.009	Pole MS-5-17	-0.018	-0.009	56.4	90.0	
SEC_MS-5-17	0.208	97.016	-6.0	0.000	0.000	0.018	0.009	Pole MS-5-18	-0.018	-0.009	56.4	90.0	
SEC_MS-5-23	0.208	97.151	-6.0	0.000	0.000	0.012	0.006	Pole MS-5-26	-0.012	-0.006	37.1	90.0	
SEC_MS-5-25	0.208	97.144	-6.0	0.000	0.000	0.012	0.006	Pole MS-5-28	-0.012	-0.006	37.1	90.0	
SEC_MS-5-26	0.208	96.931	-6.1	0.000	0.000	0.018	0.009	Pole MS-5-29	-0.018	-0.009	56.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_MS-5-29	0.208	97.063	-6.0	0.000	0.000	0.012	0.006	Pole MS-5-32	-0.012	-0.006	37.1	90.0	
SEC_MS-5-30	0.208	96.841	-6.1	0.000	0.000	0.018	0.009	Pole MS-5-33	-0.018	-0.009	56.3	90.0	
SEC_MS-5-32	0.208	97.040	-6.0	0.000	0.000	0.012	0.006	Pole MS-5-35	-0.012	-0.006	37.1	90.0	
SEC_MS-5-40	0.208	96.729	-6.1	0.000	0.000	0.012	0.006	Pole MS-5-45	-0.012	-0.006	37.0	90.0	
SEC_MS-5-45	0.208	96.672	-6.1	0.000	0.000	0.012	0.006	Pole MS-5-50	-0.012	-0.006	37.0	90.0	
SEC_MS-5-99	0.208	99.695	-5.9	0.000	0.000	0.012	0.006	Pole MS-5-110	-0.012	-0.006	37.7	90.0	
SEC_MS-7-9	0.208	99.736	-3.6	0.000	0.000	0.031	0.015	Pole MS-7-16	-0.031	-0.015	96.7	90.0	
SEC_MS-8-3	0.208	99.079	-5.6	0.000	0.000	0.024	0.012	Pole MS-8-4	-0.024	-0.012	75.1	90.0	
SEC_MS-8-8	0.208	98.729	-5.7	0.000	0.000	0.036	0.018	Pole MS-8-9	-0.036	-0.018	114.0	90.0	
SEC_MS-9-12	0.208	98.812	-5.7	0.000	0.000	0.024	0.012	Pole MS-9-15	-0.024	-0.012	74.9	90.0	
SEC_MS-9-14	0.208	98.627	-5.7	0.000	0.000	0.024	0.012	Pole MS-9-18	-0.024	-0.012	74.9	90.0	
SEC_MS-9-17	0.208	98.547	-5.8	0.000	0.000	0.024	0.012	Pole MS-9-21	-0.024	-0.012	74.8	90.0	
SEC_MS-9-22	0.208	98.517	-5.8	0.000	0.000	0.024	0.012	Pole MS-9-26	-0.024	-0.012	74.8	90.0	
SEC_MS-9-31	0.208	98.446	-5.8	0.000	0.000	0.024	0.012	Pole MS-9-37	-0.024	-0.012	74.8	90.0	
SEC_MS-9-32	0.208	98.188	-5.9	0.000	0.000	0.036	0.018	Pole MS-9-38	-0.036	-0.018	113.6	90.0	
SEC_MS-9-37	0.208	98.179	-5.8	0.000	0.000	0.024	0.012	Pole MS-9-46	-0.024	-0.012	74.7	90.0	
SEC_MS-9-38	0.208	98.166	-5.8	0.000	0.000	0.024	0.012	Pole MS-9-47	-0.024	-0.012	74.7	90.0	
SEC_MS-9-39	0.208	97.919	-5.9	0.000	0.000	0.036	0.017	Pole MS-9-48	-0.036	-0.017	113.4	90.0	
SEC_MS-9-40	0.208	97.873	-5.9	0.000	0.000	0.036	0.017	Pole MS-9-49	-0.036	-0.017	113.4	90.0	
SEC_MS-9-41	0.208	97.855	-6.0	0.000	0.000	0.036	0.017	Pole MS-9-50	-0.036	-0.017	113.4	90.0	
SEC_MS-9-42	0.208	97.839	-6.0	0.000	0.000	0.036	0.017	Pole MS-9-51	-0.036	-0.017	113.4	90.0	
SEC_MS-9-43	0.208	97.824	-6.0	0.000	0.000	0.036	0.017	Pole MS-9-52	-0.036	-0.017	113.4	90.0	
SEC_MS-9-44	0.208	98.039	-5.9	0.000	0.000	0.024	0.011	Pole MS-9-53	-0.024	-0.011	74.6	90.0	
SEC_PM_1	0.208	97.043	-6.9	0.000	0.000	0.076	0.037	PRI_PM_1	-0.076	-0.037	241.7	90.0	
SEC_PM_1-1	0.208	92.517	-6.7	0.000	0.000	0.071	0.034	PRI_PM_1-1	-0.071	-0.034	235.1	90.0	
SEC_PM_2	0.208	96.201	-6.8	0.000	0.000	0.075	0.036	PRI_PM_2	-0.075	-0.036	240.5	90.0	
SEC_PM_3	0.208	95.498	-6.7	0.000	0.000	0.074	0.036	PRI_PM_3	-0.074	-0.036	239.4	90.0	
SEC_PM_4	0.208	93.782	-7.5	0.000	0.000	0.224	0.109	PRI_PM_4	-0.224	-0.109	737.1	90.0	
SEC_PM_5	0.208	94.897	-6.6	0.000	0.000	0.073	0.036	PRI_PM_5	-0.073	-0.036	238.6	90.0	
SEC_PM_6	0.208	94.334	-6.6	0.000	0.000	0.073	0.035	PRI_PM_6	-0.073	-0.035	237.7	90.0	
SEC_PM_7	0.208	97.896	-6.1	0.000	0.000	0.171	0.083	PRI_PM_7	-0.171	-0.083	540.0	90.0	
SEC_PM_8	0.208	98.366	-6.1	0.000	0.000	0.138	0.067	PRI_PM_8	-0.138	-0.067	433.3	90.0	
SEC_PM_9	0.208	98.406	-6.0	0.000	0.000	0.121	0.059	PRI_PM_9	-0.121	-0.059	379.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_PM_10	0.208	95.231	-6.6	0.000	0.000	0.164	0.079	PRI_PM_10	-0.164	-0.079	531.2	90.0	
SEC_PM_11	0.208	97.498	-6.9	0.000	0.000	0.170	0.082	PRI_PM_11	-0.170	-0.082	538.7	90.0	
SEC_PM_12	0.208	93.977	-7.5	0.000	0.000	0.225	0.109	PRI_PM_12	-0.225	-0.109	738.0	90.0	
SEC_PM_13	0.208	92.890	-7.4	0.000	0.000	0.423	0.205	PRI_PM_13	-0.423	-0.205	1403.2	90.0	
SEC_PM_14	0.208	94.054	-7.1	0.000	0.000	0.322	0.156	PRI_PM_14	-0.322	-0.156	1054.7	90.0	
SEC_PM_15	0.208	95.529	-6.8	0.000	0.000	0.330	0.160	PRI_PM_15	-0.330	-0.160	1064.4	90.0	
SEC_PM_16	0.208	97.284	-7.1	0.000	0.000	0.170	0.082	PRI_PM_16	-0.170	-0.082	538.0	90.0	
SEC_PM_17	0.208	95.796	-7.4	0.000	0.000	0.149	0.072	PRI_PM_17	-0.149	-0.072	479.8	90.0	
SEC_PM_18	0.208	97.351	-6.1	0.000	0.000	0.170	0.082	PRI_PM_18	-0.170	-0.082	538.2	90.0	
SEC_PM_19	0.208	92.132	-6.7	0.000	0.000	0.156	0.075	PRI_PM_19	-0.156	-0.075	521.2	90.0	
SEC_PM_20	0.208	92.985	-6.6	0.000	0.000	0.142	0.069	PRI_PM_20	-0.142	-0.069	471.5	90.0	
SEC_PM_21	0.208	93.339	-6.5	0.000	0.000	0.143	0.069	PRI_PM_21	-0.143	-0.069	472.5	90.0	
SEC_PM_22	0.208	96.591	-6.9	0.000	0.000	0.168	0.081	PRI_PM_22	-0.168	-0.081	535.7	90.0	
SEC_PM_23	0.208	93.318	-6.8	0.000	0.000	0.159	0.077	PRI_PM_23	-0.159	-0.077	525.0	90.0	
SEC_PM_24	0.208	93.142	-6.8	0.000	0.000	0.158	0.077	PRI_PM_24	-0.158	-0.077	524.4	90.0	
SEC_PM_25	0.208	97.256	-7.0	0.000	0.000	0.085	0.041	PRI_PM_25	-0.085	-0.041	269.0	90.0	
SEC_PM_26	0.208	96.416	-7.0	0.000	0.000	0.084	0.041	PRI_PM_26	-0.084	-0.041	267.6	90.0	
SEC_PM_28	0.208	95.208	-6.6	0.000	0.000	0.164	0.079	PRI_PM_28	-0.164	-0.079	531.1	90.0	
SEC_SF-1-26	0.208	95.686	-6.8	0.000	0.000	0.029	0.014	SF-1-11	-0.029	-0.014	94.3	90.0	
SEC_SF-1-47	0.208	95.079	-6.8	0.000	0.000	0.029	0.014	SF-1-14	-0.029	-0.014	93.9	90.0	
SEC_SF-1-49	0.208	96.051	-6.9	0.000	0.000	0.029	0.014	SF-1-28	-0.029	-0.014	94.5	90.0	
SEC_SF-1-51	0.208	95.767	-6.9	0.000	0.000	0.029	0.014	SF-1-29	-0.029	-0.014	94.3	90.0	
SEC_SF-1-55	0.208	95.181	-6.9	0.000	0.000	0.029	0.014	SF-1-31	-0.029	-0.014	94.0	90.0	
SEC_SF-1-57	0.208	94.946	-6.8	0.000	0.000	0.029	0.014	SF-1-32	-0.029	-0.014	93.9	90.0	
SEC_SF-1-59	0.208	94.435	-6.8	0.000	0.000	0.029	0.014	SF-1-18	-0.029	-0.014	93.6	90.0	
SEC_SF-1-61	0.208	94.118	-6.8	0.000	0.000	0.028	0.014	SF-1-27	-0.028	-0.014	93.4	90.0	
SEC_SF-1-63	0.208	93.505	-6.8	0.000	0.000	0.028	0.014	SF-1-39	-0.028	-0.014	93.0	90.0	
SEC_SF-1-65	0.208	94.255	-6.9	0.000	0.000	0.029	0.014	SF-1-62	-0.029	-0.014	93.5	90.0	
SEC_SF-1-67	0.208	93.161	-6.8	0.000	0.000	0.028	0.014	SF-1-50	-0.028	-0.014	92.8	90.0	
SEC_SF-1-69	0.208	94.651	-6.9	0.000	0.000	0.029	0.014	SF-1-58	-0.029	-0.014	93.7	90.0	
SEC_SF-1-71	0.208	95.175	-6.9	0.000	0.000	0.029	0.014	SF-1-56	-0.029	-0.014	94.0	90.0	
SEC_SF-1-73	0.208	95.483	-6.9	0.000	0.000	0.029	0.014	SF-1-54	-0.029	-0.014	94.2	90.0	
SEC_SF-1-75	0.208	95.718	-6.9	0.000	0.000	0.029	0.014	SF-1-55	-0.029	-0.014	94.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_SF-2-7	0.208	97.928	-6.2	0.000	0.000	0.030	0.015	SF-2-12	-0.030	-0.015	95.6	90.0	
SEC_SF-2-11	0.208	97.878	-6.2	0.000	0.000	0.030	0.015	SF-2-25	-0.030	-0.015	95.6	90.0	
SEC_SF-2-15	0.208	97.762	-6.2	0.000	0.000	0.030	0.015	SF-2-17	-0.030	-0.015	95.5	90.0	
SEC_SF-2-18	0.208	97.745	-6.2	0.000	0.000	0.030	0.015	SF-2-20	-0.030	-0.015	95.5	90.0	
SEC_SF-2-19	0.208	97.943	-6.2	0.000	0.000	0.030	0.015	SF-2-22	-0.030	-0.015	95.6	90.0	
SEC_SF-2-20	0.208	97.934	-6.2	0.000	0.000	0.030	0.015	SF-2-23	-0.030	-0.015	95.6	90.0	
SEC_SF-4-01	0.208	98.857	-6.2	0.000	0.000	0.031	0.015	SF-2-46	-0.031	-0.015	96.2	90.0	
SEC_SF-4-2	0.208	99.433	-6.0	0.000	0.000	0.014	0.007	SF-2-47	-0.014	-0.007	44.2	90.0	
SEC_SF-4-3	0.208	99.430	-6.0	0.000	0.000	0.014	0.007	SF-2-48	-0.014	-0.007	44.2	90.0	
SEC_SUB_FDR_XFMR#25-49	0.208	95.397	-6.7	0.000	0.000	0.015	0.007	SF-1-57	-0.015	-0.007	47.9	90.0	
SF-1-1	4.160	99.263	-6.0	0.000	0.000	0.013	0.006	BUS_SAF_4kV	-2.171	-1.105	340.6	89.1	
								SF-1-2	2.158	1.099	338.6	89.1	
SF-1-2	4.160	98.578	-6.2	0.000	0.000	0.000	0.000	SF-1-4	0.038	0.019	6.0	89.6	
								SF-1-1	-2.146	-1.085	338.6	89.2	
								SF-1-3	2.108	1.066	332.5	89.2	
SF-1-3	4.160	98.261	-6.2	0.000	0.000	0.013	0.006	SF-1-2	-2.102	-1.060	332.5	89.3	
								SF-1-7	2.089	1.054	330.5	89.3	
SF-1-4	4.160	98.558	-6.2	0.000	0.000	0.013	0.006	SF-1-2	-0.038	-0.019	6.0	89.6	
								SF-1-5	0.026	0.013	4.0	89.6	
SF-1-5	4.160	98.540	-6.2	0.000	0.000	0.013	0.006	SF-1-4	-0.026	-0.013	4.0	89.6	
								SF-1-6	0.013	0.006	2.0	89.6	
SF-1-6	4.160	98.535	-6.2	0.000	0.000	0.013	0.006	SF-1-5	-0.013	-0.006	2.0	89.6	
SF-1-7	4.160	97.594	-6.4	0.000	0.000	0.000	0.000	SF-1-8	0.553	0.275	87.8	89.5	
								SF-1-3	-2.078	-1.041	330.5	89.4	
								SF-1-26	1.525	0.766	242.7	89.4	
SF-1-8	4.160	97.333	-6.4	0.000	0.000	0.025	0.012	SF-1-7	-0.552	-0.274	87.8	89.5	
								SF-1-9	0.527	0.262	83.9	89.5	
SF-1-9	4.160	97.202	-6.4	0.000	0.000	0.012	0.006	SF-1-8	-0.526	-0.262	83.9	89.5	
								SF-1-10	0.513	0.255	81.9	89.5	
SF-1-10	4.160	97.037	-6.4	0.000	0.000	0.012	0.006	SF-1-9	-0.513	-0.255	81.9	89.5	
								SF-1-11	0.500	0.249	79.9	89.5	
SF-1-11	4.160	96.744	-6.4	0.000	0.000	0.000	0.000	SF-1-10	-0.499	-0.248	79.9	89.5	
								SF-1-12	0.469	0.234	75.2	89.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_SF-1-26	0.029	0.015	4.7	89.7	
SF-1-12	4.160	96.418	-6.4	0.000	0.000	0.012	0.006	SF-1-11	-0.467	-0.233	75.2	89.5	
								SF-1-13	0.455	0.227	73.2	89.5	
SF-1-13	4.160	96.316	-6.4	0.000	0.000	0.012	0.006	SF-1-12	-0.455	-0.226	73.2	89.5	
								SF-1-14	0.442	0.220	71.2	89.5	
SF-1-14	4.160	96.133	-6.4	0.000	0.000	0.000	0.000	SF-1-13	-0.441	-0.220	71.2	89.5	
								SF-1-15	0.412	0.206	66.5	89.5	
								SEC_SF-1-47	0.029	0.014	4.7	89.7	
SF-1-15	4.160	95.864	-6.4	0.000	0.000	0.012	0.006	SF-1-14	-0.411	-0.205	66.5	89.5	
								SF-1-16	0.399	0.199	64.5	89.5	
SF-1-16	4.160	95.428	-6.4	0.000	0.000	0.012	0.006	SF-1-15	-0.397	-0.198	64.5	89.5	
								SF-1-17	0.385	0.192	62.6	89.5	
SF-1-17	4.160	95.131	-6.4	0.000	0.000	0.000	0.000	PRI_PM_14	0.324	0.162	52.8	89.4	
								SF-1-16	-0.384	-0.192	62.6	89.5	
								SF-1-19	0.060	0.030	9.8	89.6	
SF-1-18	4.160	95.484	-6.4	0.000	0.000	0.000	0.000	SF-1-34	-0.643	-0.322	104.5	89.4	
								SF-1-25	0.614	0.308	99.8	89.4	
								SEC_SF-1-59	0.029	0.014	4.7	89.7	
SF-1-19	4.160	95.102	-6.4	0.000	0.000	0.000	0.000	SF-1-17	-0.060	-0.030	9.8	89.6	
								SF-1-20	0.036	0.018	5.9	89.6	
								SF-1-23	0.024	0.012	3.9	89.6	
SF-1-20	4.160	95.095	-6.4	0.000	0.000	0.012	0.006	SF-1-21	0.024	0.012	3.9	89.6	
								SF-1-19	-0.036	-0.018	5.9	89.6	
SF-1-21	4.160	95.089	-6.4	0.000	0.000	0.012	0.006	SF-1-20	-0.024	-0.012	3.9	89.6	
								SF-1-22	0.012	0.006	2.0	89.6	
SF-1-22	4.160	95.085	-6.4	0.000	0.000	0.012	0.006	SF-1-21	-0.012	-0.006	2.0	89.6	
SF-1-23	4.160	95.066	-6.4	0.000	0.000	0.012	0.006	SF-1-19	-0.024	-0.012	3.9	89.6	
								SF-1-24	0.012	0.006	2.0	89.6	
SF-1-24	4.160	95.064	-6.4	0.000	0.000	0.012	0.006	SF-1-23	-0.012	-0.006	2.0	89.6	
SF-1-25	4.160	95.329	-6.4	0.000	0.000	0.012	0.006	SF-1-18	-0.613	-0.307	99.8	89.4	
								SF-1-27	0.601	0.301	97.8	89.4	
SF-1-26	4.160	97.363	-6.5	0.000	0.000	0.013	0.006	SF-1-28	0.811	0.405	129.2	89.5	
								SF-1-53	0.698	0.351	111.4	89.3	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-1-7	-1.522	-0.763	242.7	89.4	
SF-1-27	4.160	95.165	-6.4	0.000	0.000	0.000	0.000	SF-1-25	-0.600	-0.301	97.8	89.4	
								SF-1-35	0.571	0.287	93.2	89.4	
								SEC_SF-1-61	0.029	0.014	4.7	89.7	
SF-1-28	4.160	97.111	-6.4	0.000	0.000	0.000	0.000	SF-1-26	-0.809	-0.404	129.2	89.5	
								SF-1-29	0.779	0.389	124.5	89.5	
								SEC_SF-1-49	0.030	0.015	4.7	89.7	
SF-1-29	4.160	96.825	-6.4	0.000	0.000	0.000	0.000	SF-1-28	-0.777	-0.388	124.5	89.5	
								SF-1-30	0.748	0.374	119.8	89.4	
								SEC_SF-1-51	0.030	0.015	4.7	89.7	
SF-1-30	4.160	96.634	-6.4	0.000	0.000	0.012	0.006	SF-1-29	-0.746	-0.373	119.8	89.4	
								SF-1-31	0.734	0.367	117.8	89.4	
SF-1-31	4.160	96.235	-6.4	0.000	0.000	0.000	0.000	SF-1-30	-0.731	-0.366	117.8	89.4	
								SF-1-33	0.701	0.351	113.1	89.4	
								SEC_SF-1-55	0.029	0.014	4.7	89.7	
SF-1-32	4.160	95.999	-6.4	0.000	0.000	0.000	0.000	SF-1-33	-0.687	-0.344	111.1	89.4	
								SF-1-34	0.658	0.330	106.5	89.4	
								SEC_SF-1-57	0.029	0.014	4.7	89.7	
SF-1-33	4.160	96.077	-6.4	0.000	0.000	0.012	0.006	SF-1-32	0.688	0.345	111.1	89.4	
								SF-1-31	-0.700	-0.351	113.1	89.4	
SF-1-34	4.160	95.661	-6.4	0.000	0.000	0.012	0.006	SF-1-18	0.644	0.323	104.5	89.4	
								SF-1-32	-0.656	-0.329	106.5	89.4	
SF-1-35	4.160	95.033	-6.4	0.000	0.000	0.012	0.006	SF-1-27	-0.570	-0.286	93.2	89.4	
								SF-1-36	0.558	0.280	91.2	89.3	
SF-1-36	4.160	94.884	-6.4	0.000	0.000	0.012	0.006	SF-1-35	-0.557	-0.280	91.2	89.3	
								SF-1-37	0.545	0.274	89.3	89.3	
SF-1-37	4.160	94.716	-6.4	0.000	0.000	0.012	0.006	SF-1-36	-0.544	-0.274	89.3	89.3	
								SF-1-38	0.532	0.268	87.3	89.3	
SF-1-38	4.160	94.553	-6.4	0.000	0.000	0.000	0.000	SF-1-37	-0.531	-0.267	87.3	89.3	
								SF-1-39	0.028	0.014	4.7	89.7	
								SF-1-40	0.503	0.253	82.6	89.3	
SF-1-39	4.160	94.548	-6.4	0.000	0.000	0.000	0.000	SF-1-38	-0.028	-0.014	4.7	89.7	
								SEC_SF-1-63	0.028	0.014	4.7	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-40	4.160	94.350	-6.4	0.000	0.000	0.000	0.000	PRI_PM_13	0.426	0.215	70.2	89.3	
								SF-1-38	-0.502	-0.253	82.6	89.3	
								SF-1-42	0.076	0.037	12.4	89.6	
SF-1-42	4.160	94.298	-6.4	0.000	0.000	0.000	0.000	SF-1-40	-0.076	-0.037	12.4	89.6	
								SF-1-44	0.076	0.037	12.4	89.6	
SF-1-44	4.160	94.244	-6.4	0.000	0.000	0.012	0.006	SF-1-42	-0.076	-0.037	12.4	89.6	
								SF-1-45	0.064	0.032	10.5	89.6	
SF-1-45	4.160	94.221	-6.4	0.000	0.000	0.000	0.000	SF-1-44	-0.064	-0.032	10.5	89.6	
								SF-1-47	0.064	0.032	10.5	89.6	
								L-SUB-FDR-EQ#16-1-38~	0.000	0.000	0.0	0.0	
SF-1-47	4.160	94.210	-6.4	0.000	0.000	0.012	0.006	SF-1-45	-0.064	-0.032	10.5	89.6	
								SF-1-50	0.052	0.026	8.5	89.6	
SF-1-50	4.160	94.203	-6.4	0.000	0.000	0.000	0.000	SF-1-47	-0.052	-0.026	8.5	89.6	
								SF-1-52	0.024	0.012	3.9	89.6	
								SEC_SF-1-67	0.028	0.014	4.6	89.7	
SF-1-52	4.160	94.196	-6.4	0.000	0.000	0.024	0.012	SF-1-50	-0.024	-0.012	3.9	89.6	
SF-1-53	4.160	97.043	-6.5	0.000	0.000	0.000	0.000	SF-1-55	0.697	0.349	111.4	89.4	
								SF-1-26	-0.697	-0.349	111.4	89.4	
SF-1-54	4.160	96.539	-6.5	0.000	0.000	0.000	0.000	SF-1-55	-0.663	-0.333	106.7	89.4	
								SF-1-56	0.634	0.319	102.0	89.4	
								SEC_SF-1-73	0.029	0.014	4.7	89.7	
SF-1-55	4.160	96.775	-6.5	0.000	0.000	0.000	0.000	SF-1-53	-0.695	-0.348	111.4	89.4	
								SF-1-54	0.665	0.334	106.7	89.4	
								SEC_SF-1-75	0.029	0.015	4.7	89.7	
SF-1-56	4.160	96.229	-6.5	0.000	0.000	0.000	0.000	SF-1-54	-0.632	-0.318	102.0	89.4	
								SF-1-57	0.603	0.303	97.3	89.3	
								SEC_SF-1-71	0.029	0.014	4.7	89.7	
SF-1-57	4.160	95.933	-6.5	0.000	0.000	0.012	0.006	SF-1-56	-0.601	-0.302	97.3	89.3	
								SF-1-58	0.574	0.289	92.9	89.3	
								SEC_SUB_FDR_XFMR#25-49	0.015	0.007	2.4	89.8	
SF-1-58	4.160	95.702	-6.5	0.000	0.000	0.000	0.000	SF-1-57	-0.572	-0.288	92.9	89.3	
								SF-1-59	0.543	0.274	88.3	89.3	
								SEC_SF-1-69	0.029	0.014	4.7	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-59	4.160	95.484	-6.5	0.000	0.000	0.000	0.000	PRI_PM_12	0.227	0.115	36.9	89.2	
								SF-1-58	-0.542	-0.273	88.3	89.3	
								SF-1-60	0.316	0.159	51.3	89.3	
SF-1-60	4.160	95.357	-6.5	0.000	0.000	0.000	0.000	PRI_PM_4	0.226	0.114	36.9	89.2	
								SF-1-59	-0.315	-0.159	51.3	89.3	
								SF-1-61	0.089	0.044	14.5	89.6	
SF-1-61	4.160	95.325	-6.5	0.000	0.000	0.012	0.006	SF-1-60	-0.089	-0.044	14.5	89.6	
								SF-1-62	0.077	0.038	12.5	89.6	
SF-1-62	4.160	95.304	-6.5	0.000	0.000	0.000	0.000	SF-1-61	-0.077	-0.038	12.5	89.6	
								SF-1-63	0.048	0.024	7.9	89.6	
								SEC_SF-1-65	0.029	0.014	4.7	89.7	
SF-1-63	4.160	95.283	-6.5	0.000	0.000	0.012	0.006	SF-1-62	-0.048	-0.024	7.9	89.6	
								SF-1-64	0.036	0.018	5.9	89.6	
SF-1-64	4.160	95.270	-6.5	0.000	0.000	0.012	0.006	SF-1-63	-0.036	-0.018	5.9	89.6	
								SF-1-65	0.024	0.012	3.9	89.6	
SF-1-65	4.160	95.260	-6.5	0.000	0.000	0.012	0.006	SF-1-64	-0.024	-0.012	3.9	89.6	
								SF-1-66	0.012	0.006	2.0	89.6	
SF-1-66	4.160	95.257	-6.5	0.000	0.000	0.012	0.006	SF-1-65	-0.012	-0.006	2.0	89.6	
SF-2-1	4.160	100.048	-5.8	0.000	0.000	0.013	0.006	BUS_SAF_4kV	-0.394	-0.195	61.0	89.7	
								SF-2-2	0.381	0.188	58.9	89.7	
SF-2-2	4.160	99.922	-5.8	0.000	0.000	0.000	0.000	SF-2-1	-0.381	-0.188	58.9	89.7	
								SF-2-3	0.013	0.006	2.0	89.6	
								SF-2-5	0.367	0.181	56.9	89.7	
SF-2-3	4.160	99.919	-5.8	0.000	0.000	0.013	0.006	SF-2-2	-0.013	-0.006	2.0	89.6	
								SF-2-4	0.000	0.000	0.0	0.0	
SF-2-4	4.160	99.919	-5.8	0.000	0.000	0.000	0.000	SF-2-3	0.000	0.000	0.0	0.0	
SF-2-5	4.160	99.860	-5.8	0.000	0.000	0.000	0.000	SF-2-2	-0.367	-0.181	56.9	89.7	
								SF-2-7	0.026	0.013	4.1	89.6	
								SF-2-9	0.013	0.006	2.0	89.6	
								SF-2-10	0.328	0.162	50.8	89.7	
SF-2-7	4.160	99.857	-5.8	0.000	0.000	0.013	0.006	SF-2-5	-0.026	-0.013	4.1	89.6	
								SF-2-8	0.013	0.006	2.0	89.6	
SF-2-8	4.160	99.854	-5.8	0.000	0.000	0.013	0.006	SF-2-7	-0.013	-0.006	2.0	89.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-2-9	4.160	99.855	-5.8	0.000	0.000	0.013	0.006	SF-2-5	-0.013	-0.006	2.0	89.6	
SF-2-10	4.160	99.434	-5.8	0.000	0.000	0.013	0.006	SF-2-5	-0.327	-0.161	50.8	89.7	
								SF-2-11	0.314	0.155	48.8	89.7	
SF-2-11	4.160	99.031	-5.8	0.000	0.000	0.000	0.000	SF-2-10	-0.312	-0.154	48.8	89.7	
								SF-2-12	0.182	0.090	28.4	89.7	
								SF-2-14	0.069	0.034	10.8	89.7	
								SF-2-22	0.061	0.030	9.6	89.7	
SF-2-12	4.160	99.000	-5.8	0.000	0.000	0.000	0.000	SF-2-11	-0.182	-0.090	28.4	89.7	
								SF-2-13	0.151	0.075	23.7	89.6	
								SEC_SF-2-7	0.031	0.015	4.8	89.7	
SF-2-13	4.160	98.976	-5.8	0.000	0.000	0.026	0.013	SF-2-12	-0.151	-0.075	23.7	89.6	
								SF-2-15	0.125	0.062	19.6	89.7	
SF-2-14	4.160	98.999	-5.8	0.000	0.000	0.013	0.006	SF-2-11	-0.069	-0.034	10.8	89.7	
								SF-2-26	0.056	0.028	8.8	89.7	
SF-2-15	4.160	98.908	-5.8	0.000	0.000	0.026	0.013	SF-2-13	-0.125	-0.062	19.6	89.6	
								SF-2-16	0.100	0.049	15.6	89.7	
SF-2-16	4.160	98.852	-5.8	0.000	0.000	0.013	0.006	SF-2-15	-0.100	-0.049	15.6	89.7	
								SF-2-17	0.087	0.043	13.6	89.7	
SF-2-17	4.160	98.834	-5.8	0.000	0.000	0.000	0.000	SF-2-16	-0.087	-0.043	13.6	89.7	
								SF-2-18	0.056	0.028	8.8	89.7	
								SEC_SF-2-15	0.030	0.015	4.8	89.7	
SF-2-18	4.160	98.831	-5.8	0.000	0.000	0.013	0.006	SF-2-17	-0.056	-0.028	8.8	89.7	
								SF-2-19	0.043	0.021	6.8	89.7	
SF-2-19	4.160	98.825	-5.8	0.000	0.000	0.013	0.006	SF-2-18	-0.043	-0.021	6.8	89.7	
								SF-2-20	0.030	0.015	4.8	89.7	
SF-2-20	4.160	98.816	-5.8	0.000	0.000	0.000	0.000	SF-2-19	-0.030	-0.015	4.8	89.7	
								SF-2-21	0.000	0.000	0.0	0.0	
								SEC_SF-2-18	0.030	0.015	4.8	89.7	
SF-2-21	4.160	98.816	-5.8	0.000	0.000	0.000	0.000	SF-2-20	0.000	0.000	0.0	0.0	
SF-2-22	4.160	99.015	-5.8	0.000	0.000	0.000	0.000	SF-2-11	-0.061	-0.030	9.6	89.7	
								SF-2-23	0.031	0.015	4.8	89.7	
								SEC_SF-2-19	0.031	0.015	4.8	89.7	
SF-2-23	4.160	99.007	-5.8	0.000	0.000	0.000	0.000	SF-2-22	-0.031	-0.015	4.8	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-2-24	0.000	0.000	0.0	0.0	
								SEC_SF-2-20	0.031	0.015	4.8	89.7	
SF-2-24	4.160	99.007	-5.8	0.000	0.000	0.000	0.000	SF-2-23	0.000	0.000	0.0	0.0	
SF-2-25	4.160	98.950	-5.8	0.000	0.000	0.000	0.000	SF-2-26	-0.056	-0.028	8.8	89.7	
								SF-2-27	0.026	0.013	4.0	89.6	
								SEC_SF-2-11	0.031	0.015	4.8	89.7	
SF-2-26	4.160	98.986	-5.8	0.000	0.000	0.000	0.000	SF-2-25	0.056	0.028	8.8	89.7	
								SF-2-14	-0.056	-0.028	8.8	89.7	
SF-2-27	4.160	98.916	-5.8	0.000	0.000	0.013	0.006	SF-2-25	-0.026	-0.013	4.0	89.6	
								SF-2-28	0.013	0.006	2.0	89.6	
SF-2-28	4.160	98.909	-5.8	0.000	0.000	0.013	0.006	SF-2-27	-0.013	-0.006	2.0	89.6	
								SF-2-29	0.000	0.000	0.0	0.0	
SF-2-29	4.160	98.909	-5.8	0.000	0.000	0.000	0.000	SF-2-28	0.000	0.000	0.0	0.0	
SF-2-30	4.160	100.170	-5.8	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.301	-0.147	46.3	89.9	
								Pole MS-5-108	0.241	0.117	37.1	89.9	
								SF-2-33	0.060	0.029	9.2	89.8	
SF-2-33	4.160	100.062	-5.8	0.000	0.000	0.000	0.000	SF-2-37	0.060	0.029	9.2	89.8	
								SF-2-30	-0.060	-0.029	9.2	89.8	
								Line SF-2-45~	0.000	0.000	0.0	0.0	
SF-2-37	4.160	100.025	-5.8	0.000	0.000	0.000	0.000	SF-2-33	-0.060	-0.029	9.2	89.8	
								SF-2-42	0.060	0.029	9.2	89.8	
								Line SF-2-37~	0.000	0.000	0.0	0.0	
SF-2-42	4.160	99.984	-5.8	0.000	0.000	0.000	0.000	SF-2-37	-0.060	-0.029	9.2	89.8	
								SF-2-44	0.060	0.029	9.2	89.8	
								Line SF-2-49~	0.000	0.000	0.0	0.0	
SF-2-44	4.160	99.943	-5.8	0.000	0.000	0.000	0.000	SF-2-42	-0.060	-0.029	9.2	89.8	
								SF-2-46	0.060	0.029	9.2	89.8	
								Line SF-2-53~	0.000	0.000	0.0	0.0	
SF-2-46	4.160	99.936	-5.8	0.000	0.000	0.000	0.000	SF-2-44	-0.060	-0.029	9.2	89.8	
								SF-2-47	0.029	0.014	4.4	89.9	
								SEC_SF-4-01	0.031	0.015	4.8	89.7	
SF-2-47	4.160	99.928	-5.8	0.000	0.000	0.000	0.000	SF-2-46	-0.029	-0.014	4.4	89.9	
								SF-2-48	0.014	0.007	2.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_SF-4-2	0.014	0.007	2.2	89.9	
SF-2-48	4.160	99.925	-5.8	0.000	0.000	0.000	0.000	SF-2-47	-0.014	-0.007	2.2	89.9	
								SF-2-50	0.000	0.000	0.0	0.0	
								SEC_SF-4-3	0.014	0.007	2.2	89.9	
SF-2-50	4.160	99.925	-5.8	0.000	0.000	0.000	0.000	SF-2-48	0.000	0.000	0.0	0.0	
								Line SF-2-61~	0.000	0.000	0.0	0.0	
UG-JUNC-CS-5-8	24.900	94.791	-3.2	0.000	0.000	0.000	0.000	Pole CS-5-20	-0.046	-0.023	1.3	89.6	
								SEC_CS-5-10	0.046	0.023	1.3	89.6	
UG-JUNC-CS-5-9	24.900	94.791	-3.2	0.000	0.000	0.000	0.000	Pole CS-5-19	-0.047	-0.023	1.3	89.9	
								SEC_CS-5-12	0.047	0.023	1.3	89.9	
UG_JUNC-CS-1	4.160	98.104	-6.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	1.335	0.653	210.3	89.8	
								Pole CS-2-5	-1.412	-0.691	222.4	89.8	
								PRI_PM_1	0.076	0.038	12.1	89.5	
UG_JUNC-CS-2	4.160	97.257	-6.1	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-1.323	-0.651	210.3	89.7	
								UG_JUNC-CS-3	1.247	0.613	198.3	89.7	
								PRI_PM_2	0.075	0.038	12.0	89.5	
UG_JUNC-CS-3	4.160	96.550	-6.0	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-1.237	-0.611	198.3	89.7	
								PRI_PM_3	0.075	0.037	12.0	89.5	
								UG_JUNC-CS-5	1.163	0.573	186.3	89.7	
UG_JUNC-CS-5	4.160	95.945	-5.9	0.000	0.000	0.000	0.000	PRI_PM_5	0.074	0.037	11.9	89.5	
								UG_JUNC-CS-3	-1.154	-0.572	186.3	89.6	
								UG_JUNC-CS-6	1.081	0.535	174.4	89.6	
UG_JUNC-CS-6	4.160	95.379	-5.8	0.000	0.000	0.000	0.000	PRI_PM_6	0.073	0.037	11.9	89.5	
								UG_JUNC-CS-5	-1.073	-0.533	174.4	89.6	
								Pole CS-2-7	1.000	0.497	162.5	89.6	
UG_JUNC-CS-7	4.160	94.379	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-17	0.000	0.000	0.0	0.0	
								C_SUB-FDR-EQ#7-3-8~	0.000	0.000	0.0	0.0	
C_SUB-FDR-EQ#7-3-8~	4.160	94.379	-5.9	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
LINE 6M-26~	4.160	97.986	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-23	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-173~	4.160	95.294	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-57	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-84~	4.160	96.407	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-10	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-86~	4.160	94.893	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-54	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-237~	4.160	98.695	-6.3	0.000	0.000	0.000	0.000	Pole CS-2-66	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
L-SUB-FDR-EQ#18-1-246~	4.160	95.327	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-36	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-276~	4.160	95.521	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-74	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-283~	4.160	99.153	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-4	0.000	0.000	0.0	0.0	
LINE MS-4-53~	4.160	97.070	-5.3	0.000	0.000	0.000	0.000	Pole MS-4-52	0.000	0.000	0.0	0.0	
Line MS-5-79~	4.160	96.725	-6.1	0.000	0.000	0.000	0.000	Pole MS-5-76	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-97~	4.160	98.728	-5.5	0.000	0.000	0.000	0.000	Pole MS-2-122	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-173~	4.160	99.218	-5.6	0.000	0.000	0.000	0.000	Pole MS-2-3	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-13~	4.160	99.253	-5.6	0.000	0.000	0.000	0.000	Pole MS-2-180	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-133~	4.160	98.789	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-25	0.000	0.000	0.0	0.0	
LINE MS-3-11~	4.160	98.723	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-43	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-177~	4.160	98.905	-5.4	0.000	0.000	0.000	0.000	Pole MS-3-70	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-1-38~	4.160	94.221	-6.4	0.000	0.000	0.000	0.000	SF-1-45	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-12~	4.160	100.047	-5.8	0.000	0.000	0.000	0.000	Pole MS-1-19	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-9~	4.160	100.150	-5.8	0.000	0.000	0.000	0.000	Pole MS-1-1	0.000	0.000	0.0	0.0	
Line MS-5-129~	4.160	99.683	-5.8	0.000	0.000	0.000	0.000	Pole MS-5-125	0.000	0.000	0.0	0.0	
Line SF-2-37~	4.160	100.025	-5.8	0.000	0.000	0.000	0.000	SF-2-37	0.000	0.000	0.0	0.0	
Line SF-2-45~	4.160	100.062	-5.8	0.000	0.000	0.000	0.000	SF-2-33	0.000	0.000	0.0	0.0	
Line SF-2-49~	4.160	99.984	-5.8	0.000	0.000	0.000	0.000	SF-2-42	0.000	0.000	0.0	0.0	
Line SF-2-53~	4.160	99.943	-5.8	0.000	0.000	0.000	0.000	SF-2-44	0.000	0.000	0.0	0.0	
Line SF-2-61~	4.160	99.925	-5.8	0.000	0.000	0.000	0.000	SF-2-50	0.000	0.000	0.0	0.0	
HS-4-33~	4.160	98.719	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-47	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-90~	4.160	96.640	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-67	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-96~	4.160	96.650	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-33	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-278~	4.160	95.688	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-49	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-301~	4.160	96.665	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-66	0.000	0.000	0.0	0.0	
L-25-LAM-L1-02~	24.900	99.978	-2.1	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.000	0.000	0.0	0.0	
L-25-LLP-SW-03~	24.900	99.671	-3.6	0.000	0.000	0.000	0.000	BUS_SAF_25kV	0.000	0.000	0.0	0.0	
L-25-XFMR-03~	24.900	100.084	-3.5	0.000	0.000	0.000	0.000	BUS_25kV_03	0.000	0.000	0.0	0.0	
Line51~	69.000	99.523	-0.2	0.000	0.000	0.000	0.000	BUS_LLP_69kV_02	0.000	0.000	0.0	0.0	
L-25-LLP-E-06~	24.900	95.899	-4.2	0.000	0.000	0.000	0.000	BUS_25kV_E-04	0.000	0.000	0.0	0.0	
Line15~	24.900	99.731	-3.6	0.000	0.000	0.000	0.000	BUS_25kV_W-02	0.000	0.000	0.0	0.0	
L-25-LLP-W-03~	24.900	98.901	-3.7	0.000	0.000	0.000	0.000	BUS_25kV_W-03	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
L_25_WTG_2~	24.900	100.021	-3.6	0.000	0.000	0.000	0.000	BUS_WTG6	0.000	0.000	0.0	0.0	

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)

# Indicates a bus with a load mismatch of more than 0.1 MVA

LOAD_FLOW_REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Bus1	4.160	99.831	-2.8	0.000	0.000	0.000	0.000	BUS_5KV_LLP_2	0.000	0.000	0.0	0.0	
Bus2	4.160	95.596	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.000	0.000	0.0	0.0	
BUS_5KV-LLP_01	4.160	99.869	-2.8	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	-0.882	-0.436	136.7	89.7	
								BUS_5KV_LLP_02	0.082	0.044	12.9	88.1	
								Pole MS-9-1	0.284	0.139	43.9	89.8	
								Pole MS-4-1	0.144	0.069	22.1	90.1	
								Pole MS-4-31	0.373	0.184	57.8	89.7	
BUS_5KV_LLP_01	4.160	99.835	-2.8	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.294	-0.165	46.9	87.3	
								BUS_5KV_LLP_PLTLDCTR	0.161	0.099	26.3	85.1	
								Pole MS-8-1	0.133	0.065	20.6	89.8	
BUS_5KV_LLP_2	4.160	99.831	-2.8	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.180	-0.088	27.8	89.9	
								Bus1	0.000	0.000	0.0	0.0	
								Pole MS-2-182	0.180	0.088	27.8	89.9	
BUS_5KV_LLP_02	4.160	99.857	-2.8	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	0.294	0.164	46.8	87.4	
								BUS_5KV_XFMR_02	-1.045	-0.524	162.5	89.4	
								BUS_5KV-LLP_01	-0.082	-0.044	12.9	87.9	
								BUS_5KV_LLP_2	0.180	0.087	27.8	90.0	
								Pole CS-1-90	0.197	0.095	30.3	90.1	
								Pole MS-3-87	0.456	0.222	70.6	89.9	
BUS_5KV_LLP_PLTLDCTR	4.160	99.809	-2.8	0.000	0.000	0.161	0.100	BUS_5KV_LLP_01	-0.161	-0.100	26.3	85.0	
BUS_5KV_XFMR_02	4.160	99.933	-2.7	0.000	0.000	0.000	0.000	BUS_5KV-LLP_01	0.883	0.435	136.7	89.7	
								BUS_5KV_LLP_02	1.046	0.524	162.5	89.4	
								BUS_25kV_SUB_02	-1.929	-0.959	299.1	89.5	1.250
BUS_5_NEOPLAN	4.160	99.222	-2.8	0.000	0.000	0.195	0.095	Pole CS-1-90	-0.195	-0.095	30.4	90.0	
BUS_6M_5kV	4.160	99.893	-1.3	0.000	0.000	0.000	0.000	BUS_6M_SEC	-0.234	-0.112	36.1	90.2	
								Pole 6M-1-1	0.072	0.035	11.1	90.1	
								Pole 6M-E-1	0.163	0.078	25.0	90.2	
BUS_6M_25kV	24.900	99.793	-0.8	0.000	0.000	0.000	0.000	BUS_L1_01	-0.235	-0.114	6.1	89.9	
								L-25-LAM-L1-02~	0.000	0.000	0.0	0.0	
								BUS_6M_SEC	0.235	0.115	6.1	89.8	
BUS_6M_SEC	4.160	99.390	-1.2	0.000	0.000	0.000	0.000	BUS_6M_5kV	0.235	0.113	36.3	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_6M_25kV	-0.235	-0.113	36.3	90.1	
BUS-25kV-BEEFCITY	24.900	98.478	-1.2	0.000	0.000	0.257	0.159	BUS-25kV-MCCLAVE	-0.257	-0.159	7.1	85.0	
BUS-25kV-BIG-BEND	24.900	99.574	-1.2	0.000	0.000	0.262	0.162	BUS_25kV_W-10	-0.262	-0.162	7.2	85.0	
BUS-25KV-E-10	24.900	98.723	-7.2	0.000	0.000	1.207	0.748	BUS_25kV_E-09	-1.207	-0.748	33.4	85.0	
BUS-25kV-HS-01	24.900	97.699	-1.3	0.000	0.000	0.057	0.035	BUS_HIS_25kV	-0.057	-0.035	1.6	85.0	
BUS-25kV-MCCLAVE	24.900	98.531	-1.2	0.000	0.000	0.307	0.190	BUS_25kV_W-11	-0.564	-0.346	15.6	85.2	
								BUS-25kV-BEEFCITY	0.257	0.156	7.1	85.4	
BUS-25kV-TS-01	24.900	97.802	-1.3	0.000	0.000	0.057	0.036	BUS_TS_25kV	-0.057	-0.036	1.6	85.0	
BUS-25kV-TS-AREA	24.900	97.804	-1.3	0.000	0.000	0.057	0.036	BUS_TSA_25kV	-0.057	-0.036	1.6	85.0	
BUS-25kV-WILEY	24.900	99.597	-1.2	0.000	0.000	0.312	0.194	BUS_25kV_W-10	-0.312	-0.194	8.6	85.0	
BUS_25kV_03	24.900	99.688	-1.8	0.000	0.000	0.000	0.000	L-25-XFMR-03~	0.000	-0.001	0.0	0.0	
								BUS_25kV_SUB_01	-6.206	-3.445	165.1	87.4	
								BUS_25kV_SUB_02	6.206	3.446	165.1	87.4	
BUS_25kV_BRISTOL	24.900	97.528	-4.8	0.000	0.000	0.081	0.050	BUS_25kV_E-07	-0.081	-0.050	2.3	85.0	
BUS_25kV_CO-BEEF	24.900	99.527	-1.2	0.000	0.000	0.526	0.326	BUS_25kV_W-08	-0.526	-0.326	14.4	85.0	
BUS_25kV_DECHANT	24.900	96.089	-2.5	0.000	0.000	0.119	0.074	BUS_25kV_E-05	-0.119	-0.074	3.4	85.0	
BUS_25kV_E_01	24.900	99.688	-1.8	0.000	0.000	0.000	0.000	BUS_25kV_E-02	1.757	1.049	47.6	85.9	
								BUS_25kV_SUB_01	-1.757	-1.049	47.6	85.9	
BUS_25kV_E-02	24.900	99.624	-1.8	0.000	0.000	0.000	0.000	BUS_25kV_E_01	-1.756	-1.049	47.6	85.8	
								BUS_25kV_SUTRAK	0.076	0.047	2.1	85.0	
								BUS_25kV_E-03	1.680	1.002	45.5	85.9	
BUS_25kV_E-03	24.900	99.557	-1.8	0.000	0.000	0.000	0.000	BUS_25kV_E-02	-1.679	-1.002	45.5	85.9	
								BUS_25kV_SWL	0.084	0.052	2.3	85.2	
								BUS_25kV_E-04	1.595	0.950	43.2	85.9	
BUS_25kV_E-04	24.900	97.624	-2.2	0.000	0.000	0.000	0.000	BUS_25kV_E-03	-1.570	-0.945	43.5	85.7	
								BUS_25kV_E-05	1.570	0.946	43.5	85.6	
								L-25-LLP-E-06~	0.000	-0.001	0.0	0.0	
BUS_25kV_E-05	24.900	96.094	-2.5	0.000	0.000	0.000	0.000	BUS_25kV_E-04	-1.550	-0.942	43.8	85.5	
								BUS_25kV_DECHANT	0.119	0.073	3.4	85.2	
								BUS_25kV_E-06	1.431	0.868	40.4	85.5	
BUS_25kV_E-06	24.900	99.600	-4.5	0.000	0.000	0.000	0.000	BUS_25kV_E-05	-1.424	-0.847	38.6	85.9	
								BUS_25kV_E-07	1.424	0.847	38.6	85.9	
BUS_25kV_E-07	24.900	97.533	-4.8	0.000	0.000	0.000	0.000	BUS_25kV_E-06	-1.400	-0.848	38.9	85.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_BRISTOL	0.081	0.049	2.3	85.5	
								BUS_25kV_E-08	1.318	0.799	36.6	85.5	
BUS_25kV_E-08	24.900	96.472	-5.0	0.000	0.000	0.000	0.000	BUS_25kV_E-07	-1.307	-0.801	36.8	85.3	
								BUS_25kV_HARTMAN	0.080	0.044	2.2	87.6	
								BUS_25kV_E-09	1.227	0.757	34.6	85.1	
BUS_25kV_E-09	24.900	100.136	-7.0	0.000	0.000	0.000	0.000	BUS_25kV_E-08	-1.221	-0.741	33.1	85.5	
								BUS-25KV-E-10	1.221	0.741	33.1	85.5	
BUS_25kV_HARTMAN	24.900	96.448	-5.1	0.000	0.000	0.080	0.050	BUS_25kV_E-08	-0.080	-0.050	2.3	85.0	
BUS_25kV_KMART	24.900	99.545	-1.8	0.000	0.000	0.000	0.000	BUS_25kV_W-2	0.000	0.000	0.0	0.0	
BUS_25kV_KORMAN	24.900	97.614	-2.2	0.000	0.000	0.859	0.532	BUS_25kV_W-04	-0.859	-0.532	24.0	85.0	
BUS_25kV_ROAD 13	24.900	95.629	-2.6	0.000	0.000	0.000	0.000	BUS_25kV_W-05	0.000	0.000	0.0	0.0	
BUS_25kV_SUB_01	24.900	99.688	-1.8	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	-5.455	-3.048	145.3	87.3	1.875
								BUS_LLP_69kV_01	-2.764	-1.544	73.6	87.3	1.875
								BUS_25kV_E_01	1.757	1.049	47.6	85.9	
								BUS_25_LLP_SE_01	0.256	0.097	6.4	93.5	
								BUS_25kV_03	6.206	3.445	165.1	87.4	
BUS_25kV_SUB_02	24.900	99.688	-1.8	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	1.932	1.001	50.6	88.8	
								BUS_25kV_SW_01	1.634	0.846	42.8	88.8	
								BUS_25kV_W-01	2.640	1.600	71.8	85.5	
								BUS_25kV_03	-6.206	-3.446	165.1	87.4	
BUS_25kV_SUTRAK	24.900	99.624	-1.8	0.000	0.000	0.076	0.047	BUS_25kV_E-02	-0.076	-0.047	2.1	85.0	
BUS_25kV_SWL	24.900	99.555	-1.8	0.000	0.000	0.084	0.052	BUS_25kV_E-03	-0.084	-0.052	2.3	85.0	
BUS_25kV_SW_01	24.900	99.688	-1.8	0.000	0.000	0.000	0.000	BUS_25kV_W-2	1.634	0.846	42.8	88.8	
								BUS_25kV_SUB_02	-1.634	-0.846	42.8	88.8	
BUS_25kV_W-01	24.900	99.688	-1.8	0.000	0.000	0.000	0.000	BUS_25kV_W-02	2.640	1.600	71.8	85.5	
								BUS_25kV_SUB_02	-2.640	-1.600	71.8	85.5	
BUS_25kV_W-2	24.900	99.545	-1.8	0.000	0.000	0.000	0.000	BUS_25kV_SW_01	-1.632	-0.846	42.8	88.8	
								BUS_SAF_25kV	1.632	0.846	42.8	88.8	
								BUS_25kV_KMART	0.000	0.000	0.0	0.0	
BUS_25kV_W-02	24.900	99.514	-1.8	0.000	0.000	0.000	0.000	BUS_25kV_W-01	-2.636	-1.597	71.8	85.5	
								BUS_25kV_W-03	2.636	1.598	71.8	85.5	
								Line15~	0.000	-0.001	0.0	0.0	
BUS_25kV_W-03	24.900	99.104	-1.9	0.000	0.000	0.000	0.000	BUS_25kV_W-02	-2.628	-1.591	71.9	85.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_W-04	2.628	1.591	71.9	85.5	
								L-25-LLP-W-03~	0.000	0.000	0.0	0.0	
BUS_25kV_W-04	24.900	97.683	-2.2	0.000	0.000	0.000	0.000	BUS_25kV_W-03	-2.597	-1.567	72.0	85.6	
								BUS_25kV_KORMAN	0.859	0.531	24.0	85.1	
								BUS_25kV_W-05	1.738	1.035	48.0	85.9	
BUS_25kV_W-05	24.900	95.628	-2.6	0.000	0.000	0.000	0.000	BUS_25kV_W-04	-1.708	-1.024	48.3	85.8	
								BUS_25kV_ROAD 13	0.000	-0.007	0.2	0.0	
								BUS_25kV_W-06	1.708	1.031	48.4	85.6	
BUS_25kV_W-06	24.900	100.002	-1.2	0.000	0.000	0.000	0.000	BUS_25kV_W-05	-1.676	-0.991	45.2	86.1	
								BUS_25kV_W-07	1.676	0.991	45.2	86.1	
BUS_25kV_W-07	24.900	99.820	-1.2	0.000	0.000	0.000	0.000	BUS_25kV_W-06	-1.674	-0.990	45.2	86.1	
								BUS_25kV_W-08	0.528	0.319	14.3	85.6	
								BUS_25kV_W-09	1.146	0.671	30.9	86.3	
BUS_25kV_W-08	24.900	99.817	-1.2	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-0.528	-0.319	14.3	85.6	
								BUS_25kV_CO-BEEF	0.528	0.319	14.3	85.6	
BUS_25kV_W-09	24.900	99.648	-1.2	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-1.145	-0.673	30.9	86.2	
								BUS_25kV_W-10	0.574	0.351	15.7	85.4	
								BUS_25kV_W-11	0.570	0.322	15.2	87.1	
BUS_25kV_W-10	24.900	99.636	-1.2	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-0.574	-0.351	15.7	85.3	
								BUS-25kV-WILEY	0.312	0.192	8.5	85.2	
								BUS-25kV-BIG-BEND	0.262	0.159	7.1	85.5	
BUS_25kV_W-11	24.900	99.640	-1.2	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-0.570	-0.322	15.2	87.1	
								BUS-25kV-MCCLAVE	0.570	0.322	15.2	87.1	
BUS_25_LLP_SE_01	24.900	99.688	-1.8	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	0.256	0.097	6.4	93.5	
								BUS_25kV_SUB_01	-0.256	-0.097	6.4	93.5	
BUS_25_LLP_SE_02	24.900	99.648	-1.8	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_01	-0.256	-0.101	6.4	93.1	
								BUS_25_LLP_SE_03	0.212	0.131	5.8	85.1	
								BUS_25_LLP_SE_04	0.043	-0.030	1.2	-82.2	
BUS_25_LLP_SE_03	24.900	99.639	-1.8	0.000	0.000	0.212	0.132	BUS_25_LLP_SE_02	-0.212	-0.132	5.8	85.0	
BUS_25_LLP_SE_04	24.900	99.646	-1.8	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	-0.043	0.026	1.2	-85.8	
								Pole MS-7-17	0.043	0.017	1.1	93.0	
								BUS_WTG_SOL	0.000	-0.043	1.0	0.0	
BUS_ATT	24.900	99.764	-0.8	0.000	0.000	0.034	0.021	BUS_L3_SEC	-0.034	-0.021	0.9	85.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_CLG_4kV	4.160	99.735	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-1	0.600	0.291	92.9	90.0	
								Pole CS-1-1	0.514	0.254	79.7	89.7	
								Pole CS-3-1	0.348	0.170	53.8	89.9	
								Pole CS-4-1	0.362	0.177	56.0	89.8	
								BUS_CLG_SEC	-1.824	-0.892	282.5	89.8	
BUS_CLG_25kV	24.900	97.913	-1.3	0.000	0.000	0.000	0.000	BUS_L2_SEC	-3.374	-1.732	89.8	89.0	
								BUS_HSP_25kV	1.545	0.794	41.1	88.9	
								BUS_CLG_SEC	1.829	0.938	48.7	89.0	
BUS_CLG_SEC	4.160	97.249	-1.9	0.000	0.000	0.000	0.000	BUS_CLG_4kV	1.827	0.911	291.3	89.5	
								BUS_CLG_25kV	-1.827	-0.911	291.3	89.5	
BUS_HIS_25kV	24.900	97.702	-1.3	0.000	0.000	0.000	0.000	BUS_TS_25kV	-1.374	-0.702	36.6	89.0	
								BUS-25kV-HS-01	0.057	0.035	1.6	85.5	
								BUS_HSC_25kV	1.316	0.667	35.0	89.2	
BUS_HSC_4kV	4.160	100.214	-2.3	0.000	0.000	0.000	0.000	Pole HS-1-001	0.037	0.018	5.7	90.0	
								Pole HS-2-1	0.495	0.241	76.3	89.9	
								Pole HS-3-1	0.338	0.164	52.0	90.0	
								Pole HS-4-1	0.442	0.216	68.2	89.8	
								BUS_HSC_SEC	-1.312	-0.639	202.2	89.9	
BUS_HSC_25kV	24.900	97.609	-1.3	0.000	0.000	0.000	0.000	BUS_HIS_25kV	-1.315	-0.668	35.0	89.2	
								BUS_HSC_SEC	1.315	0.668	35.0	89.2	
BUS_HSC_SEC	4.160	96.976	-2.0	0.000	0.000	0.000	0.000	BUS_HSC_4kV	1.314	0.649	209.7	89.7	
								BUS_HSC_25kV	-1.314	-0.649	209.7	89.7	
BUS_HSP_25kV	24.900	97.859	-1.3	0.000	0.000	0.000	0.000	BUS_CLG_25kV	-1.544	-0.794	41.1	88.9	
								Pole CS-5-21	0.054	0.022	1.4	92.6	
								BUS_TSA_25kV	1.490	0.772	39.8	88.8	
BUS_L1_01	24.900	99.801	-0.8	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.235	0.114	6.1	90.0	
								BUS_LAMSO_25kV	-0.235	-0.114	6.1	90.0	
BUS_L2_SEC	24.900	99.801	-0.8	0.000	0.000	0.000	0.000	BUS_CLG_25kV	3.425	1.779	89.7	88.7	
								BUS_LAMSO_25kV	-3.425	-1.779	89.7	88.7	
BUS_L3_SEC	24.900	99.801	-0.8	0.000	0.000	0.000	0.000	BUS_ATT	0.034	-0.011	0.8	-94.9	
								BUS_LAMSO_25kV	-0.034	0.011	0.8	-94.9	
BUS_LAMSO_25kV	24.900	99.801	-0.8	0.000	0.000	0.000	0.000	BUS_LAMSO_115kV	-3.694	-1.881	96.3	89.1	0.625
								BUS_L1_01	0.235	0.114	6.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_L2_SEC	3.425	1.779	89.7	88.7	
								BUS_L3_SEC	0.034	-0.011	0.8	-94.9	
* BUS_LAMSO_115kV	115.000	100.000	0.0	3.697	1.950	0.000	0.000	BUS_LAMSO_25kV	3.697	1.950	21.0	88.4	
BUS_LLP_69kV_01	69.000	99.754	-0.1	0.000	0.000	0.000	0.000	BUS_25kV_SUB_01	5.467	3.269	53.4	85.8	
								BUS_25kV_SUB_01	2.770	1.656	27.1	85.8	
								BUS_LLP_69kV_03	-4.118	-2.463	40.3	85.8	
								BUS_LLP_69kV_04	-4.118	-2.463	40.3	85.8	
BUS_LLP_69kV_02	69.000	99.754	-0.1	0.000	0.000	0.000	0.000	Line51~	0.000	-0.510	4.3	0.0	
								BUS_LLP_69kV_03	-4.118	-1.953	38.2	90.4	
								BUS_LLP_69kV_04	4.118	2.463	40.3	85.8	
BUS_LLP_69kV_03	69.000	99.754	-0.1	0.000	0.000	0.000	0.000	BUS_WC_69KV_01	-8.237	-4.416	78.4	88.1	
								BUS_LLP_69kV_01	4.118	2.463	40.3	85.8	
								BUS_LLP_69kV_02	4.118	1.953	38.2	90.4	
BUS_LLP_69kV_04	69.000	99.754	-0.1	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	4.118	2.463	40.3	85.8	
								BUS_LLP_69kV_02	-4.118	-2.463	40.3	85.8	
BUS_SAF_4kV	4.160	100.055	-3.0	0.000	0.000	0.000	0.000	SF-2-30	0.156	0.076	24.1	90.0	
								Pole MS-1-1	0.114	0.055	17.6	90.0	
								SF-1-1	1.175	0.587	182.1	89.4	
								SF-2-1	0.182	0.089	28.1	89.9	
								BUS_SAF_SEC	-1.627	-0.807	251.9	89.6	
BUS_SAF_25kV	24.900	99.477	-1.8	0.000	0.000	0.000	0.000	BUS_25kV_W-2	-1.631	-0.846	42.8	88.8	
								L-25-LLP-SW-03~	0.000	-0.004	0.1	0.0	
								BUS_SAF_SEC	1.631	0.850	42.9	88.7	
BUS_SAF_SEC	4.160	98.689	-2.6	0.000	0.000	0.000	0.000	BUS_SAF_4kV	1.630	0.822	256.7	89.3	
								BUS_SAF_25kV	-1.630	-0.822	256.7	89.3	
BUS_SW_8.5EES23	24.900	99.658	-1.8	0.000	0.000	0.000	0.000	BUS_WTG_SOL	0.000	0.000	0.0	0.0	
BUS_TSA_25kV	24.900	97.807	-1.3	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-1.489	-0.772	39.8	88.8	
								BUS-25kV-TS-AREA	0.057	0.035	1.6	85.5	
								BUS_TS_25kV	1.432	0.737	38.2	88.9	
BUS_TS_25kV	24.900	97.804	-1.3	0.000	0.000	0.000	0.000	BUS_TSA_25kV	-1.432	-0.737	38.2	88.9	
								BUS-25kV-TS-01	0.057	0.035	1.6	85.5	
								BUS_HIS_25kV	1.375	0.702	36.6	89.1	
* BUS_WC_69KV_01	69.000	100.000	0.0	8.249	4.378	0.000	0.000	BUS_LLP_69kV_03	8.249	4.378	78.1	88.3	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_WTG6	24.900	99.658	-1.8	0.000	0.000	0.000	0.000	BUS_WTG_SOL	0.000	0.033	0.8	0.0	
								P_526_2	0.000	-0.002	0.0	0.0	
								L_25_WTG_2~	0.000	-0.031	0.7	0.0	
BUS_WTG_SOL	24.900	99.658	-1.8	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	0.000	0.034	0.8	0.0	
								BUS_SW_8.5EES23	0.000	-0.001	0.0	0.0	
								BUS_WTG6	0.000	-0.034	0.8	0.0	
Pole 6M-1-1	4.160	99.734	-1.3	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.072	-0.035	11.1	90.1	
								Pole 6M-1-2	0.063	0.030	9.8	90.1	
								SEC_6M-1-1	0.008	0.004	1.3	89.9	
Pole 6M-1-2	4.160	99.635	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-1	-0.063	-0.030	9.8	90.1	
								Pole 6M-1-3	0.008	0.004	1.3	90.0	
								Pole 6M-1-4	0.055	0.026	8.5	90.1	
Pole 6M-1-3	4.160	99.634	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.008	-0.004	1.3	89.9	
								SEC_6M-1-2	0.008	0.004	1.3	89.9	
Pole 6M-1-4	4.160	99.491	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.055	-0.026	8.5	90.1	
								Pole 6M-1-5	0.004	0.002	0.6	90.0	
								Pole 6M-1-6	0.051	0.025	7.9	90.1	
Pole 6M-1-5	4.160	99.489	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-4	-0.004	-0.002	0.6	89.9	
Pole 6M-1-6	4.160	99.450	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-4	-0.051	-0.025	7.9	90.1	
								Pole 6M-1-7	0.007	0.003	1.1	90.1	
								Pole 6M-1-9	0.044	0.021	6.8	90.1	
Pole 6M-1-7	4.160	99.435	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-6	-0.007	-0.003	1.1	90.0	
								Pole 6M-1-8	0.004	0.002	0.6	90.0	
Pole 6M-1-8	4.160	99.433	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-7	-0.004	-0.002	0.6	89.9	
Pole 6M-1-9	4.160	99.396	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-6	-0.044	-0.021	6.8	90.1	
								Pole 6M-1-10	0.040	0.019	6.3	90.1	
Pole 6M-1-10	4.160	99.381	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-9	-0.040	-0.019	6.3	90.1	
								Pole 6M-1-11	0.040	0.019	6.3	90.1	
Pole 6M-1-11	4.160	99.368	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-10	-0.040	-0.019	6.3	90.1	
								Pole 6M-1-12	0.037	0.018	5.7	90.1	
Pole 6M-1-12	4.160	99.344	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-11	-0.037	-0.018	5.7	90.1	
								Pole 6M-1-13	0.004	0.002	0.5	90.5	
								Pole 6M-1-14	0.033	0.016	5.2	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-1-13	4.160	99.325	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-12	-0.004	-0.002	0.6	89.9	
Pole 6M-1-14	4.160	99.291	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-12	-0.033	-0.016	5.2	90.1	
								Pole 6M-1-15	0.030	0.014	4.6	90.1	
Pole 6M-1-15	4.160	99.276	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-14	-0.030	-0.014	4.6	90.1	
								Pole 6M-1-16	0.026	0.013	4.1	90.1	
Pole 6M-1-16	4.160	99.228	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-15	-0.026	-0.013	4.1	90.1	
								Pole 6M-1-17	0.012	0.006	1.9	90.0	
								Pole 6M-1-20	0.014	0.007	2.2	90.1	
Pole 6M-1-17	4.160	99.228	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-16	-0.012	-0.006	1.9	90.0	
								Pole 6M-1-18	0.008	0.004	1.3	90.0	
Pole 6M-1-18	4.160	99.218	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-17	-0.008	-0.004	1.3	90.0	
								Pole 6M-1-19	0.008	0.004	1.3	90.0	
Pole 6M-1-19	4.160	99.213	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-18	-0.008	-0.004	1.3	89.9	
								SEC_6M-1-12	0.008	0.004	1.3	89.9	
Pole 6M-1-20	4.160	99.201	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-16	-0.014	-0.007	2.2	90.1	
								Pole 6M-1-21	0.007	0.003	1.1	90.1	
								Pole 6M-1-23	0.007	0.003	1.1	90.1	
Pole 6M-1-21	4.160	99.198	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-20	-0.007	-0.003	1.1	90.1	
								Pole 6M-1-22	0.004	0.002	0.5	90.2	
Pole 6M-1-22	4.160	99.189	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-21	-0.004	-0.002	0.6	89.9	
Pole 6M-1-23	4.160	99.196	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-20	-0.007	-0.003	1.1	90.0	
								Pole 6M-1-24	0.007	0.003	1.1	90.0	
								LINE 6M-26~	0.000	0.000	0.0	0.0	
Pole 6M-1-24	4.160	99.196	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-23	-0.007	-0.003	1.1	90.0	
								Pole 6M-1-25	0.004	0.002	0.6	90.0	
Pole 6M-1-25	4.160	99.194	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-24	-0.004	-0.002	0.6	89.9	
Pole 6M-E-1	4.160	97.721	-1.3	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.159	-0.076	25.1	90.1	
								Pole 6M-E-2	0.013	0.006	2.1	90.0	
								Pole 6M-E-30	0.146	0.070	23.0	90.1	
Pole 6M-E-2	4.160	97.700	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-1	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-2	0.013	0.006	2.1	90.0	
Pole 6M-E-3	4.160	97.287	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-3	0.013	0.006	2.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-E-4	4.160	97.290	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.132	-0.063	20.9	90.1	
								Pole 6M-E-3	0.013	0.006	2.1	90.0	
								Pole 6M-E-5	0.119	0.057	18.8	90.2	
Pole 6M-E-5	4.160	97.068	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.118	-0.057	18.8	90.1	
								Pole 6M-E-6	0.105	0.050	16.7	90.2	
								SEC_6M-E-1	0.013	0.006	2.1	90.0	
Pole 6M-E-6	4.160	96.851	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-5	-0.105	-0.050	16.7	90.2	
								Pole 6M-E-7	0.092	0.044	14.6	90.2	
								SEC_6M-E-4	0.013	0.006	2.1	90.0	
Pole 6M-E-7	4.160	96.522	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-6	-0.091	-0.044	14.6	90.2	
								Pole 6M-E-8	0.013	0.006	2.1	90.0	
								Pole 6M-E-9	0.078	0.038	12.5	90.2	
Pole 6M-E-8	4.160	96.507	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-5	0.013	0.006	2.1	90.0	
Pole 6M-E-9	4.160	95.973	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.078	-0.037	12.5	90.2	
								Pole 6M-E-10	0.026	0.012	4.1	90.1	
								Pole 6M-E-13	0.052	0.025	8.4	90.2	
Pole 6M-E-10	4.160	95.882	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-9	-0.026	-0.012	4.2	90.0	
								Pole 6M-E-11	0.013	0.006	2.1	90.1	
								SEC_6M-E-6	0.013	0.006	2.1	90.0	
Pole 6M-E-11	4.160	95.836	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-10	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-7	0.013	0.006	2.1	90.0	
Pole 6M-E-12	4.160	95.879	-1.3	0.000	0.000	0.003	0.002	Pole 6M-E-13	-0.003	-0.002	0.5	89.9	
Pole 6M-E-13	4.160	95.880	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-12	0.003	0.002	0.5	90.0	
								Pole 6M-E-9	-0.052	-0.025	8.4	90.2	
								Pole 6M-E-15	0.049	0.023	7.8	90.2	
Pole 6M-E-14	4.160	95.777	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-8	0.013	0.006	2.1	90.0	
Pole 6M-E-15	4.160	95.793	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-14	0.013	0.006	2.1	90.0	
								Pole 6M-E-13	-0.049	-0.023	7.8	90.2	
								Pole 6M-E-18	0.036	0.017	5.7	90.3	
Pole 6M-E-18	4.160	95.718	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.036	-0.017	5.7	90.3	
								Pole 6M-E-19	0.013	0.006	2.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole 6M-E-20	0.023	0.011	3.7	90.4	
Pole 6M-E-19	4.160	95.710	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-10	0.013	0.006	2.1	90.0	
Pole 6M-E-20	4.160	95.694	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.023	-0.011	3.7	90.4	
								Pole 6M-E-21	0.010	0.005	1.6	91.0	
								SEC_6M-E-11	0.013	0.006	2.1	90.0	
Pole 6M-E-21	4.160	95.689	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-20	-0.010	-0.005	1.6	91.0	
								Pole 6M-E-22	0.003	0.002	0.5	90.9	
								Pole 6M-E-23	0.007	0.003	1.1	91.1	
Pole 6M-E-22	4.160	95.660	-1.3	0.000	0.000	0.003	0.002	Pole 6M-E-21	-0.003	-0.002	0.5	89.9	
Pole 6M-E-23	4.160	95.610	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.003	0.002	0.5	90.5	
								Pole 6M-E-21	-0.007	-0.003	1.1	90.4	
								Pole 6M-E-24	0.003	0.002	0.5	90.4	
Pole 6M-E-24	4.160	95.595	-1.3	0.000	0.000	0.003	0.002	Pole 6M-E-23	-0.003	-0.002	0.5	89.9	
Pole 6M-E-25	4.160	95.595	-1.3	0.000	0.000	0.003	0.002	Pole 6M-E-26	-0.003	-0.002	0.5	89.9	
Pole 6M-E-26	4.160	95.596	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-23	-0.003	-0.002	0.5	90.0	
								Pole 6M-E-25	0.003	0.002	0.5	90.0	
								Bus2	0.000	0.000	0.0	0.0	
Pole 6M-E-29	4.160	97.527	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-13	0.013	0.006	2.1	90.0	
Pole 6M-E-30	4.160	97.530	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	0.132	0.063	20.9	90.1	
								Pole 6M-E-29	0.013	0.006	2.1	90.0	
								Pole 6M-E-1	-0.145	-0.070	23.0	90.1	
Pole CS-1-1	4.160	99.340	-2.4	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-0.512	-0.252	79.7	89.7	
								Pole CS-1-2	0.512	0.252	79.7	89.7	
Pole CS-1-2	4.160	99.204	-2.5	0.000	0.000	0.000	0.000	PRI_PM_16	0.070	0.034	10.9	89.8	
								Pole CS-1-1	-0.512	-0.251	79.7	89.8	
								Pole CS-1-3	0.434	0.213	67.6	89.8	
								Pole HS-2-85	0.008	0.004	1.2	90.0	
Pole CS-1-3	4.160	98.921	-2.5	0.000	0.000	0.000	0.000	Pole CS-1-4	0.012	0.006	1.9	89.9	
								Pole CS-1-5	0.012	0.006	1.9	89.9	
								Pole HS-3-86	0.004	0.002	0.6	89.9	
								Pole CS-1-2	-0.433	-0.212	67.6	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-6	0.405	0.199	63.3	89.8	
Pole CS-1-4	4.160	98.915	-2.5	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.012	-0.006	1.9	89.9	
								SEC_CS-1-1	0.012	0.006	1.9	89.9	
Pole CS-1-5	4.160	98.917	-2.5	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.012	-0.006	1.9	89.9	
								SEC_CS-1-2	0.012	0.006	1.9	89.9	
Pole CS-1-6	4.160	98.656	-2.6	0.000	0.000	0.000	0.000	Pole HS-3-88	0.012	0.006	1.9	90.0	
								Pole CS-1-3	-0.404	-0.198	63.3	89.8	
								Pole CS-1-9	0.393	0.192	61.5	89.8	
Pole CS-1-9	4.160	98.587	-2.6	0.000	0.000	0.000	0.000	PRI_PM_17	0.059	0.029	9.2	89.8	
								Pole CS-1-6	-0.392	-0.192	61.5	89.9	
								Pole CS-1-10	0.334	0.163	52.3	89.9	
Pole CS-1-10	4.160	98.457	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.333	-0.162	52.3	89.9	
								Pole CS-1-11	0.333	0.162	52.3	89.9	
								L-SUB-FDR-EQ#20-1-84~	0.000	0.000	0.0	0.0	
Pole CS-1-11	4.160	98.444	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-10	-0.333	-0.162	52.3	89.9	
								Pole CS-1-12	0.333	0.162	52.3	89.9	
Pole CS-1-12	4.160	98.389	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-13	0.012	0.006	1.8	89.9	
								Pole CS-1-11	-0.333	-0.162	52.3	89.9	
								Pole CS-1-14	0.321	0.157	50.4	89.9	
Pole CS-1-13	4.160	98.388	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-12	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-7	0.012	0.006	1.8	89.9	
Pole CS-1-14	4.160	98.337	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-17	0.035	0.017	5.5	89.9	
								Pole CS-1-12	-0.321	-0.156	50.4	89.9	
								Pole CS-1-16	0.282	0.137	44.3	89.9	
Pole CS-1-15	4.160	98.294	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-16	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-9	0.012	0.006	1.8	89.9	
Pole CS-1-16	4.160	98.295	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-15	0.012	0.006	1.8	89.9	
								Pole CS-1-14	-0.282	-0.137	44.3	89.9	
								Pole CS-1-21	0.270	0.132	42.4	89.9	
Pole CS-1-17	4.160	98.315	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-14	-0.035	-0.017	5.5	89.9	
								Pole CS-1-18	0.024	0.011	3.7	89.9	
								Pole CS-1-20	0.012	0.006	1.8	89.9	
Pole CS-1-18	4.160	98.312	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.024	-0.011	3.7	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-19	0.012	0.006	1.8	89.9	
								SEC_CS-1-10	0.012	0.006	1.8	89.9	
Pole CS-1-19	4.160	98.308	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-18	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-11	0.012	0.006	1.8	89.9	
Pole CS-1-20	4.160	98.313	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-12	0.012	0.006	1.8	89.9	
Pole CS-1-21	4.160	98.255	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-16	-0.270	-0.131	42.4	89.9	
								Pole CS-1-22	0.266	0.129	41.8	89.9	
Pole CS-1-22	4.160	98.216	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-23	0.012	0.006	1.8	89.9	
								Pole CS-1-21	-0.266	-0.129	41.8	89.9	
								Pole CS-1-24	0.250	0.122	39.3	89.9	
Pole CS-1-23	4.160	98.212	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-15	0.012	0.006	1.8	89.9	
Pole CS-1-24	4.160	98.168	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.250	-0.122	39.3	89.9	
								Pole CS-1-25	0.238	0.116	37.5	89.9	
								SEC_CS-1-16	0.012	0.006	1.8	89.9	
Pole CS-1-25	4.160	98.122	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-28	0.113	0.055	17.8	89.9	
								Pole CS-1-55	0.117	0.057	18.4	89.9	
								Pole CS-1-24	-0.238	-0.116	37.5	89.9	
								Pole CS-1-26	0.008	0.004	1.2	89.9	
Pole CS-1-26	4.160	98.121	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-25	-0.008	-0.004	1.2	89.9	
								Pole CS-1-27	0.004	0.002	0.6	89.9	
Pole CS-1-27	4.160	98.120	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-26	-0.004	-0.002	0.6	89.9	
Pole CS-1-28	4.160	98.114	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-25	-0.113	-0.055	17.8	89.9	
								Pole CS-1-29	0.109	0.053	17.2	89.9	
Pole CS-1-29	4.160	98.085	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-28	-0.109	-0.053	17.2	89.9	
								Pole CS-1-32	0.102	0.049	16.0	89.9	
								Pole CS-1-31	0.008	0.004	1.2	89.9	
Pole CS-1-30	4.160	98.083	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-31	-0.004	-0.002	0.6	89.9	
Pole CS-1-31	4.160	98.084	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-30	0.004	0.002	0.6	89.9	
								Pole CS-1-29	-0.008	-0.004	1.2	89.9	
Pole CS-1-32	4.160	98.057	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-29	-0.102	-0.049	16.0	89.9	
								Pole CS-1-33	0.098	0.047	15.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-1-33	4.160	98.014	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-32	-0.098	-0.047	15.4	89.9	
								Pole CS-1-36	0.086	0.042	13.5	89.9	
								Pole CS-1-35	0.008	0.004	1.2	89.9	
Pole CS-1-34	4.160	98.013	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-35	-0.004	-0.002	0.6	89.9	
Pole CS-1-35	4.160	98.014	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-34	0.004	0.002	0.6	90.0	
								Pole CS-1-33	-0.008	-0.004	1.2	89.9	
Pole CS-1-36	4.160	97.978	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-33	-0.086	-0.042	13.5	89.9	
								Pole CS-1-37	0.082	0.040	12.9	89.9	
Pole CS-1-37	4.160	97.961	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-36	-0.082	-0.040	12.9	89.9	
								Pole CS-1-38	0.078	0.038	12.3	89.9	
Pole CS-1-38	4.160	97.942	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-37	-0.078	-0.038	12.3	89.9	
								Pole CS-1-39	0.074	0.036	11.7	89.9	
Pole CS-1-39	4.160	97.927	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-40	0.019	0.009	3.1	90.0	
								Pole CS-1-38	-0.074	-0.036	11.7	89.9	
								Pole CS-1-43	0.055	0.027	8.6	89.9	
Pole CS-1-40	4.160	97.912	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.019	-0.009	3.1	89.9	
								Pole CS-1-41	0.008	0.004	1.2	90.0	
								SEC_CS-1-29	0.012	0.006	1.8	89.9	
Pole CS-1-41	4.160	97.910	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-40	-0.008	-0.004	1.2	89.9	
								Pole CS-1-42	0.004	0.002	0.6	90.0	
Pole CS-1-42	4.160	97.909	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-41	-0.004	-0.002	0.6	89.9	
Pole CS-1-43	4.160	97.922	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.055	-0.027	8.6	89.9	
								Pole CS-1-44	0.043	0.021	6.8	89.9	
								SEC_CS-1-32	0.012	0.006	1.8	89.9	
Pole CS-1-44	4.160	97.916	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-43	-0.043	-0.021	6.8	89.9	
								Pole CS-1-45	0.039	0.019	6.1	89.9	
Pole CS-1-45	4.160	97.910	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-44	-0.039	-0.019	6.1	89.9	
								Pole CS-1-46	0.035	0.017	5.5	89.9	
Pole CS-1-46	4.160	97.904	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-45	-0.035	-0.017	5.5	89.9	
								Pole CS-1-47	0.031	0.015	4.9	89.9	
Pole CS-1-47	4.160	97.895	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-46	-0.031	-0.015	4.9	89.9	
								Pole CS-1-48	0.027	0.013	4.3	89.9	
Pole CS-1-48	4.160	97.890	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-47	-0.027	-0.013	4.3	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-49	0.023	0.011	3.7	89.9	
Pole CS-1-49	4.160	97.887	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-48	-0.023	-0.011	3.7	89.9	
								Pole CS-1-50	0.019	0.009	3.1	90.0	
Pole CS-1-50	4.160	97.883	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-49	-0.019	-0.009	3.1	89.9	
								Pole CS-1-51	0.016	0.008	2.5	90.0	
Pole CS-1-51	4.160	97.881	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-50	-0.016	-0.008	2.5	89.9	
								Pole CS-1-52	0.012	0.006	1.8	90.0	
Pole CS-1-52	4.160	97.878	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-51	-0.012	-0.006	1.8	89.9	
								Pole CS-1-53	0.008	0.004	1.2	90.0	
Pole CS-1-53	4.160	97.876	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-52	-0.008	-0.004	1.2	89.9	
								Pole CS-1-54	0.004	0.002	0.6	90.0	
Pole CS-1-54	4.160	97.876	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-53	-0.004	-0.002	0.6	89.9	
								L-SUB-FDR-EQ#20-1-86~	0.000	0.000	0.0	0.0	
Pole CS-1-55	4.160	98.079	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-25	-0.117	-0.057	18.4	89.9	
								Pole CS-1-56	0.004	0.002	0.6	90.0	
								Pole CS-1-58	0.113	0.055	17.8	89.9	
Pole CS-1-56	4.160	98.078	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-55	-0.004	-0.002	0.6	89.9	
Pole CS-1-57	4.160	98.030	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-58	-0.109	-0.053	17.2	89.9	
								Pole CS-1-60	0.109	0.053	17.2	89.9	
								L-SUB-FDR-EQ#18-1-173~	0.000	0.000	0.0	0.0	
Pole CS-1-58	4.160	98.052	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-57	0.109	0.053	17.2	89.9	
								Pole CS-1-55	-0.113	-0.055	17.8	89.9	
Pole CS-1-59	4.160	98.003	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-61	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-46	0.012	0.006	1.8	89.9	
Pole CS-1-60	4.160	98.010	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-57	-0.109	-0.053	17.2	89.9	
								Pole CS-1-61	0.105	0.051	16.6	89.9	
Pole CS-1-61	4.160	98.003	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-59	0.012	0.006	1.8	89.9	
								Pole CS-1-60	-0.105	-0.051	16.6	89.9	
								Pole CS-1-62	0.094	0.046	14.7	89.9	
Pole CS-1-62	4.160	97.990	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-61	-0.094	-0.046	14.7	89.9	
								Pole CS-1-63	0.090	0.044	14.1	89.9	
Pole CS-1-63	4.160	97.977	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-62	-0.090	-0.044	14.1	89.9	
								Pole CS-1-64	0.086	0.042	13.5	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-1-64	4.160	97.964	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-63	-0.086	-0.042	13.5	89.9	
								Pole CS-1-65	0.000	0.000	0.0	0.0	
								Pole CS-1-66	0.086	0.042	13.5	89.9	
Pole CS-1-65	4.160	97.964	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-64	0.000	0.000	0.0	0.0	
Pole CS-1-66	4.160	97.936	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-64	-0.086	-0.042	13.5	89.9	
								Pole CS-1-67	0.082	0.040	12.9	89.9	
Pole CS-1-67	4.160	97.926	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-66	-0.082	-0.040	12.9	89.9	
								Pole CS-1-68	0.078	0.038	12.3	89.9	
Pole CS-1-68	4.160	97.916	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-67	-0.078	-0.038	12.3	89.9	
								Pole CS-1-69	0.066	0.032	10.4	90.0	
								SEC_CS-1-53	0.012	0.006	1.8	89.9	
Pole CS-1-69	4.160	97.906	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-68	-0.066	-0.032	10.4	90.0	
								Pole CS-1-70	0.062	0.030	9.8	90.0	
Pole CS-1-70	4.160	97.893	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-69	-0.062	-0.030	9.8	90.0	
								Pole CS-1-71	0.058	0.028	9.2	90.0	
Pole CS-1-71	4.160	97.884	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-70	-0.058	-0.028	9.2	90.0	
								Pole CS-1-72	0.055	0.026	8.6	90.0	
Pole CS-1-72	4.160	97.875	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-71	-0.055	-0.026	8.6	90.0	
								Pole CS-1-73	0.051	0.025	8.0	90.0	
Pole CS-1-73	4.160	97.865	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-72	-0.051	-0.025	8.0	90.0	
								Pole CS-1-74	0.004	0.002	0.6	89.9	
								Pole CS-1-75	0.047	0.023	7.4	90.0	
Pole CS-1-74	4.160	97.865	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-73	-0.004	-0.002	0.6	89.9	
Pole CS-1-75	4.160	97.839	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-73	-0.047	-0.023	7.4	90.0	
								Pole CS-1-76	0.019	0.009	3.1	90.0	
								Pole CS-1-86	0.027	0.013	4.3	90.0	
Pole CS-1-76	4.160	97.834	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-75	-0.019	-0.009	3.1	90.0	
								Pole CS-1-77	0.016	0.008	2.5	90.0	
Pole CS-1-77	4.160	97.829	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-76	-0.016	-0.008	2.5	89.9	
								Pole CS-1-78	0.012	0.006	1.8	90.0	
Pole CS-1-78	4.160	97.827	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-77	-0.012	-0.006	1.8	89.9	
								Pole CS-1-79	0.008	0.004	1.2	90.0	
Pole CS-1-79	4.160	97.825	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-78	-0.008	-0.004	1.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-80	0.004	0.002	0.6	89.9	
Pole CS-1-80	4.160	97.824	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-79	-0.004	-0.002	0.6	89.9	
Pole CS-1-81	4.160	97.791	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-82	-0.012	-0.006	1.8	89.9	
								Pole CS-1-88	0.008	0.004	1.2	90.0	
Pole CS-1-82	4.160	97.794	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-81	0.012	0.006	1.8	90.0	
								Pole CS-1-83	-0.016	-0.008	2.5	89.9	
Pole CS-1-83	4.160	97.799	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-82	0.016	0.008	2.5	90.0	
								Pole CS-1-84	-0.019	-0.009	3.1	89.9	
Pole CS-1-84	4.160	97.804	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-83	0.019	0.009	3.1	90.0	
								Pole CS-1-85	-0.023	-0.011	3.7	89.9	
Pole CS-1-85	4.160	97.816	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-84	0.023	0.011	3.7	90.0	
								Pole CS-1-86	-0.027	-0.013	4.3	90.0	
Pole CS-1-86	4.160	97.826	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-75	-0.027	-0.013	4.3	90.0	
								Pole CS-1-85	0.027	0.013	4.3	90.0	
Pole CS-1-87	4.160	97.788	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-88	-0.004	-0.002	0.6	89.9	
Pole CS-1-88	4.160	97.788	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-81	-0.008	-0.004	1.2	89.9	
								Pole CS-1-87	0.004	0.002	0.6	89.9	
Pole CS-1-90	4.160	99.739	-2.8	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.196	-0.095	30.4	90.0	
								BUS_5_NEOPLAN	0.196	0.095	30.4	90.0	
Pole CS-2-1	4.160	99.610	-2.4	0.000	0.000	0.000	0.000	Pole CS-2-2	0.600	0.291	92.9	90.0	
								BUS_CLG_4kV	-0.600	-0.291	92.9	90.0	
Pole CS-2-2	4.160	99.484	-2.4	0.000	0.000	0.004	0.002	Pole CS-2-1	-0.599	-0.290	92.9	90.0	
								Pole CS-2-3	0.012	0.006	1.9	90.0	
								Pole CS-2-5	0.583	0.282	90.4	90.0	
Pole CS-2-3	4.160	99.479	-2.4	0.000	0.000	0.008	0.004	Pole CS-2-2	-0.012	-0.006	1.9	89.9	
								Pole CS-2-4	0.004	0.002	0.6	90.0	
Pole CS-2-4	4.160	99.478	-2.4	0.000	0.000	0.004	0.002	Pole CS-2-3	-0.004	-0.002	0.6	89.9	
Pole CS-2-5	4.160	99.361	-2.4	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	0.583	0.282	90.4	90.0	
								Pole CS-2-2	-0.583	-0.282	90.4	90.0	
Pole CS-2-7	4.160	97.735	-2.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.426	-0.208	67.3	89.8	
								Pole CS-2-8	0.426	0.208	67.3	89.8	
Pole CS-2-8	4.160	97.643	-2.2	0.000	0.000	0.000	0.000	Pole CS-2-7	-0.425	-0.208	67.3	89.8	
								Pole CS-2-9	0.027	0.013	4.3	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-2-12	0.387	0.189	61.2	89.8	
								SEC_CS-2-5	0.012	0.006	1.8	89.9	
Pole CS-2-9	4.160	97.638	-2.2	0.000	0.000	0.004	0.002	Pole CS-2-8	-0.027	-0.013	4.3	89.9	
								Pole CS-2-10	0.023	0.011	3.7	89.9	
Pole CS-2-10	4.160	97.636	-2.2	0.000	0.000	0.000	0.000	Pole CS-2-9	-0.023	-0.011	3.7	89.9	
								Pole CS-2-11	0.012	0.006	1.8	89.9	
								SEC_CS-2-7	0.012	0.006	1.8	89.9	
Pole CS-2-11	4.160	97.632	-2.2	0.000	0.000	0.000	0.000	Pole CS-2-10	-0.012	-0.006	1.8	89.9	
								SEC_CS-2-8	0.012	0.006	1.8	89.9	
Pole CS-2-12	4.160	97.597	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-8	-0.387	-0.189	61.2	89.8	
								Pole CS-2-13	0.383	0.187	60.6	89.8	
Pole CS-2-13	4.160	97.544	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-12	-0.383	-0.187	60.6	89.9	
								Pole CS-2-14	0.015	0.007	2.4	90.3	
								Pole CS-2-20	0.367	0.179	58.1	89.8	
Pole CS-2-14	4.160	97.541	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-13	-0.015	-0.007	2.4	90.3	
								Pole CS-2-15	0.012	0.006	1.8	89.9	
								Pole CS-2-16	0.004	0.002	0.6	91.3	
Pole CS-2-15	4.160	97.539	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.012	-0.006	1.8	89.9	
								SEC_CS-2-10	0.012	0.006	1.8	89.9	
Pole CS-2-16	4.160	97.540	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.004	-0.002	0.6	91.3	
								Pole CS-2-17	0.004	0.002	0.6	91.3	
Pole CS-2-17	4.160	97.539	-2.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
								Pole CS-2-16	-0.004	-0.002	0.6	91.2	
								Pole CS-2-18	0.004	0.002	0.6	90.0	
Pole CS-2-18	4.160	97.538	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-17	-0.004	-0.002	0.6	89.9	
Pole CS-2-20	4.160	97.496	-2.3	0.000	0.000	0.000	0.000	PRI_PM_21	0.071	0.035	11.3	89.8	
								Pole CS-2-13	-0.367	-0.179	58.1	89.8	
								Pole CS-2-21	0.296	0.144	46.8	89.9	
Pole CS-2-21	4.160	97.351	-2.3	0.000	0.000	0.000	0.000	PRI_PM_20	0.068	0.033	10.7	89.8	
								Pole CS-2-20	-0.295	-0.144	46.8	89.9	
								Pole CS-2-22	0.228	0.111	36.1	89.9	
Pole CS-2-22	4.160	97.293	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-21	-0.228	-0.111	36.1	89.9	
								Pole CS-2-23	0.224	0.109	35.5	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-23	4.160	97.270	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-22	-0.224	-0.109	35.5	89.9	
								Pole CS-2-24	0.064	0.031	10.1	89.9	
								Pole CS-2-35	0.160	0.078	25.4	89.9	
Pole CS-2-24	4.160	97.244	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-23	-0.064	-0.031	10.1	89.9	
								Pole CS-2-25	0.060	0.029	9.5	89.9	
Pole CS-2-25	4.160	97.238	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-24	-0.060	-0.029	9.5	89.9	
								Pole CS-2-26	0.056	0.027	8.9	89.9	
Pole CS-2-26	4.160	97.224	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-25	-0.056	-0.027	8.9	89.9	
								Pole CS-2-27	0.052	0.025	8.3	89.9	
Pole CS-2-27	4.160	97.207	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-28	0.023	0.011	3.7	90.1	
								Pole CS-2-26	-0.052	-0.025	8.3	89.9	
								PRI_PM_1-1	0.029	0.014	4.6	89.8	
Pole CS-2-28	4.160	97.197	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.023	-0.011	3.7	89.9	
								Pole CS-2-29	0.023	0.011	3.7	89.9	
Pole CS-2-29	4.160	97.194	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-28	-0.023	-0.011	3.7	89.9	
								Pole CS-2-30	0.019	0.009	3.1	89.9	
Pole CS-2-30	4.160	97.190	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-29	-0.019	-0.009	3.1	89.9	
								Pole CS-2-31	0.015	0.007	2.4	89.9	
Pole CS-2-31	4.160	97.187	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-30	-0.015	-0.007	2.4	89.9	
								Pole CS-2-32	0.012	0.006	1.8	89.9	
Pole CS-2-32	4.160	97.184	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-31	-0.012	-0.006	1.8	89.9	
								Pole CS-2-33	0.008	0.004	1.2	89.9	
Pole CS-2-33	4.160	97.183	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-32	-0.008	-0.004	1.2	89.9	
								Pole CS-2-34	0.004	0.002	0.6	89.9	
Pole CS-2-34	4.160	97.182	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-33	-0.004	-0.002	0.6	89.9	
Pole CS-2-35	4.160	97.223	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-23	-0.160	-0.078	25.4	89.9	
								Pole CS-2-36	0.160	0.078	25.4	89.9	
Pole CS-2-36	4.160	97.114	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-35	-0.160	-0.078	25.4	89.9	
								Pole CS-2-37	0.160	0.078	25.4	89.9	
Pole CS-2-37	4.160	97.055	-2.3	0.000	0.000	0.000	0.000	PRI_PM_19	0.067	0.033	10.7	89.8	
								Pole CS-2-36	-0.160	-0.078	25.4	89.9	
								Pole CS-2-38	0.012	0.006	1.8	90.0	
								Pole CS-2-41	0.081	0.039	12.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-38	4.160	97.053	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-37	-0.012	-0.006	1.8	90.0	
								Pole CS-2-39	0.008	0.004	1.2	90.0	
Pole CS-2-39	4.160	97.048	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-38	-0.008	-0.004	1.2	89.9	
								Pole CS-2-40	0.004	0.002	0.6	90.0	
Pole CS-2-40	4.160	97.047	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-39	-0.004	-0.002	0.6	89.9	
Pole CS-2-41	4.160	97.035	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-37	-0.081	-0.039	12.8	90.0	
								Pole CS-2-42	0.077	0.037	12.2	90.0	
Pole CS-2-42	4.160	97.005	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-41	-0.077	-0.037	12.2	90.0	
								Pole CS-2-43	0.004	0.002	0.6	89.9	
								Pole CS-2-44	0.073	0.035	11.6	90.0	
Pole CS-2-43	4.160	97.005	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-42	-0.004	-0.002	0.6	89.9	
Pole CS-2-44	4.160	96.983	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-42	-0.073	-0.035	11.6	90.0	
								Pole CS-2-45	0.019	0.009	3.1	89.9	
								Pole CS-2-50	0.008	0.004	1.2	89.9	
								Pole CS-2-52	0.046	0.022	7.3	90.0	
Pole CS-2-45	4.160	96.981	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-44	-0.019	-0.009	3.1	89.9	
								Pole CS-2-46	0.015	0.007	2.4	90.0	
Pole CS-2-46	4.160	96.978	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-45	-0.015	-0.007	2.4	89.9	
								Pole CS-2-47	0.012	0.006	1.8	90.0	
Pole CS-2-47	4.160	96.975	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-46	-0.012	-0.006	1.8	89.9	
								Pole CS-2-48	0.008	0.004	1.2	90.0	
Pole CS-2-48	4.160	96.972	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-47	-0.008	-0.004	1.2	89.9	
								Pole CS-2-49	0.004	0.002	0.6	89.9	
Pole CS-2-49	4.160	96.971	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-48	-0.004	-0.002	0.6	89.9	
Pole CS-2-50	4.160	96.982	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-44	-0.008	-0.004	1.2	89.9	
								Pole CS-2-51	0.004	0.002	0.6	89.9	
Pole CS-2-51	4.160	96.981	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-50	-0.004	-0.002	0.6	89.9	
Pole CS-2-52	4.160	96.967	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-44	-0.046	-0.022	7.3	90.0	
								Pole CS-2-56	0.015	0.007	2.4	89.9	
								Pole CS-2-58	0.008	0.004	1.2	90.0	
								Pole CS-2-61	0.023	0.011	3.7	90.0	
Pole CS-2-53	4.160	96.959	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-54	-0.004	-0.002	0.6	89.9	
Pole CS-2-54	4.160	96.959	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-53	0.004	0.002	0.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-2-55	-0.008	-0.004	1.2	89.9	
Pole CS-2-55	4.160	96.961	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-54	0.008	0.004	1.2	89.9	
								Pole CS-2-56	-0.012	-0.006	1.8	89.9	
Pole CS-2-56	4.160	96.964	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-52	-0.015	-0.007	2.4	89.9	
								Pole CS-2-55	0.012	0.006	1.8	89.9	
Pole CS-2-57	4.160	96.963	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-58	-0.004	-0.002	0.6	89.9	
Pole CS-2-58	4.160	96.964	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-57	0.004	0.002	0.6	90.0	
								Pole CS-2-52	-0.008	-0.004	1.2	89.9	
Pole CS-2-60	4.160	96.955	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-61	-0.019	-0.009	3.1	89.9	
								Pole CS-2-62	0.015	0.007	2.4	90.0	
Pole CS-2-61	4.160	96.963	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-52	-0.023	-0.011	3.7	90.0	
								Pole CS-2-60	0.019	0.009	3.1	90.0	
Pole CS-2-62	4.160	96.948	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-60	-0.015	-0.007	2.4	89.9	
								Pole CS-2-63	0.012	0.006	1.8	90.0	
Pole CS-2-63	4.160	96.943	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-62	-0.012	-0.006	1.8	89.9	
								Pole CS-2-64	0.008	0.004	1.2	89.9	
Pole CS-2-64	4.160	96.942	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-63	-0.008	-0.004	1.2	89.9	
								Pole CS-2-65	0.004	0.002	0.6	89.9	
Pole CS-2-65	4.160	96.941	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-64	-0.004	-0.002	0.6	89.9	
Pole CS-2-66	4.160	99.326	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-10	-0.012	-0.006	1.9	90.0	
								L-SUB-FDR-EQ#18-1-237~	0.000	0.000	0.0	0.0	
								SEC_CS-2-46	0.012	0.006	1.9	89.9	
Pole CS-2-73	4.160	98.438	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-27	-0.012	-0.006	1.8	89.9	
								SEC_CS-2-49	0.012	0.006	1.8	89.9	
Pole CS-3-1	4.160	99.440	-2.4	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-0.347	-0.169	53.8	89.9	
								Pole CS-3-2	0.084	0.041	13.0	90.0	
								Pole CS-3-21	0.263	0.128	40.8	89.9	
Pole CS-3-2	4.160	99.416	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-3	0.032	0.015	5.0	90.0	
								Pole CS-3-1	-0.084	-0.041	13.0	90.0	
								Pole CS-3-11	0.048	0.023	7.4	90.0	
Pole CS-3-3	4.160	99.409	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-2	-0.032	-0.015	5.0	90.0	
								Pole CS-3-4	0.028	0.014	4.3	90.0	
Pole CS-3-4	4.160	99.393	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-3	-0.028	-0.014	4.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-5	0.024	0.012	3.7	90.0	
Pole CS-3-5	4.160	99.379	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-4	-0.024	-0.012	3.7	90.0	
								Pole CS-3-6	0.024	0.012	3.7	90.0	
Pole CS-3-6	4.160	99.365	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-5	-0.024	-0.012	3.7	90.0	
								Pole CS-3-7	0.020	0.010	3.1	90.0	
Pole CS-3-7	4.160	99.358	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-6	-0.020	-0.010	3.1	90.0	
								Pole CS-3-8	0.020	0.010	3.1	90.0	
Pole CS-3-8	4.160	99.352	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-7	-0.020	-0.010	3.1	90.0	
								Pole CS-3-9	0.016	0.008	2.5	90.0	
Pole CS-3-9	4.160	99.337	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-8	-0.016	-0.008	2.5	90.0	
								Pole CS-3-10	0.016	0.008	2.5	90.0	
Pole CS-3-10	4.160	99.327	-2.4	0.000	0.000	0.004	0.002	Pole CS-2-66	0.012	0.006	1.9	90.0	
								Pole CS-3-9	-0.016	-0.008	2.5	90.0	
Pole CS-3-11	4.160	99.409	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-2	-0.048	-0.023	7.4	90.0	
								Pole CS-3-12	0.044	0.021	6.8	90.0	
Pole CS-3-12	4.160	99.359	-2.4	0.000	0.000	0.008	0.004	Pole CS-3-11	-0.044	-0.021	6.8	90.0	
								Pole CS-3-13	0.036	0.017	5.6	90.0	
Pole CS-3-13	4.160	99.349	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-12	-0.036	-0.017	5.6	90.0	
								Pole CS-3-14	0.032	0.015	5.0	90.0	
Pole CS-3-14	4.160	99.324	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-13	-0.032	-0.016	5.0	90.0	
								Pole CS-3-15	0.028	0.014	4.3	90.0	
Pole CS-3-15	4.160	99.304	-2.4	0.000	0.000	0.008	0.004	Pole CS-3-14	-0.028	-0.014	4.3	90.0	
								Pole CS-3-16	0.020	0.010	3.1	90.0	
Pole CS-3-16	4.160	99.283	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-15	-0.020	-0.010	3.1	90.0	
								Pole CS-3-17	0.016	0.008	2.5	90.0	
Pole CS-3-17	4.160	99.279	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-16	-0.016	-0.008	2.5	90.0	
								Pole CS-3-18	0.012	0.006	1.9	90.0	
Pole CS-3-18	4.160	99.273	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-17	-0.012	-0.006	1.9	89.9	
								Pole CS-3-19	0.008	0.004	1.2	90.0	
Pole CS-3-19	4.160	99.269	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-18	-0.008	-0.004	1.2	89.9	
								Pole CS-3-20	0.004	0.002	0.6	89.9	
Pole CS-3-20	4.160	99.269	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-19	-0.004	-0.002	0.6	89.9	
Pole CS-3-21	4.160	99.381	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-1	-0.263	-0.128	40.8	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-22	0.259	0.126	40.2	89.9	
Pole CS-3-22	4.160	99.165	-2.4	0.000	0.000	0.000	0.000	PRI_PM_25	0.040	0.020	6.2	89.8	
								Pole CS-3-21	-0.258	-0.126	40.2	89.9	
								Pole CS-3-23	0.218	0.106	34.0	89.9	
Pole CS-3-23	4.160	99.035	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-29	0.214	0.104	33.3	89.9	
								Pole CS-3-22	-0.218	-0.106	34.0	89.9	
Pole CS-3-24	4.160	98.727	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-32	-0.016	-0.008	2.5	89.9	
								Pole CS-3-25	0.012	0.006	1.9	89.9	
Pole CS-3-25	4.160	98.724	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-24	-0.012	-0.006	1.9	89.9	
								Pole CS-3-26	0.008	0.004	1.2	89.9	
Pole CS-3-26	4.160	98.721	-2.4	0.000	0.000	0.008	0.004	Pole CS-3-25	-0.008	-0.004	1.2	89.9	
Pole CS-3-27	4.160	98.442	-2.4	0.000	0.000	0.004	0.002	Pole CS-2-73	0.012	0.006	1.8	89.9	
								Pole CS-3-34	-0.016	-0.008	2.5	89.9	
Pole CS-3-28	4.160	98.327	-2.4	0.000	0.000	0.008	0.004	Pole CS-3-35	-0.008	-0.004	1.2	89.9	
Pole CS-3-29	4.160	98.918	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-23	-0.214	-0.104	33.3	89.9	
								Pole CS-3-30	0.202	0.098	31.5	89.9	
								SEC_CS-2-47	0.012	0.006	1.9	89.9	
Pole CS-3-30	4.160	98.833	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-29	-0.202	-0.098	31.5	89.9	
								Pole CS-3-31	0.040	0.020	6.2	89.8	
								Pole CS-3-32	0.162	0.078	25.2	90.0	
Pole CS-3-31	4.160	98.830	-2.4	0.000	0.000	0.000	0.000	PRI_PM_26	0.040	0.020	6.2	89.8	
								Pole CS-3-30	-0.040	-0.020	6.2	89.8	
Pole CS-3-32	4.160	98.732	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-30	-0.162	-0.078	25.2	90.0	
								Pole CS-3-33	0.146	0.071	22.8	90.0	
								Pole CS-3-24	0.016	0.008	2.5	89.9	
Pole CS-3-33	4.160	98.686	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-32	-0.146	-0.071	22.8	90.0	
								Pole CS-3-34	0.134	0.065	20.9	90.0	
								SEC_CS-2-48	0.012	0.006	1.9	89.9	
Pole CS-3-34	4.160	98.449	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-33	-0.134	-0.065	20.9	90.0	
								Pole CS-3-35	0.118	0.057	18.5	90.0	
								Pole CS-3-27	0.016	0.008	2.5	89.9	
Pole CS-3-35	4.160	98.329	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-34	-0.118	-0.057	18.5	90.0	
								Pole CS-3-52	0.110	0.053	17.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-28	0.008	0.004	1.2	89.9	
Pole CS-3-36	4.160	98.007	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-37	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-246~	0.000	0.000	0.0	0.0	
Pole CS-3-37	4.160	98.007	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-36	0.000	0.000	0.0	0.0	
								Pole CS-3-38	-0.004	-0.002	0.6	90.0	
Pole CS-3-38	4.160	98.008	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-37	0.004	0.002	0.6	90.0	
								Pole CS-3-39	-0.008	-0.004	1.2	90.0	
Pole CS-3-39	4.160	98.012	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-38	0.008	0.004	1.2	90.0	
								Pole CS-3-40	-0.012	-0.006	1.8	90.0	
Pole CS-3-40	4.160	98.016	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-39	0.012	0.006	1.8	90.0	
								Pole CS-3-41	-0.016	-0.008	2.5	90.0	
Pole CS-3-41	4.160	98.023	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-40	0.016	0.008	2.5	90.0	
								Pole CS-3-42	-0.020	-0.009	3.1	90.0	
Pole CS-3-42	4.160	98.030	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-41	0.020	0.009	3.1	90.0	
								Pole CS-3-43	-0.023	-0.011	3.7	90.0	
Pole CS-3-43	4.160	98.041	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-42	0.023	0.011	3.7	90.0	
								Pole CS-3-45	-0.031	-0.015	4.9	90.0	
								Pole CS-3-44	0.004	0.002	0.6	89.9	
Pole CS-3-44	4.160	98.041	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-43	-0.004	-0.002	0.6	89.9	
Pole CS-3-45	4.160	98.057	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-43	0.031	0.015	4.9	90.0	
								Pole CS-3-50	-0.039	-0.019	6.2	90.0	
								Pole CS-3-46	0.004	0.002	0.6	89.9	
								Pole CS-3-47	0.004	0.002	0.6	89.9	
Pole CS-3-46	4.160	98.057	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-45	-0.004	-0.002	0.6	89.9	
Pole CS-3-47	4.160	98.057	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-45	-0.004	-0.002	0.6	89.9	
Pole CS-3-48	4.160	98.078	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-50	-0.004	-0.002	0.6	89.9	
Pole CS-3-49	4.160	98.078	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-50	-0.004	-0.002	0.6	89.9	
Pole CS-3-50	4.160	98.078	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-45	0.039	0.019	6.2	90.0	
								Pole CS-3-51	-0.047	-0.023	7.4	90.0	
								Pole CS-3-48	0.004	0.002	0.6	89.9	
								Pole CS-3-49	0.004	0.002	0.6	89.9	
Pole CS-3-51	4.160	98.082	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-50	0.047	0.023	7.4	90.0	
								Pole CS-3-63	-0.078	-0.038	12.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-66	0.031	0.015	4.9	90.0	
								Pole CS-3-74	0.000	0.000	0.0	0.0	
Pole CS-3-52	4.160	98.266	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-35	-0.110	-0.053	17.2	90.0	
								Pole CS-3-59	0.098	0.048	15.4	90.0	
								Pole CS-3-53	0.012	0.006	1.8	90.0	
Pole CS-3-53	4.160	98.262	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-52	-0.012	-0.006	1.8	89.9	
								Pole CS-3-54	0.008	0.004	1.2	90.0	
Pole CS-3-54	4.160	98.260	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-53	-0.008	-0.004	1.2	89.9	
								Pole CS-3-55	0.004	0.002	0.6	90.0	
Pole CS-3-55	4.160	98.259	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-54	-0.004	-0.002	0.6	89.9	
Pole CS-3-56	4.160	98.213	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-57	-0.004	-0.002	0.6	89.9	
Pole CS-3-57	4.160	98.216	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-56	0.004	0.002	0.6	90.0	
								Pole CS-3-58	-0.008	-0.004	1.2	90.0	
Pole CS-3-58	4.160	98.220	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-57	0.008	0.004	1.2	90.0	
								Pole CS-3-59	-0.012	-0.006	1.8	90.0	
Pole CS-3-59	4.160	98.222	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-52	-0.098	-0.048	15.4	90.0	
								Pole CS-3-60	0.086	0.042	13.5	90.0	
								Pole CS-3-58	0.012	0.006	1.8	90.0	
Pole CS-3-60	4.160	98.183	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-59	-0.086	-0.042	13.5	90.0	
								Pole CS-3-62	0.086	0.042	13.5	90.0	
Pole CS-3-61	4.160	98.143	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-62	-0.082	-0.040	12.9	90.0	
								Pole CS-3-63	0.078	0.038	12.3	90.0	
Pole CS-3-62	4.160	98.163	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-61	0.082	0.040	12.9	90.0	
								Pole CS-3-60	-0.086	-0.042	13.5	90.0	
Pole CS-3-63	4.160	98.113	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-61	-0.078	-0.038	12.3	90.0	
								Pole CS-3-51	0.078	0.038	12.3	90.0	
								Pole CS-3-75	0.000	0.000	0.0	0.0	
Pole CS-3-66	4.160	98.076	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-51	-0.031	-0.015	4.9	90.0	
								Pole CS-3-67	0.027	0.013	4.3	90.0	
Pole CS-3-67	4.160	98.069	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-66	-0.027	-0.013	4.3	90.0	
								Pole CS-3-68	0.023	0.011	3.7	90.0	
Pole CS-3-68	4.160	98.061	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-67	-0.023	-0.011	3.7	89.9	
								Pole CS-3-69	0.020	0.009	3.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-3-69	4.160	98.056	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-68	-0.020	-0.009	3.1	89.9	
								Pole CS-3-70	0.016	0.008	2.5	90.0	
Pole CS-3-70	4.160	98.051	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-69	-0.016	-0.008	2.5	89.9	
								Pole CS-3-71	0.012	0.006	1.8	90.0	
Pole CS-3-71	4.160	98.048	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-70	-0.012	-0.006	1.8	89.9	
								Pole CS-3-72	0.008	0.004	1.2	90.0	
Pole CS-3-72	4.160	98.045	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-71	-0.008	-0.004	1.2	89.9	
								Pole CS-3-73	0.004	0.002	0.6	90.0	
Pole CS-3-73	4.160	98.044	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-72	-0.004	-0.002	0.6	89.9	
Pole CS-3-74	4.160	98.082	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-51	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-276~	0.000	0.000	0.0	0.0	
Pole CS-3-75	4.160	98.113	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-63	0.000	0.000	0.0	0.0	
Pole CS-4-1	4.160	99.482	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-11	0.349	0.171	54.2	89.8	
								Pole CS-4-3	0.008	0.004	1.2	90.0	
								BUS_CLG_4kV	-0.361	-0.176	56.0	89.8	
Pole CS-4-2	4.160	99.012	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-11	-0.277	-0.136	43.3	89.8	
								Pole CS-4-6	0.273	0.134	42.7	89.8	
Pole CS-4-3	4.160	99.482	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-1	-0.008	-0.004	1.2	90.0	
								Pole CS-4-4	0.004	0.002	0.6	90.1	
Pole CS-4-4	4.160	99.478	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-3	-0.004	-0.002	0.6	90.0	
								Pole CS-4-5	0.004	0.002	0.6	89.9	
								L-SUB-FDR-EQ#18-1-283~	0.000	0.000	0.0	0.0	
Pole CS-4-5	4.160	99.478	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-4	-0.004	-0.002	0.6	89.9	
Pole CS-4-6	4.160	98.806	-2.4	0.000	0.000	0.000	0.000	PRI_PM_22	0.080	0.039	12.5	89.8	
								Pole CS-4-2	-0.273	-0.134	42.7	89.8	
								Pole CS-4-7	0.193	0.095	30.2	89.8	
Pole CS-4-7	4.160	98.739	-2.4	0.000	0.000	0.008	0.004	Pole CS-4-6	-0.193	-0.094	30.2	89.8	
								Pole CS-4-8	0.185	0.091	29.0	89.8	
Pole CS-4-8	4.160	98.669	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-7	-0.185	-0.091	29.0	89.8	
								Pole CS-4-9	0.181	0.089	28.4	89.8	
Pole CS-4-9	4.160	98.615	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-8	-0.181	-0.089	28.4	89.8	
								Pole CS-4-12	0.012	0.006	1.9	89.9	
								Pole CS-4-13	0.169	0.083	26.5	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-4-11	4.160	99.221	-2.4	0.000	0.000	0.000	0.000	PRI_PM_11	0.070	0.034	10.9	89.8	
								Pole CS-4-1	-0.348	-0.170	54.2	89.8	
								Pole CS-4-2	0.278	0.136	43.3	89.8	
Pole CS-4-12	4.160	98.613	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.012	-0.006	1.9	89.9	
								SEC_CS-4-8	0.012	0.006	1.9	89.9	
Pole CS-4-13	4.160	98.553	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.169	-0.083	26.5	89.8	
								Pole CS-4-14	0.169	0.083	26.5	89.8	
Pole CS-4-14	4.160	98.487	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-13	-0.169	-0.083	26.5	89.8	
								Pole CS-4-15	0.169	0.083	26.5	89.8	
Pole CS-4-15	4.160	98.053	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-14	-0.168	-0.082	26.5	89.8	
								Pole CS-4-16	0.168	0.082	26.5	89.8	
Pole CS-4-16	4.160	97.370	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-15	-0.167	-0.082	26.5	89.8	
								Pole CS-4-18	0.008	0.004	1.2	90.0	
								Pole CS-4-20	0.159	0.078	25.3	89.8	
Pole CS-4-17	4.160	97.366	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-18	-0.004	-0.002	0.6	89.9	
Pole CS-4-18	4.160	97.368	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-17	0.004	0.002	0.6	90.0	
								Pole CS-4-16	-0.008	-0.004	1.2	90.0	
								Pole CS-4-19	0.004	0.002	0.6	90.0	
Pole CS-4-19	4.160	97.365	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-18	-0.004	-0.002	0.6	89.9	
Pole CS-4-20	4.160	97.284	-2.4	0.000	0.000	0.000	0.000	PRI_PM_23	0.078	0.038	12.3	89.8	
								Pole CS-4-16	-0.159	-0.078	25.3	89.8	
								Pole CS-4-21	0.082	0.040	13.0	89.8	
Pole CS-4-21	4.160	97.234	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-20	-0.081	-0.040	13.0	89.8	
								Pole CS-4-22	0.078	0.038	12.3	89.8	
Pole CS-4-22	4.160	97.201	-2.4	0.000	0.000	0.000	0.000	PRI_PM_24	0.078	0.038	12.3	89.8	
								Pole CS-4-21	-0.078	-0.038	12.3	89.8	
Pole CS-5-18	24.940	97.697	-1.3	0.000	0.000	0.008	0.004	Pole CS-5-19	-0.008	-0.004	0.2	89.8	
Pole CS-5-19	24.940	97.697	-1.3	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-9	0.023	0.010	0.6	92.0	
								Pole CS-5-18	0.008	0.004	0.2	90.3	
								Pole CS-5-20	-0.031	-0.014	0.8	91.6	
Pole CS-5-20	24.940	97.697	-1.3	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-8	0.023	0.010	0.6	91.2	
								Pole CS-5-19	0.031	0.014	0.8	91.7	
								Pole CS-5-21	-0.054	-0.024	1.4	91.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-5-21	24.940	97.700	-1.3	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-0.054	-0.023	1.4	92.2	
								Pole CS-5-20	0.054	0.023	1.4	92.2	
Pole HS-1-001	4.160	100.192	-2.3	0.000	0.000	0.005	0.002	BUS_HSC_4kV	-0.037	-0.018	5.7	90.0	
								Pole HS-1-4	0.032	0.016	5.0	90.0	
Pole HS-1-4	4.160	100.185	-2.3	0.000	0.000	0.007	0.004	Pole HS-1-001	-0.032	-0.016	5.0	90.0	
								Pole HS-1-16	0.025	0.012	3.8	90.0	
Pole HS-1-16	4.160	100.180	-2.3	0.000	0.000	0.015	0.007	Pole HS-1-17	0.010	0.005	1.5	90.0	
								Pole HS-1-4	-0.025	-0.012	3.8	90.0	
Pole HS-1-17	4.160	100.178	-2.3	0.000	0.000	0.002	0.001	Pole HS-1-16	-0.010	-0.005	1.5	90.0	
								Pole HS-1-19	0.007	0.004	1.1	90.0	
Pole HS-1-19	4.160	100.176	-2.3	0.000	0.000	0.007	0.004	Pole HS-1-17	-0.007	-0.004	1.1	90.0	
Pole HS-2-1	4.160	100.089	-2.3	0.000	0.000	0.004	0.002	BUS_HSC_4kV	-0.495	-0.241	76.3	89.9	
								Pole HS-2-2	0.491	0.239	75.7	89.9	
Pole HS-2-2	4.160	99.946	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-1	-0.490	-0.238	75.7	89.9	
								Pole HS-2-3	0.486	0.236	75.0	89.9	
Pole HS-2-3	4.160	99.821	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-2	-0.485	-0.236	75.0	89.9	
								Pole HS-2-4	0.481	0.234	74.4	89.9	
Pole HS-2-4	4.160	99.697	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-3	-0.481	-0.234	74.4	89.9	
								Pole HS-2-5	0.469	0.228	72.5	89.9	
								SEC_HS-2-4	0.012	0.006	1.9	89.9	
Pole HS-2-5	4.160	99.564	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-4	-0.468	-0.228	72.5	89.9	
								Pole HS-2-6	0.456	0.222	70.7	89.9	
								SEC_HS-2-5	0.012	0.006	1.9	89.9	
Pole HS-2-6	4.160	99.450	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-5	-0.455	-0.222	70.7	89.9	
								Pole HS-2-7	0.443	0.216	68.8	89.9	
								SEC_HS-2-6	0.012	0.006	1.9	89.9	
Pole HS-2-7	4.160	99.326	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-6	-0.443	-0.215	68.8	89.9	
								Pole HS-2-8	0.431	0.210	67.0	89.9	
								SEC_HS-2-7	0.012	0.006	1.9	89.9	
Pole HS-2-8	4.160	99.206	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-7	-0.430	-0.209	67.0	89.9	
								Pole HS-2-9	0.303	0.148	47.1	89.9	
								Pole HS-2-50	0.127	0.062	19.8	90.0	
Pole HS-2-9	4.160	99.125	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-8	-0.303	-0.147	47.1	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-10	0.299	0.146	46.5	89.9	
Pole HS-2-10	4.160	99.051	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-9	-0.299	-0.145	46.5	89.9	
								Pole HS-2-11	0.295	0.144	45.9	89.9	
Pole HS-2-11	4.160	98.971	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-10	-0.294	-0.143	45.9	89.9	
								Pole HS-2-12	0.282	0.138	44.1	89.9	
								SEC_HS-2-10	0.012	0.006	1.9	89.9	
Pole HS-2-12	4.160	98.920	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-11	-0.282	-0.138	44.1	89.9	
								Pole HS-2-86	0.278	0.136	43.4	89.9	
Pole HS-2-13	4.160	98.843	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-14	0.040	0.019	6.2	90.0	
								Pole HS-2-24	0.107	0.052	16.7	90.0	
								Pole HS-2-86	-0.146	-0.071	22.9	90.0	
Pole HS-2-14	4.160	98.830	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-13	-0.040	-0.019	6.2	90.0	
								Pole HS-2-15	0.036	0.017	5.6	90.0	
Pole HS-2-15	4.160	98.817	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-14	-0.036	-0.017	5.6	90.0	
								Pole HS-2-16	0.032	0.015	4.9	90.0	
Pole HS-2-16	4.160	98.804	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-15	-0.032	-0.015	4.9	90.0	
								Pole HS-2-17	0.028	0.013	4.3	90.0	
Pole HS-2-17	4.160	98.795	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-16	-0.028	-0.013	4.3	90.0	
								Pole HS-2-18	0.024	0.012	3.7	90.0	
Pole HS-2-18	4.160	98.789	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-17	-0.024	-0.012	3.7	90.0	
								Pole HS-2-19	0.020	0.010	3.1	90.0	
Pole HS-2-19	4.160	98.785	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-18	-0.020	-0.010	3.1	90.0	
								Pole HS-2-20	0.016	0.008	2.5	90.0	
Pole HS-2-20	4.160	98.776	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-19	-0.016	-0.008	2.5	89.9	
								Pole HS-2-21	0.012	0.006	1.9	90.0	
Pole HS-2-21	4.160	98.773	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-20	-0.012	-0.006	1.9	89.9	
								Pole HS-2-22	0.008	0.004	1.2	90.0	
Pole HS-2-22	4.160	98.770	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-21	-0.008	-0.004	1.2	89.9	
								Pole HS-2-23	0.004	0.002	0.6	90.0	
Pole HS-2-23	4.160	98.769	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-22	-0.004	-0.002	0.6	89.9	
Pole HS-2-24	4.160	98.756	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-13	-0.107	-0.052	16.7	90.0	
								Pole HS-2-25	0.091	0.044	14.2	90.0	
								Pole HS-2-26	0.012	0.006	1.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-2-25	4.160	98.727	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.091	-0.044	14.2	90.0	
								Pole HS-2-27	0.091	0.044	14.2	90.0	
Pole HS-2-26	4.160	98.746	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.012	-0.006	1.9	89.9	
								SEC_HS-2-23	0.012	0.006	1.9	89.9	
Pole HS-2-27	4.160	98.698	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-25	-0.091	-0.044	14.2	90.0	
								Pole HS-2-28	0.091	0.044	14.2	90.0	
Pole HS-2-28	4.160	98.650	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-27	-0.091	-0.044	14.2	90.0	
								Pole HS-2-29	0.032	0.015	4.9	89.9	
								Pole HS-2-35	0.059	0.029	9.3	90.0	
Pole HS-2-29	4.160	98.640	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-28	-0.032	-0.015	4.9	89.9	
								Pole HS-2-30	0.028	0.013	4.3	89.9	
Pole HS-2-30	4.160	98.637	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-31	0.016	0.008	2.5	89.9	
								Pole HS-2-29	-0.028	-0.013	4.3	89.9	
								SEC_HS-2-25	0.012	0.006	1.9	89.9	
Pole HS-2-31	4.160	98.635	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-30	-0.016	-0.008	2.5	89.9	
								Pole HS-2-32	0.012	0.006	1.9	90.0	
Pole HS-2-32	4.160	98.632	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-31	-0.012	-0.006	1.9	89.9	
								Pole HS-2-33	0.008	0.004	1.2	90.0	
Pole HS-2-33	4.160	98.629	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-32	-0.008	-0.004	1.2	89.9	
								Pole HS-2-34	0.004	0.002	0.6	90.0	
Pole HS-2-34	4.160	98.628	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-33	-0.004	-0.002	0.6	89.9	
Pole HS-2-35	4.160	98.619	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-28	-0.059	-0.029	9.3	90.0	
								Pole HS-2-36	0.024	0.012	3.7	90.0	
								Pole HS-2-42	0.032	0.015	4.9	90.0	
								Pole HS-2-48	0.004	0.002	0.6	89.9	
Pole HS-2-36	4.160	98.610	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-35	-0.024	-0.012	3.7	89.9	
								Pole HS-2-37	0.020	0.010	3.1	89.9	
Pole HS-2-37	4.160	98.605	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-36	-0.020	-0.010	3.1	89.9	
								Pole HS-2-38	0.016	0.008	2.5	89.9	
Pole HS-2-38	4.160	98.601	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-37	-0.016	-0.008	2.5	89.9	
								Pole HS-2-39	0.012	0.006	1.9	89.9	
Pole HS-2-39	4.160	98.598	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-38	-0.012	-0.006	1.9	89.9	
								Pole HS-2-40	0.008	0.004	1.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-2-40	4.160	98.596	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-39	-0.008	-0.004	1.2	89.9	
								Pole HS-2-41	0.004	0.002	0.6	89.9	
Pole HS-2-41	4.160	98.596	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-40	-0.004	-0.002	0.6	89.9	
Pole HS-2-42	4.160	98.603	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-35	-0.032	-0.015	4.9	90.0	
								Pole HS-2-43	0.028	0.013	4.3	89.9	
								Pole HS-2-49	0.004	0.002	0.6	90.0	
Pole HS-2-43	4.160	98.595	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-42	-0.028	-0.013	4.3	89.9	
								Pole HS-2-44	0.016	0.008	2.5	89.9	
								SEC_HS-2-36	0.012	0.006	1.8	89.9	
Pole HS-2-44	4.160	98.591	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-43	-0.016	-0.008	2.5	89.9	
								Pole HS-2-45	0.012	0.006	1.9	89.9	
Pole HS-2-45	4.160	98.588	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-44	-0.012	-0.006	1.9	89.9	
								Pole HS-2-46	0.008	0.004	1.2	89.9	
Pole HS-2-46	4.160	98.586	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-45	-0.008	-0.004	1.2	89.9	
								Pole HS-2-47	0.004	0.002	0.6	89.9	
Pole HS-2-47	4.160	98.585	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-46	-0.004	-0.002	0.6	89.9	
Pole HS-2-48	4.160	98.618	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-35	-0.004	-0.002	0.6	89.9	
Pole HS-2-49	4.160	98.600	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-42	-0.004	-0.002	0.6	90.0	
								L-SUB-FDR-EQ#18-1-278~	0.000	0.000	0.0	0.0	
Pole HS-2-50	4.160	99.139	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-8	-0.127	-0.062	19.8	90.0	
								Pole HS-2-51	0.123	0.060	19.2	90.0	
Pole HS-2-51	4.160	99.075	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-50	-0.123	-0.060	19.2	90.0	
								Pole HS-2-52	0.020	0.010	3.1	89.9	
								Pole HS-2-57	0.103	0.050	16.1	90.0	
Pole HS-2-52	4.160	99.072	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-51	-0.020	-0.010	3.1	89.9	
								Pole HS-2-53	0.016	0.008	2.5	89.9	
Pole HS-2-53	4.160	99.070	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-52	-0.016	-0.008	2.5	89.9	
								Pole HS-2-54	0.012	0.006	1.9	89.9	
Pole HS-2-54	4.160	99.068	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-53	-0.012	-0.006	1.9	89.9	
								Pole HS-2-55	0.008	0.004	1.2	89.9	
Pole HS-2-55	4.160	99.067	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-54	-0.008	-0.004	1.2	89.9	
								Pole HS-2-56	0.004	0.002	0.6	90.0	
Pole HS-2-56	4.160	99.066	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-55	-0.004	-0.002	0.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-2-57	4.160	99.021	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-51	-0.103	-0.050	16.1	90.0	
								Pole HS-2-58	0.040	0.019	6.2	89.9	
								Pole HS-2-76	0.064	0.031	9.9	90.0	
Pole HS-2-58	4.160	99.015	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-57	-0.040	-0.019	6.2	89.9	
								Pole HS-2-67	0.036	0.017	5.6	89.9	
Pole HS-2-59	4.160	99.001	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-67	-0.032	-0.015	5.0	89.9	
								Pole HS-2-60	0.028	0.014	4.3	89.9	
Pole HS-2-60	4.160	98.996	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-59	-0.028	-0.014	4.3	89.9	
								Pole HS-2-61	0.024	0.012	3.7	89.9	
Pole HS-2-61	4.160	98.991	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-60	-0.024	-0.012	3.7	89.9	
								Pole HS-2-62	0.020	0.010	3.1	90.0	
Pole HS-2-62	4.160	98.986	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-61	-0.020	-0.010	3.1	89.9	
								Pole HS-2-63	0.016	0.008	2.5	89.9	
Pole HS-2-63	4.160	98.983	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-62	-0.016	-0.008	2.5	89.9	
								Pole HS-2-64	0.012	0.006	1.9	90.0	
Pole HS-2-64	4.160	98.981	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-63	-0.012	-0.006	1.9	89.9	
								Pole HS-2-65	0.008	0.004	1.2	90.0	
Pole HS-2-65	4.160	98.980	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-64	-0.008	-0.004	1.2	89.9	
								Pole HS-2-66	0.004	0.002	0.6	90.0	
Pole HS-2-66	4.160	98.979	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-65	-0.004	-0.002	0.6	89.9	
								L-SUB-FDR-EQ#18-1-301~	0.000	0.000	0.0	0.0	
Pole HS-2-67	4.160	99.007	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-59	0.032	0.015	5.0	89.9	
								Pole HS-2-58	-0.036	-0.017	5.6	89.9	
Pole HS-2-68	4.160	98.960	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-69	-0.004	-0.002	0.6	89.9	
Pole HS-2-69	4.160	98.961	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-68	0.004	0.002	0.6	89.9	
								Pole HS-2-70	-0.008	-0.004	1.2	89.9	
Pole HS-2-70	4.160	98.962	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-69	0.008	0.004	1.2	89.9	
								Pole HS-2-71	-0.012	-0.006	1.9	89.9	
Pole HS-2-71	4.160	98.966	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-70	0.012	0.006	1.9	89.9	
								Pole HS-2-72	-0.016	-0.008	2.5	89.9	
Pole HS-2-72	4.160	98.969	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-71	0.016	0.008	2.5	89.9	
								Pole HS-2-73	-0.020	-0.010	3.1	89.9	
Pole HS-2-73	4.160	98.973	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-72	0.020	0.010	3.1	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-74	-0.024	-0.012	3.7	89.9	
Pole HS-2-74	4.160	98.976	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-73	0.024	0.012	3.7	89.9	
								Pole HS-2-75	-0.028	-0.014	4.3	89.9	
Pole HS-2-75	4.160	98.983	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-74	0.028	0.014	4.3	89.9	
								Pole HS-2-76	-0.032	-0.015	5.0	89.9	
Pole HS-2-76	4.160	98.987	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-75	0.032	0.015	5.0	89.9	
								Pole HS-2-57	-0.064	-0.031	9.9	90.0	
								Pole HS-2-77	0.032	0.015	4.9	90.0	
Pole HS-2-77	4.160	98.970	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-76	-0.032	-0.015	4.9	90.0	
								Pole HS-2-78	0.020	0.010	3.1	90.0	
								SEC_HS-2-67	0.012	0.006	1.9	89.9	
Pole HS-2-78	4.160	98.957	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-77	-0.020	-0.010	3.1	90.0	
								Pole HS-2-79	0.004	0.002	0.6	90.0	
								Pole HS-2-80	0.016	0.008	2.5	90.0	
Pole HS-2-79	4.160	98.954	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-78	-0.004	-0.002	0.6	89.9	
Pole HS-2-80	4.160	98.947	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-78	-0.016	-0.008	2.5	90.0	
								Pole HS-2-81	0.012	0.006	1.9	90.0	
Pole HS-2-81	4.160	98.941	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-80	-0.012	-0.006	1.9	90.0	
								Pole HS-2-82	0.008	0.004	1.2	90.0	
Pole HS-2-82	4.160	98.934	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-81	-0.008	-0.004	1.2	90.0	
								Pole HS-2-83	0.004	0.002	0.6	90.0	
Pole HS-2-83	4.160	98.931	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-82	-0.004	-0.002	0.6	89.9	
Pole HS-2-84	4.160	99.199	-2.5	0.000	0.000	0.004	0.002	Pole HS-2-85	-0.004	-0.002	0.6	89.9	
Pole HS-2-85	4.160	99.201	-2.5	0.000	0.000	0.004	0.002	Pole HS-2-84	0.004	0.002	0.6	90.0	
								Pole CS-1-2	-0.008	-0.004	1.2	90.0	
Pole HS-2-86	4.160	98.869	-2.3	0.000	0.000	0.000	0.000	PRI_PM_10	0.132	0.064	20.6	89.8	
								Pole HS-2-12	-0.278	-0.136	43.4	89.9	
								Pole HS-2-13	0.146	0.071	22.9	90.0	
Pole HS-3-1	4.160	100.177	-2.3	0.000	0.000	0.004	0.002	BUS_HSC_4kV	-0.337	-0.164	52.0	90.0	
								Pole HS-3-2	0.333	0.162	51.3	90.0	
Pole HS-3-2	4.160	100.068	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-1	-0.333	-0.162	51.3	90.0	
								Pole HS-3-3	0.329	0.160	50.7	90.0	
Pole HS-3-3	4.160	99.910	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-2	-0.328	-0.159	50.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-3-4	0.324	0.157	50.1	90.0	
Pole HS-3-4	4.160	99.803	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-3	-0.324	-0.157	50.1	90.0	
								Pole HS-3-5	0.320	0.155	49.5	90.0	
Pole HS-3-5	4.160	99.697	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-4	-0.320	-0.155	49.5	90.0	
								Pole HS-3-6	0.316	0.153	48.8	90.0	
Pole HS-3-6	4.160	99.623	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-5	-0.315	-0.153	48.8	90.0	
								Pole HS-3-7	0.311	0.151	48.2	90.0	
Pole HS-3-7	4.160	99.536	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-6	-0.311	-0.151	48.2	90.0	
								Pole HS-3-8	0.307	0.149	47.6	90.0	
Pole HS-3-8	4.160	99.473	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-7	-0.307	-0.149	47.6	90.0	
								Pole HS-3-9	0.303	0.147	47.0	90.0	
Pole HS-3-9	4.160	99.391	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-8	-0.303	-0.147	47.0	90.0	
								Pole HS-3-10	0.299	0.145	46.4	90.0	
Pole HS-3-10	4.160	99.311	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-9	-0.298	-0.145	46.4	90.0	
								Pole HS-3-11	0.294	0.143	45.7	90.0	
Pole HS-3-11	4.160	99.253	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-10	-0.294	-0.143	45.7	90.0	
								Pole HS-3-12	0.290	0.141	45.1	90.0	
Pole HS-3-12	4.160	99.200	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-11	-0.290	-0.141	45.1	90.0	
								Pole HS-3-13	0.286	0.139	44.5	90.0	
Pole HS-3-13	4.160	99.124	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-12	-0.286	-0.139	44.5	90.0	
								Pole HS-3-14	0.282	0.137	43.9	90.0	
Pole HS-3-14	4.160	99.069	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-13	-0.282	-0.137	43.9	90.0	
								Pole HS-3-15	0.278	0.135	43.3	90.0	
Pole HS-3-15	4.160	99.004	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-14	-0.278	-0.135	43.3	90.0	
								Pole HS-3-16	0.274	0.133	42.6	90.0	
Pole HS-3-16	4.160	98.941	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-15	-0.273	-0.133	42.6	90.0	
								Pole HS-3-17	0.269	0.131	42.0	90.0	
Pole HS-3-17	4.160	98.887	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-16	-0.269	-0.131	42.0	90.0	
								Pole HS-3-18	0.174	0.085	27.2	90.0	
								Pole HS-3-23	0.095	0.046	14.8	90.0	
Pole HS-3-18	4.160	98.770	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-17	-0.174	-0.084	27.2	90.0	
								Pole HS-3-28	0.020	0.010	3.1	90.0	
								Pole HS-3-29	0.103	0.050	16.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-3-46	0.051	0.025	8.0	89.9	
Pole HS-3-19	4.160	98.781	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-20	-0.079	-0.038	12.4	90.0	
								Pole HS-3-30	0.075	0.037	11.7	90.0	
Pole HS-3-20	4.160	98.799	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-19	0.079	0.038	12.4	90.0	
								Pole HS-3-21	-0.083	-0.040	13.0	90.0	
Pole HS-3-21	4.160	98.835	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-20	0.083	0.040	13.0	90.0	
								Pole HS-3-22	-0.087	-0.042	13.6	90.0	
Pole HS-3-22	4.160	98.852	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-21	0.087	0.042	13.6	90.0	
								Pole HS-3-23	-0.091	-0.044	14.2	90.0	
Pole HS-3-23	4.160	98.868	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-17	-0.095	-0.046	14.8	90.0	
								Pole HS-3-22	0.091	0.044	14.2	90.0	
Pole HS-3-24	4.160	98.757	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-25	-0.004	-0.002	0.6	89.9	
Pole HS-3-25	4.160	98.758	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-24	0.004	0.002	0.6	90.0	
								Pole HS-3-26	-0.008	-0.004	1.2	89.9	
Pole HS-3-26	4.160	98.761	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-25	0.008	0.004	1.2	90.0	
								Pole HS-3-27	-0.012	-0.006	1.9	89.9	
Pole HS-3-27	4.160	98.764	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-26	0.012	0.006	1.9	90.0	
								Pole HS-3-28	-0.016	-0.008	2.5	89.9	
Pole HS-3-28	4.160	98.768	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-27	0.016	0.008	2.5	90.0	
								Pole HS-3-18	-0.020	-0.010	3.1	89.9	
Pole HS-3-29	4.160	98.702	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-18	-0.103	-0.050	16.1	90.0	
								Pole HS-3-34	0.016	0.008	2.5	89.9	
								Pole HS-3-35	0.040	0.019	6.2	90.0	
								Pole HS-3-59	0.047	0.023	7.4	89.9	
Pole HS-3-30	4.160	98.765	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-19	-0.075	-0.037	11.7	90.0	
								Pole HS-3-85	0.071	0.035	11.1	90.0	
Pole HS-3-31	4.160	98.692	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-32	-0.004	-0.002	0.6	89.9	
Pole HS-3-32	4.160	98.693	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-31	0.004	0.002	0.6	89.9	
								Pole HS-3-33	-0.008	-0.004	1.2	89.9	
Pole HS-3-33	4.160	98.695	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-32	0.008	0.004	1.2	89.9	
								Pole HS-3-34	-0.012	-0.006	1.9	89.9	
Pole HS-3-34	4.160	98.697	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-29	-0.016	-0.008	2.5	89.9	
								Pole HS-3-33	0.012	0.006	1.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-35	4.160	98.676	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.040	-0.019	6.2	90.0	
								Pole HS-3-37	0.008	0.004	1.2	90.0	
								Pole HS-3-38	0.032	0.015	4.9	90.0	
Pole HS-3-36	4.160	98.673	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-37	-0.004	-0.002	0.6	89.9	
Pole HS-3-37	4.160	98.673	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-35	-0.008	-0.004	1.2	89.9	
								Pole HS-3-36	0.004	0.002	0.6	89.9	
Pole HS-3-38	4.160	98.655	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-35	-0.032	-0.015	4.9	90.0	
								Pole HS-3-43	0.028	0.013	4.3	90.0	
Pole HS-3-39	4.160	98.628	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-44	0.008	0.004	1.2	90.0	
								Pole HS-3-40	-0.012	-0.006	1.9	90.0	
Pole HS-3-40	4.160	98.630	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-39	0.012	0.006	1.9	90.0	
								Pole HS-3-41	-0.016	-0.008	2.5	90.0	
Pole HS-3-41	4.160	98.634	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-40	0.016	0.008	2.5	90.0	
								Pole HS-3-42	-0.020	-0.010	3.1	90.0	
Pole HS-3-42	4.160	98.637	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-41	0.020	0.010	3.1	90.0	
								Pole HS-3-43	-0.024	-0.012	3.7	90.0	
Pole HS-3-43	4.160	98.643	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-42	0.024	0.012	3.7	90.0	
								Pole HS-3-38	-0.028	-0.013	4.3	90.0	
Pole HS-3-44	4.160	98.620	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-39	-0.008	-0.004	1.2	89.9	
								Pole HS-3-45	0.004	0.002	0.6	90.0	
Pole HS-3-45	4.160	98.618	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-44	-0.004	-0.002	0.6	89.9	
Pole HS-3-46	4.160	98.764	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-18	-0.051	-0.025	8.0	89.9	
								Pole HS-3-47	0.047	0.023	7.4	89.9	
Pole HS-3-47	4.160	98.757	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-46	-0.047	-0.023	7.4	89.9	
								Pole HS-3-48	0.044	0.021	6.8	89.9	
Pole HS-3-48	4.160	98.744	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-47	-0.044	-0.021	6.8	89.9	
								Pole HS-3-49	0.040	0.019	6.2	89.9	
Pole HS-3-49	4.160	98.734	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-50	0.036	0.017	5.6	89.9	
								Pole HS-3-48	-0.040	-0.019	6.2	89.9	
Pole HS-3-50	4.160	98.728	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-49	-0.036	-0.017	5.6	89.9	
								Pole HS-3-51	0.032	0.015	4.9	89.9	
Pole HS-3-51	4.160	98.721	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-50	-0.032	-0.015	4.9	89.9	
								Pole HS-3-52	0.028	0.013	4.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-52	4.160	98.713	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-51	-0.028	-0.013	4.3	89.9	
								Pole HS-3-53	0.024	0.012	3.7	89.9	
Pole HS-3-53	4.160	98.710	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-58	0.020	0.010	3.1	90.0	
								Pole HS-3-52	-0.024	-0.012	3.7	89.9	
Pole HS-3-54	4.160	98.694	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-55	-0.004	-0.002	0.6	89.9	
Pole HS-3-55	4.160	98.695	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-54	0.004	0.002	0.6	90.0	
								Pole HS-3-56	-0.008	-0.004	1.2	89.9	
Pole HS-3-56	4.160	98.697	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-55	0.008	0.004	1.2	90.0	
								Pole HS-3-57	-0.012	-0.006	1.9	89.9	
Pole HS-3-57	4.160	98.699	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-56	0.012	0.006	1.9	89.9	
								Pole HS-3-58	-0.016	-0.008	2.5	89.9	
Pole HS-3-58	4.160	98.708	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-53	-0.020	-0.010	3.1	90.0	
								Pole HS-3-57	0.016	0.008	2.5	90.0	
Pole HS-3-59	4.160	98.669	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.047	-0.023	7.4	89.9	
								Pole HS-3-60	0.036	0.017	5.6	89.9	
								SEC_HS-3-55	0.012	0.006	1.9	89.9	
Pole HS-3-60	4.160	98.654	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-59	-0.036	-0.017	5.6	89.9	
								Pole HS-3-61	0.032	0.015	4.9	89.9	
Pole HS-3-61	4.160	98.643	-2.2	0.000	0.000	0.000	0.000	Pole HS-3-60	-0.032	-0.015	4.9	89.9	
								Pole HS-3-62	0.020	0.010	3.1	89.9	
								SEC_HS-3-57	0.012	0.006	1.9	89.9	
Pole HS-3-62	4.160	98.636	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-61	-0.020	-0.010	3.1	89.9	
								Pole HS-3-63	0.016	0.008	2.5	89.9	
Pole HS-3-63	4.160	98.630	-2.2	0.000	0.000	0.000	0.000	Pole HS-3-62	-0.016	-0.008	2.5	89.9	
								Pole HS-3-64	0.004	0.002	0.6	90.0	
								SEC_HS-3-59	0.012	0.006	1.9	89.9	
Pole HS-3-64	4.160	98.629	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-63	-0.004	-0.002	0.6	89.9	
Pole HS-3-65	4.160	98.670	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-66	-0.004	-0.002	0.6	89.9	
Pole HS-3-66	4.160	98.672	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-65	0.004	0.002	0.6	89.9	
								Pole HS-3-67	-0.008	-0.004	1.2	89.9	
Pole HS-3-67	4.160	98.676	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-66	0.008	0.004	1.2	90.0	
								Pole HS-3-68	-0.012	-0.006	1.9	89.9	
Pole HS-3-68	4.160	98.680	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-67	0.012	0.006	1.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-3-69	-0.016	-0.008	2.5	89.9	
Pole HS-3-69	4.160	98.684	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-68	0.016	0.008	2.5	89.9	
								Pole HS-3-70	-0.020	-0.010	3.1	89.9	
Pole HS-3-70	4.160	98.696	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-69	0.020	0.010	3.1	90.0	
								Pole HS-3-71	-0.024	-0.012	3.7	89.9	
Pole HS-3-71	4.160	98.711	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-70	0.024	0.012	3.7	90.0	
								Pole MS-1-81	-0.028	-0.013	4.3	89.9	
Pole HS-3-74	4.160	98.684	-2.3	0.000	0.000	0.008	0.004	Pole HS-3-75	-0.008	-0.004	1.2	89.9	
Pole HS-3-75	4.160	98.686	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-74	0.008	0.004	1.2	89.9	
								Pole HS-3-76	-0.012	-0.006	1.9	89.9	
Pole HS-3-76	4.160	98.691	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-75	0.012	0.006	1.9	89.9	
								Pole HS-3-77	-0.016	-0.008	2.5	89.9	
Pole HS-3-77	4.160	98.696	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-76	0.016	0.008	2.5	89.9	
								Pole HS-3-78	-0.020	-0.010	3.1	89.9	
Pole HS-3-78	4.160	98.703	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-77	0.020	0.010	3.1	89.9	
								Pole HS-3-79	-0.024	-0.012	3.7	89.9	
Pole HS-3-79	4.160	98.724	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-78	0.024	0.012	3.7	89.9	
								Pole MS-1-81	-0.028	-0.013	4.3	89.9	
Pole HS-3-80	4.160	98.730	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-81	0.012	0.006	1.9	90.0	
								Pole HS-3-85	-0.016	-0.008	2.5	90.0	
Pole HS-3-81	4.160	98.720	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-82	0.008	0.004	1.2	90.0	
								Pole HS-3-80	-0.012	-0.006	1.9	89.9	
Pole HS-3-82	4.160	98.714	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-83	0.004	0.002	0.6	89.9	
								Pole HS-3-81	-0.008	-0.004	1.2	89.9	
Pole HS-3-83	4.160	98.713	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-82	-0.004	-0.002	0.6	89.9	
Pole HS-3-85	4.160	98.740	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-80	0.016	0.008	2.5	90.0	
								Pole MS-1-81	0.055	0.027	8.7	90.0	
								Pole HS-3-30	-0.071	-0.035	11.1	90.0	
Pole HS-3-86	4.160	98.920	-2.5	0.000	0.000	0.004	0.002	Pole CS-1-3	-0.004	-0.002	0.6	89.9	
Pole HS-3-88	4.160	98.650	-2.6	0.000	0.000	0.004	0.002	Pole CS-1-6	-0.012	-0.006	1.9	89.9	
								Pole HS-3-89	0.008	0.004	1.2	89.9	
Pole HS-3-89	4.160	98.649	-2.6	0.000	0.000	0.004	0.002	Pole HS-3-88	-0.008	-0.004	1.2	89.9	
								Pole HS-3-90	0.004	0.002	0.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-90	4.160	98.648	-2.6	0.000	0.000	0.004	0.002	Pole HS-3-89	-0.004	-0.002	0.6	89.9	
Pole HS-4-1	4.160	99.928	-2.3	0.000	0.000	0.004	0.002	BUS_HSC_4kV	-0.441	-0.215	68.2	89.9	
								Pole HS-4-2	0.437	0.213	67.5	89.9	
Pole HS-4-2	4.160	99.874	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-12	0.263	0.128	40.6	89.8	
								Pole HS-4-1	-0.437	-0.213	67.5	89.9	
								Pole HS-4-3	0.174	0.085	26.9	89.9	
Pole HS-4-3	4.160	99.793	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-44	0.059	0.029	9.2	89.9	
								Pole HS-4-53	0.038	0.019	5.9	90.0	
								Pole HS-4-2	-0.174	-0.085	26.9	90.0	
								Pole HS-4-4	0.076	0.037	11.8	90.0	
Pole HS-4-4	4.160	99.774	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-58	0.025	0.012	3.9	90.0	
								Pole HS-4-3	-0.076	-0.037	11.8	90.0	
								Pole HS-4-5	0.051	0.025	7.9	89.9	
Pole HS-4-5	4.160	99.758	-2.4	0.000	0.000	0.008	0.004	Pole HS-4-55	0.008	0.004	1.3	90.0	
								Pole HS-4-4	-0.051	-0.025	7.9	89.9	
								Pole HS-4-6	0.034	0.016	5.3	89.9	
Pole HS-4-6	4.160	99.747	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-56	0.008	0.004	1.3	89.9	
								Pole HS-4-5	-0.034	-0.016	5.3	89.9	
								Pole HS-4-7	0.021	0.010	3.3	90.0	
Pole HS-4-7	4.160	99.740	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-6	-0.021	-0.010	3.3	89.9	
								Pole HS-4-8	0.021	0.010	3.3	89.9	
Pole HS-4-8	4.160	99.733	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-7	-0.021	-0.010	3.3	89.9	
								Pole HS-4-9	0.017	0.008	2.6	89.9	
Pole HS-4-9	4.160	99.730	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-8	-0.017	-0.008	2.6	89.9	
								Pole HS-4-10	0.013	0.006	2.0	89.9	
Pole HS-4-10	4.160	99.729	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-9	-0.013	-0.006	2.0	89.9	
								Pole HS-4-11	0.000	0.000	0.0	0.0	
								SEC_HS-4-7	0.013	0.006	2.0	89.9	
Pole HS-4-11	4.160	99.729	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-10	0.000	0.000	0.0	0.0	
Pole HS-4-12	4.160	99.791	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-2	-0.262	-0.128	40.6	89.8	
								Pole HS-4-13	0.258	0.126	40.0	89.8	
Pole HS-4-13	4.160	99.741	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-12	-0.258	-0.126	40.0	89.8	
								Pole HS-4-14	0.254	0.124	39.3	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-4-14	4.160	99.672	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-13	-0.254	-0.124	39.3	89.8	
								Pole HS-4-15	0.249	0.122	38.7	89.8	
Pole HS-4-15	4.160	99.601	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-14	-0.249	-0.122	38.7	89.8	
								Pole HS-4-19	0.245	0.120	38.0	89.8	
Pole HS-4-16	4.160	98.789	-2.3	0.000	0.000	0.000	0.000	PRI_PM_15	0.159	0.078	24.9	89.8	
								Pole HS-4-33	-0.159	-0.078	24.9	89.8	
Pole HS-4-17	4.160	99.496	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-19	-0.241	-0.118	37.3	89.8	
								Pole HS-4-18	0.228	0.111	35.4	89.8	
								SEC_HS-4-13	0.013	0.006	2.0	89.9	
Pole HS-4-18	4.160	99.453	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-17	-0.228	-0.111	35.4	89.8	
								Pole HS-4-20	0.224	0.109	34.7	89.8	
Pole HS-4-19	4.160	99.564	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-15	-0.245	-0.120	38.0	89.8	
								Pole HS-4-17	0.241	0.118	37.3	89.8	
Pole HS-4-20	4.160	99.400	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-18	-0.223	-0.109	34.7	89.8	
								Pole HS-4-21	0.219	0.107	34.1	89.8	
Pole HS-4-21	4.160	99.350	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-20	-0.219	-0.107	34.1	89.8	
								Pole HS-4-22	0.215	0.105	33.4	89.8	
Pole HS-4-22	4.160	99.262	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-21	-0.215	-0.105	33.4	89.8	
								Pole HS-4-23	0.210	0.103	32.8	89.8	
Pole HS-4-23	4.160	99.208	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-22	-0.210	-0.103	32.8	89.8	
								Pole HS-4-24	0.206	0.101	32.1	89.8	
Pole HS-4-24	4.160	99.169	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-23	-0.206	-0.101	32.1	89.8	
								Pole HS-4-26	0.013	0.006	2.0	89.9	
								Pole HS-4-27	0.193	0.095	30.1	89.8	
Pole HS-4-26	4.160	99.165	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-24	-0.013	-0.006	2.0	89.9	
								SEC_HS-4-21	0.013	0.006	2.0	89.9	
Pole HS-4-27	4.160	99.128	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-24	-0.193	-0.095	30.1	89.8	
								Pole HS-4-28	0.189	0.093	29.5	89.8	
Pole HS-4-28	4.160	99.086	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-27	-0.189	-0.093	29.5	89.8	
								Pole HS-4-29	0.185	0.091	28.8	89.8	
Pole HS-4-29	4.160	98.963	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-28	-0.185	-0.091	28.8	89.8	
								Pole HS-4-31	0.180	0.088	28.2	89.8	
Pole HS-4-30	4.160	98.854	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-31	-0.180	-0.088	28.2	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-32	0.176	0.086	27.5	89.8	
Pole HS-4-31	4.160	98.922	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-29	-0.180	-0.088	28.2	89.8	
								Pole HS-4-30	0.180	0.088	28.2	89.8	
Pole HS-4-32	4.160	98.823	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-30	-0.176	-0.086	27.5	89.8	
								Pole HS-4-33	0.172	0.084	26.9	89.8	
Pole HS-4-33	4.160	98.806	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-32	-0.172	-0.084	26.9	89.8	
								Pole HS-4-16	0.159	0.078	24.9	89.8	
								Pole HS-4-64	0.013	0.006	2.0	90.0	
								L-SUB-FDR-EQ#20-1-96~	0.000	0.000	0.0	0.0	
Pole HS-4-34	4.160	99.720	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-35	-0.008	-0.004	1.3	89.9	
								Pole HS-4-45	0.004	0.002	0.7	90.0	
Pole HS-4-35	4.160	99.723	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-36	-0.013	-0.006	2.0	89.9	
								Pole HS-4-34	0.008	0.004	1.3	90.0	
Pole HS-4-36	4.160	99.732	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-37	-0.017	-0.008	2.6	90.0	
								Pole HS-4-35	0.013	0.006	2.0	90.0	
Pole HS-4-37	4.160	99.740	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-38	-0.021	-0.010	3.3	90.0	
								Pole HS-4-36	0.017	0.008	2.6	90.0	
Pole HS-4-38	4.160	99.744	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-39	-0.025	-0.012	3.9	90.0	
								Pole HS-4-37	0.021	0.010	3.3	90.0	
Pole HS-4-39	4.160	99.746	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-40	-0.038	-0.019	5.9	89.9	
								Pole HS-4-38	0.025	0.012	3.9	90.0	
								SEC_HS-4-32	0.013	0.006	2.0	89.9	
Pole HS-4-40	4.160	99.752	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-41	-0.042	-0.021	6.6	89.9	
								Pole HS-4-39	0.038	0.019	5.9	89.9	
Pole HS-4-41	4.160	99.762	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-42	-0.047	-0.023	7.2	89.9	
								Pole HS-4-40	0.042	0.021	6.6	89.9	
Pole HS-4-42	4.160	99.774	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-43	-0.051	-0.025	7.9	89.9	
								Pole HS-4-41	0.047	0.023	7.2	89.9	
Pole HS-4-43	4.160	99.780	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-44	-0.055	-0.027	8.5	89.9	
								Pole HS-4-42	0.051	0.025	7.9	89.9	
Pole HS-4-44	4.160	99.786	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-3	-0.059	-0.029	9.2	89.9	
								Pole HS-4-43	0.055	0.027	8.5	89.9	
Pole HS-4-45	4.160	99.718	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-34	-0.004	-0.002	0.7	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-4-47	4.160	99.746	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-48	-0.004	-0.002	0.7	90.0	
								HS-4-33~	0.000	0.000	0.0	0.0	
Pole HS-4-48	4.160	99.748	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-47	0.004	0.002	0.7	90.1	
								Pole HS-4-49	-0.017	-0.008	2.6	90.0	
								SEC_HS-4-44	0.013	0.006	2.0	89.9	
Pole HS-4-49	4.160	99.752	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-48	0.017	0.008	2.6	90.0	
								Pole HS-4-50	-0.021	-0.010	3.3	90.0	
Pole HS-4-50	4.160	99.756	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-49	0.021	0.010	3.3	90.0	
								Pole HS-4-51	-0.025	-0.012	3.9	90.0	
Pole HS-4-51	4.160	99.768	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-50	0.025	0.012	3.9	90.0	
								Pole HS-4-52	-0.030	-0.014	4.6	90.0	
Pole HS-4-52	4.160	99.775	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-51	0.030	0.014	4.6	90.0	
								Pole HS-4-53	-0.034	-0.016	5.3	90.0	
Pole HS-4-53	4.160	99.784	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-52	0.034	0.016	5.3	90.0	
								Pole HS-4-3	-0.038	-0.019	5.9	90.0	
Pole HS-4-54	4.160	99.753	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-55	-0.004	-0.002	0.7	89.9	
Pole HS-4-55	4.160	99.754	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-54	0.004	0.002	0.7	89.9	
								Pole HS-4-5	-0.008	-0.004	1.3	89.9	
Pole HS-4-56	4.160	99.745	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-6	-0.008	-0.004	1.3	89.9	
								Pole HS-4-57	0.004	0.002	0.7	89.9	
Pole HS-4-57	4.160	99.744	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-56	-0.004	-0.002	0.7	89.9	
Pole HS-4-58	4.160	99.752	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-4	-0.025	-0.012	3.9	90.0	
								Pole HS-4-59	0.021	0.010	3.3	90.0	
Pole HS-4-59	4.160	99.743	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-58	-0.021	-0.010	3.3	90.0	
								Pole HS-4-60	0.004	0.002	0.7	89.9	
								Pole HS-4-61	0.013	0.006	2.0	90.0	
Pole HS-4-60	4.160	99.742	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-59	-0.004	-0.002	0.7	89.9	
Pole HS-4-61	4.160	99.736	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-59	-0.013	-0.006	2.0	89.9	
								Pole HS-4-62	0.008	0.004	1.3	90.0	
Pole HS-4-62	4.160	99.731	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-61	-0.008	-0.004	1.3	89.9	
								Pole HS-4-63	0.004	0.002	0.7	89.9	
Pole HS-4-63	4.160	99.730	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-62	-0.004	-0.002	0.7	89.9	
Pole HS-4-64	4.160	98.803	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-65	0.004	0.002	0.7	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-33	-0.013	-0.006	2.0	90.0	
								Pole HS-4-66	0.008	0.004	1.3	90.0	
Pole HS-4-65	4.160	98.802	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-64	-0.004	-0.002	0.7	89.9	
Pole HS-4-66	4.160	98.802	-2.3	0.000	0.000	0.008	0.004	Pole HS-4-64	-0.008	-0.004	1.3	90.0	
								Pole HS-4-67	0.000	0.000	0.0	0.0	
Pole HS-4-67	4.160	98.802	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-66	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#20-1-90~	0.000	0.000	0.0	0.0	
Pole MS-1-1	4.160	100.031	-3.0	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.114	-0.055	17.6	90.0	
								Pole MS-1-2	0.083	0.040	12.8	90.0	
								Pole MS-1-76	0.031	0.015	4.8	90.0	
								L-SUB-FDR-EQ#12-9~	0.000	0.000	0.0	0.0	
Pole MS-1-2	4.160	100.013	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-1	-0.083	-0.040	12.8	90.0	
								Pole MS-1-3	0.080	0.039	12.4	90.0	
Pole MS-1-3	4.160	99.999	-3.0	0.000	0.000	0.000	0.000	Pole MS-1-2	-0.080	-0.039	12.4	90.0	
								Pole MS-1-17	0.059	0.029	9.1	90.0	
								Pole MS-1-5	0.021	0.010	3.2	90.0	
Pole MS-1-5	4.160	99.991	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-3	-0.021	-0.010	3.2	90.0	
								Pole MS-1-7	0.018	0.009	2.8	90.0	
Pole MS-1-7	4.160	99.986	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-5	-0.018	-0.009	2.8	90.0	
								Pole MS-1-9	0.016	0.008	2.4	90.0	
Pole MS-1-8	4.160	99.979	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-9	-0.013	-0.006	2.0	90.0	
								Pole MS-1-10	0.010	0.005	1.6	90.0	
Pole MS-1-9	4.160	99.982	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-8	0.013	0.006	2.0	90.0	
								Pole MS-1-7	-0.016	-0.008	2.4	90.0	
Pole MS-1-10	4.160	99.976	-3.0	0.000	0.000	0.000	0.000	Pole MS-1-8	-0.010	-0.005	1.6	90.0	
								Pole MS-1-11	0.008	0.004	1.2	90.0	
								SEC_MS-1-17	0.002	0.001	0.3	90.0	
Pole MS-1-11	4.160	99.974	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-10	-0.008	-0.004	1.2	90.0	
								Pole MS-1-13	0.005	0.003	0.8	90.0	
Pole MS-1-13	4.160	99.972	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-11	-0.005	-0.003	0.8	90.0	
								Pole MS-1-15	0.003	0.001	0.4	90.0	
Pole MS-1-15	4.160	99.971	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-13	-0.003	-0.001	0.4	90.0	
Pole MS-1-17	4.160	99.987	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-3	-0.059	-0.029	9.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-1-19	0.057	0.027	8.7	90.0	
Pole MS-1-18	4.160	99.971	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-19	-0.057	-0.027	8.7	90.0	
								Pole MS-1-28	0.054	0.026	8.3	90.0	
Pole MS-1-19	4.160	99.977	-3.0	0.000	0.000	0.000	0.000	Pole MS-1-18	0.057	0.027	8.7	90.0	
								Pole MS-1-17	-0.057	-0.027	8.7	90.0	
								L-SUB-FDR-EQ#16-12~	0.000	0.000	0.0	0.0	
Pole MS-1-28	4.160	99.956	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-18	-0.054	-0.026	8.3	90.0	
								Pole MS-1-50	0.030	0.014	4.6	90.0	
								Pole MS-1-30	0.022	0.010	3.3	90.0	
Pole MS-1-30	4.160	99.949	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-28	-0.022	-0.010	3.3	90.0	
								Pole MS-1-32	0.019	0.009	2.9	90.0	
Pole MS-1-32	4.160	99.944	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-30	-0.019	-0.009	2.9	90.0	
								Pole MS-1-34	0.016	0.008	2.5	90.0	
Pole MS-1-34	4.160	99.937	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-32	-0.016	-0.008	2.5	90.0	
								Pole MS-1-36	0.013	0.007	2.1	90.0	
Pole MS-1-36	4.160	99.932	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-34	-0.013	-0.007	2.1	90.0	
								Pole MS-1-38	0.011	0.005	1.7	90.0	
Pole MS-1-38	4.160	99.928	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-36	-0.011	-0.005	1.7	90.0	
								Pole MS-1-40	0.008	0.004	1.2	90.0	
Pole MS-1-40	4.160	99.925	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-38	-0.008	-0.004	1.2	90.0	
								Pole MS-1-42	0.005	0.003	0.8	90.0	
Pole MS-1-42	4.160	99.923	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-40	-0.005	-0.003	0.8	90.0	
								Pole MS-1-46	0.003	0.001	0.4	90.0	
Pole MS-1-46	4.160	99.922	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-42	-0.003	-0.001	0.4	90.0	
Pole MS-1-50	4.160	99.944	-3.0	0.000	0.000	0.000	0.000	Pole MS-1-28	-0.030	-0.014	4.6	90.0	
								Pole MS-1-70	0.008	0.004	1.2	90.0	
								Pole MS-1-52	0.022	0.010	3.3	90.0	
Pole MS-1-52	4.160	99.937	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-50	-0.022	-0.010	3.3	90.0	
								Pole MS-1-54	0.019	0.009	2.9	90.0	
Pole MS-1-54	4.160	99.932	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-52	-0.019	-0.009	2.9	90.0	
								Pole MS-1-56	0.016	0.008	2.5	90.0	
Pole MS-1-56	4.160	99.927	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-54	-0.016	-0.008	2.5	90.0	
								Pole MS-1-58	0.013	0.007	2.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-58	4.160	99.922	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-56	-0.013	-0.007	2.1	90.0	
								Pole MS-1-60	0.011	0.005	1.7	90.0	
Pole MS-1-60	4.160	99.920	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-58	-0.011	-0.005	1.7	90.0	
								Pole MS-1-62	0.008	0.004	1.2	90.0	
Pole MS-1-62	4.160	99.917	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-60	-0.008	-0.004	1.2	90.0	
								Pole MS-1-64	0.005	0.003	0.8	90.0	
Pole MS-1-64	4.160	99.916	-3.0	0.000	0.000	0.000	0.000	Pole MS-1-62	-0.005	-0.003	0.8	90.0	
								Pole MS-1-66	0.003	0.001	0.4	90.0	
								Pole MS-1-68	0.003	0.001	0.4	90.0	
Pole MS-1-66	4.160	99.916	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-64	-0.003	-0.001	0.4	90.0	
Pole MS-1-68	4.160	99.914	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-64	-0.003	-0.001	0.4	90.0	
Pole MS-1-70	4.160	99.943	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-50	-0.008	-0.004	1.2	90.0	
								Pole MS-1-72	0.005	0.003	0.8	90.0	
Pole MS-1-72	4.160	99.942	-3.0	0.000	0.000	0.005	0.003	Pole MS-1-70	-0.005	-0.003	0.8	90.0	
Pole MS-1-73	4.160	99.990	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-74	-0.019	-0.009	2.9	90.0	
								Pole MS-1-79	0.016	0.008	2.5	90.0	
Pole MS-1-74	4.160	99.996	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-73	0.019	0.009	2.9	90.0	
								Pole MS-1-75	-0.022	-0.010	3.3	90.0	
Pole MS-1-75	4.160	100.013	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-74	0.022	0.010	3.3	90.0	
								Pole MS-1-76	-0.024	-0.012	3.7	90.0	
Pole MS-1-76	4.160	100.021	-3.0	0.000	0.000	0.007	0.003	Pole MS-1-75	0.024	0.012	3.7	90.0	
								Pole MS-1-1	-0.031	-0.015	4.8	90.0	
Pole MS-1-79	4.160	99.984	-3.0	0.000	0.000	0.000	0.000	Pole MS-1-73	-0.016	-0.008	2.5	90.0	
								Pole MS-1-80	0.005	0.003	0.8	90.0	
								Pole MS-1-84	0.011	0.005	1.7	90.0	
Pole MS-1-80	4.160	99.982	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-79	-0.005	-0.003	0.8	90.0	
								Pole MS-1-82	0.003	0.001	0.4	90.0	
Pole MS-1-81	4.160	98.729	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-71	0.028	0.013	4.3	90.0	
								Pole HS-3-79	0.028	0.013	4.3	89.9	
								Pole HS-3-85	-0.055	-0.027	8.7	90.0	
Pole MS-1-82	4.160	99.981	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-80	-0.003	-0.001	0.4	90.0	
Pole MS-1-84	4.160	99.980	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-79	-0.011	-0.005	1.7	90.0	
								Pole MS-1-86	0.008	0.004	1.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-86	4.160	99.976	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-84	-0.008	-0.004	1.2	90.0	
								Pole MS-1-87	0.005	0.003	0.8	90.0	
Pole MS-1-87	4.160	99.971	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-86	-0.005	-0.003	0.8	90.0	
								Pole MS-1-88	0.003	0.001	0.4	90.0	
Pole MS-1-88	4.160	99.971	-3.0	0.000	0.000	0.003	0.001	Pole MS-1-87	-0.003	-0.001	0.4	90.0	
Pole MS-2-1	4.160	99.537	-2.9	0.000	0.000	0.000	0.000	Pole MS-2-180	-0.019	-0.009	2.9	90.0	
								Pole MS-2-2	0.013	0.006	2.0	90.0	
								SEC_MS-2-8	0.006	0.003	1.0	90.0	
Pole MS-2-2	4.160	99.532	-2.9	0.000	0.000	0.000	0.000	Pole MS-2-1	-0.013	-0.006	2.0	90.0	
								Pole MS-2-3	0.006	0.003	1.0	90.1	
								SEC_MS-2-37	0.006	0.003	1.0	90.0	
Pole MS-2-3	4.160	99.526	-2.9	0.000	0.000	0.000	0.000	Pole MS-2-2	-0.006	-0.003	1.0	90.0	
								L-SUB-FDR-EQ#16-173~	0.000	0.000	0.0	0.0	
								SEC_MS-2-38	0.006	0.003	1.0	90.0	
Pole MS-2-4	4.160	99.563	-2.9	0.000	0.000	0.000	0.000	PRI_PM_8	0.074	0.036	11.4	89.8	
								Pole MS-2-180	0.019	0.009	2.9	90.0	
								Pole MS-2-182	-0.093	-0.045	14.4	89.8	
Pole MS-2-90	4.160	99.631	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-182	-0.087	-0.042	13.4	90.0	
								Pole MS-2-91	0.078	0.038	12.0	90.0	
								SEC_MS-2-36	0.006	0.003	1.0	90.0	
Pole MS-2-91	4.160	99.557	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-90	-0.078	-0.038	12.1	90.0	
								Pole MS-2-92	0.075	0.036	11.6	90.0	
Pole MS-2-92	4.160	99.536	-2.8	0.000	0.000	0.000	0.000	Pole MS-2-91	-0.075	-0.036	11.6	90.0	
								Pole MS-2-93	0.069	0.033	10.7	90.0	
								SEC_MS-2-39	0.006	0.003	1.0	90.0	
Pole MS-2-93	4.160	99.517	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-92	-0.069	-0.033	10.7	90.0	
								Pole MS-2-94	0.066	0.032	10.2	90.0	
Pole MS-2-94	4.160	99.502	-2.8	0.000	0.000	0.000	0.000	Pole MS-2-93	-0.066	-0.032	10.2	90.0	
								Pole MS-2-95	0.060	0.029	9.3	90.0	
								SEC_MS-2-40	0.006	0.003	1.0	90.0	
Pole MS-2-95	4.160	99.458	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-94	-0.060	-0.029	9.3	90.0	
								Pole MS-2-96	0.057	0.028	8.8	90.0	
Pole MS-2-96	4.160	99.425	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-95	-0.057	-0.028	8.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-2-98	0.054	0.026	8.4	90.0	
Pole MS-2-98	4.160	99.414	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-96	-0.054	-0.026	8.4	90.0	
								Pole MS-2-100	0.052	0.025	8.0	90.0	
Pole MS-2-100	4.160	99.407	-2.8	0.000	0.000	0.000	0.000	Pole MS-2-98	-0.052	-0.025	8.0	90.0	
								Pole MS-2-102	0.045	0.022	7.0	90.0	
								SEC_MS-2-41	0.006	0.003	1.0	90.0	
Pole MS-2-102	4.160	99.400	-2.8	0.000	0.000	0.000	0.000	Pole MS-2-100	-0.045	-0.022	7.0	90.0	
								Pole MS-2-103	0.045	0.022	7.0	90.0	
Pole MS-2-103	4.160	99.391	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-102	-0.045	-0.022	7.0	90.0	
								Pole MS-2-107	0.043	0.021	6.6	90.0	
Pole MS-2-107	4.160	99.369	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-103	-0.043	-0.021	6.6	90.0	
								Pole MS-2-108	0.040	0.019	6.2	90.0	
Pole MS-2-108	4.160	99.359	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-107	-0.040	-0.019	6.2	90.0	
								Pole MS-2-109	0.037	0.018	5.8	90.0	
Pole MS-2-109	4.160	99.350	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-108	-0.037	-0.018	5.8	90.0	
								Pole MS-2-110	0.035	0.017	5.4	90.0	
Pole MS-2-110	4.160	99.340	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-109	-0.035	-0.017	5.4	90.0	
								Pole MS-2-111	0.032	0.016	5.0	90.0	
Pole MS-2-111	4.160	99.330	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-110	-0.032	-0.016	5.0	90.0	
								Pole MS-2-112	0.029	0.014	4.6	90.0	
Pole MS-2-112	4.160	99.324	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-111	-0.029	-0.014	4.6	90.0	
								Pole MS-2-113	0.027	0.013	4.1	90.0	
Pole MS-2-113	4.160	99.318	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-112	-0.027	-0.013	4.1	90.0	
								Pole MS-2-115	0.024	0.012	3.7	90.0	
Pole MS-2-115	4.160	99.311	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-113	-0.024	-0.012	3.7	90.0	
								Pole MS-2-116	0.021	0.010	3.3	90.0	
Pole MS-2-116	4.160	99.302	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-115	-0.021	-0.010	3.3	90.0	
								Pole MS-2-117	0.019	0.009	2.9	90.0	
Pole MS-2-117	4.160	99.291	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-116	-0.019	-0.009	2.9	90.0	
								Pole MS-2-118	0.016	0.008	2.5	90.0	
Pole MS-2-118	4.160	99.282	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-117	-0.016	-0.008	2.5	90.0	
								Pole MS-2-120	0.013	0.006	2.1	90.0	
Pole MS-2-120	4.160	99.277	-2.8	0.000	0.000	0.003	0.001	Pole MS-2-118	-0.013	-0.006	2.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-2-121	0.011	0.005	1.7	90.0	
Pole MS-2-121	4.160	99.271	-2.8	0.000	0.000	0.005	0.003	Pole MS-2-120	-0.011	-0.005	1.7	90.0	
								Pole MS-2-122	0.005	0.003	0.8	90.0	
Pole MS-2-122	4.160	99.269	-2.8	0.000	0.000	0.005	0.003	Pole MS-2-121	-0.005	-0.003	0.8	90.0	
								L-SUB-FDR-EQ#16-97~	0.000	0.000	0.0	0.0	
Pole MS-2-180	4.160	99.544	-2.9	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.019	-0.009	2.9	90.0	
								Pole MS-2-1	0.019	0.009	2.9	90.0	
								L-SUB-FDR-EQ#12-13~	0.000	0.000	0.0	0.0	
Pole MS-2-182	4.160	99.654	-2.8	0.000	0.000	0.000	0.000	Pole MS-2-4	0.093	0.045	14.4	89.8	
								BUS_5KV_LLP_2	-0.179	-0.087	27.8	89.9	
								Pole MS-2-90	0.087	0.042	13.4	90.0	
Pole MS-3-1	4.160	99.687	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-2	0.006	0.003	1.0	90.0	
								Pole MS-3-88	-0.122	-0.059	18.8	90.0	
								Pole MS-3-3	0.115	0.056	17.8	90.0	
Pole MS-3-2	4.160	99.687	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-1	-0.006	-0.003	1.0	90.0	
								SEC_MS-3-1	0.006	0.003	1.0	90.0	
Pole MS-3-3	4.160	99.623	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-4	0.115	0.056	17.8	90.0	
								Pole MS-3-1	-0.115	-0.056	17.8	90.0	
Pole MS-3-4	4.160	99.610	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-3	-0.115	-0.056	17.8	90.0	
								Pole MS-3-5	0.113	0.055	17.4	90.0	
Pole MS-3-5	4.160	99.597	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-4	-0.113	-0.055	17.4	90.0	
								Pole MS-3-6	0.110	0.053	17.0	90.0	
Pole MS-3-6	4.160	99.582	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-5	-0.110	-0.053	17.0	90.0	
								Pole MS-3-7	0.104	0.050	16.0	90.0	
								SEC_MS-3-2	0.006	0.003	1.0	90.0	
Pole MS-3-7	4.160	99.541	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-6	-0.103	-0.050	16.0	90.0	
								Pole MS-3-8	0.101	0.049	15.6	90.0	
Pole MS-3-8	4.160	99.523	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-7	-0.101	-0.049	15.6	90.0	
								Pole MS-3-9	0.094	0.046	14.6	90.0	
								SEC_MS-3-3	0.006	0.003	1.0	90.0	
Pole MS-3-9	4.160	99.507	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-8	-0.094	-0.046	14.6	90.0	
								Pole MS-3-10	0.092	0.044	14.2	90.0	
Pole MS-3-10	4.160	99.475	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-9	-0.092	-0.044	14.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-11	0.089	0.043	13.8	90.0	
Pole MS-3-11	4.160	99.465	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-10	-0.089	-0.043	13.8	90.0	
								Pole MS-3-12	0.086	0.042	13.4	90.0	
Pole MS-3-12	4.160	99.454	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-11	-0.086	-0.042	13.4	90.0	
								Pole MS-3-13	0.084	0.041	13.0	90.0	
Pole MS-3-13	4.160	99.417	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-12	-0.084	-0.041	13.0	90.0	
								Pole MS-3-14	0.081	0.039	12.6	90.0	
Pole MS-3-14	4.160	99.402	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-13	-0.081	-0.039	12.6	90.0	
								Pole MS-3-15	0.078	0.038	12.2	90.0	
Pole MS-3-15	4.160	99.369	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-14	-0.078	-0.038	12.2	90.0	
								Pole MS-3-16	0.076	0.037	11.7	90.0	
Pole MS-3-16	4.160	99.359	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-15	-0.076	-0.037	11.7	90.0	
								Pole MS-3-17	0.073	0.035	11.3	90.0	
Pole MS-3-17	4.160	99.344	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-16	-0.073	-0.035	11.3	90.0	
								Pole MS-3-18	0.070	0.034	10.9	90.0	
Pole MS-3-18	4.160	99.332	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-17	-0.070	-0.034	10.9	90.0	
								Pole MS-3-19	0.025	0.012	3.9	90.0	
								Pole MS-3-26	0.045	0.022	7.0	90.0	
Pole MS-3-19	4.160	99.326	-2.8	0.000	0.000	0.005	0.003	Pole MS-3-18	-0.025	-0.012	3.9	90.0	
								Pole MS-3-20	0.020	0.010	3.0	90.0	
Pole MS-3-20	4.160	99.322	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-19	-0.020	-0.010	3.0	90.0	
								Pole MS-3-21	0.017	0.008	2.6	90.0	
Pole MS-3-21	4.160	99.314	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-20	-0.017	-0.008	2.6	90.0	
								Pole MS-3-22	0.014	0.007	2.2	90.0	
Pole MS-3-22	4.160	99.310	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-21	-0.014	-0.007	2.2	90.0	
								Pole MS-3-23	0.012	0.006	1.8	90.0	
Pole MS-3-23	4.160	99.306	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-22	-0.012	-0.006	1.8	90.0	
								Pole MS-3-24	0.009	0.004	1.4	90.0	
Pole MS-3-24	4.160	99.303	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-23	-0.009	-0.004	1.4	90.0	
								Pole MS-3-25	0.006	0.003	1.0	90.0	
Pole MS-3-25	4.160	99.300	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-24	-0.006	-0.003	1.0	90.0	
								L-SUB-FDR-EQ#16-133~	0.000	0.000	0.0	0.0	
								SEC_MS-3-22	0.006	0.003	1.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-26	4.160	99.314	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-27	0.011	0.005	1.7	90.0	
								Pole MS-3-18	-0.045	-0.022	7.0	90.0	
								Pole MS-3-31	0.032	0.015	5.0	90.0	
Pole MS-3-27	4.160	99.309	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-26	-0.011	-0.005	1.7	90.0	
								Pole MS-3-28	0.008	0.004	1.2	90.0	
Pole MS-3-28	4.160	99.308	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-27	-0.008	-0.004	1.2	90.0	
								Pole MS-3-29	0.005	0.003	0.8	90.0	
Pole MS-3-29	4.160	99.305	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-28	-0.005	-0.003	0.8	90.0	
								Pole MS-3-30	0.003	0.001	0.4	90.0	
Pole MS-3-30	4.160	99.304	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-29	-0.003	-0.001	0.4	90.0	
Pole MS-3-31	4.160	99.298	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-26	-0.032	-0.015	5.0	90.0	
								Pole MS-3-32	0.029	0.014	4.6	90.0	
Pole MS-3-32	4.160	99.293	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-31	-0.029	-0.014	4.6	90.0	
								Pole MS-3-33	0.027	0.013	4.1	90.0	
Pole MS-3-33	4.160	99.288	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-32	-0.027	-0.013	4.1	90.0	
								Pole MS-3-34	0.024	0.012	3.7	90.0	
Pole MS-3-34	4.160	99.284	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-36	0.019	0.009	2.9	90.0	
								Pole MS-3-33	-0.024	-0.012	3.7	90.0	
								Pole MS-3-35	0.003	0.001	0.4	90.0	
Pole MS-3-35	4.160	99.283	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-34	-0.003	-0.001	0.4	90.0	
Pole MS-3-36	4.160	99.276	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-34	-0.019	-0.009	2.9	90.0	
								Pole MS-3-37	0.016	0.008	2.5	90.0	
Pole MS-3-37	4.160	99.268	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-36	-0.016	-0.008	2.5	90.0	
								Pole MS-3-39	0.011	0.005	1.7	90.0	
								Pole MS-3-38	0.005	0.003	0.8	90.0	
Pole MS-3-38	4.160	99.267	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-37	-0.005	-0.003	0.8	90.0	
								Pole MS-3-43	0.003	0.001	0.4	90.1	
Pole MS-3-39	4.160	99.265	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-37	-0.011	-0.005	1.7	90.0	
								Pole MS-3-40	0.008	0.004	1.2	90.0	
Pole MS-3-40	4.160	99.264	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-39	-0.008	-0.004	1.2	90.0	
								Pole MS-3-41	0.005	0.003	0.8	90.0	
Pole MS-3-41	4.160	99.263	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-40	-0.005	-0.003	0.8	90.0	
								Pole MS-3-42	0.003	0.001	0.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-42	4.160	99.262	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-41	-0.003	-0.001	0.4	90.0	
Pole MS-3-43	4.160	99.266	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-38	-0.003	-0.001	0.4	90.0	
								LINE MS-3-11~	0.000	0.000	0.0	0.0	
Pole MS-3-44	4.160	99.099	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-46	0.016	0.008	2.5	90.0	
								Pole MS-3-45	0.000	0.000	0.0	0.0	
								Pole MS-3-54	-0.016	-0.008	2.5	90.0	
Pole MS-3-45	4.160	99.099	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-44	0.000	0.000	0.0	0.0	
Pole MS-3-46	4.160	99.097	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-44	-0.016	-0.008	2.5	90.0	
								Pole MS-3-47	0.016	0.008	2.5	90.0	
Pole MS-3-47	4.160	99.093	-2.8	0.000	0.000	0.004	0.002	Pole MS-3-46	-0.016	-0.008	2.5	90.0	
								Pole MS-3-48	0.012	0.006	1.9	90.0	
Pole MS-3-48	4.160	99.086	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-47	-0.012	-0.006	1.9	90.0	
								Pole MS-3-51	0.005	0.003	0.8	90.0	
								Pole MS-3-50	0.007	0.003	1.1	90.0	
Pole MS-3-49	4.160	99.084	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-50	-0.003	-0.001	0.4	89.9	
Pole MS-3-50	4.160	99.085	-2.8	0.000	0.000	0.004	0.002	Pole MS-3-48	-0.007	-0.003	1.1	89.9	
								Pole MS-3-49	0.003	0.001	0.4	90.0	
Pole MS-3-51	4.160	99.084	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-48	-0.005	-0.003	0.8	90.0	
								Pole MS-3-53	0.003	0.001	0.4	90.0	
								Pole MS-3-52	0.003	0.001	0.4	90.0	
Pole MS-3-52	4.160	99.082	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-51	-0.003	-0.001	0.4	89.9	
Pole MS-3-53	4.160	99.083	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-51	-0.003	-0.001	0.4	89.9	
Pole MS-3-54	4.160	99.107	-2.8	0.000	0.000	0.000	0.000	PRI_PM_18	0.090	0.044	14.1	89.7	
								Pole MS-3-57	0.003	0.001	0.4	90.0	
								Pole MS-3-44	0.016	0.008	2.5	90.0	
								Pole MS-3-58	-0.109	-0.054	17.1	89.8	
Pole MS-3-55	4.160	99.517	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-90	0.068	0.033	10.5	90.0	
								Pole MS-3-71	0.243	0.119	37.8	89.8	
								Pole MS-3-79	-0.311	-0.152	48.4	89.8	
Pole MS-3-57	4.160	99.105	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-54	-0.003	-0.001	0.4	89.9	
Pole MS-3-58	4.160	99.168	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-59	0.005	0.003	0.8	90.0	
								Pole MS-3-61	-0.115	-0.056	17.9	89.8	
								Pole MS-3-54	0.109	0.054	17.1	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-59	4.160	99.167	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-58	-0.005	-0.003	0.8	90.0	
								Pole MS-3-60	0.003	0.001	0.4	90.0	
Pole MS-3-60	4.160	99.165	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-59	-0.003	-0.001	0.4	90.0	
Pole MS-3-61	4.160	99.236	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-58	0.115	0.056	17.9	89.8	
								Pole MS-3-64	-0.120	-0.059	18.7	89.8	
								Pole MS-3-62	0.005	0.003	0.8	90.0	
Pole MS-3-62	4.160	99.235	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-61	-0.005	-0.003	0.8	90.0	
								Pole MS-3-63	0.003	0.001	0.4	90.0	
Pole MS-3-63	4.160	99.235	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-62	-0.003	-0.001	0.4	90.0	
Pole MS-3-64	4.160	99.269	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-61	0.120	0.059	18.7	89.8	
								Pole MS-3-70	-0.139	-0.068	21.6	89.8	
								Pole MS-3-65	0.016	0.008	2.5	90.0	
Pole MS-3-65	4.160	99.264	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-64	-0.016	-0.008	2.5	90.0	
								Pole MS-3-66	0.013	0.006	2.1	90.0	
Pole MS-3-66	4.160	99.262	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-65	-0.013	-0.006	2.1	90.0	
								Pole MS-3-67	0.005	0.003	0.8	90.0	
								Pole MS-3-69	0.005	0.003	0.8	90.0	
Pole MS-3-67	4.160	99.259	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-66	-0.005	-0.003	0.8	90.0	
								Pole MS-3-68	0.003	0.001	0.4	90.0	
Pole MS-3-68	4.160	99.258	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-67	-0.003	-0.001	0.4	90.0	
Pole MS-3-69	4.160	99.261	-2.8	0.000	0.000	0.005	0.003	Pole MS-3-66	-0.005	-0.003	0.8	90.0	
Pole MS-3-70	4.160	99.359	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-64	0.139	0.068	21.6	89.8	
								Pole MS-3-71	-0.139	-0.068	21.6	89.8	
								L-SUB-FDR-EQ#16-177~	0.000	0.000	0.0	0.0	
Pole MS-3-71	4.160	99.457	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-55	-0.243	-0.119	37.8	89.8	
								Pole MS-3-70	0.139	0.068	21.6	89.8	
								Pole MS-3-72	0.104	0.051	16.2	89.8	
Pole MS-3-72	4.160	99.443	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-71	-0.104	-0.051	16.2	89.8	
								Pole MS-3-73	0.101	0.050	15.8	89.8	
Pole MS-3-73	4.160	99.433	-2.8	0.000	0.000	0.000	0.000	PRI_PM_7	0.091	0.045	14.1	89.7	
								Pole MS-3-72	-0.101	-0.050	15.8	89.8	
								Pole MS-3-74	0.011	0.005	1.7	90.0	
Pole MS-3-74	4.160	99.432	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-73	-0.011	-0.005	1.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-75	0.008	0.004	1.2	90.0	
Pole MS-3-75	4.160	99.427	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-74	-0.008	-0.004	1.2	90.0	
								Pole MS-3-76	0.005	0.003	0.8	90.0	
Pole MS-3-76	4.160	99.425	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-75	-0.005	-0.003	0.8	90.0	
								Pole MS-3-77	0.003	0.001	0.4	90.0	
Pole MS-3-77	4.160	99.424	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-76	-0.003	-0.001	0.4	90.0	
Pole MS-3-79	4.160	99.594	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-55	0.312	0.152	48.4	89.8	
								Pole MS-3-82	0.022	0.011	3.4	90.0	
								Pole MS-3-87	-0.334	-0.163	51.7	89.9	
Pole MS-3-80	4.160	99.580	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-81	-0.016	-0.008	2.6	90.0	
								Pole MS-3-83	0.014	0.007	2.1	90.0	
Pole MS-3-81	4.160	99.586	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-80	0.016	0.008	2.6	90.0	
								Pole MS-3-82	-0.019	-0.009	3.0	90.0	
Pole MS-3-82	4.160	99.590	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-81	0.019	0.009	3.0	90.0	
								Pole MS-3-79	-0.022	-0.011	3.4	90.0	
Pole MS-3-83	4.160	99.577	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-80	-0.014	-0.007	2.1	90.0	
								Pole MS-3-84	0.011	0.005	1.7	90.0	
Pole MS-3-84	4.160	99.575	-2.8	0.000	0.000	0.003	0.001	Pole MS-3-83	-0.011	-0.005	1.7	89.9	
								Pole MS-3-85	0.008	0.004	1.3	89.9	
Pole MS-3-85	4.160	99.572	-2.8	0.000	0.000	0.004	0.002	Pole MS-3-84	-0.008	-0.004	1.3	89.9	
								Pole MS-3-86	0.004	0.002	0.7	89.9	
Pole MS-3-86	4.160	99.571	-2.8	0.000	0.000	0.004	0.002	Pole MS-3-85	-0.004	-0.002	0.7	89.9	
Pole MS-3-87	4.160	99.779	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-79	0.334	0.163	51.7	89.9	
								Pole MS-3-88	0.122	0.059	18.8	90.0	
								BUS_5KV_LLP_02	-0.456	-0.222	70.6	89.9	
Pole MS-3-88	4.160	99.712	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-87	-0.122	-0.059	18.8	90.0	
								Pole MS-3-1	0.122	0.059	18.8	90.0	
Pole MS-3-90	4.160	99.500	-2.8	0.000	0.000	0.008	0.004	Pole MS-3-55	-0.068	-0.033	10.5	90.0	
								Pole MS-3-92	0.060	0.029	9.2	90.0	
Pole MS-3-92	4.160	99.457	-2.8	0.000	0.000	0.008	0.004	Pole MS-3-95	0.051	0.025	7.9	90.0	
								Pole MS-3-90	-0.060	-0.029	9.2	90.0	
Pole MS-3-95	4.160	99.439	-2.8	0.000	0.000	0.004	0.002	Pole MS-3-96	0.004	0.002	0.7	90.0	
								Pole MS-4-36	0.043	0.021	6.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-92	-0.051	-0.025	7.9	90.0	
Pole MS-3-96	4.160	99.437	-2.8	0.000	0.000	0.004	0.002	Pole MS-3-95	-0.004	-0.002	0.7	89.9	
Pole MS-3-97	4.160	99.364	-2.8	0.000	0.000	0.004	0.002	Pole MS-3-98	0.028	0.014	4.4	90.0	
								Pole MS-4-36	-0.033	-0.016	5.1	90.0	
Pole MS-3-98	4.160	99.356	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-99	0.028	0.014	4.4	90.0	
								Pole MS-3-97	-0.028	-0.014	4.4	90.0	
Pole MS-3-99	4.160	99.348	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-100	0.010	0.005	1.5	90.0	
								Pole MS-3-101	0.018	0.009	2.9	90.0	
								Pole MS-3-98	-0.028	-0.014	4.4	90.0	
Pole MS-3-100	4.160	99.343	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-99	-0.010	-0.005	1.5	89.9	
								SEC_MS-3-49	0.010	0.005	1.5	89.9	
Pole MS-3-101	4.160	99.336	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-102	0.010	0.005	1.5	89.9	
								Pole MS-3-103	0.008	0.004	1.3	89.9	
								Pole MS-3-99	-0.018	-0.009	2.9	89.9	
Pole MS-3-102	4.160	99.334	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-101	-0.010	-0.005	1.5	89.9	
								SEC_MS-3-65	0.010	0.005	1.5	89.9	
Pole MS-3-103	4.160	99.333	-2.8	0.000	0.000	0.008	0.004	Pole MS-3-101	-0.008	-0.004	1.3	89.9	
Pole MS-4-1	4.160	99.832	-2.8	0.000	0.000	0.003	0.001	BUS_5KV-LLP_01	-0.143	-0.069	22.1	90.1	
								Pole MS-4-2	0.022	0.011	3.4	90.0	
								Pole MS-4-7	0.119	0.057	18.3	90.1	
Pole MS-4-2	4.160	99.827	-2.8	0.000	0.000	0.003	0.001	Pole MS-4-1	-0.022	-0.011	3.4	90.0	
								Pole MS-4-3	0.019	0.009	3.0	90.0	
Pole MS-4-3	4.160	99.826	-2.8	0.000	0.000	0.000	0.000	Pole MS-4-2	-0.019	-0.009	3.0	90.0	
								Pole MS-4-5	0.013	0.006	2.0	90.0	
								SEC_MS-3-73	0.006	0.003	1.0	90.0	
Pole MS-4-5	4.160	99.823	-2.8	0.000	0.000	0.007	0.003	Pole MS-4-3	-0.013	-0.006	2.0	90.0	
								Pole MS-4-6	0.006	0.003	1.0	90.0	
Pole MS-4-6	4.160	99.822	-2.8	0.000	0.000	0.000	0.000	Pole MS-4-5	-0.006	-0.003	1.0	90.0	
								SEC_MS-3-74	0.006	0.003	1.0	90.0	
Pole MS-4-7	4.160	99.765	-2.8	0.000	0.000	0.000	0.000	Pole MS-4-1	-0.119	-0.057	18.3	90.1	
								Pole MS-4-8	0.119	0.057	18.3	90.1	
Pole MS-4-8	4.160	99.635	-2.8	0.000	0.000	0.003	0.001	Pole MS-4-7	-0.118	-0.057	18.3	90.1	
								Pole MS-4-9	0.032	0.015	4.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-16	0.084	0.040	13.0	90.2	
Pole MS-4-9	4.160	99.626	-2.8	0.000	0.000	0.004	0.002	Pole MS-4-8	-0.032	-0.015	4.9	90.0	
								Pole MS-4-10	0.028	0.013	4.3	90.0	
Pole MS-4-10	4.160	99.619	-2.8	0.000	0.000	0.000	0.000	Pole MS-4-9	-0.028	-0.013	4.3	90.0	
								Pole MS-4-11	0.021	0.010	3.3	90.0	
								SEC_MS-3-75	0.006	0.003	1.0	90.0	
Pole MS-4-11	4.160	99.609	-2.8	0.000	0.000	0.008	0.004	Pole MS-4-10	-0.021	-0.010	3.3	90.0	
								Pole MS-4-12	0.013	0.006	2.1	90.0	
Pole MS-4-12	4.160	99.605	-2.8	0.000	0.000	0.003	0.001	Pole MS-4-11	-0.013	-0.006	2.1	90.0	
								Pole MS-4-13	0.011	0.005	1.7	90.0	
Pole MS-4-13	4.160	99.600	-2.8	0.000	0.000	0.004	0.002	Pole MS-4-12	-0.011	-0.005	1.7	89.9	
								Pole MS-4-14	0.007	0.003	1.0	90.0	
Pole MS-4-14	4.160	99.599	-2.8	0.000	0.000	0.004	0.002	Pole MS-4-13	-0.007	-0.003	1.0	89.9	
								Pole MS-4-15	0.003	0.001	0.4	90.0	
Pole MS-4-15	4.160	99.599	-2.8	0.000	0.000	0.003	0.001	Pole MS-4-14	-0.003	-0.001	0.4	90.0	
Pole MS-4-16	4.160	99.542	-2.8	0.000	0.000	0.004	0.002	Pole MS-4-17	0.080	0.038	12.3	90.2	
								Pole MS-4-8	-0.084	-0.040	13.0	90.2	
Pole MS-4-17	4.160	99.499	-2.8	0.000	0.000	0.000	0.000	Pole MS-4-16	-0.080	-0.038	12.3	90.2	
								Pole MS-4-18	0.070	0.033	10.8	90.2	
								SEC_MS-3-66	0.010	0.005	1.6	89.9	
Pole MS-4-18	4.160	99.457	-2.8	0.000	0.000	0.008	0.004	Pole MS-4-17	-0.070	-0.033	10.8	90.2	
								Pole MS-4-20	0.062	0.029	9.6	90.3	
Pole MS-4-20	4.160	99.433	-2.8	0.000	0.000	0.000	0.000	Pole MS-4-18	-0.062	-0.029	9.6	90.3	
								Pole MS-4-21	0.052	0.025	8.0	90.3	
								SEC_MS-3-76	0.010	0.005	1.6	89.9	
Pole MS-4-21	4.160	99.308	-2.8	0.000	0.000	0.004	0.002	Pole MS-4-20	-0.052	-0.025	8.0	90.3	
								Pole MS-4-22	0.048	0.023	7.4	90.3	
Pole MS-4-22	4.160	99.266	-2.8	0.000	0.000	0.004	0.002	Pole MS-4-21	-0.048	-0.023	7.4	90.3	
								Pole MS-4-23	0.044	0.021	6.8	90.4	
Pole MS-4-23	4.160	99.225	-2.8	0.000	0.000	0.004	0.002	Pole MS-4-22	-0.044	-0.021	6.8	90.4	
								Pole MS-4-25	0.040	0.019	6.1	90.4	
Pole MS-4-24	4.160	98.834	-2.8	0.000	0.000	0.000	0.000	Pole MS-4-25	-0.036	-0.017	5.5	90.3	
								Pole MS-4-39	0.004	0.002	0.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-41	0.032	0.015	4.9	90.4	
Pole MS-4-25	4.160	99.129	-2.8	0.000	0.000	0.004	0.002	Pole MS-4-23	-0.040	-0.019	6.1	90.4	
								Pole MS-4-24	0.036	0.017	5.5	90.4	
Pole MS-4-31	4.160	99.824	-2.8	0.000	0.000	0.000	0.000	Pole MS-5-1	0.373	0.184	57.8	89.7	
								BUS_5KV-LLP_01	-0.373	-0.184	57.8	89.7	
Pole MS-4-36	4.160	99.403	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-97	0.033	0.016	5.1	90.0	
								Pole MS-3-95	-0.043	-0.021	6.6	90.0	
								SEC_MS-3-45	0.010	0.005	1.6	89.9	
Pole MS-4-39	4.160	98.832	-2.8	0.000	0.000	0.004	0.002	Pole MS-4-24	-0.004	-0.002	0.6	89.9	
Pole MS-4-40	4.160	98.812	-2.8	0.000	0.000	0.004	0.002	Pole MS-4-41	-0.012	-0.006	1.9	90.0	
								Pole MS-4-42	0.008	0.004	1.2	90.1	
Pole MS-4-41	4.160	98.818	-2.8	0.000	0.000	0.000	0.000	Pole MS-4-24	-0.032	-0.015	4.9	90.4	
								Pole MS-4-40	0.012	0.006	1.9	90.0	
								Pole MS-4-44	0.020	0.009	3.1	90.6	
Pole MS-4-42	4.160	98.803	-2.8	0.000	0.000	0.004	0.002	Pole MS-4-40	-0.008	-0.004	1.2	90.0	
								Pole MS-4-43	0.004	0.002	0.6	90.1	
Pole MS-4-43	4.160	98.796	-2.8	0.000	0.000	0.004	0.002	Pole MS-4-42	-0.004	-0.002	0.6	89.9	
Pole MS-4-44	4.160	98.460	-2.7	0.000	0.000	0.000	0.000	Pole MS-4-41	-0.020	-0.009	3.1	90.2	
								Pole MS-4-45	0.004	0.002	0.6	90.0	
								Pole MS-4-46	0.016	0.008	2.5	90.3	
Pole MS-4-45	4.160	98.456	-2.7	0.000	0.000	0.004	0.002	Pole MS-4-44	-0.004	-0.002	0.6	89.9	
Pole MS-4-46	4.160	98.442	-2.7	0.000	0.000	0.000	0.000	Pole MS-4-44	-0.016	-0.008	2.5	90.2	
								Pole MS-4-47	0.004	0.002	0.6	89.9	
								Pole MS-4-48	0.004	0.002	0.6	90.0	
								Pole MS-4-50	0.008	0.004	1.2	90.5	
Pole MS-4-47	4.160	98.441	-2.7	0.000	0.000	0.004	0.002	Pole MS-4-46	-0.004	-0.002	0.6	89.9	
Pole MS-4-48	4.160	98.440	-2.7	0.000	0.000	0.004	0.002	Pole MS-4-46	-0.004	-0.002	0.6	89.9	
Pole MS-4-49	4.160	98.417	-2.7	0.000	0.000	0.004	0.002	Pole MS-4-50	-0.004	-0.002	0.6	89.9	
Pole MS-4-50	4.160	98.417	-2.7	0.000	0.000	0.000	0.000	Pole MS-4-46	-0.008	-0.004	1.2	90.4	
								Pole MS-4-49	0.004	0.002	0.6	89.9	
								Pole MS-4-52	0.004	0.002	0.6	90.8	
Pole MS-4-51	4.160	98.404	-2.7	0.000	0.000	0.004	0.002	Pole MS-4-52	-0.004	-0.002	0.6	89.9	
Pole MS-4-52	4.160	98.412	-2.7	0.000	0.000	0.000	0.000	Pole MS-4-50	-0.004	-0.002	0.6	90.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-51	0.004	0.002	0.6	90.1	
								LINE MS-4-53~	0.000	0.000	0.0	0.0	
Pole MS-5-1	4.160	99.043	-3.0	0.000	0.000	0.004	0.002	Pole MS-4-31	-0.371	-0.181	57.8	89.9	
								Pole MS-5-2	0.366	0.179	57.1	89.9	
Pole MS-5-2	4.160	98.949	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-1	-0.366	-0.179	57.1	89.9	
								Pole MS-5-3	0.017	0.008	2.6	90.0	
								Pole MS-5-7	0.345	0.168	53.9	89.9	
Pole MS-5-3	4.160	98.944	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-2	-0.017	-0.008	2.6	89.9	
								Pole MS-5-4	0.013	0.006	2.0	90.0	
Pole MS-5-4	4.160	98.937	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-3	-0.013	-0.006	2.0	89.9	
								Pole MS-5-5	0.008	0.004	1.3	89.9	
Pole MS-5-5	4.160	98.935	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-4	-0.008	-0.004	1.3	89.9	
								Pole MS-5-6	0.004	0.002	0.7	89.9	
Pole MS-5-6	4.160	98.934	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-5	-0.004	-0.002	0.7	89.9	
Pole MS-5-7	4.160	98.793	-3.0	0.000	0.000	0.000	0.000	Pole MS-5-2	-0.345	-0.168	53.9	89.9	
								Pole MS-5-11	0.057	0.028	8.9	90.0	
								Pole MS-5-24	0.287	0.140	44.9	89.9	
Pole MS-5-8	4.160	98.748	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-9	-0.045	-0.022	7.0	90.0	
								Pole MS-5-14	0.041	0.020	6.4	90.0	
Pole MS-5-9	4.160	98.758	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-8	0.045	0.022	7.0	90.0	
								Pole MS-5-10	-0.049	-0.024	7.7	90.0	
Pole MS-5-10	4.160	98.772	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-9	0.049	0.024	7.7	90.0	
								Pole MS-5-11	-0.053	-0.026	8.3	90.0	
Pole MS-5-11	4.160	98.786	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-7	-0.057	-0.028	8.9	90.0	
								Pole MS-5-10	0.053	0.026	8.3	90.0	
Pole MS-5-12	4.160	98.710	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-13	-0.033	-0.016	5.1	89.9	
								Pole MS-5-16	0.029	0.014	4.5	90.0	
Pole MS-5-13	4.160	98.733	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-12	0.033	0.016	5.1	90.0	
								Pole MS-5-14	-0.037	-0.018	5.8	90.0	
Pole MS-5-14	4.160	98.739	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-8	-0.041	-0.020	6.4	90.0	
								Pole MS-5-13	0.037	0.018	5.8	90.0	
Pole MS-5-15	4.160	98.702	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-16	-0.023	-0.011	3.5	89.9	
								Pole MS-5-17	0.019	0.009	2.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-16	4.160	98.704	-3.0	0.000	0.000	0.000	0.000	Pole MS-5-15	0.023	0.011	3.5	89.9	
								Pole MS-5-12	-0.029	-0.014	4.5	89.9	
								SEC_MS-5-15	0.006	0.003	1.0	90.0	
Pole MS-5-17	4.160	98.699	-3.0	0.000	0.000	0.000	0.000	Pole MS-5-15	-0.019	-0.009	2.9	89.9	
								Pole MS-5-18	0.009	0.005	1.5	89.9	
								SEC_MS-5-16	0.009	0.005	1.5	89.9	
Pole MS-5-18	4.160	98.698	-3.0	0.000	0.000	0.000	0.000	Pole MS-5-17	-0.009	-0.005	1.5	89.9	
								Pole MS-5-19	0.000	0.000	0.0	0.0	
								SEC_MS-5-17	0.009	0.005	1.5	89.9	
Pole MS-5-19	4.160	98.698	-3.0	0.000	0.000	0.000	0.000	Pole MS-5-18	0.000	0.000	0.0	0.0	
Pole MS-5-24	4.160	98.663	-3.1	0.000	0.000	0.000	0.000	Pole MS-5-7	-0.287	-0.140	44.9	89.9	
								Pole MS-5-25	0.015	0.007	2.4	90.0	
								Pole MS-5-29	0.048	0.023	7.5	90.0	
								Pole MS-5-41	0.224	0.109	35.0	89.9	
Pole MS-5-25	4.160	98.660	-3.1	0.000	0.000	0.003	0.001	Pole MS-5-24	-0.015	-0.007	2.4	90.0	
								Pole MS-5-26	0.012	0.006	2.0	90.0	
Pole MS-5-26	4.160	98.658	-3.1	0.000	0.000	0.000	0.000	Pole MS-5-25	-0.012	-0.006	2.0	90.0	
								Pole MS-5-28	0.006	0.003	1.0	90.0	
								SEC_MS-5-23	0.006	0.003	1.0	90.0	
Pole MS-5-27	4.160	98.602	-3.1	0.000	0.000	0.003	0.001	Pole MS-5-41	-0.220	-0.107	34.4	89.9	
								Pole MS-5-151	0.217	0.106	34.0	89.9	
Pole MS-5-28	4.160	98.654	-3.1	0.000	0.000	0.000	0.000	Pole MS-5-26	-0.006	-0.003	1.0	90.0	
								SEC_MS-5-25	0.006	0.003	1.0	90.0	
Pole MS-5-29	4.160	98.653	-3.1	0.000	0.000	0.000	0.000	Pole MS-5-24	-0.048	-0.023	7.5	90.0	
								Pole MS-5-30	0.039	0.019	6.1	90.0	
								SEC_MS-5-26	0.009	0.005	1.5	89.9	
Pole MS-5-30	4.160	98.634	-3.1	0.000	0.000	0.003	0.001	Pole MS-5-29	-0.039	-0.019	6.1	90.0	
								Pole MS-5-31	0.036	0.018	5.7	90.0	
Pole MS-5-31	4.160	98.621	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-30	-0.036	-0.018	5.7	90.0	
								Pole MS-5-32	0.032	0.016	5.1	90.0	
Pole MS-5-32	4.160	98.612	-3.1	0.000	0.000	0.000	0.000	Pole MS-5-31	-0.032	-0.016	5.1	90.0	
								Pole MS-5-33	0.026	0.013	4.1	90.0	
								SEC_MS-5-29	0.006	0.003	1.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-33	4.160	98.606	-3.1	0.000	0.000	0.000	0.000	Pole MS-5-32	-0.026	-0.013	4.1	90.0	
								Pole MS-5-34	0.017	0.008	2.6	90.0	
								SEC_MS-5-30	0.009	0.005	1.5	89.9	
Pole MS-5-34	4.160	98.603	-3.1	0.000	0.000	0.003	0.001	Pole MS-5-33	-0.017	-0.008	2.6	90.0	
								Pole MS-5-35	0.014	0.007	2.2	90.0	
Pole MS-5-35	4.160	98.600	-3.1	0.000	0.000	0.000	0.000	Pole MS-5-34	-0.014	-0.007	2.2	90.0	
								Pole MS-5-36	0.008	0.004	1.2	90.0	
								SEC_MS-5-32	0.006	0.003	1.0	90.0	
Pole MS-5-36	4.160	98.596	-3.1	0.000	0.000	0.000	0.000	Pole MS-5-35	-0.008	-0.004	1.2	90.0	
								Pole MS-5-37	0.008	0.004	1.2	90.0	
Pole MS-5-37	4.160	98.594	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-36	-0.008	-0.004	1.2	89.9	
								Pole MS-5-38	0.004	0.002	0.6	90.0	
Pole MS-5-38	4.160	98.593	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-37	-0.004	-0.002	0.6	89.9	
								Pole MS-5-39	0.000	0.000	0.0	0.0	
Pole MS-5-39	4.160	98.593	-3.1	0.000	0.000	0.000	0.000	Pole MS-5-38	0.000	0.000	0.0	0.0	
Pole MS-5-40	4.160	98.456	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-151	-0.217	-0.105	34.0	89.9	
								Pole MS-5-42	0.003	0.001	0.4	90.0	
								Pole MS-5-44	0.041	0.020	6.5	90.0	
								Pole MS-5-55	0.169	0.082	26.5	89.9	
Pole MS-5-41	4.160	98.615	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-27	0.220	0.107	34.4	89.9	
								Pole MS-5-24	-0.224	-0.109	35.0	89.9	
Pole MS-5-42	4.160	98.456	-3.1	0.000	0.000	0.003	0.001	Pole MS-5-40	-0.003	-0.001	0.4	89.9	
Pole MS-5-43	4.160	98.442	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-44	-0.037	-0.018	5.9	90.0	
								Pole MS-5-45	0.033	0.016	5.2	90.0	
Pole MS-5-44	4.160	98.449	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-40	-0.041	-0.020	6.5	90.0	
								Pole MS-5-43	0.037	0.018	5.9	90.0	
Pole MS-5-45	4.160	98.437	-3.1	0.000	0.000	0.000	0.000	Pole MS-5-43	-0.033	-0.016	5.2	90.0	
								Pole MS-5-46	0.027	0.013	4.3	90.0	
								SEC_MS-5-40	0.006	0.003	1.0	90.0	
Pole MS-5-46	4.160	98.429	-3.1	0.000	0.000	0.003	0.001	Pole MS-5-45	-0.027	-0.013	4.3	90.0	
								Pole MS-5-47	0.025	0.012	3.9	90.0	
Pole MS-5-47	4.160	98.425	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-46	-0.025	-0.012	3.9	90.0	
								Pole MS-5-48	0.021	0.010	3.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-48	4.160	98.417	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-47	-0.021	-0.010	3.2	90.0	
								Pole MS-5-49	0.017	0.008	2.6	90.0	
Pole MS-5-49	4.160	98.413	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-48	-0.017	-0.008	2.6	90.0	
								Pole MS-5-50	0.013	0.006	2.0	90.0	
Pole MS-5-50	4.160	98.407	-3.1	0.000	0.000	0.000	0.000	Pole MS-5-49	-0.013	-0.006	2.0	90.0	
								Pole MS-5-51	0.007	0.003	1.0	90.0	
								SEC_MS-5-45	0.006	0.003	1.0	90.0	
Pole MS-5-51	4.160	98.406	-3.1	0.000	0.000	0.003	0.001	Pole MS-5-50	-0.007	-0.003	1.0	90.0	
								Pole MS-5-52	0.004	0.002	0.6	90.0	
Pole MS-5-52	4.160	98.404	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-51	-0.004	-0.002	0.6	90.0	
								Pole MS-5-149	0.000	0.000	0.0	0.0	
Pole MS-5-55	4.160	98.415	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-40	-0.169	-0.082	26.5	89.9	
								Pole MS-5-68	0.165	0.080	25.9	89.9	
Pole MS-5-56	4.160	98.302	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-68	-0.161	-0.078	25.3	90.0	
								Pole MS-5-57	0.031	0.015	4.9	89.9	
								Pole MS-5-64	0.012	0.006	1.8	90.0	
								Pole MS-5-67	0.114	0.055	17.9	90.0	
Pole MS-5-57	4.160	98.294	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-56	-0.031	-0.015	4.9	89.9	
								Pole MS-5-58	0.027	0.013	4.3	89.9	
Pole MS-5-58	4.160	98.285	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-57	-0.027	-0.013	4.3	89.9	
								Pole MS-5-59	0.024	0.011	3.7	89.9	
Pole MS-5-59	4.160	98.281	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-58	-0.024	-0.011	3.7	89.9	
								Pole MS-5-60	0.020	0.010	3.1	89.9	
Pole MS-5-60	4.160	98.275	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-59	-0.020	-0.010	3.1	89.9	
								Pole MS-5-61	0.016	0.008	2.5	89.9	
Pole MS-5-61	4.160	98.273	-3.1	0.000	0.000	0.008	0.004	Pole MS-5-60	-0.016	-0.008	2.5	89.9	
								Pole MS-5-62	0.008	0.004	1.2	89.9	
Pole MS-5-62	4.160	98.271	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-61	-0.008	-0.004	1.2	89.9	
								Pole MS-5-63	0.004	0.002	0.6	89.9	
Pole MS-5-63	4.160	98.271	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-62	-0.004	-0.002	0.6	89.9	
Pole MS-5-64	4.160	98.300	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-56	-0.012	-0.006	1.8	90.0	
								Pole MS-5-65	0.008	0.004	1.2	90.0	
Pole MS-5-65	4.160	98.298	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-64	-0.008	-0.004	1.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-66	0.004	0.002	0.6	90.0	
Pole MS-5-66	4.160	98.294	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-65	-0.004	-0.002	0.6	89.9	
Pole MS-5-67	4.160	98.250	-3.2	0.000	0.000	0.000	0.000	Pole MS-5-56	-0.114	-0.055	17.9	90.0	
								Pole MS-5-69	0.029	0.014	4.5	90.0	
								Pole MS-5-78	0.026	0.013	4.1	90.0	
								Pole MS-5-86	0.059	0.029	9.2	90.0	
Pole MS-5-68	4.160	98.342	-3.1	0.000	0.000	0.004	0.002	Pole MS-5-56	0.161	0.078	25.3	89.9	
								Pole MS-5-55	-0.165	-0.080	25.9	89.9	
Pole MS-5-69	4.160	98.244	-3.2	0.000	0.000	0.004	0.002	Pole MS-5-67	-0.029	-0.014	4.5	90.0	
								Pole MS-5-70	0.025	0.012	3.9	90.0	
Pole MS-5-70	4.160	98.233	-3.2	0.000	0.000	0.004	0.002	Pole MS-5-69	-0.025	-0.012	3.9	90.0	
								Pole MS-5-71	0.021	0.010	3.3	90.0	
Pole MS-5-71	4.160	98.231	-3.2	0.000	0.000	0.004	0.002	Pole MS-5-70	-0.021	-0.010	3.3	90.0	
								Pole MS-5-72	0.017	0.008	2.7	90.0	
Pole MS-5-72	4.160	98.230	-3.2	0.000	0.000	0.004	0.002	Pole MS-5-71	-0.017	-0.008	2.7	90.0	
								Pole MS-5-73	0.013	0.006	2.1	90.0	
Pole MS-5-73	4.160	98.226	-3.2	0.000	0.000	0.004	0.002	Pole MS-5-72	-0.013	-0.006	2.1	90.0	
								Pole MS-5-74	0.009	0.004	1.4	90.0	
Pole MS-5-74	4.160	98.224	-3.2	0.000	0.000	0.004	0.002	Pole MS-5-73	-0.009	-0.004	1.4	90.0	
								Pole MS-5-75	0.005	0.003	0.8	90.0	
Pole MS-5-75	4.160	98.223	-3.2	0.000	0.000	0.003	0.001	Pole MS-5-74	-0.005	-0.003	0.8	90.0	
								Pole MS-5-76	0.003	0.001	0.4	90.0	
Pole MS-5-76	4.160	98.223	-3.2	0.000	0.000	0.003	0.001	Pole MS-5-75	-0.003	-0.001	0.4	90.0	
								Line MS-5-79~	0.000	0.000	0.0	0.0	
Pole MS-5-77	4.160	98.239	-3.2	0.000	0.000	0.003	0.001	Pole MS-5-78	-0.024	-0.011	3.7	90.0	
								Pole MS-5-79	0.021	0.010	3.3	90.0	
Pole MS-5-78	4.160	98.244	-3.2	0.000	0.000	0.003	0.001	Pole MS-5-67	-0.026	-0.013	4.1	90.0	
								Pole MS-5-77	0.024	0.011	3.7	90.0	
Pole MS-5-79	4.160	98.238	-3.2	0.000	0.000	0.003	0.001	Pole MS-5-77	-0.021	-0.010	3.3	90.0	
								Pole MS-5-80	0.018	0.009	2.9	90.0	
Pole MS-5-80	4.160	98.229	-3.2	0.000	0.000	0.003	0.001	Pole MS-5-79	-0.018	-0.009	2.9	90.0	
								Pole MS-5-81	0.016	0.008	2.5	90.0	
Pole MS-5-81	4.160	98.225	-3.2	0.000	0.000	0.003	0.001	Pole MS-5-80	-0.016	-0.008	2.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-82	0.013	0.006	2.1	90.0	
Pole MS-5-82	4.160	98.224	-3.2	0.000	0.000	0.003	0.001	Pole MS-5-81	-0.013	-0.006	2.1	90.0	
								Pole MS-5-83	0.010	0.005	1.6	90.0	
Pole MS-5-83	4.160	98.223	-3.2	0.000	0.000	0.004	0.002	Pole MS-5-82	-0.010	-0.005	1.6	90.0	
								Pole MS-5-84	0.007	0.003	1.0	90.0	
Pole MS-5-84	4.160	98.222	-3.2	0.000	0.000	0.004	0.002	Pole MS-5-83	-0.007	-0.003	1.0	90.0	
								Pole MS-5-85	0.003	0.001	0.4	90.2	
Pole MS-5-85	4.160	98.218	-3.2	0.000	0.000	0.003	0.001	Pole MS-5-84	-0.003	-0.001	0.4	89.9	
Pole MS-5-86	4.160	98.223	-3.2	0.000	0.000	0.000	0.000	Pole MS-5-67	-0.059	-0.029	9.2	90.0	
								Pole MS-5-89	0.008	0.004	1.2	90.0	
								Pole MS-5-90	0.018	0.009	2.9	90.0	
								Pole MS-5-96	0.033	0.016	5.1	89.9	
Pole MS-5-87	4.160	98.220	-3.2	0.000	0.000	0.003	0.001	Pole MS-5-88	-0.003	-0.001	0.4	89.9	
Pole MS-5-88	4.160	98.220	-3.2	0.000	0.000	0.003	0.001	Pole MS-5-87	0.003	0.001	0.4	90.0	
								Pole MS-5-89	-0.005	-0.003	0.8	90.0	
Pole MS-5-89	4.160	98.221	-3.2	0.000	0.000	0.003	0.001	Pole MS-5-86	-0.008	-0.004	1.2	90.0	
								Pole MS-5-88	0.005	0.003	0.8	90.0	
Pole MS-5-90	4.160	98.218	-3.2	0.000	0.000	0.003	0.001	Pole MS-5-86	-0.018	-0.009	2.9	90.0	
								Pole MS-5-91	0.016	0.008	2.5	90.0	
Pole MS-5-91	4.160	98.214	-3.2	0.000	0.000	0.003	0.001	Pole MS-5-90	-0.016	-0.008	2.5	90.0	
								Pole MS-5-92	0.013	0.006	2.1	90.0	
Pole MS-5-92	4.160	98.210	-3.2	0.000	0.000	0.003	0.001	Pole MS-5-91	-0.013	-0.006	2.1	90.0	
								Pole MS-5-93	0.010	0.005	1.6	90.0	
Pole MS-5-93	4.160	98.207	-3.2	0.000	0.000	0.004	0.002	Pole MS-5-92	-0.010	-0.005	1.6	89.9	
								Pole MS-5-94	0.007	0.003	1.0	90.0	
Pole MS-5-94	4.160	98.205	-3.2	0.000	0.000	0.004	0.002	Pole MS-5-93	-0.007	-0.003	1.0	89.9	
								Pole MS-5-95	0.003	0.001	0.4	90.0	
Pole MS-5-95	4.160	98.205	-3.2	0.000	0.000	0.003	0.001	Pole MS-5-94	-0.003	-0.001	0.4	89.9	
Pole MS-5-96	4.160	98.210	-3.2	0.000	0.000	0.000	0.000	Pole MS-5-86	-0.033	-0.016	5.1	89.9	
								Pole MS-5-111	0.033	0.016	5.1	89.9	
Pole MS-5-106	4.160	99.946	-3.0	0.000	0.000	0.030	0.014	Pole MS-5-108	-0.113	-0.055	17.4	90.0	
								Pole MS-5-122	0.083	0.040	12.9	90.0	
Pole MS-5-107	4.160	100.013	-3.0	0.000	0.000	0.003	0.001	Pole MS-5-108	-0.012	-0.006	1.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-109	0.009	0.004	1.4	90.0	
Pole MS-5-108	4.160	100.016	-3.0	0.000	0.000	0.000	0.000	Pole MS-5-107	0.012	0.006	1.8	90.0	
								Pole MS-5-106	0.113	0.055	17.4	90.0	
								SF-2-30	-0.125	-0.061	19.2	90.0	
Pole MS-5-109	4.160	100.011	-3.0	0.000	0.000	0.003	0.001	Pole MS-5-107	-0.009	-0.004	1.4	90.0	
								Pole MS-5-110	0.006	0.003	1.0	90.0	
Pole MS-5-110	4.160	100.009	-3.0	0.000	0.000	0.000	0.000	Pole MS-5-109	-0.006	-0.003	1.0	90.0	
								SEC_MS-5-99	0.006	0.003	1.0	90.0	
Pole MS-5-111	4.160	98.197	-3.2	0.000	0.000	0.000	0.000	Pole MS-5-96	-0.033	-0.016	5.1	89.9	
								Pole MS-5-124	0.033	0.016	5.1	89.9	
Pole MS-5-122	4.160	99.889	-3.0	0.000	0.000	0.038	0.018	Pole MS-5-106	-0.083	-0.040	12.9	90.0	
								Pole MS-5-123	0.046	0.022	7.1	90.0	
Pole MS-5-123	4.160	99.859	-3.0	0.000	0.000	0.000	0.000	Pole MS-5-122	-0.046	-0.022	7.1	90.0	
								Pole MS-5-134	0.038	0.018	5.8	90.0	
								Pole MS-5-135	0.008	0.004	1.2	90.0	
Pole MS-5-124	4.160	98.184	-3.2	0.000	0.000	0.000	0.000	Pole MS-5-111	-0.033	-0.016	5.1	89.9	
								Pole MS-5-139	0.033	0.016	5.1	89.9	
Pole MS-5-125	4.160	99.789	-3.0	0.000	0.000	0.003	0.001	Pole MS-5-126	-0.003	-0.001	0.4	90.0	
								Line MS-5-129~	0.000	0.000	0.0	0.0	
Pole MS-5-126	4.160	99.789	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-125	0.003	0.001	0.4	90.0	
								Pole MS-5-127	-0.007	-0.003	1.0	90.0	
Pole MS-5-127	4.160	99.791	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-126	0.007	0.003	1.0	90.0	
								Pole MS-5-128	-0.011	-0.005	1.7	90.0	
Pole MS-5-128	4.160	99.793	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-127	0.011	0.005	1.7	90.0	
								Pole MS-5-129	-0.015	-0.007	2.3	90.0	
Pole MS-5-129	4.160	99.800	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-128	0.015	0.007	2.3	90.0	
								Pole MS-5-130	-0.019	-0.009	2.9	90.0	
Pole MS-5-130	4.160	99.804	-3.0	0.000	0.000	0.003	0.001	Pole MS-5-129	0.019	0.009	2.9	90.0	
								Pole MS-5-131	-0.021	-0.010	3.3	90.0	
Pole MS-5-131	4.160	99.813	-3.0	0.000	0.000	0.003	0.001	Pole MS-5-130	0.021	0.010	3.3	90.0	
								Pole MS-5-132	-0.024	-0.012	3.7	90.0	
Pole MS-5-132	4.160	99.819	-3.0	0.000	0.000	0.003	0.001	Pole MS-5-131	0.024	0.012	3.7	90.0	
								Pole MS-5-137	-0.027	-0.013	4.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-133	4.160	99.845	-3.0	0.000	0.000	0.003	0.001	Pole MS-5-137	0.031	0.015	4.8	90.0	
								Pole MS-5-134	-0.034	-0.016	5.2	90.0	
Pole MS-5-134	4.160	99.852	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-133	0.034	0.016	5.2	90.0	
								Pole MS-5-123	-0.038	-0.018	5.8	90.0	
Pole MS-5-135	4.160	99.852	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-123	-0.008	-0.004	1.2	90.0	
								Pole MS-5-136	0.004	0.002	0.6	90.0	
Pole MS-5-136	4.160	99.848	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-135	-0.004	-0.002	0.6	89.9	
Pole MS-5-137	4.160	99.831	-3.0	0.000	0.000	0.004	0.002	Pole MS-5-133	-0.031	-0.015	4.8	90.0	
								Pole MS-5-132	0.027	0.013	4.2	90.0	
Pole MS-5-139	4.160	98.177	-3.2	0.000	0.000	0.033	0.016	Pole MS-5-124	-0.033	-0.016	5.1	89.9	
Pole MS-5-149	4.160	98.404	-3.1	0.000	0.000	0.000	0.000	Pole MS-5-52	0.000	0.000	0.0	0.0	
Pole MS-5-151	4.160	98.555	-3.1	0.000	0.000	0.000	0.000	Pole MS-5-40	0.217	0.106	34.0	89.9	
								Pole MS-5-27	-0.217	-0.106	34.0	89.9	
Pole MS-7-16	24.940	99.482	-1.8	0.000	0.000	0.000	0.000	Pole MS-7-18	-0.016	-0.008	0.4	90.0	
								SEC_MS-7-9	0.016	0.008	0.4	90.0	
Pole MS-7-17	24.940	99.484	-1.8	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	-0.043	-0.019	1.1	91.9	
								Pole MS-7-18	0.043	0.019	1.1	91.9	
Pole MS-7-18	24.940	99.482	-1.8	0.000	0.000	0.000	0.000	Pole MS-7-19	0.027	0.012	0.7	91.6	
								Pole MS-7-16	0.016	0.008	0.4	90.2	
								Pole MS-7-17	-0.043	-0.020	1.1	91.1	
Pole MS-7-19	24.940	99.482	-1.8	0.000	0.000	0.027	0.014	Pole MS-7-18	-0.027	-0.014	0.7	89.3	
Pole MS-8-1	4.160	99.804	-2.8	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	-0.133	-0.065	20.6	89.8	
								Pole MS-8-2	0.133	0.065	20.6	89.8	
Pole MS-8-2	4.160	99.714	-2.8	0.000	0.000	0.003	0.001	Pole MS-8-1	-0.133	-0.065	20.6	89.9	
								Pole MS-8-3	0.130	0.064	20.2	89.9	
Pole MS-8-3	4.160	99.684	-2.8	0.000	0.000	0.003	0.001	Pole MS-8-2	-0.130	-0.064	20.2	89.9	
								Pole MS-8-4	0.128	0.062	19.8	89.9	
Pole MS-8-4	4.160	99.670	-2.8	0.000	0.000	0.000	0.000	Pole MS-8-3	-0.128	-0.062	19.8	89.9	
								Pole MS-8-5	0.115	0.056	17.8	89.8	
								SEC_MS-8-3	0.013	0.006	2.0	89.9	
Pole MS-8-5	4.160	99.655	-2.8	0.000	0.000	0.003	0.001	Pole MS-8-4	-0.115	-0.056	17.8	89.8	
								Pole MS-8-6	0.112	0.055	17.4	89.8	
Pole MS-8-6	4.160	99.630	-2.8	0.000	0.000	0.003	0.001	Pole MS-8-5	-0.112	-0.055	17.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-8-7	0.110	0.054	17.0	89.8	
Pole MS-8-7	4.160	99.617	-2.8	0.000	0.000	0.005	0.003	Pole MS-8-6	-0.110	-0.054	17.0	89.9	
								Pole MS-8-8	0.104	0.051	16.2	89.8	
Pole MS-8-8	4.160	99.604	-2.8	0.000	0.000	0.000	0.000	Pole MS-8-7	-0.104	-0.051	16.2	89.8	
								Pole MS-8-9	0.019	0.009	2.9	89.9	
								Pole MS-8-10	0.085	0.042	13.2	89.8	
Pole MS-8-9	4.160	99.600	-2.8	0.000	0.000	0.000	0.000	Pole MS-8-8	-0.019	-0.009	2.9	89.9	
								SEC_MS-8-8	0.019	0.009	2.9	89.9	
Pole MS-8-10	4.160	99.582	-2.8	0.000	0.000	0.003	0.001	Pole MS-8-8	-0.085	-0.042	13.2	89.8	
								Pole MS-8-11	0.083	0.040	12.8	89.8	
Pole MS-8-11	4.160	99.561	-2.8	0.000	0.000	0.004	0.002	Pole MS-8-10	-0.083	-0.040	12.8	89.8	
								Pole MS-8-12	0.079	0.038	12.2	89.8	
Pole MS-8-12	4.160	99.542	-2.8	0.000	0.000	0.004	0.002	Pole MS-8-11	-0.079	-0.038	12.2	89.8	
								Pole MS-8-13	0.075	0.036	11.6	89.8	
Pole MS-8-13	4.160	99.538	-2.8	0.000	0.000	0.004	0.002	Pole MS-8-12	-0.075	-0.036	11.6	89.8	
								Pole MS-8-14	0.071	0.035	11.0	89.8	
Pole MS-8-14	4.160	99.527	-2.8	0.000	0.000	0.004	0.002	Pole MS-8-15	0.067	0.033	10.3	89.8	
								Pole MS-8-13	-0.071	-0.035	11.0	89.8	
Pole MS-8-15	4.160	99.517	-2.9	0.000	0.000	0.000	0.000	PRI_PM_9	0.067	0.033	10.3	89.8	
								Pole MS-8-14	-0.067	-0.033	10.3	89.8	
Pole MS-9-1	4.160	99.823	-2.8	0.000	0.000	0.004	0.002	BUS_5KV-LLP_01	-0.284	-0.139	43.9	89.8	
								Pole MS-9-2	0.280	0.137	43.3	89.8	
Pole MS-9-2	4.160	99.763	-2.8	0.000	0.000	0.000	0.000	Pole MS-9-1	-0.280	-0.137	43.3	89.9	
								Pole MS-9-12	0.280	0.137	43.3	89.9	
Pole MS-9-12	4.160	99.649	-2.8	0.000	0.000	0.000	0.000	Pole MS-9-2	-0.279	-0.136	43.3	89.9	
								Pole MS-9-13	0.279	0.136	43.3	89.9	
Pole MS-9-13	4.160	99.630	-2.8	0.000	0.000	0.000	0.000	Pole MS-9-12	-0.279	-0.136	43.3	89.9	
								Pole MS-9-14	0.279	0.136	43.3	89.9	
Pole MS-9-14	4.160	99.596	-2.8	0.000	0.000	0.003	0.001	Pole MS-9-13	-0.279	-0.136	43.3	89.9	
								Pole MS-9-15	0.277	0.135	42.9	89.9	
Pole MS-9-15	4.160	99.545	-2.8	0.000	0.000	0.000	0.000	Pole MS-9-14	-0.277	-0.135	42.9	89.9	
								Pole MS-9-16	0.264	0.129	40.9	89.9	
								SEC_MS-9-12	0.013	0.006	2.0	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-9-16	4.160	99.490	-2.9	0.000	0.000	0.003	0.001	Pole MS-9-15	-0.264	-0.128	40.9	89.9	
								Pole MS-9-17	0.261	0.127	40.5	89.9	
Pole MS-9-17	4.160	99.455	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-16	-0.261	-0.127	40.5	89.9	
								Pole MS-9-18	0.075	0.037	11.7	89.9	
								Pole MS-9-33	0.186	0.091	28.8	89.9	
Pole MS-9-18	4.160	99.451	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-17	-0.075	-0.037	11.7	89.9	
								Pole MS-9-19	0.063	0.030	9.7	89.9	
								SEC_MS-9-14	0.013	0.006	2.0	89.9	
Pole MS-9-19	4.160	99.440	-2.9	0.000	0.000	0.003	0.001	Pole MS-9-18	-0.063	-0.030	9.7	89.9	
								Pole MS-9-20	0.060	0.029	9.3	89.9	
Pole MS-9-20	4.160	99.424	-2.9	0.000	0.000	0.004	0.002	Pole MS-9-19	-0.060	-0.029	9.3	89.9	
								Pole MS-9-21	0.056	0.027	8.7	89.9	
Pole MS-9-21	4.160	99.410	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-20	-0.056	-0.027	8.7	89.9	
								Pole MS-9-23	0.043	0.021	6.7	90.0	
								SEC_MS-9-17	0.013	0.006	2.0	89.9	
Pole MS-9-22	4.160	99.237	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-42	-0.131	-0.064	20.4	89.9	
								Pole MS-9-43	0.019	0.009	3.0	90.0	
								Pole MS-9-47	0.112	0.055	17.4	89.9	
Pole MS-9-23	4.160	99.407	-2.9	0.000	0.000	0.004	0.002	Pole MS-9-21	-0.043	-0.021	6.7	90.0	
								Pole MS-9-24	0.039	0.019	6.1	90.0	
Pole MS-9-24	4.160	99.402	-2.9	0.000	0.000	0.008	0.004	Pole MS-9-23	-0.039	-0.019	6.1	90.0	
								Pole MS-9-25	0.031	0.015	4.9	90.0	
Pole MS-9-25	4.160	99.400	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-24	-0.031	-0.015	4.9	90.0	
								Pole MS-9-26	0.013	0.006	2.0	90.0	
								Pole MS-9-28	0.019	0.009	2.9	90.0	
Pole MS-9-26	4.160	99.394	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-27	0.000	0.000	0.0	0.0	
								Pole MS-9-25	-0.013	-0.006	2.0	89.9	
								SEC_MS-9-22	0.013	0.006	2.0	89.9	
Pole MS-9-27	4.160	99.394	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-26	0.000	0.000	0.0	0.0	
Pole MS-9-28	4.160	99.396	-2.9	0.000	0.000	0.003	0.001	Pole MS-9-25	-0.019	-0.009	2.9	89.9	
								Pole MS-9-29	0.016	0.008	2.5	89.9	
Pole MS-9-29	4.160	99.394	-2.9	0.000	0.000	0.004	0.002	Pole MS-9-28	-0.016	-0.008	2.5	89.9	
								Pole MS-9-30	0.012	0.006	1.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-9-30	4.160	99.391	-2.9	0.000	0.000	0.004	0.002	Pole MS-9-29	-0.012	-0.006	1.9	89.9	
								Pole MS-9-31	0.008	0.004	1.2	89.9	
Pole MS-9-31	4.160	99.390	-2.9	0.000	0.000	0.004	0.002	Pole MS-9-30	-0.008	-0.004	1.2	89.9	
								Pole MS-9-32	0.004	0.002	0.6	89.9	
Pole MS-9-32	4.160	99.390	-2.9	0.000	0.000	0.004	0.002	Pole MS-9-31	-0.004	-0.002	0.6	89.9	
Pole MS-9-33	4.160	99.420	-2.9	0.000	0.000	0.004	0.002	Pole MS-9-17	-0.186	-0.091	28.8	89.9	
								Pole MS-9-34	0.182	0.089	28.2	89.9	
Pole MS-9-34	4.160	99.392	-2.9	0.000	0.000	0.004	0.002	Pole MS-9-33	-0.182	-0.089	28.2	89.9	
								Pole MS-9-35	0.178	0.087	27.6	89.9	
Pole MS-9-35	4.160	99.370	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-34	-0.178	-0.087	27.6	89.9	
								Pole MS-9-36	0.004	0.002	0.6	89.9	
								Pole MS-9-37	0.174	0.085	27.0	89.9	
Pole MS-9-36	4.160	99.370	-2.9	0.000	0.000	0.004	0.002	Pole MS-9-35	-0.004	-0.002	0.6	89.9	
Pole MS-9-37	4.160	99.361	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-35	-0.174	-0.085	27.0	89.9	
								Pole MS-9-38	0.161	0.078	25.0	89.9	
								SEC_MS-9-31	0.013	0.006	2.0	89.9	
Pole MS-9-38	4.160	99.341	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-37	-0.161	-0.078	25.0	89.9	
								Pole MS-9-39	0.142	0.069	22.1	89.9	
								SEC_MS-9-32	0.019	0.009	2.9	89.9	
Pole MS-9-39	4.160	99.302	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-38	-0.142	-0.069	22.1	89.9	
								Pole MS-9-40	0.003	0.001	0.4	90.0	
								Pole MS-9-41	0.139	0.068	21.7	89.9	
Pole MS-9-40	4.160	99.301	-2.9	0.000	0.000	0.003	0.001	Pole MS-9-39	-0.003	-0.001	0.4	90.0	
Pole MS-9-41	4.160	99.283	-2.9	0.000	0.000	0.004	0.002	Pole MS-9-39	-0.139	-0.068	21.7	89.9	
								Pole MS-9-42	0.135	0.066	21.1	89.9	
Pole MS-9-42	4.160	99.251	-2.9	0.000	0.000	0.004	0.002	Pole MS-9-22	0.131	0.064	20.4	89.9	
								Pole MS-9-41	-0.135	-0.066	21.1	89.9	
Pole MS-9-43	4.160	99.236	-2.9	0.000	0.000	0.003	0.001	Pole MS-9-22	-0.019	-0.009	3.0	90.0	
								Pole MS-9-44	0.017	0.008	2.6	90.0	
Pole MS-9-44	4.160	99.232	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-43	-0.017	-0.008	2.6	89.9	
								Pole MS-9-45	0.004	0.002	0.6	89.9	
								Pole MS-9-46	0.013	0.006	2.0	89.9	
Pole MS-9-45	4.160	99.232	-2.9	0.000	0.000	0.004	0.002	Pole MS-9-44	-0.004	-0.002	0.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-9-46	4.160	99.229	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-44	-0.013	-0.006	2.0	89.9	
								SEC_MS-9-37	0.013	0.006	2.0	89.9	
Pole MS-9-47	4.160	99.223	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-22	-0.112	-0.055	17.4	89.9	
								Pole MS-9-48	0.100	0.048	15.5	89.9	
								SEC_MS-9-38	0.013	0.006	2.0	89.9	
Pole MS-9-48	4.160	99.209	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-47	-0.100	-0.048	15.5	89.9	
								Pole MS-9-49	0.081	0.039	12.6	89.9	
								SEC_MS-9-39	0.019	0.009	2.9	89.9	
Pole MS-9-49	4.160	99.187	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-48	-0.081	-0.039	12.6	89.9	
								Pole MS-9-50	0.062	0.030	9.6	89.9	
								SEC_MS-9-40	0.019	0.009	2.9	89.9	
Pole MS-9-50	4.160	99.178	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-49	-0.062	-0.030	9.6	89.9	
								Pole MS-9-51	0.045	0.022	7.0	89.9	
								SEC_MS-9-41	0.017	0.008	2.6	89.9	
Pole MS-9-51	4.160	99.171	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-50	-0.045	-0.022	7.0	89.9	
								Pole MS-9-52	0.028	0.014	4.4	89.9	
								SEC_MS-9-42	0.017	0.008	2.6	89.9	
Pole MS-9-52	4.160	99.164	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-51	-0.028	-0.014	4.4	89.9	
								Pole MS-9-53	0.012	0.006	1.8	90.0	
								SEC_MS-9-43	0.017	0.008	2.6	89.9	
Pole MS-9-53	4.160	99.163	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-52	-0.012	-0.006	1.8	89.9	
								Pole MS-9-54	0.000	0.000	0.0	0.0	
								SEC_MS-9-44	0.012	0.006	1.8	89.9	
Pole MS-9-54	4.160	99.163	-2.9	0.000	0.000	0.000	0.000	Pole MS-9-53	0.000	0.000	0.0	0.0	
PRI_PM_1	4.160	99.067	-2.4	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-0.030	-0.015	4.6	89.8	
								SEC_PM_1	0.030	0.015	4.6	89.8	
PRI_PM_1-1	4.160	97.202	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.029	-0.014	4.6	89.8	
								SEC_PM_1-1	0.029	0.014	4.6	89.8	
PRI_PM_2	4.160	98.721	-2.4	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-0.030	-0.015	4.6	89.8	
								SEC_PM_2	0.030	0.015	4.6	89.8	
PRI_PM_3	4.160	98.432	-2.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-3	-0.029	-0.014	4.6	89.8	
								SEC_PM_3	0.029	0.014	4.6	89.8	
PRI_PM_4	4.160	97.446	-3.4	0.000	0.000	0.000	0.000	SF-1-60	-0.125	-0.062	19.8	89.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_PM_4	0.125	0.062	19.8	89.6	
PRI_PM_5	4.160	98.183	-2.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-5	-0.029	-0.014	4.6	89.8	
								SEC_PM_5	0.029	0.014	4.6	89.8	
PRI_PM_6	4.160	97.949	-2.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.029	-0.014	4.6	89.8	
								SEC_PM_6	0.029	0.014	4.6	89.8	
PRI_PM_7	4.160	99.421	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-73	-0.091	-0.045	14.1	89.7	
								SEC_PM_7	0.091	0.045	14.1	89.7	
PRI_PM_8	4.160	99.553	-2.9	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.074	-0.036	11.4	89.8	
								SEC_PM_8	0.074	0.036	11.4	89.8	
PRI_PM_9	4.160	99.508	-2.8	0.000	0.000	0.000	0.000	Pole MS-8-15	-0.067	-0.033	10.3	89.8	
								SEC_PM_9	0.067	0.033	10.3	89.8	
PRI_PM_10	4.160	98.851	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-86	-0.132	-0.065	20.6	89.8	
								PRI_PM_28	0.066	0.032	10.3	89.8	
								SEC_PM_10	0.066	0.032	10.3	89.8	
PRI_PM_11	4.160	99.211	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-11	-0.070	-0.034	10.9	89.8	
								SEC_PM_11	0.070	0.034	10.9	89.8	
PRI_PM_12	4.160	97.514	-3.4	0.000	0.000	0.000	0.000	SF-1-59	-0.125	-0.062	19.9	89.6	
								SEC_PM_12	0.125	0.062	19.9	89.6	
PRI_PM_13	4.160	96.903	-3.3	0.000	0.000	0.000	0.000	SF-1-40	-0.234	-0.116	37.4	89.6	
								SEC_PM_13	0.234	0.116	37.4	89.6	
PRI_PM_14	4.160	97.336	-3.3	0.000	0.000	0.000	0.000	SF-1-17	-0.176	-0.087	27.9	89.7	
								SEC_PM_14	0.176	0.087	27.9	89.7	
PRI_PM_15	4.160	98.767	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-16	-0.159	-0.078	24.9	89.7	
								SEC_PM_15	0.159	0.078	24.9	89.7	
PRI_PM_16	4.160	99.194	-2.5	0.000	0.000	0.000	0.000	Pole CS-1-2	-0.070	-0.034	10.9	89.8	
								SEC_PM_16	0.070	0.034	10.9	89.8	
PRI_PM_17	4.160	98.579	-2.6	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.059	-0.029	9.2	89.8	
								SEC_PM_17	0.059	0.029	9.2	89.8	
PRI_PM_18	4.160	99.094	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-54	-0.090	-0.045	14.1	89.7	
								SEC_PM_18	0.090	0.045	14.1	89.7	
PRI_PM_19	4.160	97.046	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-37	-0.067	-0.033	10.7	89.8	
								SEC_PM_19	0.067	0.033	10.7	89.8	
PRI_PM_20	4.160	97.342	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-21	-0.068	-0.033	10.7	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_PM_20	0.068	0.033	10.7	89.8	
PRI_PM_21	4.160	97.486	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-20	-0.071	-0.035	11.3	89.8	
								SEC_PM_21	0.071	0.035	11.3	89.8	
PRI_PM_22	4.160	98.795	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-6	-0.080	-0.039	12.5	89.7	
								SEC_PM_22	0.080	0.039	12.5	89.7	
PRI_PM_23	4.160	97.273	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-20	-0.078	-0.038	12.3	89.7	
								SEC_PM_23	0.078	0.038	12.3	89.7	
PRI_PM_24	4.160	97.190	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-22	-0.078	-0.038	12.3	89.7	
								SEC_PM_24	0.078	0.038	12.3	89.7	
PRI_PM_25	4.160	99.160	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-22	-0.040	-0.020	6.2	89.7	
								SEC_PM_25	0.040	0.020	6.2	89.7	
PRI_PM_26	4.160	98.825	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-31	-0.040	-0.020	6.2	89.7	
								SEC_PM_26	0.040	0.020	6.2	89.7	
PRI_PM_28	4.160	98.842	-2.2	0.000	0.000	0.000	0.000	PRI_PM_10	-0.066	-0.032	10.3	89.8	
								SEC_PM_28	0.066	0.032	10.3	89.8	
PV-PMS-Pri	24.900	99.658	-1.8	0.000	0.000	0.000	0.000	P_526_2	0.000	0.000	0.0	0.0	
P_526_2	24.900	99.658	-1.8	0.000	0.000	0.000	0.000	PV-PMS-Pri	0.000	-0.001	0.0	0.0	
								BUS_WTG6	0.000	0.001	0.0	0.0	
SEC_6M-1-1	0.208	99.447	-1.4	0.000	0.000	0.008	0.004	Pole 6M-1-1	-0.008	-0.004	26.2	90.0	
SEC_6M-1-2	0.208	99.347	-1.4	0.000	0.000	0.008	0.004	Pole 6M-1-3	-0.008	-0.004	26.2	90.0	
SEC_6M-1-12	0.208	98.927	-1.4	0.000	0.000	0.008	0.004	Pole 6M-1-19	-0.008	-0.004	26.1	90.0	
SEC_6M-E-1	0.208	96.839	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-5	-0.013	-0.006	41.8	90.0	
SEC_6M-E-2	0.208	97.470	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-2	-0.013	-0.006	42.0	90.0	
SEC_6M-E-3	0.208	97.057	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-3	-0.013	-0.006	41.9	90.0	
SEC_6M-E-4	0.208	96.622	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-6	-0.013	-0.006	41.8	90.0	
SEC_6M-E-5	0.208	96.278	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-8	-0.013	-0.006	41.7	90.0	
SEC_6M-E-6	0.208	95.654	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-10	-0.013	-0.006	41.5	90.0	
SEC_6M-E-7	0.208	95.608	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-11	-0.013	-0.006	41.5	90.0	
SEC_6M-E-8	0.208	95.549	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-14	-0.013	-0.006	41.5	90.0	
SEC_6M-E-10	0.208	95.482	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-19	-0.013	-0.006	41.5	90.0	
SEC_6M-E-11	0.208	95.466	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-20	-0.013	-0.006	41.5	90.0	
SEC_6M-E-13	0.208	97.297	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-29	-0.013	-0.006	42.0	90.0	
SEC_CS-1-1	0.208	113.664	-2.6	0.000	0.000	0.012	0.006	Pole CS-1-4	-0.012	-0.006	32.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_CS-1-2	0.208	113.666	-2.6	0.000	0.000	0.012	0.006	Pole CS-1-5	-0.012	-0.006	32.1	90.0	
SEC_CS-1-7	0.208	113.058	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-13	-0.012	-0.006	32.0	90.0	
SEC_CS-1-9	0.208	112.949	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-15	-0.012	-0.006	32.0	90.0	
SEC_CS-1-10	0.208	112.969	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-18	-0.012	-0.006	32.0	90.0	
SEC_CS-1-11	0.208	112.966	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-19	-0.012	-0.006	32.0	90.0	
SEC_CS-1-12	0.208	112.971	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-20	-0.012	-0.006	32.0	90.0	
SEC_CS-1-15	0.208	112.855	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-23	-0.012	-0.006	32.0	90.0	
SEC_CS-1-16	0.208	112.804	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-24	-0.012	-0.006	32.0	90.0	
SEC_CS-1-29	0.208	112.509	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-40	-0.012	-0.006	31.9	90.0	
SEC_CS-1-32	0.208	112.521	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-43	-0.012	-0.006	31.9	90.0	
SEC_CS-1-46	0.208	112.614	-2.9	0.000	0.000	0.012	0.006	Pole CS-1-59	-0.012	-0.006	31.9	90.0	
SEC_CS-1-53	0.208	112.514	-2.9	0.000	0.000	0.012	0.006	Pole CS-1-68	-0.012	-0.006	31.9	90.0	
SEC_CS-2-5	0.208	112.201	-2.3	0.000	0.000	0.012	0.006	Pole CS-2-8	-0.012	-0.006	31.9	90.0	
SEC_CS-2-7	0.208	112.192	-2.3	0.000	0.000	0.012	0.006	Pole CS-2-10	-0.012	-0.006	31.9	90.0	
SEC_CS-2-8	0.208	112.188	-2.3	0.000	0.000	0.012	0.006	Pole CS-2-11	-0.012	-0.006	31.8	90.0	
SEC_CS-2-10	0.208	112.081	-2.4	0.000	0.000	0.012	0.006	Pole CS-2-15	-0.012	-0.006	31.8	90.0	
SEC_CS-2-46	0.208	114.137	-2.5	0.000	0.000	0.012	0.006	Pole CS-2-66	-0.012	-0.006	32.2	90.0	
SEC_CS-2-47	0.208	113.666	-2.5	0.000	0.000	0.012	0.006	Pole CS-3-29	-0.012	-0.006	32.1	90.0	
SEC_CS-2-48	0.208	113.400	-2.5	0.000	0.000	0.012	0.006	Pole CS-3-33	-0.012	-0.006	32.1	90.0	
SEC_CS-2-49	0.208	113.115	-2.5	0.000	0.000	0.012	0.006	Pole CS-2-73	-0.012	-0.006	32.0	90.0	
SEC_CS-4-8	0.208	113.316	-2.5	0.000	0.000	0.012	0.006	Pole CS-4-12	-0.012	-0.006	32.1	90.0	
SEC_CS-5-10	0.240	97.378	-1.5	0.000	0.000	0.023	0.011	UG-JUNC-CS-5-8	-0.023	-0.011	63.8	90.0	
SEC_CS-5-12	0.240	97.759	-1.3	0.000	0.000	0.023	0.011	UG-JUNC-CS-5-9	-0.023	-0.011	63.9	90.0	
SEC_HS-2-4	0.208	114.563	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-4	-0.012	-0.006	32.3	90.0	
SEC_HS-2-5	0.208	114.410	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-5	-0.012	-0.006	32.3	90.0	
SEC_HS-2-6	0.208	114.279	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-6	-0.012	-0.006	32.3	90.0	
SEC_HS-2-7	0.208	114.137	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-7	-0.012	-0.006	32.2	90.0	
SEC_HS-2-10	0.208	113.728	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-11	-0.012	-0.006	32.2	90.0	
SEC_HS-2-23	0.208	113.470	-2.3	0.000	0.000	0.012	0.006	Pole HS-2-26	-0.012	-0.006	32.1	90.0	
SEC_HS-2-25	0.208	113.344	-2.3	0.000	0.000	0.012	0.006	Pole HS-2-30	-0.012	-0.006	32.1	90.0	
SEC_HS-2-36	0.208	113.296	-2.3	0.000	0.000	0.012	0.006	Pole HS-2-43	-0.012	-0.006	32.1	90.0	
SEC_HS-2-67	0.208	113.727	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-77	-0.012	-0.006	32.2	90.0	
SEC_HS-3-55	0.208	113.381	-2.3	0.000	0.000	0.012	0.006	Pole HS-3-59	-0.012	-0.006	32.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_HS-3-57	0.208	113.350	-2.3	0.000	0.000	0.012	0.006	Pole HS-3-61	-0.012	-0.006	32.1	90.0	
SEC_HS-3-59	0.208	113.335	-2.3	0.000	0.000	0.012	0.006	Pole HS-3-63	-0.012	-0.006	32.1	90.0	
SEC_HS-4-7	0.208	114.573	-2.5	0.000	0.000	0.013	0.006	Pole HS-4-10	-0.013	-0.006	34.1	90.0	
SEC_HS-4-13	0.208	114.306	-2.5	0.000	0.000	0.013	0.006	Pole HS-4-17	-0.013	-0.006	34.1	90.0	
SEC_HS-4-21	0.208	113.925	-2.4	0.000	0.000	0.013	0.006	Pole HS-4-26	-0.013	-0.006	34.0	90.0	
SEC_HS-4-32	0.208	114.594	-2.5	0.000	0.000	0.013	0.006	Pole HS-4-39	-0.013	-0.006	34.1	90.0	
SEC_HS-4-44	0.208	114.596	-2.5	0.000	0.000	0.013	0.006	Pole HS-4-48	-0.013	-0.006	34.1	90.0	
SEC_MS-1-17	0.208	99.904	-3.0	0.000	0.000	0.002	0.001	Pole MS-1-10	-0.002	-0.001	6.6	90.0	
SEC_MS-2-8	0.208	99.322	-2.9	0.000	0.000	0.006	0.003	Pole MS-2-1	-0.006	-0.003	19.6	90.0	
SEC_MS-2-36	0.208	99.416	-2.9	0.000	0.000	0.006	0.003	Pole MS-2-90	-0.006	-0.003	19.6	90.0	
SEC_MS-2-37	0.208	99.317	-2.9	0.000	0.000	0.006	0.003	Pole MS-2-2	-0.006	-0.003	19.6	90.0	
SEC_MS-2-38	0.208	99.311	-2.9	0.000	0.000	0.006	0.003	Pole MS-2-3	-0.006	-0.003	19.6	90.0	
SEC_MS-2-39	0.208	99.321	-2.9	0.000	0.000	0.006	0.003	Pole MS-2-92	-0.006	-0.003	19.6	90.0	
SEC_MS-2-40	0.208	99.287	-2.9	0.000	0.000	0.006	0.003	Pole MS-2-94	-0.006	-0.003	19.6	90.0	
SEC_MS-2-41	0.208	99.192	-2.9	0.000	0.000	0.006	0.003	Pole MS-2-100	-0.006	-0.003	19.6	90.0	
SEC_MS-3-1	0.208	99.472	-2.8	0.000	0.000	0.006	0.003	Pole MS-3-2	-0.006	-0.003	19.6	90.0	
SEC_MS-3-2	0.208	99.367	-2.8	0.000	0.000	0.006	0.003	Pole MS-3-6	-0.006	-0.003	19.6	90.0	
SEC_MS-3-3	0.208	99.308	-2.8	0.000	0.000	0.006	0.003	Pole MS-3-8	-0.006	-0.003	19.6	90.0	
SEC_MS-3-22	0.208	99.086	-2.8	0.000	0.000	0.006	0.003	Pole MS-3-25	-0.006	-0.003	19.6	90.0	
SEC_MS-3-45	0.208	99.063	-2.8	0.000	0.000	0.010	0.005	Pole MS-4-36	-0.010	-0.005	31.0	90.0	
SEC_MS-3-49	0.208	99.003	-2.8	0.000	0.000	0.010	0.005	Pole MS-3-100	-0.010	-0.005	31.0	90.0	
SEC_MS-3-65	0.208	98.994	-2.8	0.000	0.000	0.010	0.005	Pole MS-3-102	-0.010	-0.005	31.0	90.0	
SEC_MS-3-66	0.208	99.159	-2.8	0.000	0.000	0.010	0.005	Pole MS-4-17	-0.010	-0.005	31.0	90.0	
SEC_MS-3-73	0.208	99.610	-2.8	0.000	0.000	0.006	0.003	Pole MS-4-3	-0.006	-0.003	19.6	90.0	
SEC_MS-3-74	0.208	99.606	-2.8	0.000	0.000	0.006	0.003	Pole MS-4-6	-0.006	-0.003	19.6	90.0	
SEC_MS-3-75	0.208	99.404	-2.8	0.000	0.000	0.006	0.003	Pole MS-4-10	-0.006	-0.003	19.6	90.0	
SEC_MS-3-76	0.208	99.093	-2.8	0.000	0.000	0.010	0.005	Pole MS-4-20	-0.010	-0.005	31.0	90.0	
SEC_MS-5-15	0.208	98.490	-3.1	0.000	0.000	0.006	0.003	Pole MS-5-16	-0.006	-0.003	19.5	90.0	
SEC_MS-5-16	0.208	98.378	-3.1	0.000	0.000	0.009	0.005	Pole MS-5-17	-0.009	-0.005	29.2	90.0	
SEC_MS-5-17	0.208	98.377	-3.1	0.000	0.000	0.009	0.005	Pole MS-5-18	-0.009	-0.005	29.2	90.0	
SEC_MS-5-23	0.208	98.444	-3.1	0.000	0.000	0.006	0.003	Pole MS-5-26	-0.006	-0.003	19.5	90.0	
SEC_MS-5-25	0.208	98.440	-3.1	0.000	0.000	0.006	0.003	Pole MS-5-28	-0.006	-0.003	19.5	90.0	
SEC_MS-5-26	0.208	98.333	-3.1	0.000	0.000	0.009	0.005	Pole MS-5-29	-0.009	-0.005	29.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_MS-5-29	0.208	98.398	-3.1	0.000	0.000	0.006	0.003	Pole MS-5-32	-0.006	-0.003	19.5	90.0	
SEC_MS-5-30	0.208	98.286	-3.1	0.000	0.000	0.009	0.005	Pole MS-5-33	-0.009	-0.005	29.2	90.0	
SEC_MS-5-32	0.208	98.386	-3.1	0.000	0.000	0.006	0.003	Pole MS-5-35	-0.006	-0.003	19.5	90.0	
SEC_MS-5-40	0.208	98.223	-3.2	0.000	0.000	0.006	0.003	Pole MS-5-45	-0.006	-0.003	19.5	90.0	
SEC_MS-5-45	0.208	98.193	-3.2	0.000	0.000	0.006	0.003	Pole MS-5-50	-0.006	-0.003	19.5	90.0	
SEC_MS-5-99	0.208	99.794	-3.0	0.000	0.000	0.006	0.003	Pole MS-5-110	-0.006	-0.003	19.7	90.0	
SEC_MS-7-9	0.208	99.432	-1.8	0.000	0.000	0.016	0.008	Pole MS-7-16	-0.016	-0.008	50.7	90.0	
SEC_MS-8-3	0.208	99.451	-2.9	0.000	0.000	0.013	0.006	Pole MS-8-4	-0.013	-0.006	39.3	90.0	
SEC_MS-8-8	0.208	99.271	-3.0	0.000	0.000	0.019	0.009	Pole MS-8-9	-0.019	-0.009	58.8	90.0	
SEC_MS-9-12	0.208	99.326	-2.9	0.000	0.000	0.013	0.006	Pole MS-9-15	-0.013	-0.006	39.2	90.0	
SEC_MS-9-14	0.208	99.232	-2.9	0.000	0.000	0.013	0.006	Pole MS-9-18	-0.013	-0.006	39.2	90.0	
SEC_MS-9-17	0.208	99.191	-3.0	0.000	0.000	0.013	0.006	Pole MS-9-21	-0.013	-0.006	39.2	90.0	
SEC_MS-9-22	0.208	99.175	-3.0	0.000	0.000	0.013	0.006	Pole MS-9-26	-0.013	-0.006	39.2	90.0	
SEC_MS-9-31	0.208	99.142	-3.0	0.000	0.000	0.013	0.006	Pole MS-9-37	-0.013	-0.006	39.2	90.0	
SEC_MS-9-32	0.208	99.013	-3.0	0.000	0.000	0.019	0.009	Pole MS-9-38	-0.019	-0.009	58.7	90.0	
SEC_MS-9-37	0.208	99.010	-3.0	0.000	0.000	0.013	0.006	Pole MS-9-46	-0.013	-0.006	39.2	90.0	
SEC_MS-9-38	0.208	99.004	-3.0	0.000	0.000	0.013	0.006	Pole MS-9-47	-0.013	-0.006	39.2	90.0	
SEC_MS-9-39	0.208	98.881	-3.0	0.000	0.000	0.019	0.009	Pole MS-9-48	-0.019	-0.009	58.7	90.0	
SEC_MS-9-40	0.208	98.859	-3.1	0.000	0.000	0.019	0.009	Pole MS-9-49	-0.019	-0.009	58.7	90.0	
SEC_MS-9-41	0.208	98.887	-3.0	0.000	0.000	0.017	0.008	Pole MS-9-50	-0.017	-0.008	52.2	90.0	
SEC_MS-9-42	0.208	98.879	-3.0	0.000	0.000	0.017	0.008	Pole MS-9-51	-0.017	-0.008	52.2	90.0	
SEC_MS-9-43	0.208	98.872	-3.0	0.000	0.000	0.017	0.008	Pole MS-9-52	-0.017	-0.008	52.2	90.0	
SEC_MS-9-44	0.208	98.962	-3.0	0.000	0.000	0.012	0.006	Pole MS-9-53	-0.012	-0.006	35.9	90.0	
SEC_PM_1	0.208	98.710	-2.7	0.000	0.000	0.030	0.014	PRI_PM_1	-0.030	-0.014	92.8	90.0	
SEC_PM_1-1	0.208	96.849	-2.6	0.000	0.000	0.029	0.014	PRI_PM_1-1	-0.029	-0.014	91.8	90.0	
SEC_PM_2	0.208	98.365	-2.6	0.000	0.000	0.030	0.014	PRI_PM_2	-0.030	-0.014	92.6	90.0	
SEC_PM_3	0.208	98.076	-2.6	0.000	0.000	0.029	0.014	PRI_PM_3	-0.029	-0.014	92.5	90.0	
SEC_PM_4	0.208	96.620	-3.9	0.000	0.000	0.124	0.060	PRI_PM_4	-0.124	-0.060	396.5	90.0	
SEC_PM_5	0.208	97.828	-2.6	0.000	0.000	0.029	0.014	PRI_PM_5	-0.029	-0.014	92.3	90.0	
SEC_PM_6	0.208	97.594	-2.5	0.000	0.000	0.029	0.014	PRI_PM_6	-0.029	-0.014	92.2	90.0	
SEC_PM_7	0.208	98.833	-3.1	0.000	0.000	0.091	0.044	PRI_PM_7	-0.091	-0.044	282.5	90.0	
SEC_PM_8	0.208	99.077	-3.2	0.000	0.000	0.073	0.036	PRI_PM_8	-0.073	-0.036	228.5	90.0	
SEC_PM_9	0.208	99.078	-3.1	0.000	0.000	0.066	0.032	PRI_PM_9	-0.066	-0.032	206.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_PM_10	0.208	98.423	-2.5	0.000	0.000	0.066	0.032	PRI_PM_10	-0.066	-0.032	205.9	90.0	
SEC_PM_11	0.208	98.833	-2.7	0.000	0.000	0.070	0.034	PRI_PM_11	-0.070	-0.034	217.3	90.0	
SEC_PM_12	0.208	96.759	-3.9	0.000	0.000	0.124	0.060	PRI_PM_12	-0.124	-0.060	396.8	90.0	
SEC_PM_13	0.208	96.195	-3.8	0.000	0.000	0.233	0.113	PRI_PM_13	-0.233	-0.113	748.1	90.0	
SEC_PM_14	0.208	96.828	-3.7	0.000	0.000	0.175	0.085	PRI_PM_14	-0.175	-0.085	557.9	90.0	
SEC_PM_15	0.208	98.322	-2.7	0.000	0.000	0.159	0.077	PRI_PM_15	-0.159	-0.077	498.2	90.0	
SEC_PM_16	0.208	98.816	-2.8	0.000	0.000	0.070	0.034	PRI_PM_16	-0.070	-0.034	217.3	90.0	
SEC_PM_17	0.208	98.269	-2.9	0.000	0.000	0.059	0.028	PRI_PM_17	-0.059	-0.028	184.0	90.0	
SEC_PM_18	0.208	98.581	-3.1	0.000	0.000	0.090	0.044	PRI_PM_18	-0.090	-0.044	282.0	90.0	
SEC_PM_19	0.208	96.672	-2.6	0.000	0.000	0.067	0.033	PRI_PM_19	-0.067	-0.033	214.4	90.0	
SEC_PM_20	0.208	96.967	-2.6	0.000	0.000	0.068	0.033	PRI_PM_20	-0.068	-0.033	214.8	90.0	
SEC_PM_21	0.208	97.089	-2.6	0.000	0.000	0.071	0.034	PRI_PM_21	-0.071	-0.034	225.7	90.0	
SEC_PM_22	0.208	98.350	-2.7	0.000	0.000	0.079	0.038	PRI_PM_22	-0.079	-0.038	249.1	90.0	
SEC_PM_23	0.208	96.832	-2.7	0.000	0.000	0.077	0.038	PRI_PM_23	-0.077	-0.038	246.8	90.0	
SEC_PM_24	0.208	96.749	-2.7	0.000	0.000	0.077	0.037	PRI_PM_24	-0.077	-0.037	246.7	90.0	
SEC_PM_25	0.208	98.714	-2.7	0.000	0.000	0.040	0.019	PRI_PM_25	-0.040	-0.019	124.8	90.0	
SEC_PM_26	0.208	98.379	-2.7	0.000	0.000	0.040	0.019	PRI_PM_26	-0.040	-0.019	124.6	90.0	
SEC_PM_28	0.208	98.414	-2.5	0.000	0.000	0.066	0.032	PRI_PM_28	-0.066	-0.032	205.9	90.0	
SEC_SF-1-26	0.208	97.655	-3.5	0.000	0.000	0.016	0.008	SF-1-11	-0.016	-0.008	50.1	90.0	
SEC_SF-1-47	0.208	97.331	-3.5	0.000	0.000	0.016	0.008	SF-1-14	-0.016	-0.008	50.0	90.0	
SEC_SF-1-49	0.208	97.847	-3.5	0.000	0.000	0.016	0.008	SF-1-28	-0.016	-0.008	50.2	90.0	
SEC_SF-1-51	0.208	97.695	-3.5	0.000	0.000	0.016	0.008	SF-1-29	-0.016	-0.008	50.2	90.0	
SEC_SF-1-55	0.208	97.381	-3.5	0.000	0.000	0.016	0.008	SF-1-31	-0.016	-0.008	50.1	90.0	
SEC_SF-1-57	0.208	97.255	-3.5	0.000	0.000	0.016	0.008	SF-1-32	-0.016	-0.008	50.0	90.0	
SEC_SF-1-59	0.208	96.982	-3.5	0.000	0.000	0.016	0.008	SF-1-18	-0.016	-0.008	49.9	90.0	
SEC_SF-1-61	0.208	96.812	-3.5	0.000	0.000	0.016	0.008	SF-1-27	-0.016	-0.008	49.9	90.0	
SEC_SF-1-63	0.208	96.483	-3.5	0.000	0.000	0.016	0.008	SF-1-39	-0.016	-0.008	49.8	90.0	
SEC_SF-1-65	0.208	96.876	-3.6	0.000	0.000	0.016	0.008	SF-1-62	-0.016	-0.008	49.9	90.0	
SEC_SF-1-67	0.208	96.299	-3.5	0.000	0.000	0.016	0.008	SF-1-50	-0.016	-0.008	49.7	90.0	
SEC_SF-1-69	0.208	97.089	-3.6	0.000	0.000	0.016	0.008	SF-1-58	-0.016	-0.008	50.0	90.0	
SEC_SF-1-71	0.208	97.372	-3.6	0.000	0.000	0.016	0.008	SF-1-56	-0.016	-0.008	50.1	90.0	
SEC_SF-1-73	0.208	97.539	-3.6	0.000	0.000	0.016	0.008	SF-1-54	-0.016	-0.008	50.1	90.0	
SEC_SF-1-75	0.208	97.666	-3.6	0.000	0.000	0.016	0.008	SF-1-55	-0.016	-0.008	50.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_SF-2-7	0.208	99.010	-3.2	0.000	0.000	0.014	0.007	SF-2-12	-0.014	-0.007	44.0	90.0	
SEC_SF-2-11	0.208	98.987	-3.2	0.000	0.000	0.014	0.007	SF-2-25	-0.014	-0.007	44.0	90.0	
SEC_SF-2-15	0.208	98.933	-3.2	0.000	0.000	0.014	0.007	SF-2-17	-0.014	-0.007	44.0	90.0	
SEC_SF-2-18	0.208	98.925	-3.2	0.000	0.000	0.014	0.007	SF-2-20	-0.014	-0.007	44.0	90.0	
SEC_SF-2-19	0.208	99.017	-3.2	0.000	0.000	0.014	0.007	SF-2-22	-0.014	-0.007	44.0	90.0	
SEC_SF-2-20	0.208	99.013	-3.2	0.000	0.000	0.014	0.007	SF-2-23	-0.014	-0.007	44.0	90.0	
SEC_SF-4-01	0.208	99.351	-3.2	0.000	0.000	0.016	0.008	SF-2-46	-0.016	-0.008	50.7	90.0	
SEC_SF-4-2	0.208	99.658	-3.1	0.000	0.000	0.007	0.004	SF-2-47	-0.007	-0.004	22.9	90.0	
SEC_SF-4-3	0.208	99.656	-3.1	0.000	0.000	0.007	0.004	SF-2-48	-0.007	-0.004	22.9	90.0	
SEC_SUB_FDR_XFMR#25-49	0.208	97.411	-3.5	0.000	0.000	0.010	0.005	SF-1-57	-0.010	-0.005	32.3	90.0	
SF-1-1	4.160	99.558	-3.1	0.000	0.000	0.007	0.003	BUS_SAF_4kV	-1.170	-0.582	182.1	89.5	
								SF-1-2	1.163	0.578	181.1	89.5	
SF-1-2	4.160	99.193	-3.2	0.000	0.000	0.000	0.000	SF-1-4	0.021	0.010	3.2	89.8	
								SF-1-1	-1.160	-0.575	181.1	89.6	
								SF-1-3	1.139	0.565	177.9	89.6	
SF-1-3	4.160	99.024	-3.2	0.000	0.000	0.007	0.003	SF-1-2	-1.138	-0.563	177.9	89.6	
								SF-1-7	1.131	0.559	176.8	89.6	
SF-1-4	4.160	99.182	-3.2	0.000	0.000	0.007	0.003	SF-1-2	-0.021	-0.010	3.2	89.8	
								SF-1-5	0.014	0.007	2.1	89.8	
SF-1-5	4.160	99.173	-3.2	0.000	0.000	0.007	0.003	SF-1-4	-0.014	-0.007	2.1	89.8	
								SF-1-6	0.007	0.003	1.1	89.8	
SF-1-6	4.160	99.170	-3.2	0.000	0.000	0.007	0.003	SF-1-5	-0.007	-0.003	1.1	89.8	
SF-1-7	4.160	98.668	-3.3	0.000	0.000	0.000	0.000	SF-1-8	0.298	0.146	46.6	89.8	
								SF-1-3	-1.128	-0.556	176.8	89.7	
								SF-1-26	0.830	0.410	130.2	89.7	
SF-1-8	4.160	98.529	-3.3	0.000	0.000	0.014	0.007	SF-1-7	-0.297	-0.146	46.6	89.8	
								SF-1-9	0.284	0.139	44.5	89.8	
SF-1-9	4.160	98.460	-3.3	0.000	0.000	0.007	0.003	SF-1-8	-0.284	-0.139	44.5	89.8	
								SF-1-10	0.277	0.136	43.5	89.8	
SF-1-10	4.160	98.372	-3.3	0.000	0.000	0.007	0.003	SF-1-9	-0.277	-0.136	43.5	89.8	
								SF-1-11	0.270	0.132	42.4	89.8	
SF-1-11	4.160	98.216	-3.3	0.000	0.000	0.000	0.000	SF-1-10	-0.269	-0.132	42.4	89.8	
								SF-1-12	0.253	0.124	39.9	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_SF-1-26	0.016	0.008	2.5	89.8	
SF-1-12	4.160	98.043	-3.3	0.000	0.000	0.007	0.003	SF-1-11	-0.253	-0.124	39.9	89.8	
								SF-1-13	0.246	0.121	38.8	89.8	
SF-1-13	4.160	97.989	-3.3	0.000	0.000	0.007	0.003	SF-1-12	-0.246	-0.121	38.8	89.8	
								SF-1-14	0.239	0.118	37.8	89.8	
SF-1-14	4.160	97.892	-3.3	0.000	0.000	0.000	0.000	SF-1-13	-0.239	-0.118	37.8	89.8	
								SF-1-15	0.223	0.110	35.3	89.7	
								SEC_SF-1-47	0.016	0.008	2.5	89.8	
SF-1-15	4.160	97.750	-3.3	0.000	0.000	0.007	0.003	SF-1-14	-0.223	-0.110	35.3	89.7	
								SF-1-16	0.216	0.106	34.2	89.7	
SF-1-16	4.160	97.518	-3.3	0.000	0.000	0.007	0.003	SF-1-15	-0.216	-0.106	34.2	89.7	
								SF-1-17	0.209	0.103	33.2	89.7	
SF-1-17	4.160	97.361	-3.3	0.000	0.000	0.000	0.000	PRI_PM_14	0.176	0.086	27.9	89.7	
								SF-1-16	-0.209	-0.103	33.2	89.7	
								SF-1-19	0.033	0.016	5.3	89.8	
SF-1-18	4.160	97.541	-3.3	0.000	0.000	0.000	0.000	SF-1-34	-0.352	-0.173	55.8	89.7	
								SF-1-25	0.336	0.166	53.3	89.7	
								SEC_SF-1-59	0.016	0.008	2.5	89.8	
SF-1-19	4.160	97.345	-3.3	0.000	0.000	0.000	0.000	SF-1-17	-0.033	-0.016	5.3	89.8	
								SF-1-20	0.020	0.010	3.2	89.8	
								SF-1-23	0.013	0.006	2.1	89.8	
SF-1-20	4.160	97.342	-3.3	0.000	0.000	0.007	0.003	SF-1-21	0.013	0.006	2.1	89.8	
								SF-1-19	-0.020	-0.010	3.2	89.8	
SF-1-21	4.160	97.338	-3.3	0.000	0.000	0.007	0.003	SF-1-20	-0.013	-0.006	2.1	89.8	
								SF-1-22	0.007	0.003	1.1	89.8	
SF-1-22	4.160	97.336	-3.3	0.000	0.000	0.007	0.003	SF-1-21	-0.007	-0.003	1.1	89.8	
SF-1-23	4.160	97.326	-3.3	0.000	0.000	0.007	0.003	SF-1-19	-0.013	-0.006	2.1	89.8	
								SF-1-24	0.007	0.003	1.1	89.8	
SF-1-24	4.160	97.325	-3.3	0.000	0.000	0.007	0.003	SF-1-23	-0.007	-0.003	1.1	89.8	
SF-1-25	4.160	97.458	-3.3	0.000	0.000	0.007	0.003	SF-1-18	-0.336	-0.166	53.3	89.7	
								SF-1-27	0.329	0.162	52.3	89.7	
SF-1-26	4.160	98.544	-3.3	0.000	0.000	0.007	0.003	SF-1-28	0.440	0.216	69.0	89.7	
								SF-1-53	0.383	0.189	60.1	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-1-7	-0.829	-0.409	130.2	89.7	
SF-1-27	4.160	97.371	-3.3	0.000	0.000	0.000	0.000	SF-1-25	-0.329	-0.162	52.3	89.7	
								SF-1-35	0.313	0.155	49.8	89.7	
								SEC_SF-1-61	0.016	0.008	2.5	89.8	
SF-1-28	4.160	98.410	-3.3	0.000	0.000	0.000	0.000	SF-1-26	-0.439	-0.216	69.0	89.7	
								SF-1-29	0.423	0.208	66.5	89.7	
								SEC_SF-1-49	0.016	0.008	2.5	89.8	
SF-1-29	4.160	98.257	-3.3	0.000	0.000	0.000	0.000	SF-1-28	-0.422	-0.208	66.5	89.7	
								SF-1-30	0.406	0.200	64.0	89.7	
								SEC_SF-1-51	0.016	0.008	2.5	89.8	
SF-1-30	4.160	98.155	-3.3	0.000	0.000	0.007	0.003	SF-1-29	-0.406	-0.200	64.0	89.7	
								SF-1-31	0.399	0.197	62.9	89.7	
SF-1-31	4.160	97.942	-3.3	0.000	0.000	0.000	0.000	SF-1-30	-0.398	-0.196	62.9	89.7	
								SF-1-33	0.382	0.188	60.4	89.7	
								SEC_SF-1-55	0.016	0.008	2.5	89.8	
SF-1-32	4.160	97.816	-3.3	0.000	0.000	0.000	0.000	SF-1-33	-0.375	-0.185	59.4	89.7	
								SF-1-34	0.359	0.177	56.9	89.7	
								SEC_SF-1-57	0.016	0.008	2.5	89.8	
SF-1-33	4.160	97.858	-3.3	0.000	0.000	0.007	0.003	SF-1-32	0.375	0.185	59.4	89.7	
								SF-1-31	-0.382	-0.188	60.4	89.7	
SF-1-34	4.160	97.635	-3.3	0.000	0.000	0.007	0.003	SF-1-18	0.352	0.174	55.8	89.7	
								SF-1-32	-0.359	-0.177	56.9	89.7	
SF-1-35	4.160	97.300	-3.3	0.000	0.000	0.007	0.003	SF-1-27	-0.313	-0.154	49.8	89.7	
								SF-1-36	0.306	0.151	48.7	89.7	
SF-1-36	4.160	97.220	-3.3	0.000	0.000	0.007	0.003	SF-1-35	-0.306	-0.151	48.7	89.7	
								SF-1-37	0.299	0.148	47.7	89.7	
SF-1-37	4.160	97.131	-3.3	0.000	0.000	0.007	0.003	SF-1-36	-0.299	-0.148	47.7	89.7	
								SF-1-38	0.292	0.144	46.6	89.7	
SF-1-38	4.160	97.044	-3.3	0.000	0.000	0.000	0.000	SF-1-37	-0.292	-0.144	46.6	89.7	
								SF-1-39	0.016	0.008	2.5	89.8	
								SF-1-40	0.277	0.137	44.1	89.7	
SF-1-39	4.160	97.041	-3.3	0.000	0.000	0.000	0.000	SF-1-38	-0.016	-0.008	2.5	89.8	
								SEC_SF-1-63	0.016	0.008	2.5	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-40	4.160	96.935	-3.3	0.000	0.000	0.000	0.000	PRI_PM_13	0.234	0.116	37.4	89.6	
								SF-1-38	-0.276	-0.137	44.1	89.7	
								SF-1-42	0.042	0.021	6.7	89.8	
SF-1-42	4.160	96.908	-3.3	0.000	0.000	0.000	0.000	SF-1-40	-0.042	-0.021	6.7	89.8	
								SF-1-44	0.042	0.021	6.7	89.8	
SF-1-44	4.160	96.878	-3.3	0.000	0.000	0.007	0.003	SF-1-42	-0.042	-0.021	6.7	89.8	
								SF-1-45	0.035	0.017	5.6	89.8	
SF-1-45	4.160	96.866	-3.3	0.000	0.000	0.000	0.000	SF-1-44	-0.035	-0.017	5.6	89.8	
								SF-1-47	0.035	0.017	5.6	89.8	
								L-SUB-FDR-EQ#16-1-38~	0.000	0.000	0.0	0.0	
SF-1-47	4.160	96.860	-3.3	0.000	0.000	0.007	0.003	SF-1-45	-0.035	-0.017	5.6	89.8	
								SF-1-50	0.029	0.014	4.6	89.8	
SF-1-50	4.160	96.856	-3.3	0.000	0.000	0.000	0.000	SF-1-47	-0.029	-0.014	4.6	89.8	
								SF-1-52	0.013	0.006	2.1	89.8	
								SEC_SF-1-67	0.016	0.008	2.5	89.8	
SF-1-52	4.160	96.853	-3.3	0.000	0.000	0.013	0.006	SF-1-50	-0.013	-0.006	2.1	89.8	
SF-1-53	4.160	98.372	-3.4	0.000	0.000	0.000	0.000	SF-1-55	0.382	0.188	60.1	89.7	
								SF-1-26	-0.382	-0.188	60.1	89.7	
SF-1-54	4.160	98.100	-3.4	0.000	0.000	0.000	0.000	SF-1-55	-0.365	-0.180	57.6	89.7	
								SF-1-56	0.349	0.172	55.1	89.7	
								SEC_SF-1-73	0.016	0.008	2.5	89.8	
SF-1-55	4.160	98.228	-3.4	0.000	0.000	0.000	0.000	SF-1-53	-0.382	-0.188	60.1	89.7	
								SF-1-54	0.366	0.180	57.6	89.7	
								SEC_SF-1-75	0.016	0.008	2.5	89.8	
SF-1-56	4.160	97.933	-3.4	0.000	0.000	0.000	0.000	SF-1-54	-0.349	-0.172	55.1	89.7	
								SF-1-57	0.333	0.164	52.6	89.7	
								SEC_SF-1-71	0.016	0.008	2.5	89.8	
SF-1-57	4.160	97.773	-3.4	0.000	0.000	0.007	0.003	SF-1-56	-0.332	-0.164	52.6	89.7	
								SF-1-58	0.315	0.156	49.9	89.6	
								SEC_SUB_FDR_XFMR#25-49	0.010	0.005	1.6	89.9	
SF-1-58	4.160	97.649	-3.4	0.000	0.000	0.000	0.000	SF-1-57	-0.315	-0.156	49.9	89.6	
								SF-1-59	0.299	0.148	47.4	89.6	
								SEC_SF-1-69	0.016	0.008	2.5	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-59	4.160	97.532	-3.4	0.000	0.000	0.000	0.000	PRI_PM_12	0.125	0.062	19.9	89.6	
								SF-1-58	-0.299	-0.148	47.4	89.6	
								SF-1-60	0.174	0.086	27.6	89.7	
SF-1-60	4.160	97.463	-3.4	0.000	0.000	0.000	0.000	PRI_PM_4	0.125	0.062	19.8	89.6	
								SF-1-59	-0.174	-0.086	27.6	89.7	
								SF-1-61	0.049	0.024	7.8	89.8	
SF-1-61	4.160	97.446	-3.4	0.000	0.000	0.007	0.003	SF-1-60	-0.049	-0.024	7.8	89.8	
								SF-1-62	0.042	0.021	6.7	89.8	
SF-1-62	4.160	97.435	-3.4	0.000	0.000	0.000	0.000	SF-1-61	-0.042	-0.021	6.7	89.8	
								SF-1-63	0.027	0.013	4.2	89.8	
								SEC_SF-1-65	0.016	0.008	2.5	89.8	
SF-1-63	4.160	97.424	-3.4	0.000	0.000	0.007	0.003	SF-1-62	-0.027	-0.013	4.2	89.8	
								SF-1-64	0.020	0.010	3.2	89.8	
SF-1-64	4.160	97.417	-3.4	0.000	0.000	0.007	0.003	SF-1-63	-0.020	-0.010	3.2	89.8	
								SF-1-65	0.013	0.007	2.1	89.8	
SF-1-65	4.160	97.411	-3.4	0.000	0.000	0.007	0.003	SF-1-64	-0.013	-0.007	2.1	89.8	
								SF-1-66	0.007	0.003	1.1	89.8	
SF-1-66	4.160	97.409	-3.4	0.000	0.000	0.007	0.003	SF-1-65	-0.007	-0.003	1.1	89.8	
SF-2-1	4.160	99.987	-3.0	0.000	0.000	0.006	0.003	BUS_SAF_4kV	-0.182	-0.089	28.1	89.9	
								SF-2-2	0.176	0.086	27.2	89.9	
SF-2-2	4.160	99.929	-3.0	0.000	0.000	0.000	0.000	SF-2-1	-0.176	-0.086	27.2	89.9	
								SF-2-3	0.006	0.003	0.9	89.8	
								SF-2-5	0.170	0.083	26.2	89.9	
SF-2-3	4.160	99.927	-3.0	0.000	0.000	0.006	0.003	SF-2-2	-0.006	-0.003	0.9	89.8	
								SF-2-4	0.000	0.000	0.0	0.0	
SF-2-4	4.160	99.927	-3.0	0.000	0.000	0.000	0.000	SF-2-3	0.000	0.000	0.0	0.0	
SF-2-5	4.160	99.900	-3.0	0.000	0.000	0.000	0.000	SF-2-2	-0.170	-0.083	26.2	89.9	
								SF-2-7	0.012	0.006	1.9	89.8	
								SF-2-9	0.006	0.003	0.9	89.8	
								SF-2-10	0.152	0.074	23.4	89.9	
SF-2-7	4.160	99.898	-3.0	0.000	0.000	0.006	0.003	SF-2-5	-0.012	-0.006	1.9	89.8	
								SF-2-8	0.006	0.003	0.9	89.8	
SF-2-8	4.160	99.897	-3.0	0.000	0.000	0.006	0.003	SF-2-7	-0.006	-0.003	0.9	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-2-9	4.160	99.898	-3.0	0.000	0.000	0.006	0.003	SF-2-5	-0.006	-0.003	0.9	89.8	
SF-2-10	4.160	99.704	-3.0	0.000	0.000	0.006	0.003	SF-2-5	-0.151	-0.074	23.4	89.9	
								SF-2-11	0.145	0.071	22.5	89.9	
SF-2-11	4.160	99.518	-3.0	0.000	0.000	0.000	0.000	SF-2-10	-0.145	-0.071	22.5	89.9	
								SF-2-12	0.085	0.041	13.1	89.8	
								SF-2-14	0.032	0.016	5.0	89.9	
								SF-2-22	0.028	0.014	4.4	89.9	
SF-2-12	4.160	99.503	-3.0	0.000	0.000	0.000	0.000	SF-2-11	-0.084	-0.041	13.1	89.8	
								SF-2-13	0.070	0.034	10.9	89.8	
								SEC_SF-2-7	0.014	0.007	2.2	89.9	
SF-2-13	4.160	99.492	-3.0	0.000	0.000	0.012	0.006	SF-2-12	-0.070	-0.034	10.9	89.8	
								SF-2-15	0.058	0.028	9.1	89.9	
SF-2-14	4.160	99.503	-3.0	0.000	0.000	0.006	0.003	SF-2-11	-0.032	-0.016	5.0	89.9	
								SF-2-26	0.026	0.013	4.1	89.9	
SF-2-15	4.160	99.461	-3.0	0.000	0.000	0.012	0.006	SF-2-13	-0.058	-0.028	9.1	89.8	
								SF-2-16	0.046	0.023	7.2	89.9	
SF-2-16	4.160	99.435	-3.0	0.000	0.000	0.006	0.003	SF-2-15	-0.046	-0.023	7.2	89.8	
								SF-2-17	0.040	0.020	6.3	89.9	
SF-2-17	4.160	99.426	-3.0	0.000	0.000	0.000	0.000	SF-2-16	-0.040	-0.020	6.3	89.9	
								SF-2-18	0.026	0.013	4.1	89.9	
								SEC_SF-2-15	0.014	0.007	2.2	89.9	
SF-2-18	4.160	99.425	-3.0	0.000	0.000	0.006	0.003	SF-2-17	-0.026	-0.013	4.1	89.8	
								SF-2-19	0.020	0.010	3.1	89.9	
SF-2-19	4.160	99.423	-3.0	0.000	0.000	0.006	0.003	SF-2-18	-0.020	-0.010	3.1	89.9	
								SF-2-20	0.014	0.007	2.2	89.9	
SF-2-20	4.160	99.418	-3.0	0.000	0.000	0.000	0.000	SF-2-19	-0.014	-0.007	2.2	89.9	
								SF-2-21	0.000	0.000	0.0	0.0	
								SEC_SF-2-18	0.014	0.007	2.2	89.9	
SF-2-21	4.160	99.418	-3.0	0.000	0.000	0.000	0.000	SF-2-20	0.000	0.000	0.0	0.0	
SF-2-22	4.160	99.510	-3.0	0.000	0.000	0.000	0.000	SF-2-11	-0.028	-0.014	4.4	89.9	
								SF-2-23	0.014	0.007	2.2	89.9	
								SEC_SF-2-19	0.014	0.007	2.2	89.9	
SF-2-23	4.160	99.506	-3.0	0.000	0.000	0.000	0.000	SF-2-22	-0.014	-0.007	2.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-2-24	0.000	0.000	0.0	0.0	
								SEC_SF-2-20	0.014	0.007	2.2	89.9	
SF-2-24	4.160	99.506	-3.0	0.000	0.000	0.000	0.000	SF-2-23	0.000	0.000	0.0	0.0	
SF-2-25	4.160	99.480	-3.0	0.000	0.000	0.000	0.000	SF-2-26	-0.026	-0.013	4.1	89.9	
								SF-2-27	0.012	0.006	1.9	89.9	
								SEC_SF-2-11	0.014	0.007	2.2	89.9	
SF-2-26	4.160	99.497	-3.0	0.000	0.000	0.000	0.000	SF-2-25	0.026	0.013	4.1	89.9	
								SF-2-14	-0.026	-0.013	4.1	89.9	
SF-2-27	4.160	99.465	-3.0	0.000	0.000	0.006	0.003	SF-2-25	-0.012	-0.006	1.9	89.8	
								SF-2-28	0.006	0.003	0.9	89.9	
SF-2-28	4.160	99.461	-3.0	0.000	0.000	0.006	0.003	SF-2-27	-0.006	-0.003	0.9	89.8	
								SF-2-29	0.000	0.000	0.0	0.0	
SF-2-29	4.160	99.461	-3.0	0.000	0.000	0.000	0.000	SF-2-28	0.000	0.000	0.0	0.0	
SF-2-30	4.160	100.041	-3.0	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.156	-0.076	24.1	90.0	
								Pole MS-5-108	0.125	0.061	19.2	90.0	
								SF-2-33	0.031	0.015	4.8	90.0	
SF-2-33	4.160	99.985	-3.0	0.000	0.000	0.000	0.000	SF-2-37	0.031	0.015	4.8	89.9	
								SF-2-30	-0.031	-0.015	4.8	89.9	
								Line SF-2-45~	0.000	0.000	0.0	0.0	
SF-2-37	4.160	99.966	-3.0	0.000	0.000	0.000	0.000	SF-2-33	-0.031	-0.015	4.8	89.9	
								SF-2-42	0.031	0.015	4.8	89.9	
								Line SF-2-37~	0.000	0.000	0.0	0.0	
SF-2-42	4.160	99.944	-3.0	0.000	0.000	0.000	0.000	SF-2-37	-0.031	-0.015	4.8	89.9	
								SF-2-44	0.031	0.015	4.8	89.9	
								Line SF-2-49~	0.000	0.000	0.0	0.0	
SF-2-44	4.160	99.923	-3.0	0.000	0.000	0.000	0.000	SF-2-42	-0.031	-0.015	4.8	89.9	
								SF-2-46	0.031	0.015	4.8	89.9	
								Line SF-2-53~	0.000	0.000	0.0	0.0	
SF-2-46	4.160	99.919	-3.0	0.000	0.000	0.000	0.000	SF-2-44	-0.031	-0.015	4.8	89.9	
								SF-2-47	0.015	0.007	2.3	90.0	
								SEC_SF-4-01	0.016	0.008	2.5	89.8	
SF-2-47	4.160	99.915	-3.0	0.000	0.000	0.000	0.000	SF-2-46	-0.015	-0.007	2.3	90.0	
								SF-2-48	0.007	0.004	1.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_SF-4-2	0.007	0.004	1.1	89.9	
SF-2-48	4.160	99.913	-3.0	0.000	0.000	0.000	0.000	SF-2-47	-0.007	-0.004	1.1	90.0	
								SF-2-50	0.000	0.000	0.0	0.0	
								SEC_SF-4-3	0.007	0.004	1.1	89.9	
SF-2-50	4.160	99.913	-3.0	0.000	0.000	0.000	0.000	SF-2-48	0.000	0.000	0.0	0.0	
								Line SF-2-61~	0.000	0.000	0.0	0.0	
UG-JUNC-CS-5-8	24.900	97.854	-1.3	0.000	0.000	0.000	0.000	Pole CS-5-20	-0.023	-0.011	0.6	89.8	
								SEC_CS-5-10	0.023	0.011	0.6	89.8	
UG-JUNC-CS-5-9	24.900	97.854	-1.3	0.000	0.000	0.000	0.000	Pole CS-5-19	-0.023	-0.011	0.6	90.0	
								SEC_CS-5-12	0.023	0.011	0.6	90.0	
UG_JUNC-CS-1	4.160	99.071	-2.4	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	0.551	0.267	85.7	90.0	
								Pole CS-2-5	-0.581	-0.281	90.4	90.0	
								PRI_PM_1	0.030	0.015	4.6	89.8	
UG_JUNC-CS-2	4.160	98.726	-2.4	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-0.549	-0.266	85.8	90.0	
								UG_JUNC-CS-3	0.519	0.252	81.1	90.0	
								PRI_PM_2	0.030	0.014	4.6	89.8	
UG_JUNC-CS-3	4.160	98.436	-2.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-0.517	-0.252	81.1	89.9	
								PRI_PM_3	0.029	0.014	4.6	89.8	
								UG_JUNC-CS-5	0.488	0.237	76.5	89.9	
UG_JUNC-CS-5	4.160	98.187	-2.3	0.000	0.000	0.000	0.000	PRI_PM_5	0.029	0.014	4.6	89.8	
								UG_JUNC-CS-3	-0.487	-0.237	76.5	89.9	
								UG_JUNC-CS-6	0.457	0.223	71.9	89.9	
UG_JUNC-CS-6	4.160	97.954	-2.2	0.000	0.000	0.000	0.000	PRI_PM_6	0.029	0.014	4.6	89.8	
								UG_JUNC-CS-5	-0.456	-0.223	71.9	89.9	
								Pole CS-2-7	0.427	0.208	67.3	89.9	
UG_JUNC-CS-7	4.160	97.539	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-17	0.000	0.000	0.0	0.0	
								C_SUB-FDR-EQ#7-3-8~	0.000	0.000	0.0	0.0	
C_SUB-FDR-EQ#7-3-8~	4.160	97.539	-2.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
LINE 6M-26~	4.160	99.196	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-23	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-173~	4.160	98.030	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-57	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-84~	4.160	98.457	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-10	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-86~	4.160	97.876	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-54	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-237~	4.160	99.326	-2.4	0.000	0.000	0.000	0.000	Pole CS-2-66	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
L-SUB-FDR-EQ#18-1-246~	4.160	98.007	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-36	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-276~	4.160	98.082	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-74	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-283~	4.160	99.478	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-4	0.000	0.000	0.0	0.0	
LINE MS-4-53~	4.160	98.412	-2.7	0.000	0.000	0.000	0.000	Pole MS-4-52	0.000	0.000	0.0	0.0	
Line MS-5-79~	4.160	98.223	-3.2	0.000	0.000	0.000	0.000	Pole MS-5-76	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-97~	4.160	99.269	-2.8	0.000	0.000	0.000	0.000	Pole MS-2-122	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-173~	4.160	99.526	-2.9	0.000	0.000	0.000	0.000	Pole MS-2-3	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-13~	4.160	99.544	-2.9	0.000	0.000	0.000	0.000	Pole MS-2-180	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-133~	4.160	99.300	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-25	0.000	0.000	0.0	0.0	
LINE MS-3-11~	4.160	99.266	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-43	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-177~	4.160	99.359	-2.8	0.000	0.000	0.000	0.000	Pole MS-3-70	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-1-38~	4.160	96.866	-3.3	0.000	0.000	0.000	0.000	SF-1-45	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-12~	4.160	99.977	-3.0	0.000	0.000	0.000	0.000	Pole MS-1-19	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-9~	4.160	100.031	-3.0	0.000	0.000	0.000	0.000	Pole MS-1-1	0.000	0.000	0.0	0.0	
Line MS-5-129~	4.160	99.789	-3.0	0.000	0.000	0.000	0.000	Pole MS-5-125	0.000	0.000	0.0	0.0	
Line SF-2-37~	4.160	99.966	-3.0	0.000	0.000	0.000	0.000	SF-2-37	0.000	0.000	0.0	0.0	
Line SF-2-45~	4.160	99.985	-3.0	0.000	0.000	0.000	0.000	SF-2-33	0.000	0.000	0.0	0.0	
Line SF-2-49~	4.160	99.944	-3.0	0.000	0.000	0.000	0.000	SF-2-42	0.000	0.000	0.0	0.0	
Line SF-2-53~	4.160	99.923	-3.0	0.000	0.000	0.000	0.000	SF-2-44	0.000	0.000	0.0	0.0	
Line SF-2-61~	4.160	99.913	-3.0	0.000	0.000	0.000	0.000	SF-2-50	0.000	0.000	0.0	0.0	
HS-4-33~	4.160	99.746	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-47	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-90~	4.160	98.802	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-67	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-96~	4.160	98.806	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-33	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-278~	4.160	98.600	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-49	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-301~	4.160	98.979	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-66	0.000	0.000	0.0	0.0	
L-25-LAM-L1-02~	24.900	99.793	-0.8	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.000	0.000	0.0	0.0	
L-25-LLP-SW-03~	24.900	99.478	-1.8	0.000	0.000	0.000	0.000	BUS_SAF_25kV	0.000	0.000	0.0	0.0	
L-25-XFMR-03~	24.900	99.688	-1.8	0.000	0.000	0.000	0.000	BUS_25kV_03	0.000	0.000	0.0	0.0	
Line51~	69.000	99.814	-0.1	0.000	0.000	0.000	0.000	BUS_LLP_69kV_02	0.000	0.000	0.0	0.0	
L-25-LLP-E-06~	24.900	97.624	-2.2	0.000	0.000	0.000	0.000	BUS_25kV_E-04	0.000	0.000	0.0	0.0	
Line15~	24.900	99.514	-1.8	0.000	0.000	0.000	0.000	BUS_25kV_W-02	0.000	0.000	0.0	0.0	
L-25-LLP-W-03~	24.900	99.104	-1.9	0.000	0.000	0.000	0.000	BUS_25kV_W-03	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
L_25_WTG_2~	24.900	99.675	-1.8	0.000	0.000	0.000	0.000	BUS_WTG6	0.000	0.000	0.0	0.0	

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)

# Indicates a bus with a load mismatch of more than 0.1 MVA

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Bus1	4.160	100.196	-1.5	0.000	0.000	0.000	0.000	BUS_5KV_LLP_2	0.000	0.000	0.0	0.0	
Bus2	4.160	97.563	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.000	0.000	0.0	0.0	
BUS_5KV-LLP_01	4.160	100.218	-1.5	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	-0.503	-0.246	77.5	89.8	
								BUS_5KV_LLP_02	0.043	0.023	6.8	88.3	
								Pole MS-9-1	0.167	0.081	25.7	89.9	
								Pole MS-4-1	0.081	0.039	12.4	90.3	
								Pole MS-4-31	0.212	0.103	32.6	89.9	
BUS_5KV_LLP_01	4.160	100.199	-1.5	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.159	-0.088	25.2	87.4	
								BUS_5KV_LLP_PLTLDCTR	0.085	0.052	13.9	85.2	
								Pole MS-8-1	0.074	0.036	11.3	89.9	
BUS_5KV_LLP_2	4.160	100.196	-1.5	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.105	-0.051	16.1	90.0	
								Bus1	0.000	0.000	0.0	0.0	
								Pole MS-2-182	0.105	0.051	16.1	90.0	
BUS_5KV_LLP_02	4.160	100.211	-1.5	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	0.159	0.087	25.1	87.7	
								BUS_5KV_XFMR_02	-0.589	-0.293	91.1	89.6	
								BUS_5KV-LLP_01	-0.043	-0.024	6.8	87.9	
								BUS_5KV_LLP_2	0.105	0.050	16.1	90.1	
								Pole CS-1-90	0.108	0.052	16.6	90.1	
								Pole MS-3-87	0.261	0.126	40.1	90.0	
BUS_5KV_LLP_PLTLDCTR	4.160	100.186	-1.5	0.000	0.000	0.085	0.053	BUS_5KV_LLP_01	-0.085	-0.053	13.9	85.0	
BUS_5KV_XFMR_02	4.160	100.254	-1.5	0.000	0.000	0.000	0.000	BUS_5KV-LLP_01	0.503	0.245	77.4	89.9	
								BUS_5KV_LLP_02	0.590	0.292	91.1	89.6	
								BUS_25kV_SUB_02	-1.092	-0.537	168.5	89.7	0.625
BUS_5_NEOPLAN	4.160	99.863	-1.5	0.000	0.000	0.108	0.052	Pole CS-1-90	-0.108	-0.052	16.6	90.0	
BUS_6M_5kV	4.160	99.912	-0.7	0.000	0.000	0.000	0.000	BUS_6M_SEC	-0.129	-0.061	19.9	90.3	
								Pole 6M-1-1	0.041	0.019	6.2	90.3	
								Pole 6M-E-1	0.089	0.042	13.7	90.3	
BUS_6M_25kV	24.900	100.195	-0.5	0.000	0.000	0.000	0.000	BUS_L1_01	-0.129	-0.062	3.3	90.3	
								L-25-LAM-L1-02~	0.000	0.000	0.0	0.0	
								BUS_6M_SEC	0.129	0.062	3.3	90.1	
BUS_6M_SEC	4.160	99.976	-0.7	0.000	0.000	0.000	0.000	BUS_6M_5kV	0.129	0.062	19.9	90.3	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_6M_25kV	-0.129	-0.062	19.9	90.3	
BUS-25kV-BEEFCITY	24.900	99.511	-0.7	0.000	0.000	0.143	0.089	BUS-25kV-MCCLAVE	-0.143	-0.089	3.9	85.0	
BUS-25kV-BIG-BEND	24.900	100.106	-0.7	0.000	0.000	0.145	0.090	BUS_25kV_W-10	-0.145	-0.090	3.9	85.0	
BUS-25KV-E-10	24.900	99.586	-3.9	0.000	0.000	0.676	0.419	BUS_25kV_E-09	-0.676	-0.419	18.5	85.0	
BUS-25kV-HS-01	24.900	99.060	-0.7	0.000	0.000	0.033	0.021	BUS_HIS_25kV	-0.033	-0.021	0.9	85.0	
BUS-25kV-MCCLAVE	24.900	99.540	-0.7	0.000	0.000	0.169	0.105	BUS_25kV_W-11	-0.312	-0.191	8.5	85.3	
								BUS-25kV-BEEFCITY	0.143	0.086	3.9	85.7	
BUS-25kV-TS-01	24.900	99.115	-0.7	0.000	0.000	0.033	0.021	BUS_TS_25kV	-0.033	-0.021	0.9	85.0	
BUS-25kV-TS-AREA	24.900	99.117	-0.7	0.000	0.000	0.033	0.021	BUS_TSA_25kV	-0.033	-0.021	0.9	85.0	
BUS-25kV-WILEY	24.900	100.120	-0.8	0.000	0.000	0.170	0.106	BUS_25kV_W-10	-0.170	-0.106	4.6	85.0	
BUS_25kV_03	24.900	100.177	-1.0	0.000	0.000	0.000	0.000	L-25-XFMR-03~	0.000	-0.001	0.0	0.0	
								BUS_25kV_SUB_01	-3.447	-1.800	90.0	88.6	
								BUS_25kV_SUB_02	3.447	1.801	90.0	88.6	
BUS_25kV_BRISTOL	24.900	98.630	-2.5	0.000	0.000	0.042	0.026	BUS_25kV_E-07	-0.042	-0.026	1.1	85.0	
BUS_25kV_CO-BEEF	24.900	100.080	-0.7	0.000	0.000	0.289	0.179	BUS_25kV_W-08	-0.289	-0.179	7.9	85.0	
BUS_25kV_DECHANT	24.900	98.371	-1.4	0.000	0.000	0.062	0.038	BUS_25kV_E-05	-0.062	-0.038	1.7	85.0	
BUS_25kV_E_01	24.900	100.177	-1.0	0.000	0.000	0.000	0.000	BUS_25kV_E-02	0.927	0.474	24.1	89.0	
								BUS_25kV_SUB_01	-0.927	-0.474	24.1	89.0	
BUS_25kV_E-02	24.900	100.145	-1.0	0.000	0.000	0.000	0.000	BUS_25kV_E_01	-0.927	-0.475	24.1	89.0	
								BUS_25kV_SUTRAK	0.034	0.021	0.9	85.1	
								BUS_25kV_E-03	0.893	0.454	23.2	89.1	
BUS_25kV_E-03	24.900	100.112	-1.0	0.000	0.000	0.000	0.000	BUS_25kV_E-02	-0.892	-0.454	23.2	89.1	
								BUS_25kV_SWL	0.043	0.026	1.2	85.3	
								BUS_25kV_E-04	0.850	0.428	22.0	89.3	
BUS_25kV_E-04	24.900	99.146	-1.2	0.000	0.000	0.000	0.000	BUS_25kV_E-03	-0.843	-0.446	22.3	88.4	
								BUS_25kV_E-05	0.843	0.446	22.3	88.4	
								L-25-LLP-E-06~	0.000	-0.001	0.0	0.0	
BUS_25kV_E-05	24.900	98.374	-1.4	0.000	0.000	0.000	0.000	BUS_25kV_E-04	-0.838	-0.459	22.5	87.7	
								BUS_25kV_DECHANT	0.062	0.038	1.7	85.4	
								BUS_25kV_E-06	0.776	0.422	20.8	87.9	
BUS_25kV_E-06	24.900	99.718	-2.3	0.000	0.000	0.000	0.000	BUS_25kV_E-05	-0.774	-0.416	20.4	88.1	
								BUS_25kV_E-07	0.774	0.416	20.4	88.1	
BUS_25kV_E-07	24.900	98.632	-2.5	0.000	0.000	0.000	0.000	BUS_25kV_E-06	-0.767	-0.437	20.8	86.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_BRISTOL	0.042	0.025	1.1	85.9	
								BUS_25kV_E-08	0.726	0.413	19.6	86.9	
BUS_25kV_E-08	24.900	98.067	-2.6	0.000	0.000	0.000	0.000	BUS_25kV_E-07	-0.722	-0.424	19.8	86.2	
								BUS_25kV_HARTMAN	0.041	0.020	1.1	90.2	
								BUS_25kV_E-09	0.681	0.405	18.7	86.0	
BUS_25kV_E-09	24.900	100.365	-3.7	0.000	0.000	0.000	0.000	BUS_25kV_E-08	-0.680	-0.400	18.2	86.2	
								BUS-25KV-E-10	0.680	0.400	18.2	86.2	
BUS_25kV_HARTMAN	24.900	98.055	-2.6	0.000	0.000	0.041	0.025	BUS_25kV_E-08	-0.041	-0.025	1.1	85.0	
BUS_25kV_KMART	24.900	100.098	-1.0	0.000	0.000	0.000	0.000	BUS_25kV_W-2	0.000	0.000	0.0	0.0	
BUS_25kV_KORMAN	24.900	99.093	-1.2	0.000	0.000	0.483	0.299	BUS_25kV_W-04	-0.483	-0.299	13.3	85.0	
BUS_25kV_ROAD 13	24.900	98.083	-1.4	0.000	0.000	0.000	0.000	BUS_25kV_W-05	0.000	0.000	0.0	0.0	
BUS_25kV_SUB_01	24.900	100.177	-1.0	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	-2.995	-1.527	77.8	89.1	1.250
								BUS_LLP_69kV_01	-1.518	-0.774	39.4	89.1	1.250
								BUS_25kV_E_01	0.927	0.474	24.1	89.0	
								BUS_25_LLP_SE_01	0.139	0.026	3.3	98.3	
								BUS_25kV_03	3.447	1.800	90.0	88.6	
BUS_25kV_SUB_02	24.900	100.177	-1.0	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	1.093	0.550	28.3	89.3	
								BUS_25kV_SW_01	0.922	0.458	23.8	89.6	
								BUS_25kV_W-01	1.432	0.793	37.9	87.5	
								BUS_25kV_03	-3.447	-1.801	90.0	88.6	
BUS_25kV_SUTRAK	24.900	100.145	-1.0	0.000	0.000	0.034	0.021	BUS_25kV_E-02	-0.034	-0.021	0.9	85.0	
BUS_25kV_SWL	24.900	100.111	-1.0	0.000	0.000	0.043	0.026	BUS_25kV_E-03	-0.043	-0.026	1.2	85.0	
BUS_25kV_SW_01	24.900	100.177	-1.0	0.000	0.000	0.000	0.000	BUS_25kV_W-2	0.922	0.458	23.8	89.6	
								BUS_25kV_SUB_02	-0.922	-0.458	23.8	89.6	
BUS_25kV_W-01	24.900	100.177	-1.0	0.000	0.000	0.000	0.000	BUS_25kV_W-02	1.432	0.793	37.9	87.5	
								BUS_25kV_SUB_02	-1.432	-0.793	37.9	87.5	
BUS_25kV_W-2	24.900	100.098	-1.0	0.000	0.000	0.000	0.000	BUS_25kV_SW_01	-0.921	-0.459	23.8	89.5	
								BUS_SAF_25kV	0.921	0.459	23.8	89.5	
								BUS_25kV_KMART	0.000	0.000	0.0	0.0	
BUS_25kV_W-02	24.900	100.086	-1.0	0.000	0.000	0.000	0.000	BUS_25kV_W-01	-1.431	-0.793	37.9	87.5	
								BUS_25kV_W-03	1.431	0.794	37.9	87.4	
								Line15~	0.000	-0.001	0.0	0.0	
BUS_25kV_W-03	24.900	99.873	-1.0	0.000	0.000	0.000	0.000	BUS_25kV_W-02	-1.428	-0.795	37.9	87.4	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_W-04	1.428	0.795	37.9	87.4	
								L-25-LLP-W-03~	0.000	0.000	0.0	0.0	
BUS_25kV_W-04	24.900	99.130	-1.2	0.000	0.000	0.000	0.000	BUS_25kV_W-03	-1.420	-0.796	38.1	87.2	
								BUS_25kV_KORMAN	0.483	0.298	13.3	85.1	
								BUS_25kV_W-05	0.937	0.498	24.8	88.3	
BUS_25kV_W-05	24.900	98.082	-1.4	0.000	0.000	0.000	0.000	BUS_25kV_W-04	-0.929	-0.512	25.1	87.6	
								BUS_25kV_ROAD 13	0.000	-0.008	0.2	0.0	
								BUS_25kV_W-06	0.929	0.520	25.2	87.3	
BUS_25kV_W-06	24.900	100.337	-0.7	0.000	0.000	0.000	0.000	BUS_25kV_W-05	-0.920	-0.521	24.4	87.0	
								BUS_25kV_W-07	0.920	0.521	24.4	87.0	
BUS_25kV_W-07	24.900	100.239	-0.7	0.000	0.000	0.000	0.000	BUS_25kV_W-06	-0.919	-0.522	24.5	86.9	
								BUS_25kV_W-08	0.290	0.171	7.8	86.0	
								BUS_25kV_W-09	0.630	0.351	16.7	87.4	
BUS_25kV_W-08	24.900	100.238	-0.7	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-0.290	-0.172	7.8	86.0	
								BUS_25kV_CO-BEEF	0.290	0.172	7.8	86.0	
BUS_25kV_W-09	24.900	100.147	-0.8	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-0.629	-0.353	16.7	87.2	
								BUS_25kV_W-10	0.315	0.190	8.5	85.7	
								BUS_25kV_W-11	0.314	0.164	8.2	88.7	
BUS_25kV_W-10	24.900	100.140	-0.8	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-0.315	-0.190	8.5	85.6	
								BUS-25kV-WILEY	0.170	0.104	4.6	85.4	
								BUS-25kV-BIG-BEND	0.145	0.086	3.9	85.9	
BUS_25kV_W-11	24.900	100.143	-0.8	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-0.314	-0.164	8.2	88.7	
								BUS-25kV-MCCLAVE	0.314	0.164	8.2	88.7	
BUS_25_LLP_SE_01	24.900	100.177	-1.0	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	0.139	0.026	3.3	98.3	
								BUS_25kV_SUB_01	-0.139	-0.026	3.3	98.3	
BUS_25_LLP_SE_02	24.900	100.158	-1.0	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_01	-0.139	-0.030	3.3	97.7	
								BUS_25_LLP_SE_03	0.115	0.070	3.1	85.3	
								BUS_25_LLP_SE_04	0.024	-0.040	1.1	-51.4	
BUS_25_LLP_SE_03	24.900	100.154	-1.0	0.000	0.000	0.115	0.071	BUS_25_LLP_SE_02	-0.115	-0.071	3.1	85.0	
BUS_25_LLP_SE_04	24.900	100.161	-1.0	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	-0.024	0.036	1.0	-55.6	
								Pole MS-7-17	0.024	0.007	0.6	95.6	
								BUS_WTG_SOL	0.000	-0.044	1.0	0.0	
BUS_ATT	24.900	100.189	-0.5	0.000	0.000	0.017	0.011	BUS_L3_SEC	-0.017	-0.011	0.5	85.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_CLG_4kV	4.160	99.780	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-1	0.331	0.159	51.0	90.1	
								Pole CS-1-1	0.289	0.141	44.8	89.9	
								Pole CS-3-1	0.186	0.090	28.8	90.0	
								Pole CS-4-1	0.180	0.087	27.8	89.9	
								BUS_CLG_SEC	-0.986	-0.478	152.4	90.0	
BUS_CLG_25kV	24.900	99.177	-0.7	0.000	0.000	0.000	0.000	BUS_L2_SEC	-1.876	-0.932	49.0	89.5	
								BUS_HSP_25kV	0.888	0.441	23.2	89.5	
								BUS_CLG_SEC	0.988	0.491	25.8	89.5	
BUS_CLG_SEC	4.160	98.830	-1.0	0.000	0.000	0.000	0.000	BUS_CLG_4kV	0.987	0.483	154.3	89.8	
								BUS_CLG_25kV	-0.987	-0.483	154.3	89.8	
BUS_HIS_25kV	24.900	99.061	-0.7	0.000	0.000	0.000	0.000	BUS_TS_25kV	-0.758	-0.378	19.8	89.5	
								BUS-25kV-HS-01	0.033	0.020	0.9	85.8	
								BUS_HSC_25kV	0.725	0.358	18.9	89.7	
BUS_HSC_4kV	4.160	100.312	-1.2	0.000	0.000	0.000	0.000	Pole HS-1-001	0.020	0.010	3.1	90.0	
								Pole HS-2-1	0.280	0.136	43.1	90.0	
								Pole HS-3-1	0.189	0.091	29.0	90.0	
								Pole HS-4-1	0.234	0.114	36.1	89.9	
								BUS_HSC_SEC	-0.724	-0.351	111.3	90.0	
BUS_HSC_25kV	24.900	99.011	-0.7	0.000	0.000	0.000	0.000	BUS_HIS_25kV	-0.725	-0.359	18.9	89.6	
								BUS_HSC_SEC	0.725	0.359	18.9	89.6	
BUS_HSC_SEC	4.160	98.673	-1.1	0.000	0.000	0.000	0.000	BUS_HSC_4kV	0.724	0.354	113.4	89.9	
								BUS_HSC_25kV	-0.724	-0.354	113.4	89.9	
BUS_HSP_25kV	24.900	99.146	-0.7	0.000	0.000	0.000	0.000	BUS_CLG_25kV	-0.888	-0.442	23.2	89.5	
								Pole CS-5-21	0.062	0.026	1.6	92.4	
								BUS_TSA_25kV	0.826	0.416	21.6	89.3	
BUS_L1_01	24.900	100.199	-0.5	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.129	0.061	3.3	90.5	
								BUS_LAMSO_25kV	-0.129	-0.061	3.3	90.5	
BUS_L2_SEC	24.900	100.199	-0.5	0.000	0.000	0.000	0.000	BUS_CLG_25kV	1.891	0.938	48.8	89.6	
								BUS_LAMSO_25kV	-1.891	-0.938	48.8	89.6	
BUS_L3_SEC	24.900	100.199	-0.5	0.000	0.000	0.000	0.000	BUS_ATT	0.017	-0.022	0.6	-61.5	
								BUS_LAMSO_25kV	-0.017	0.022	0.6	-61.5	
BUS_LAMSO_25kV	24.900	100.199	-0.5	0.000	0.000	0.000	0.000	BUS_LAMSO_115kV	-2.037	-0.977	52.3	90.2	0.625
								BUS_L1_01	0.129	0.061	3.3	90.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_L2_SEC	1.891	0.938	48.8	89.6	
								BUS_L3_SEC	0.017	-0.022	0.6	-61.5	
* BUS_LAMSO_115kV	115.000	100.000	0.0	2.038	0.997	0.000	0.000	BUS_LAMSO_25kV	2.038	0.997	11.4	89.8	
BUS_LLP_69kV_01	69.000	99.881	-0.1	0.000	0.000	0.000	0.000	BUS_25kV_SUB_01	2.999	1.590	28.4	88.3	
								BUS_25kV_SUB_01	1.519	0.806	14.4	88.3	
								BUS_LLP_69kV_03	-2.259	-1.198	21.4	88.3	
								BUS_LLP_69kV_04	-2.259	-1.198	21.4	88.3	
BUS_LLP_69kV_02	69.000	99.881	-0.1	0.000	0.000	0.000	0.000	Line51~	0.000	-0.511	4.3	0.0	
								BUS_LLP_69kV_03	-2.259	-0.687	19.8	95.7	
								BUS_LLP_69kV_04	2.259	1.198	21.4	88.3	
BUS_LLP_69kV_03	69.000	99.881	-0.1	0.000	0.000	0.000	0.000	BUS_WC_69KV_01	-4.518	-1.885	41.0	92.3	
								BUS_LLP_69kV_01	2.259	1.198	21.4	88.3	
								BUS_LLP_69kV_02	2.259	0.687	19.8	95.7	
BUS_LLP_69kV_04	69.000	99.881	-0.1	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	2.259	1.198	21.4	88.3	
								BUS_LLP_69kV_02	-2.259	-1.198	21.4	88.3	
BUS_SAF_4kV	4.160	99.987	-1.6	0.000	0.000	0.000	0.000	SF-2-30	0.088	0.043	13.6	90.0	
								Pole MS-1-1	0.064	0.031	9.9	90.0	
								SF-1-1	0.653	0.321	101.0	89.7	
								SF-2-1	0.115	0.056	17.7	89.9	
								BUS_SAF_SEC	-0.920	-0.451	142.2	89.8	
BUS_SAF_25kV	24.900	100.061	-1.0	0.000	0.000	0.000	0.000	BUS_25kV_W-2	-0.921	-0.460	23.9	89.5	
								L-25-LLP-SW-03~	0.000	-0.004	0.1	0.0	
								BUS_SAF_SEC	0.921	0.464	23.9	89.3	
BUS_SAF_SEC	4.160	99.629	-1.4	0.000	0.000	0.000	0.000	BUS_SAF_4kV	0.921	0.455	143.1	89.6	
								BUS_SAF_25kV	-0.921	-0.455	143.1	89.6	
BUS_SW_8.5EES23	24.900	100.172	-1.0	0.000	0.000	0.000	0.000	BUS_WTG_SOL	0.000	0.000	0.0	0.0	
BUS_TSA_25kV	24.900	99.118	-0.7	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-0.826	-0.417	21.6	89.3	
								BUS-25kV-TS-AREA	0.033	0.020	0.9	85.8	
								BUS_TS_25kV	0.792	0.397	20.7	89.4	
BUS_TS_25kV	24.900	99.116	-0.7	0.000	0.000	0.000	0.000	BUS_TSA_25kV	-0.792	-0.397	20.7	89.4	
								BUS-25kV-TS-01	0.033	0.020	0.9	85.8	
								BUS_HIS_25kV	0.759	0.377	19.8	89.6	
* BUS_WC_69KV_01	69.000	100.000	0.0	4.521	1.828	0.000	0.000	BUS_LLP_69kV_03	4.521	1.828	40.8	92.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_WTG6	24.900	100.173	-1.0	0.000	0.000	0.000	0.000	BUS_WTG_SOL	0.000	0.033	0.8	0.0	
								P_526_2	0.000	-0.002	0.0	0.0	
								L_25_WTG_2~	0.000	-0.032	0.7	0.0	
BUS_WTG_SOL	24.900	100.172	-1.0	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	0.000	0.035	0.8	0.0	
								BUS_SW_8.5EES23	0.000	-0.001	0.0	0.0	
								BUS_WTG6	0.000	-0.034	0.8	0.0	
Pole 6M-1-1	4.160	99.822	-0.7	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.040	-0.019	6.2	90.3	
								Pole 6M-1-2	0.036	0.017	5.5	90.3	
								SEC_6M-1-1	0.005	0.002	0.7	90.0	
Pole 6M-1-2	4.160	99.767	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-1	-0.036	-0.017	5.5	90.3	
								Pole 6M-1-3	0.005	0.002	0.7	90.0	
								Pole 6M-1-4	0.031	0.015	4.8	90.3	
Pole 6M-1-3	4.160	99.766	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.005	-0.002	0.7	90.0	
								SEC_6M-1-2	0.005	0.002	0.7	90.0	
Pole 6M-1-4	4.160	99.686	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.031	-0.015	4.8	90.3	
								Pole 6M-1-5	0.002	0.001	0.3	90.1	
								Pole 6M-1-6	0.029	0.014	4.5	90.3	
Pole 6M-1-5	4.160	99.685	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-4	-0.002	-0.001	0.3	90.0	
Pole 6M-1-6	4.160	99.662	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-4	-0.029	-0.014	4.5	90.3	
								Pole 6M-1-7	0.004	0.002	0.6	90.2	
								Pole 6M-1-9	0.025	0.012	3.8	90.3	
Pole 6M-1-7	4.160	99.654	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-6	-0.004	-0.002	0.6	90.0	
								Pole 6M-1-8	0.002	0.001	0.3	90.1	
Pole 6M-1-8	4.160	99.653	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-7	-0.002	-0.001	0.3	90.0	
Pole 6M-1-9	4.160	99.632	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-6	-0.025	-0.012	3.8	90.3	
								Pole 6M-1-10	0.023	0.011	3.5	90.3	
Pole 6M-1-10	4.160	99.624	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-9	-0.023	-0.011	3.5	90.3	
								Pole 6M-1-11	0.023	0.011	3.5	90.3	
Pole 6M-1-11	4.160	99.616	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-10	-0.023	-0.011	3.5	90.3	
								Pole 6M-1-12	0.021	0.010	3.2	90.3	
Pole 6M-1-12	4.160	99.603	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-11	-0.021	-0.010	3.2	90.3	
								Pole 6M-1-13	0.002	0.001	0.3	91.0	
								Pole 6M-1-14	0.019	0.009	2.9	90.2	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-1-13	4.160	99.592	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-12	-0.002	-0.001	0.3	90.0	
Pole 6M-1-14	4.160	99.573	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-12	-0.019	-0.009	2.9	90.2	
								Pole 6M-1-15	0.017	0.008	2.6	90.2	
Pole 6M-1-15	4.160	99.565	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-14	-0.017	-0.008	2.6	90.2	
								Pole 6M-1-16	0.015	0.007	2.3	90.3	
Pole 6M-1-16	4.160	99.538	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-15	-0.015	-0.007	2.3	90.2	
								Pole 6M-1-17	0.007	0.003	1.0	90.1	
								Pole 6M-1-20	0.008	0.004	1.2	90.3	
Pole 6M-1-17	4.160	99.537	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-16	-0.007	-0.003	1.0	90.1	
								Pole 6M-1-18	0.005	0.002	0.7	90.1	
Pole 6M-1-18	4.160	99.532	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-17	-0.005	-0.002	0.7	90.0	
								Pole 6M-1-19	0.005	0.002	0.7	90.0	
Pole 6M-1-19	4.160	99.529	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-18	-0.005	-0.002	0.7	90.0	
								SEC_6M-1-12	0.005	0.002	0.7	90.0	
Pole 6M-1-20	4.160	99.522	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-16	-0.008	-0.004	1.2	90.2	
								Pole 6M-1-21	0.004	0.002	0.6	90.3	
								Pole 6M-1-23	0.004	0.002	0.6	90.2	
Pole 6M-1-21	4.160	99.521	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-20	-0.004	-0.002	0.6	90.2	
								Pole 6M-1-22	0.002	0.001	0.3	90.5	
Pole 6M-1-22	4.160	99.515	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-21	-0.002	-0.001	0.3	90.0	
Pole 6M-1-23	4.160	99.520	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-20	-0.004	-0.002	0.6	90.1	
								Pole 6M-1-24	0.004	0.002	0.6	90.0	
								LINE 6M-26~	0.000	0.000	0.0	0.0	
Pole 6M-1-24	4.160	99.519	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-23	-0.004	-0.002	0.6	90.0	
								Pole 6M-1-25	0.002	0.001	0.3	90.1	
Pole 6M-1-25	4.160	99.518	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-24	-0.002	-0.001	0.3	90.0	
Pole 6M-E-1	4.160	98.727	-0.7	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.088	-0.042	13.7	90.3	
								Pole 6M-E-2	0.007	0.004	1.1	90.1	
								Pole 6M-E-30	0.080	0.038	12.5	90.3	
Pole 6M-E-2	4.160	98.716	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-1	-0.007	-0.004	1.1	90.0	
								SEC_6M-E-2	0.007	0.004	1.1	90.0	
Pole 6M-E-3	4.160	98.491	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.007	-0.004	1.1	90.0	
								SEC_6M-E-3	0.007	0.004	1.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-E-4	4.160	98.493	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.073	-0.035	11.4	90.3	
								Pole 6M-E-3	0.007	0.004	1.1	90.0	
								Pole 6M-E-5	0.066	0.031	10.3	90.3	
Pole 6M-E-5	4.160	98.371	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.066	-0.031	10.3	90.3	
								Pole 6M-E-6	0.058	0.028	9.1	90.4	
								SEC_6M-E-1	0.007	0.004	1.1	90.0	
Pole 6M-E-6	4.160	98.252	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-5	-0.058	-0.028	9.1	90.4	
								Pole 6M-E-7	0.051	0.024	8.0	90.4	
								SEC_6M-E-4	0.007	0.004	1.1	90.0	
Pole 6M-E-7	4.160	98.072	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-6	-0.051	-0.024	8.0	90.4	
								Pole 6M-E-8	0.007	0.003	1.1	90.0	
								Pole 6M-E-9	0.044	0.021	6.9	90.4	
Pole 6M-E-8	4.160	98.064	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.007	-0.003	1.1	90.0	
								SEC_6M-E-5	0.007	0.003	1.1	90.0	
Pole 6M-E-9	4.160	97.772	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.044	-0.021	6.9	90.4	
								Pole 6M-E-10	0.014	0.007	2.3	90.2	
								Pole 6M-E-13	0.029	0.014	4.6	90.5	
Pole 6M-E-10	4.160	97.722	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-9	-0.014	-0.007	2.3	90.1	
								Pole 6M-E-11	0.007	0.003	1.1	90.2	
								SEC_6M-E-6	0.007	0.003	1.1	90.0	
Pole 6M-E-11	4.160	97.697	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-10	-0.007	-0.003	1.1	90.0	
								SEC_6M-E-7	0.007	0.003	1.1	90.0	
Pole 6M-E-12	4.160	97.720	-0.7	0.000	0.000	0.002	0.001	Pole 6M-E-13	-0.002	-0.001	0.3	90.0	
Pole 6M-E-13	4.160	97.720	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-12	0.002	0.001	0.3	90.0	
								Pole 6M-E-9	-0.029	-0.014	4.6	90.5	
								Pole 6M-E-15	0.027	0.013	4.3	90.5	
Pole 6M-E-14	4.160	97.664	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.007	-0.003	1.1	90.0	
								SEC_6M-E-8	0.007	0.003	1.1	90.0	
Pole 6M-E-15	4.160	97.673	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-14	0.007	0.003	1.1	90.0	
								Pole 6M-E-13	-0.027	-0.013	4.3	90.5	
								Pole 6M-E-18	0.020	0.009	3.2	90.6	
Pole 6M-E-18	4.160	97.631	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.020	-0.009	3.2	90.6	
								Pole 6M-E-19	0.007	0.003	1.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole 6M-E-20	0.013	0.006	2.0	90.9	
Pole 6M-E-19	4.160	97.627	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.007	-0.003	1.1	90.0	
								SEC_6M-E-10	0.007	0.003	1.1	90.0	
Pole 6M-E-20	4.160	97.618	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.013	-0.006	2.0	90.8	
								Pole 6M-E-21	0.006	0.003	0.9	91.9	
								SEC_6M-E-11	0.007	0.003	1.1	90.0	
Pole 6M-E-21	4.160	97.615	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-20	-0.006	-0.003	0.9	91.8	
								Pole 6M-E-22	0.002	0.001	0.3	91.6	
								Pole 6M-E-23	0.004	0.002	0.6	91.9	
Pole 6M-E-22	4.160	97.599	-0.7	0.000	0.000	0.002	0.001	Pole 6M-E-21	-0.002	-0.001	0.3	90.0	
Pole 6M-E-23	4.160	97.571	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.002	0.001	0.3	90.9	
								Pole 6M-E-21	-0.004	-0.002	0.6	90.8	
								Pole 6M-E-24	0.002	0.001	0.3	90.8	
Pole 6M-E-24	4.160	97.562	-0.7	0.000	0.000	0.002	0.001	Pole 6M-E-23	-0.002	-0.001	0.3	90.0	
Pole 6M-E-25	4.160	97.562	-0.7	0.000	0.000	0.002	0.001	Pole 6M-E-26	-0.002	-0.001	0.3	90.0	
Pole 6M-E-26	4.160	97.563	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-23	-0.002	-0.001	0.3	90.1	
								Pole 6M-E-25	0.002	0.001	0.3	90.1	
								Bus2	0.000	0.000	0.0	0.0	
Pole 6M-E-29	4.160	98.622	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.007	-0.004	1.1	90.0	
								SEC_6M-E-13	0.007	0.004	1.1	90.0	
Pole 6M-E-30	4.160	98.624	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-4	0.073	0.035	11.4	90.3	
								Pole 6M-E-29	0.007	0.004	1.1	90.0	
								Pole 6M-E-1	-0.080	-0.038	12.5	90.3	
Pole CS-1-1	4.160	99.558	-1.3	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-0.289	-0.141	44.8	89.9	
								Pole CS-1-2	0.289	0.141	44.8	89.9	
Pole CS-1-2	4.160	99.482	-1.3	0.000	0.000	0.000	0.000	PRI_PM_16	0.039	0.019	6.0	89.9	
								Pole CS-1-1	-0.289	-0.141	44.8	89.9	
								Pole CS-1-3	0.245	0.120	38.1	89.9	
								Pole HS-2-85	0.004	0.002	0.7	90.1	
Pole CS-1-3	4.160	99.322	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-4	0.007	0.003	1.0	90.0	
								Pole CS-1-5	0.007	0.003	1.0	90.0	
								Pole HS-3-86	0.002	0.001	0.3	90.0	
								Pole CS-1-2	-0.245	-0.119	38.1	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-6	0.230	0.112	35.7	89.9	
Pole CS-1-4	4.160	99.319	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-1	0.007	0.003	1.0	90.0	
Pole CS-1-5	4.160	99.320	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-2	0.007	0.003	1.0	90.0	
Pole CS-1-6	4.160	99.173	-1.4	0.000	0.000	0.000	0.000	Pole HS-3-88	0.007	0.003	1.0	90.0	
								Pole CS-1-3	-0.229	-0.111	35.7	89.9	
								Pole CS-1-9	0.223	0.108	34.6	89.9	
Pole CS-1-9	4.160	99.134	-1.4	0.000	0.000	0.000	0.000	PRI_PM_17	0.035	0.017	5.4	89.9	
								Pole CS-1-6	-0.223	-0.108	34.6	90.0	
								Pole CS-1-10	0.188	0.091	29.2	90.0	
Pole CS-1-10	4.160	99.062	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.188	-0.091	29.2	90.0	
								Pole CS-1-11	0.188	0.091	29.2	90.0	
								L-SUB-FDR-EQ#20-1-84~	0.000	0.000	0.0	0.0	
Pole CS-1-11	4.160	99.054	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-10	-0.188	-0.091	29.2	90.0	
								Pole CS-1-12	0.188	0.091	29.2	90.0	
Pole CS-1-12	4.160	99.024	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-13	0.007	0.003	1.0	90.0	
								Pole CS-1-11	-0.188	-0.091	29.2	90.0	
								Pole CS-1-14	0.181	0.088	28.2	90.0	
Pole CS-1-13	4.160	99.023	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-12	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-7	0.007	0.003	1.0	90.0	
Pole CS-1-14	4.160	98.995	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-17	0.020	0.010	3.1	90.0	
								Pole CS-1-12	-0.181	-0.088	28.2	90.0	
								Pole CS-1-16	0.159	0.077	24.7	90.0	
Pole CS-1-15	4.160	98.971	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-16	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-9	0.007	0.003	1.0	90.0	
Pole CS-1-16	4.160	98.971	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-15	0.007	0.003	1.0	90.0	
								Pole CS-1-14	-0.159	-0.077	24.7	90.0	
								Pole CS-1-21	0.152	0.074	23.7	90.0	
Pole CS-1-17	4.160	98.983	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-14	-0.020	-0.010	3.1	90.0	
								Pole CS-1-18	0.013	0.006	2.1	90.0	
								Pole CS-1-20	0.007	0.003	1.0	90.0	
Pole CS-1-18	4.160	98.981	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.013	-0.006	2.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-19	0.007	0.003	1.0	90.0	
								SEC_CS-1-10	0.007	0.003	1.0	90.0	
Pole CS-1-19	4.160	98.979	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-18	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-11	0.007	0.003	1.0	90.0	
Pole CS-1-20	4.160	98.982	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-12	0.007	0.003	1.0	90.0	
Pole CS-1-21	4.160	98.949	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-16	-0.152	-0.074	23.7	90.0	
								Pole CS-1-22	0.150	0.073	23.4	90.0	
Pole CS-1-22	4.160	98.928	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-23	0.007	0.003	1.0	90.0	
								Pole CS-1-21	-0.150	-0.073	23.4	90.0	
								Pole CS-1-24	0.141	0.068	22.0	90.0	
Pole CS-1-23	4.160	98.925	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-15	0.007	0.003	1.0	90.0	
Pole CS-1-24	4.160	98.900	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.141	-0.068	22.0	90.0	
								Pole CS-1-25	0.134	0.065	21.0	90.0	
								SEC_CS-1-16	0.007	0.003	1.0	90.0	
Pole CS-1-25	4.160	98.875	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-28	0.064	0.031	10.0	90.0	
								Pole CS-1-55	0.066	0.032	10.3	90.0	
								Pole CS-1-24	-0.134	-0.065	21.0	90.0	
								Pole CS-1-26	0.004	0.002	0.7	90.0	
Pole CS-1-26	4.160	98.874	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-25	-0.004	-0.002	0.7	90.0	
								Pole CS-1-27	0.002	0.001	0.3	90.0	
Pole CS-1-27	4.160	98.874	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-26	-0.002	-0.001	0.3	90.0	
Pole CS-1-28	4.160	98.870	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-25	-0.064	-0.031	10.0	90.0	
								Pole CS-1-29	0.062	0.030	9.6	90.0	
Pole CS-1-29	4.160	98.854	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-28	-0.062	-0.030	9.6	90.0	
								Pole CS-1-32	0.057	0.028	8.9	90.0	
								Pole CS-1-31	0.004	0.002	0.7	90.0	
Pole CS-1-30	4.160	98.853	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-31	-0.002	-0.001	0.3	90.0	
Pole CS-1-31	4.160	98.853	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-30	0.002	0.001	0.3	90.0	
								Pole CS-1-29	-0.004	-0.002	0.7	90.0	
Pole CS-1-32	4.160	98.838	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-29	-0.057	-0.028	8.9	90.0	
								Pole CS-1-33	0.055	0.027	8.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-1-33	4.160	98.815	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-32	-0.055	-0.027	8.6	90.0	
								Pole CS-1-36	0.048	0.023	7.6	90.0	
								Pole CS-1-35	0.004	0.002	0.7	90.0	
Pole CS-1-34	4.160	98.814	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-35	-0.002	-0.001	0.3	90.0	
Pole CS-1-35	4.160	98.814	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-34	0.002	0.001	0.3	90.0	
								Pole CS-1-33	-0.004	-0.002	0.7	90.0	
Pole CS-1-36	4.160	98.794	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-33	-0.048	-0.023	7.6	90.0	
								Pole CS-1-37	0.046	0.022	7.2	90.0	
Pole CS-1-37	4.160	98.785	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-36	-0.046	-0.022	7.2	90.0	
								Pole CS-1-38	0.044	0.021	6.9	90.0	
Pole CS-1-38	4.160	98.774	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-37	-0.044	-0.021	6.9	90.0	
								Pole CS-1-39	0.042	0.020	6.5	90.0	
Pole CS-1-39	4.160	98.766	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-40	0.011	0.005	1.7	90.0	
								Pole CS-1-38	-0.042	-0.020	6.5	90.0	
								Pole CS-1-43	0.031	0.015	4.8	90.0	
Pole CS-1-40	4.160	98.757	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.011	-0.005	1.7	90.0	
								Pole CS-1-41	0.004	0.002	0.7	90.0	
								SEC_CS-1-29	0.007	0.003	1.0	90.0	
Pole CS-1-41	4.160	98.756	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-40	-0.004	-0.002	0.7	90.0	
								Pole CS-1-42	0.002	0.001	0.3	90.0	
Pole CS-1-42	4.160	98.756	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-41	-0.002	-0.001	0.3	90.0	
Pole CS-1-43	4.160	98.763	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.031	-0.015	4.8	90.0	
								Pole CS-1-44	0.024	0.012	3.8	90.0	
								SEC_CS-1-32	0.007	0.003	1.0	90.0	
Pole CS-1-44	4.160	98.760	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-43	-0.024	-0.012	3.8	90.0	
								Pole CS-1-45	0.022	0.011	3.4	90.0	
Pole CS-1-45	4.160	98.756	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-44	-0.022	-0.011	3.4	90.0	
								Pole CS-1-46	0.020	0.010	3.1	90.0	
Pole CS-1-46	4.160	98.753	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-45	-0.020	-0.010	3.1	90.0	
								Pole CS-1-47	0.018	0.009	2.7	90.0	
Pole CS-1-47	4.160	98.748	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-46	-0.018	-0.009	2.7	90.0	
								Pole CS-1-48	0.015	0.007	2.4	90.0	
Pole CS-1-48	4.160	98.745	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-47	-0.015	-0.007	2.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-49	0.013	0.006	2.1	90.0	
Pole CS-1-49	4.160	98.743	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-48	-0.013	-0.006	2.1	90.0	
								Pole CS-1-50	0.011	0.005	1.7	90.0	
Pole CS-1-50	4.160	98.741	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-49	-0.011	-0.005	1.7	90.0	
								Pole CS-1-51	0.009	0.004	1.4	90.0	
Pole CS-1-51	4.160	98.740	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-50	-0.009	-0.004	1.4	90.0	
								Pole CS-1-52	0.007	0.003	1.0	90.0	
Pole CS-1-52	4.160	98.738	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-51	-0.007	-0.003	1.0	90.0	
								Pole CS-1-53	0.004	0.002	0.7	90.0	
Pole CS-1-53	4.160	98.737	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-52	-0.004	-0.002	0.7	90.0	
								Pole CS-1-54	0.002	0.001	0.3	90.0	
Pole CS-1-54	4.160	98.737	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-53	-0.002	-0.001	0.3	90.0	
								L-SUB-FDR-EQ#20-1-86~	0.000	0.000	0.0	0.0	
Pole CS-1-55	4.160	98.851	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-25	-0.066	-0.032	10.3	90.0	
								Pole CS-1-56	0.002	0.001	0.3	90.0	
								Pole CS-1-58	0.064	0.031	10.0	90.0	
Pole CS-1-56	4.160	98.850	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-55	-0.002	-0.001	0.3	90.0	
Pole CS-1-57	4.160	98.823	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-58	-0.062	-0.030	9.6	90.0	
								Pole CS-1-60	0.062	0.030	9.6	90.0	
								L-SUB-FDR-EQ#18-1-173~	0.000	0.000	0.0	0.0	
Pole CS-1-58	4.160	98.835	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-57	0.062	0.030	9.6	90.0	
								Pole CS-1-55	-0.064	-0.031	10.0	90.0	
Pole CS-1-59	4.160	98.808	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-61	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-46	0.007	0.003	1.0	90.0	
Pole CS-1-60	4.160	98.812	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-57	-0.062	-0.030	9.6	90.0	
								Pole CS-1-61	0.059	0.029	9.3	90.0	
Pole CS-1-61	4.160	98.808	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-59	0.007	0.003	1.0	90.0	
								Pole CS-1-60	-0.059	-0.029	9.3	90.0	
								Pole CS-1-62	0.053	0.026	8.2	90.0	
Pole CS-1-62	4.160	98.801	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-61	-0.053	-0.026	8.2	90.0	
								Pole CS-1-63	0.051	0.024	7.9	90.0	
Pole CS-1-63	4.160	98.793	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-62	-0.051	-0.024	7.9	90.0	
								Pole CS-1-64	0.048	0.023	7.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-1-64	4.160	98.786	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-63	-0.048	-0.023	7.6	90.0	
								Pole CS-1-65	0.000	0.000	0.0	0.0	
								Pole CS-1-66	0.048	0.023	7.6	90.0	
Pole CS-1-65	4.160	98.786	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-64	0.000	0.000	0.0	0.0	
Pole CS-1-66	4.160	98.771	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-64	-0.048	-0.023	7.6	90.0	
								Pole CS-1-67	0.046	0.022	7.2	90.0	
Pole CS-1-67	4.160	98.765	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-66	-0.046	-0.022	7.2	90.0	
								Pole CS-1-68	0.044	0.021	6.9	90.0	
Pole CS-1-68	4.160	98.759	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-67	-0.044	-0.021	6.9	90.0	
								Pole CS-1-69	0.037	0.018	5.8	90.0	
								SEC_CS-1-53	0.007	0.003	1.0	90.0	
Pole CS-1-69	4.160	98.754	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-68	-0.037	-0.018	5.8	90.0	
								Pole CS-1-70	0.035	0.017	5.5	90.0	
Pole CS-1-70	4.160	98.747	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-69	-0.035	-0.017	5.5	90.0	
								Pole CS-1-71	0.033	0.016	5.2	90.0	
Pole CS-1-71	4.160	98.742	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-70	-0.033	-0.016	5.2	90.0	
								Pole CS-1-72	0.031	0.015	4.8	90.0	
Pole CS-1-72	4.160	98.737	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-71	-0.031	-0.015	4.8	90.0	
								Pole CS-1-73	0.029	0.014	4.5	90.0	
Pole CS-1-73	4.160	98.731	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-72	-0.029	-0.014	4.5	90.0	
								Pole CS-1-74	0.002	0.001	0.3	90.0	
								Pole CS-1-75	0.026	0.013	4.1	90.0	
Pole CS-1-74	4.160	98.731	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-73	-0.002	-0.001	0.3	90.0	
Pole CS-1-75	4.160	98.717	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-73	-0.026	-0.013	4.1	90.0	
								Pole CS-1-76	0.011	0.005	1.7	90.0	
								Pole CS-1-86	0.015	0.007	2.4	90.0	
Pole CS-1-76	4.160	98.714	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-75	-0.011	-0.005	1.7	90.0	
								Pole CS-1-77	0.009	0.004	1.4	90.0	
Pole CS-1-77	4.160	98.711	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-76	-0.009	-0.004	1.4	90.0	
								Pole CS-1-78	0.007	0.003	1.0	90.0	
Pole CS-1-78	4.160	98.710	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-77	-0.007	-0.003	1.0	90.0	
								Pole CS-1-79	0.004	0.002	0.7	90.0	
Pole CS-1-79	4.160	98.709	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-78	-0.004	-0.002	0.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-80	0.002	0.001	0.3	90.0	
Pole CS-1-80	4.160	98.708	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-79	-0.002	-0.001	0.3	90.0	
Pole CS-1-81	4.160	98.690	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-82	-0.007	-0.003	1.0	90.0	
								Pole CS-1-88	0.004	0.002	0.7	90.0	
Pole CS-1-82	4.160	98.691	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-81	0.007	0.003	1.0	90.0	
								Pole CS-1-83	-0.009	-0.004	1.4	90.0	
Pole CS-1-83	4.160	98.694	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-82	0.009	0.004	1.4	90.0	
								Pole CS-1-84	-0.011	-0.005	1.7	90.0	
Pole CS-1-84	4.160	98.697	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-83	0.011	0.005	1.7	90.0	
								Pole CS-1-85	-0.013	-0.006	2.1	90.0	
Pole CS-1-85	4.160	98.704	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-84	0.013	0.006	2.1	90.0	
								Pole CS-1-86	-0.015	-0.007	2.4	90.0	
Pole CS-1-86	4.160	98.709	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-75	-0.015	-0.007	2.4	90.0	
								Pole CS-1-85	0.015	0.007	2.4	90.0	
Pole CS-1-87	4.160	98.688	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-88	-0.002	-0.001	0.3	90.0	
Pole CS-1-88	4.160	98.688	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-81	-0.004	-0.002	0.7	90.0	
								Pole CS-1-87	0.002	0.001	0.3	90.0	
Pole CS-1-90	4.160	100.146	-1.5	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.108	-0.052	16.6	90.0	
								BUS_5_NEOPLAN	0.108	0.052	16.6	90.0	
Pole CS-2-1	4.160	99.711	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-2	0.330	0.159	51.0	90.1	
								BUS_CLG_4kV	-0.330	-0.159	51.0	90.1	
Pole CS-2-2	4.160	99.642	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-1	-0.330	-0.159	51.0	90.1	
								Pole CS-2-3	0.007	0.003	1.0	90.0	
								Pole CS-2-5	0.321	0.154	49.6	90.1	
Pole CS-2-3	4.160	99.639	-1.3	0.000	0.000	0.004	0.002	Pole CS-2-2	-0.007	-0.003	1.0	90.0	
								Pole CS-2-4	0.002	0.001	0.3	90.0	
Pole CS-2-4	4.160	99.638	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-3	-0.002	-0.001	0.3	90.0	
Pole CS-2-5	4.160	99.574	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	0.321	0.154	49.6	90.2	
								Pole CS-2-2	-0.321	-0.154	49.6	90.2	
Pole CS-2-7	4.160	98.688	-1.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.232	-0.112	36.2	90.0	
								Pole CS-2-8	0.232	0.112	36.2	90.0	
Pole CS-2-8	4.160	98.639	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-7	-0.232	-0.112	36.2	90.0	
								Pole CS-2-9	0.015	0.007	2.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-2-12	0.210	0.102	32.8	90.0	
								SEC_CS-2-5	0.007	0.003	1.0	90.0	
Pole CS-2-9	4.160	98.636	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-8	-0.015	-0.007	2.4	90.0	
								Pole CS-2-10	0.013	0.006	2.1	90.0	
Pole CS-2-10	4.160	98.634	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-9	-0.013	-0.006	2.1	90.0	
								Pole CS-2-11	0.007	0.003	1.0	90.0	
								SEC_CS-2-7	0.007	0.003	1.0	90.0	
Pole CS-2-11	4.160	98.632	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-10	-0.007	-0.003	1.0	90.0	
								SEC_CS-2-8	0.007	0.003	1.0	90.0	
Pole CS-2-12	4.160	98.614	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-8	-0.210	-0.102	32.8	90.0	
								Pole CS-2-13	0.208	0.101	32.5	90.0	
Pole CS-2-13	4.160	98.585	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-12	-0.208	-0.101	32.5	90.0	
								Pole CS-2-14	0.009	0.004	1.4	90.6	
								Pole CS-2-20	0.199	0.096	31.1	90.0	
Pole CS-2-14	4.160	98.584	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-13	-0.009	-0.004	1.4	90.6	
								Pole CS-2-15	0.007	0.003	1.0	90.0	
								Pole CS-2-16	0.002	0.001	0.3	92.4	
Pole CS-2-15	4.160	98.583	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.007	-0.003	1.0	90.0	
								SEC_CS-2-10	0.007	0.003	1.0	90.0	
Pole CS-2-16	4.160	98.583	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.002	-0.001	0.3	92.4	
								Pole CS-2-17	0.002	0.001	0.3	92.4	
Pole CS-2-17	4.160	98.583	-1.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
								Pole CS-2-16	-0.002	-0.001	0.3	92.3	
								Pole CS-2-18	0.002	0.001	0.3	90.0	
Pole CS-2-18	4.160	98.582	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-17	-0.002	-0.001	0.3	90.0	
Pole CS-2-20	4.160	98.560	-1.2	0.000	0.000	0.000	0.000	PRI_PM_21	0.035	0.017	5.4	89.9	
								Pole CS-2-13	-0.199	-0.096	31.1	90.0	
								Pole CS-2-21	0.164	0.080	25.7	90.0	
Pole CS-2-21	4.160	98.480	-1.3	0.000	0.000	0.000	0.000	PRI_PM_20	0.035	0.017	5.4	89.9	
								Pole CS-2-20	-0.164	-0.079	25.7	90.0	
								Pole CS-2-22	0.129	0.063	20.3	90.0	
Pole CS-2-22	4.160	98.448	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-21	-0.129	-0.063	20.3	90.0	
								Pole CS-2-23	0.127	0.062	19.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-23	4.160	98.435	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-22	-0.127	-0.062	19.9	90.0	
								Pole CS-2-24	0.037	0.018	5.8	90.1	
								Pole CS-2-35	0.090	0.044	14.2	90.0	
Pole CS-2-24	4.160	98.420	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-23	-0.037	-0.018	5.8	90.1	
								Pole CS-2-25	0.035	0.017	5.4	90.1	
Pole CS-2-25	4.160	98.416	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-24	-0.035	-0.017	5.4	90.1	
								Pole CS-2-26	0.032	0.016	5.1	90.1	
Pole CS-2-26	4.160	98.408	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-25	-0.032	-0.016	5.1	90.1	
								Pole CS-2-27	0.030	0.015	4.7	90.1	
Pole CS-2-27	4.160	98.399	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-28	0.013	0.006	2.0	90.3	
								Pole CS-2-26	-0.030	-0.015	4.7	90.1	
								PRI_PM_1-1	0.017	0.008	2.7	89.9	
Pole CS-2-28	4.160	98.393	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.013	-0.006	2.1	90.0	
								Pole CS-2-29	0.013	0.006	2.1	90.0	
Pole CS-2-29	4.160	98.391	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-28	-0.013	-0.006	2.1	90.0	
								Pole CS-2-30	0.011	0.005	1.7	90.0	
Pole CS-2-30	4.160	98.389	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-29	-0.011	-0.005	1.7	90.0	
								Pole CS-2-31	0.009	0.004	1.4	90.0	
Pole CS-2-31	4.160	98.387	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-30	-0.009	-0.004	1.4	90.0	
								Pole CS-2-32	0.007	0.003	1.0	90.0	
Pole CS-2-32	4.160	98.386	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-31	-0.007	-0.003	1.0	90.0	
								Pole CS-2-33	0.004	0.002	0.7	90.0	
Pole CS-2-33	4.160	98.385	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-32	-0.004	-0.002	0.7	90.0	
								Pole CS-2-34	0.002	0.001	0.3	90.0	
Pole CS-2-34	4.160	98.385	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-33	-0.002	-0.001	0.3	90.0	
Pole CS-2-35	4.160	98.408	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-23	-0.090	-0.044	14.2	90.0	
								Pole CS-2-36	0.090	0.044	14.2	90.0	
Pole CS-2-36	4.160	98.348	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-35	-0.090	-0.044	14.2	90.0	
								Pole CS-2-37	0.090	0.044	14.2	90.0	
Pole CS-2-37	4.160	98.315	-1.3	0.000	0.000	0.000	0.000	PRI_PM_19	0.038	0.018	6.0	89.9	
								Pole CS-2-36	-0.090	-0.044	14.2	90.0	
								Pole CS-2-38	0.007	0.003	1.0	90.0	
								Pole CS-2-41	0.046	0.022	7.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-38	4.160	98.314	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-37	-0.007	-0.003	1.0	90.0	
								Pole CS-2-39	0.004	0.002	0.7	90.1	
Pole CS-2-39	4.160	98.311	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-38	-0.004	-0.002	0.7	90.0	
								Pole CS-2-40	0.002	0.001	0.3	90.0	
Pole CS-2-40	4.160	98.310	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-39	-0.002	-0.001	0.3	90.0	
Pole CS-2-41	4.160	98.304	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-37	-0.046	-0.022	7.2	90.0	
								Pole CS-2-42	0.044	0.021	6.9	90.0	
Pole CS-2-42	4.160	98.287	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-41	-0.044	-0.021	6.9	90.0	
								Pole CS-2-43	0.002	0.001	0.3	90.0	
								Pole CS-2-44	0.041	0.020	6.5	90.0	
Pole CS-2-43	4.160	98.287	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-42	-0.002	-0.001	0.3	90.0	
Pole CS-2-44	4.160	98.275	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-42	-0.041	-0.020	6.5	90.0	
								Pole CS-2-45	0.011	0.005	1.7	90.0	
								Pole CS-2-50	0.004	0.002	0.7	90.0	
								Pole CS-2-52	0.026	0.013	4.1	90.0	
Pole CS-2-45	4.160	98.273	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-44	-0.011	-0.005	1.7	90.0	
								Pole CS-2-46	0.009	0.004	1.4	90.0	
Pole CS-2-46	4.160	98.271	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-45	-0.009	-0.004	1.4	90.0	
								Pole CS-2-47	0.007	0.003	1.0	90.0	
Pole CS-2-47	4.160	98.270	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-46	-0.007	-0.003	1.0	90.0	
								Pole CS-2-48	0.004	0.002	0.7	90.0	
Pole CS-2-48	4.160	98.268	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-47	-0.004	-0.002	0.7	90.0	
								Pole CS-2-49	0.002	0.001	0.3	90.0	
Pole CS-2-49	4.160	98.268	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-48	-0.002	-0.001	0.3	90.0	
Pole CS-2-50	4.160	98.274	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-44	-0.004	-0.002	0.7	90.0	
								Pole CS-2-51	0.002	0.001	0.3	90.0	
Pole CS-2-51	4.160	98.273	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-50	-0.002	-0.001	0.3	90.0	
Pole CS-2-52	4.160	98.266	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-44	-0.026	-0.013	4.1	90.0	
								Pole CS-2-56	0.009	0.004	1.4	90.0	
								Pole CS-2-58	0.004	0.002	0.7	90.0	
								Pole CS-2-61	0.013	0.006	2.1	90.0	
Pole CS-2-53	4.160	98.261	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-54	-0.002	-0.001	0.3	90.0	
Pole CS-2-54	4.160	98.261	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-53	0.002	0.001	0.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-2-55	-0.004	-0.002	0.7	90.0	
Pole CS-2-55	4.160	98.262	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-54	0.004	0.002	0.7	90.0	
								Pole CS-2-56	-0.007	-0.003	1.0	90.0	
Pole CS-2-56	4.160	98.264	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-52	-0.009	-0.004	1.4	90.0	
								Pole CS-2-55	0.007	0.003	1.0	90.0	
Pole CS-2-57	4.160	98.263	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-58	-0.002	-0.001	0.3	90.0	
Pole CS-2-58	4.160	98.264	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-57	0.002	0.001	0.3	90.0	
								Pole CS-2-52	-0.004	-0.002	0.7	90.0	
Pole CS-2-60	4.160	98.259	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-61	-0.011	-0.005	1.7	90.0	
								Pole CS-2-62	0.009	0.004	1.4	90.0	
Pole CS-2-61	4.160	98.263	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-52	-0.013	-0.006	2.1	90.0	
								Pole CS-2-60	0.011	0.005	1.7	90.0	
Pole CS-2-62	4.160	98.255	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-60	-0.009	-0.004	1.4	90.0	
								Pole CS-2-63	0.007	0.003	1.0	90.0	
Pole CS-2-63	4.160	98.252	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-62	-0.007	-0.003	1.0	90.0	
								Pole CS-2-64	0.004	0.002	0.7	90.0	
Pole CS-2-64	4.160	98.251	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-63	-0.004	-0.002	0.7	90.0	
								Pole CS-2-65	0.002	0.001	0.3	90.0	
Pole CS-2-65	4.160	98.251	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-64	-0.002	-0.001	0.3	90.0	
Pole CS-2-66	4.160	99.558	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-10	-0.007	-0.003	1.0	90.0	
								L-SUB-FDR-EQ#18-1-237~	0.000	0.000	0.0	0.0	
								SEC_CS-2-46	0.007	0.003	1.0	90.0	
Pole CS-2-73	4.160	99.075	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-27	-0.007	-0.003	1.0	90.0	
								SEC_CS-2-49	0.007	0.003	1.0	90.0	
Pole CS-3-1	4.160	99.622	-1.3	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-0.186	-0.090	28.8	90.0	
								Pole CS-3-2	0.047	0.023	7.3	90.1	
								Pole CS-3-21	0.139	0.067	21.5	90.0	
Pole CS-3-2	4.160	99.609	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-3	0.018	0.009	2.8	90.1	
								Pole CS-3-1	-0.047	-0.023	7.3	90.1	
								Pole CS-3-11	0.027	0.013	4.1	90.0	
Pole CS-3-3	4.160	99.605	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-2	-0.018	-0.009	2.8	90.1	
								Pole CS-3-4	0.016	0.008	2.4	90.1	
Pole CS-3-4	4.160	99.596	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-3	-0.016	-0.008	2.4	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-5	0.013	0.006	2.1	90.1	
Pole CS-3-5	4.160	99.588	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-4	-0.013	-0.006	2.1	90.1	
								Pole CS-3-6	0.013	0.006	2.1	90.1	
Pole CS-3-6	4.160	99.580	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-5	-0.013	-0.006	2.1	90.1	
								Pole CS-3-7	0.011	0.005	1.7	90.1	
Pole CS-3-7	4.160	99.576	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-6	-0.011	-0.005	1.7	90.1	
								Pole CS-3-8	0.011	0.005	1.7	90.1	
Pole CS-3-8	4.160	99.573	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-7	-0.011	-0.005	1.7	90.1	
								Pole CS-3-9	0.009	0.004	1.4	90.1	
Pole CS-3-9	4.160	99.564	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-8	-0.009	-0.004	1.4	90.0	
								Pole CS-3-10	0.009	0.004	1.4	90.0	
Pole CS-3-10	4.160	99.559	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-66	0.007	0.003	1.0	90.0	
								Pole CS-3-9	-0.009	-0.004	1.4	90.0	
Pole CS-3-11	4.160	99.605	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-2	-0.027	-0.013	4.1	90.0	
								Pole CS-3-12	0.025	0.012	3.8	90.0	
Pole CS-3-12	4.160	99.577	-1.3	0.000	0.000	0.004	0.002	Pole CS-3-11	-0.025	-0.012	3.8	90.0	
								Pole CS-3-13	0.020	0.010	3.1	90.0	
Pole CS-3-13	4.160	99.571	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-12	-0.020	-0.010	3.1	90.0	
								Pole CS-3-14	0.018	0.009	2.8	90.0	
Pole CS-3-14	4.160	99.557	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-13	-0.018	-0.009	2.8	90.0	
								Pole CS-3-15	0.016	0.008	2.4	90.0	
Pole CS-3-15	4.160	99.546	-1.3	0.000	0.000	0.004	0.002	Pole CS-3-14	-0.016	-0.008	2.4	90.0	
								Pole CS-3-16	0.011	0.005	1.7	90.0	
Pole CS-3-16	4.160	99.534	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-15	-0.011	-0.005	1.7	90.0	
								Pole CS-3-17	0.009	0.004	1.4	90.0	
Pole CS-3-17	4.160	99.532	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-16	-0.009	-0.004	1.4	90.0	
								Pole CS-3-18	0.007	0.003	1.0	90.0	
Pole CS-3-18	4.160	99.529	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-17	-0.007	-0.003	1.0	90.0	
								Pole CS-3-19	0.004	0.002	0.7	90.0	
Pole CS-3-19	4.160	99.527	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-18	-0.004	-0.002	0.7	90.0	
								Pole CS-3-20	0.002	0.001	0.3	90.0	
Pole CS-3-20	4.160	99.526	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-19	-0.002	-0.001	0.3	90.0	
Pole CS-3-21	4.160	99.591	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-1	-0.139	-0.067	21.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-22	0.137	0.066	21.2	90.0	
Pole CS-3-22	4.160	99.477	-1.3	0.000	0.000	0.000	0.000	PRI_PM_25	0.018	0.009	2.7	90.0	
								Pole CS-3-21	-0.137	-0.066	21.2	90.0	
								Pole CS-3-23	0.119	0.058	18.5	90.0	
Pole CS-3-23	4.160	99.406	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-29	0.117	0.057	18.1	90.0	
								Pole CS-3-22	-0.119	-0.058	18.5	90.0	
Pole CS-3-24	4.160	99.237	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-32	-0.009	-0.004	1.4	90.0	
								Pole CS-3-25	0.007	0.003	1.0	90.0	
Pole CS-3-25	4.160	99.235	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-24	-0.007	-0.003	1.0	90.0	
								Pole CS-3-26	0.004	0.002	0.7	90.0	
Pole CS-3-26	4.160	99.234	-1.3	0.000	0.000	0.004	0.002	Pole CS-3-25	-0.004	-0.002	0.7	90.0	
Pole CS-3-27	4.160	99.078	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-73	0.007	0.003	1.0	90.0	
								Pole CS-3-34	-0.009	-0.004	1.4	90.0	
Pole CS-3-28	4.160	99.013	-1.3	0.000	0.000	0.004	0.002	Pole CS-3-35	-0.004	-0.002	0.7	90.0	
Pole CS-3-29	4.160	99.342	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-23	-0.117	-0.056	18.1	90.0	
								Pole CS-3-30	0.110	0.053	17.1	90.0	
								SEC_CS-2-47	0.007	0.003	1.0	90.0	
Pole CS-3-30	4.160	99.296	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-29	-0.110	-0.053	17.1	90.0	
								Pole CS-3-31	0.019	0.009	3.0	90.0	
								Pole CS-3-32	0.091	0.044	14.1	90.0	
Pole CS-3-31	4.160	99.295	-1.3	0.000	0.000	0.000	0.000	PRI_PM_26	0.019	0.009	3.0	90.0	
								Pole CS-3-30	-0.019	-0.009	3.0	90.0	
Pole CS-3-32	4.160	99.240	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-30	-0.091	-0.044	14.1	90.0	
								Pole CS-3-33	0.082	0.040	12.7	90.0	
								Pole CS-3-24	0.009	0.004	1.4	90.0	
Pole CS-3-33	4.160	99.214	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-32	-0.082	-0.040	12.7	90.0	
								Pole CS-3-34	0.075	0.036	11.7	90.1	
								SEC_CS-2-48	0.007	0.003	1.0	90.0	
Pole CS-3-34	4.160	99.081	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-33	-0.075	-0.036	11.7	90.0	
								Pole CS-3-35	0.066	0.032	10.3	90.0	
								Pole CS-3-27	0.009	0.004	1.4	90.0	
Pole CS-3-35	4.160	99.014	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-34	-0.066	-0.032	10.3	90.0	
								Pole CS-3-52	0.062	0.030	9.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-28	0.004	0.002	0.7	90.0	
Pole CS-3-36	4.160	98.835	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-37	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-246~	0.000	0.000	0.0	0.0	
Pole CS-3-37	4.160	98.835	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-36	0.000	0.000	0.0	0.0	
								Pole CS-3-38	-0.002	-0.001	0.3	90.2	
Pole CS-3-38	4.160	98.835	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-37	0.002	0.001	0.3	90.2	
								Pole CS-3-39	-0.004	-0.002	0.7	90.1	
Pole CS-3-39	4.160	98.837	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-38	0.004	0.002	0.7	90.1	
								Pole CS-3-40	-0.007	-0.003	1.0	90.1	
Pole CS-3-40	4.160	98.839	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-39	0.007	0.003	1.0	90.1	
								Pole CS-3-41	-0.009	-0.004	1.4	90.0	
Pole CS-3-41	4.160	98.844	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-40	0.009	0.004	1.4	90.1	
								Pole CS-3-42	-0.011	-0.005	1.7	90.0	
Pole CS-3-42	4.160	98.847	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-41	0.011	0.005	1.7	90.1	
								Pole CS-3-43	-0.013	-0.006	2.1	90.0	
Pole CS-3-43	4.160	98.854	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-42	0.013	0.006	2.1	90.1	
								Pole CS-3-45	-0.018	-0.009	2.8	90.0	
								Pole CS-3-44	0.002	0.001	0.3	90.0	
Pole CS-3-44	4.160	98.853	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-43	-0.002	-0.001	0.3	90.0	
Pole CS-3-45	4.160	98.863	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-43	0.018	0.009	2.7	90.0	
								Pole CS-3-50	-0.022	-0.011	3.4	90.0	
								Pole CS-3-46	0.002	0.001	0.3	90.0	
								Pole CS-3-47	0.002	0.001	0.3	90.0	
Pole CS-3-46	4.160	98.862	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-45	-0.002	-0.001	0.3	90.0	
Pole CS-3-47	4.160	98.862	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-45	-0.002	-0.001	0.3	90.0	
Pole CS-3-48	4.160	98.874	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-50	-0.002	-0.001	0.3	90.0	
Pole CS-3-49	4.160	98.874	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-50	-0.002	-0.001	0.3	90.0	
Pole CS-3-50	4.160	98.874	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-45	0.022	0.011	3.4	90.0	
								Pole CS-3-51	-0.026	-0.013	4.1	90.0	
								Pole CS-3-48	0.002	0.001	0.3	90.0	
								Pole CS-3-49	0.002	0.001	0.3	90.0	
Pole CS-3-51	4.160	98.876	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-50	0.026	0.013	4.1	90.0	
								Pole CS-3-63	-0.044	-0.021	6.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-66	0.018	0.009	2.8	90.0	
								Pole CS-3-74	0.000	0.000	0.0	0.0	
Pole CS-3-52	4.160	98.980	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-35	-0.062	-0.030	9.6	90.0	
								Pole CS-3-59	0.055	0.027	8.6	90.0	
								Pole CS-3-53	0.007	0.003	1.0	90.0	
Pole CS-3-53	4.160	98.977	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-52	-0.007	-0.003	1.0	90.0	
								Pole CS-3-54	0.004	0.002	0.7	90.0	
Pole CS-3-54	4.160	98.976	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-53	-0.004	-0.002	0.7	90.0	
								Pole CS-3-55	0.002	0.001	0.3	90.0	
Pole CS-3-55	4.160	98.976	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-54	-0.002	-0.001	0.3	90.0	
Pole CS-3-56	4.160	98.950	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-57	-0.002	-0.001	0.3	90.0	
Pole CS-3-57	4.160	98.951	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-56	0.002	0.001	0.3	90.1	
								Pole CS-3-58	-0.004	-0.002	0.7	90.0	
Pole CS-3-58	4.160	98.953	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-57	0.004	0.002	0.7	90.1	
								Pole CS-3-59	-0.007	-0.003	1.0	90.0	
Pole CS-3-59	4.160	98.955	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-52	-0.055	-0.027	8.6	90.0	
								Pole CS-3-60	0.049	0.023	7.6	90.0	
								Pole CS-3-58	0.007	0.003	1.0	90.0	
Pole CS-3-60	4.160	98.933	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-59	-0.049	-0.023	7.6	90.0	
								Pole CS-3-62	0.049	0.023	7.6	90.0	
Pole CS-3-61	4.160	98.911	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-62	-0.046	-0.022	7.2	90.0	
								Pole CS-3-63	0.044	0.021	6.9	90.0	
Pole CS-3-62	4.160	98.922	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-61	0.046	0.022	7.2	90.0	
								Pole CS-3-60	-0.049	-0.023	7.6	90.0	
Pole CS-3-63	4.160	98.894	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-61	-0.044	-0.021	6.9	90.0	
								Pole CS-3-51	0.044	0.021	6.9	90.0	
								Pole CS-3-75	0.000	0.000	0.0	0.0	
Pole CS-3-66	4.160	98.873	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-51	-0.018	-0.009	2.8	90.0	
								Pole CS-3-67	0.015	0.007	2.4	90.0	
Pole CS-3-67	4.160	98.869	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-66	-0.015	-0.007	2.4	90.0	
								Pole CS-3-68	0.013	0.006	2.1	90.0	
Pole CS-3-68	4.160	98.865	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-67	-0.013	-0.006	2.1	90.0	
								Pole CS-3-69	0.011	0.005	1.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-3-69	4.160	98.862	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-68	-0.011	-0.005	1.7	90.0	
								Pole CS-3-70	0.009	0.004	1.4	90.0	
Pole CS-3-70	4.160	98.859	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-69	-0.009	-0.004	1.4	90.0	
								Pole CS-3-71	0.007	0.003	1.0	90.0	
Pole CS-3-71	4.160	98.857	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-70	-0.007	-0.003	1.0	90.0	
								Pole CS-3-72	0.004	0.002	0.7	90.0	
Pole CS-3-72	4.160	98.856	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-71	-0.004	-0.002	0.7	90.0	
								Pole CS-3-73	0.002	0.001	0.3	90.0	
Pole CS-3-73	4.160	98.855	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-72	-0.002	-0.001	0.3	90.0	
Pole CS-3-74	4.160	98.876	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-51	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-276~	0.000	0.000	0.0	0.0	
Pole CS-3-75	4.160	98.894	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-63	0.000	0.000	0.0	0.0	
Pole CS-4-1	4.160	99.654	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-11	0.173	0.084	26.8	90.0	
								Pole CS-4-3	0.004	0.002	0.7	90.1	
								BUS_CLG_4kV	-0.180	-0.087	27.8	90.0	
Pole CS-4-2	4.160	99.422	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-11	-0.138	-0.067	21.3	90.0	
								Pole CS-4-6	0.135	0.066	21.0	90.0	
Pole CS-4-3	4.160	99.654	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-1	-0.004	-0.002	0.7	90.1	
								Pole CS-4-4	0.002	0.001	0.3	90.2	
Pole CS-4-4	4.160	99.652	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-3	-0.002	-0.001	0.3	90.0	
								Pole CS-4-5	0.002	0.001	0.3	90.0	
								L-SUB-FDR-EQ#18-1-283~	0.000	0.000	0.0	0.0	
Pole CS-4-5	4.160	99.651	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-4	-0.002	-0.001	0.3	90.0	
Pole CS-4-6	4.160	99.321	-1.3	0.000	0.000	0.000	0.000	PRI_PM_22	0.039	0.019	6.0	89.9	
								Pole CS-4-2	-0.135	-0.066	21.0	90.0	
								Pole CS-4-7	0.097	0.047	15.0	90.0	
Pole CS-4-7	4.160	99.287	-1.3	0.000	0.000	0.004	0.002	Pole CS-4-6	-0.097	-0.047	15.0	90.0	
								Pole CS-4-8	0.092	0.045	14.3	90.0	
Pole CS-4-8	4.160	99.253	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-7	-0.092	-0.045	14.3	90.0	
								Pole CS-4-9	0.090	0.044	14.0	90.0	
Pole CS-4-9	4.160	99.226	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-8	-0.090	-0.044	14.0	90.0	
								Pole CS-4-12	0.007	0.003	1.0	90.0	
								Pole CS-4-13	0.083	0.040	12.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-4-11	4.160	99.525	-1.3	0.000	0.000	0.000	0.000	PRI_PM_11	0.035	0.017	5.5	89.9	
								Pole CS-4-1	-0.173	-0.084	26.8	90.0	
								Pole CS-4-2	0.138	0.067	21.3	90.0	
Pole CS-4-12	4.160	99.225	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.007	-0.003	1.0	90.0	
								SEC_CS-4-8	0.007	0.003	1.0	90.0	
Pole CS-4-13	4.160	99.196	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.083	-0.040	12.9	90.0	
								Pole CS-4-14	0.083	0.040	12.9	90.0	
Pole CS-4-14	4.160	99.164	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-13	-0.083	-0.040	12.9	90.0	
								Pole CS-4-15	0.083	0.040	12.9	90.0	
Pole CS-4-15	4.160	98.951	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-14	-0.083	-0.040	12.9	90.0	
								Pole CS-4-16	0.083	0.040	12.9	90.0	
Pole CS-4-16	4.160	98.618	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-15	-0.083	-0.040	12.9	89.9	
								Pole CS-4-18	0.004	0.002	0.7	90.1	
								Pole CS-4-20	0.078	0.038	12.3	89.9	
Pole CS-4-17	4.160	98.616	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-18	-0.002	-0.001	0.3	90.0	
Pole CS-4-18	4.160	98.617	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-17	0.002	0.001	0.3	90.0	
								Pole CS-4-16	-0.004	-0.002	0.7	90.1	
								Pole CS-4-19	0.002	0.001	0.3	90.1	
Pole CS-4-19	4.160	98.615	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-18	-0.002	-0.001	0.3	90.0	
Pole CS-4-20	4.160	98.576	-1.3	0.000	0.000	0.000	0.000	PRI_PM_23	0.038	0.019	6.0	89.9	
								Pole CS-4-16	-0.078	-0.038	12.3	89.9	
								Pole CS-4-21	0.040	0.020	6.3	89.9	
Pole CS-4-21	4.160	98.552	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-20	-0.040	-0.020	6.3	89.9	
								Pole CS-4-22	0.038	0.019	6.0	89.9	
Pole CS-4-22	4.160	98.536	-1.3	0.000	0.000	0.000	0.000	PRI_PM_24	0.038	0.019	6.0	89.9	
								Pole CS-4-21	-0.038	-0.019	6.0	89.9	
Pole CS-5-18	24.940	98.982	-0.7	0.000	0.000	0.009	0.004	Pole CS-5-19	-0.009	-0.004	0.2	89.8	
Pole CS-5-19	24.940	98.982	-0.7	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-9	0.027	0.011	0.7	91.8	
								Pole CS-5-18	0.009	0.004	0.2	90.2	
								Pole CS-5-20	-0.035	-0.016	0.9	91.4	
Pole CS-5-20	24.940	98.982	-0.7	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-8	0.026	0.012	0.7	91.0	
								Pole CS-5-19	0.035	0.016	0.9	91.5	
								Pole CS-5-21	-0.062	-0.028	1.6	91.3	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-5-21	24.940	98.985	-0.7	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-0.062	-0.026	1.6	91.9	
								Pole CS-5-20	0.062	0.026	1.6	91.9	
Pole HS-1-001	4.160	100.300	-1.2	0.000	0.000	0.003	0.001	BUS_HSC_4kV	-0.020	-0.010	3.1	90.0	
								Pole HS-1-4	0.018	0.009	2.7	90.0	
Pole HS-1-4	4.160	100.296	-1.2	0.000	0.000	0.004	0.002	Pole HS-1-001	-0.018	-0.009	2.7	90.0	
								Pole HS-1-16	0.014	0.007	2.1	90.0	
Pole HS-1-16	4.160	100.293	-1.2	0.000	0.000	0.008	0.004	Pole HS-1-17	0.005	0.003	0.8	90.0	
								Pole HS-1-4	-0.014	-0.007	2.1	90.0	
Pole HS-1-17	4.160	100.292	-1.2	0.000	0.000	0.001	0.001	Pole HS-1-16	-0.005	-0.003	0.8	90.0	
								Pole HS-1-19	0.004	0.002	0.6	90.0	
Pole HS-1-19	4.160	100.291	-1.2	0.000	0.000	0.004	0.002	Pole HS-1-17	-0.004	-0.002	0.6	90.0	
Pole HS-2-1	4.160	100.242	-1.2	0.000	0.000	0.002	0.001	BUS_HSC_4kV	-0.280	-0.136	43.1	90.0	
								Pole HS-2-2	0.278	0.135	42.7	90.0	
Pole HS-2-2	4.160	100.161	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-1	-0.278	-0.134	42.7	90.0	
								Pole HS-2-3	0.275	0.133	42.4	90.0	
Pole HS-2-3	4.160	100.090	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-2	-0.275	-0.133	42.4	90.0	
								Pole HS-2-4	0.273	0.132	42.0	90.0	
Pole HS-2-4	4.160	100.020	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-3	-0.273	-0.132	42.0	90.0	
								Pole HS-2-5	0.266	0.129	41.0	90.0	
								SEC_HS-2-4	0.007	0.003	1.0	90.0	
Pole HS-2-5	4.160	99.945	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-4	-0.266	-0.129	41.0	90.0	
								Pole HS-2-6	0.259	0.125	40.0	90.0	
								SEC_HS-2-5	0.007	0.003	1.0	90.0	
Pole HS-2-6	4.160	99.880	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-5	-0.259	-0.125	40.0	90.0	
								Pole HS-2-7	0.252	0.122	38.9	90.0	
								SEC_HS-2-6	0.007	0.003	1.0	90.0	
Pole HS-2-7	4.160	99.810	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-6	-0.252	-0.122	38.9	90.0	
								Pole HS-2-8	0.245	0.119	37.9	90.0	
								SEC_HS-2-7	0.007	0.003	1.0	90.0	
Pole HS-2-8	4.160	99.742	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-7	-0.245	-0.119	37.9	90.0	
								Pole HS-2-9	0.173	0.084	26.8	90.0	
								Pole HS-2-50	0.072	0.035	11.1	90.0	
Pole HS-2-9	4.160	99.697	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-8	-0.173	-0.084	26.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-10	0.171	0.083	26.5	90.0	
Pole HS-2-10	4.160	99.654	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-9	-0.171	-0.083	26.5	90.0	
								Pole HS-2-11	0.169	0.082	26.1	90.0	
Pole HS-2-11	4.160	99.609	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-10	-0.169	-0.082	26.1	90.0	
								Pole HS-2-12	0.162	0.079	25.1	90.0	
								SEC_HS-2-10	0.007	0.003	1.0	90.0	
Pole HS-2-12	4.160	99.580	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-11	-0.162	-0.079	25.1	90.0	
								Pole HS-2-86	0.160	0.078	24.7	90.0	
Pole HS-2-13	4.160	99.536	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-14	0.022	0.011	3.5	90.0	
								Pole HS-2-24	0.060	0.029	9.3	90.0	
								Pole HS-2-86	-0.082	-0.040	12.8	90.0	
Pole HS-2-14	4.160	99.529	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-13	-0.022	-0.011	3.5	90.0	
								Pole HS-2-15	0.020	0.010	3.1	90.0	
Pole HS-2-15	4.160	99.521	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-14	-0.020	-0.010	3.1	90.0	
								Pole HS-2-16	0.018	0.009	2.8	90.0	
Pole HS-2-16	4.160	99.514	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-15	-0.018	-0.009	2.8	90.0	
								Pole HS-2-17	0.016	0.008	2.4	90.0	
Pole HS-2-17	4.160	99.509	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-16	-0.016	-0.008	2.4	90.0	
								Pole HS-2-18	0.013	0.006	2.1	90.0	
Pole HS-2-18	4.160	99.506	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-17	-0.013	-0.006	2.1	90.0	
								Pole HS-2-19	0.011	0.005	1.7	90.0	
Pole HS-2-19	4.160	99.503	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-18	-0.011	-0.005	1.7	90.0	
								Pole HS-2-20	0.009	0.004	1.4	90.0	
Pole HS-2-20	4.160	99.498	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-19	-0.009	-0.004	1.4	90.0	
								Pole HS-2-21	0.007	0.003	1.0	90.0	
Pole HS-2-21	4.160	99.497	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-20	-0.007	-0.003	1.0	90.0	
								Pole HS-2-22	0.004	0.002	0.7	90.0	
Pole HS-2-22	4.160	99.495	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-21	-0.004	-0.002	0.7	90.0	
								Pole HS-2-23	0.002	0.001	0.3	90.0	
Pole HS-2-23	4.160	99.495	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-22	-0.002	-0.001	0.3	90.0	
Pole HS-2-24	4.160	99.487	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-13	-0.060	-0.029	9.3	90.0	
								Pole HS-2-25	0.051	0.025	7.9	90.0	
								Pole HS-2-26	0.007	0.003	1.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-2-25	4.160	99.471	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.051	-0.025	7.9	90.0	
								Pole HS-2-27	0.051	0.025	7.9	90.0	
Pole HS-2-26	4.160	99.482	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.007	-0.003	1.0	90.0	
								SEC_HS-2-23	0.007	0.003	1.0	90.0	
Pole HS-2-27	4.160	99.455	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-25	-0.051	-0.025	7.9	90.0	
								Pole HS-2-28	0.051	0.025	7.9	90.0	
Pole HS-2-28	4.160	99.428	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-27	-0.051	-0.025	7.9	90.0	
								Pole HS-2-29	0.018	0.009	2.8	90.0	
								Pole HS-2-35	0.033	0.016	5.2	90.0	
Pole HS-2-29	4.160	99.423	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-28	-0.018	-0.009	2.8	90.0	
								Pole HS-2-30	0.016	0.008	2.4	90.0	
Pole HS-2-30	4.160	99.421	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-31	0.009	0.004	1.4	90.0	
								Pole HS-2-29	-0.016	-0.008	2.4	90.0	
								SEC_HS-2-25	0.007	0.003	1.0	90.0	
Pole HS-2-31	4.160	99.420	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-30	-0.009	-0.004	1.4	90.0	
								Pole HS-2-32	0.007	0.003	1.0	90.0	
Pole HS-2-32	4.160	99.418	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-31	-0.007	-0.003	1.0	90.0	
								Pole HS-2-33	0.004	0.002	0.7	90.0	
Pole HS-2-33	4.160	99.417	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-32	-0.004	-0.002	0.7	90.0	
								Pole HS-2-34	0.002	0.001	0.3	90.0	
Pole HS-2-34	4.160	99.416	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-33	-0.002	-0.001	0.3	90.0	
Pole HS-2-35	4.160	99.411	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-28	-0.033	-0.016	5.2	90.0	
								Pole HS-2-36	0.013	0.006	2.1	90.0	
								Pole HS-2-42	0.018	0.009	2.8	90.0	
								Pole HS-2-48	0.002	0.001	0.3	90.0	
Pole HS-2-36	4.160	99.406	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-35	-0.013	-0.006	2.1	90.0	
								Pole HS-2-37	0.011	0.005	1.7	90.0	
Pole HS-2-37	4.160	99.403	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-36	-0.011	-0.005	1.7	90.0	
								Pole HS-2-38	0.009	0.004	1.4	90.0	
Pole HS-2-38	4.160	99.401	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-37	-0.009	-0.004	1.4	90.0	
								Pole HS-2-39	0.007	0.003	1.0	90.0	
Pole HS-2-39	4.160	99.399	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-38	-0.007	-0.003	1.0	90.0	
								Pole HS-2-40	0.004	0.002	0.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-2-40	4.160	99.398	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-39	-0.004	-0.002	0.7	90.0	
								Pole HS-2-41	0.002	0.001	0.3	90.0	
Pole HS-2-41	4.160	99.398	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-40	-0.002	-0.001	0.3	90.0	
Pole HS-2-42	4.160	99.402	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-35	-0.018	-0.009	2.8	90.0	
								Pole HS-2-43	0.016	0.008	2.4	90.0	
								Pole HS-2-49	0.002	0.001	0.3	90.1	
Pole HS-2-43	4.160	99.398	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-42	-0.016	-0.008	2.4	90.0	
								Pole HS-2-44	0.009	0.004	1.4	90.0	
								SEC_HS-2-36	0.007	0.003	1.0	90.0	
Pole HS-2-44	4.160	99.395	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-43	-0.009	-0.004	1.4	90.0	
								Pole HS-2-45	0.007	0.003	1.0	90.0	
Pole HS-2-45	4.160	99.393	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-44	-0.007	-0.003	1.0	90.0	
								Pole HS-2-46	0.004	0.002	0.7	90.0	
Pole HS-2-46	4.160	99.393	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-45	-0.004	-0.002	0.7	90.0	
								Pole HS-2-47	0.002	0.001	0.3	90.0	
Pole HS-2-47	4.160	99.392	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-46	-0.002	-0.001	0.3	90.0	
Pole HS-2-48	4.160	99.410	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-35	-0.002	-0.001	0.3	90.0	
Pole HS-2-49	4.160	99.400	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-42	-0.002	-0.001	0.3	90.0	
								L-SUB-FDR-EQ#18-1-278~	0.000	0.000	0.0	0.0	
Pole HS-2-50	4.160	99.705	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-8	-0.072	-0.035	11.1	90.0	
								Pole HS-2-51	0.069	0.034	10.7	90.0	
Pole HS-2-51	4.160	99.669	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-50	-0.069	-0.034	10.7	90.0	
								Pole HS-2-52	0.011	0.005	1.7	90.0	
								Pole HS-2-57	0.058	0.028	9.0	90.0	
Pole HS-2-52	4.160	99.668	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-51	-0.011	-0.005	1.7	90.0	
								Pole HS-2-53	0.009	0.004	1.4	90.0	
Pole HS-2-53	4.160	99.666	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-52	-0.009	-0.004	1.4	90.0	
								Pole HS-2-54	0.007	0.003	1.0	90.0	
Pole HS-2-54	4.160	99.665	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-53	-0.007	-0.003	1.0	90.0	
								Pole HS-2-55	0.004	0.002	0.7	90.0	
Pole HS-2-55	4.160	99.665	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-54	-0.004	-0.002	0.7	90.0	
								Pole HS-2-56	0.002	0.001	0.3	90.0	
Pole HS-2-56	4.160	99.664	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-55	-0.002	-0.001	0.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-2-57	4.160	99.639	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-51	-0.058	-0.028	9.0	90.0	
								Pole HS-2-58	0.022	0.011	3.5	90.0	
								Pole HS-2-76	0.036	0.017	5.5	90.0	
Pole HS-2-58	4.160	99.636	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-57	-0.022	-0.011	3.5	90.0	
								Pole HS-2-67	0.020	0.010	3.1	90.0	
Pole HS-2-59	4.160	99.628	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-67	-0.018	-0.009	2.8	90.0	
								Pole HS-2-60	0.016	0.008	2.4	90.0	
Pole HS-2-60	4.160	99.625	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-59	-0.016	-0.008	2.4	90.0	
								Pole HS-2-61	0.013	0.006	2.1	90.0	
Pole HS-2-61	4.160	99.623	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-60	-0.013	-0.006	2.1	90.0	
								Pole HS-2-62	0.011	0.005	1.7	90.0	
Pole HS-2-62	4.160	99.619	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-61	-0.011	-0.005	1.7	90.0	
								Pole HS-2-63	0.009	0.004	1.4	90.0	
Pole HS-2-63	4.160	99.618	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-62	-0.009	-0.004	1.4	90.0	
								Pole HS-2-64	0.007	0.003	1.0	90.0	
Pole HS-2-64	4.160	99.617	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-63	-0.007	-0.003	1.0	90.0	
								Pole HS-2-65	0.004	0.002	0.7	90.0	
Pole HS-2-65	4.160	99.616	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-64	-0.004	-0.002	0.7	90.0	
								Pole HS-2-66	0.002	0.001	0.3	90.0	
Pole HS-2-66	4.160	99.615	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-65	-0.002	-0.001	0.3	90.0	
								L-SUB-FDR-EQ#18-1-301~	0.000	0.000	0.0	0.0	
Pole HS-2-67	4.160	99.631	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-59	0.018	0.009	2.8	90.0	
								Pole HS-2-58	-0.020	-0.010	3.1	90.0	
Pole HS-2-68	4.160	99.605	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-69	-0.002	-0.001	0.3	90.0	
Pole HS-2-69	4.160	99.605	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-68	0.002	0.001	0.3	90.0	
								Pole HS-2-70	-0.004	-0.002	0.7	90.0	
Pole HS-2-70	4.160	99.606	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-69	0.004	0.002	0.7	90.0	
								Pole HS-2-71	-0.007	-0.003	1.0	90.0	
Pole HS-2-71	4.160	99.608	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-70	0.007	0.003	1.0	90.0	
								Pole HS-2-72	-0.009	-0.004	1.4	90.0	
Pole HS-2-72	4.160	99.610	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-71	0.009	0.004	1.4	90.0	
								Pole HS-2-73	-0.011	-0.005	1.7	90.0	
Pole HS-2-73	4.160	99.612	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-72	0.011	0.005	1.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-74	-0.013	-0.006	2.1	90.0	
Pole HS-2-74	4.160	99.614	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-73	0.013	0.006	2.1	90.0	
								Pole HS-2-75	-0.016	-0.008	2.4	90.0	
Pole HS-2-75	4.160	99.618	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-74	0.016	0.008	2.4	90.0	
								Pole HS-2-76	-0.018	-0.009	2.8	90.0	
Pole HS-2-76	4.160	99.620	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-75	0.018	0.009	2.8	90.0	
								Pole HS-2-57	-0.036	-0.017	5.5	90.0	
								Pole HS-2-77	0.018	0.009	2.8	90.1	
Pole HS-2-77	4.160	99.610	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-76	-0.018	-0.009	2.8	90.0	
								Pole HS-2-78	0.011	0.005	1.7	90.1	
								SEC_HS-2-67	0.007	0.003	1.0	90.0	
Pole HS-2-78	4.160	99.603	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-77	-0.011	-0.005	1.7	90.1	
								Pole HS-2-79	0.002	0.001	0.3	90.1	
								Pole HS-2-80	0.009	0.004	1.4	90.1	
Pole HS-2-79	4.160	99.602	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-78	-0.002	-0.001	0.3	90.0	
Pole HS-2-80	4.160	99.598	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-78	-0.009	-0.004	1.4	90.1	
								Pole HS-2-81	0.007	0.003	1.0	90.1	
Pole HS-2-81	4.160	99.595	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-80	-0.007	-0.003	1.0	90.1	
								Pole HS-2-82	0.004	0.002	0.7	90.1	
Pole HS-2-82	4.160	99.590	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-81	-0.004	-0.002	0.7	90.0	
								Pole HS-2-83	0.002	0.001	0.3	90.1	
Pole HS-2-83	4.160	99.589	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-82	-0.002	-0.001	0.3	90.0	
Pole HS-2-84	4.160	99.479	-1.3	0.000	0.000	0.002	0.001	Pole HS-2-85	-0.002	-0.001	0.3	90.0	
Pole HS-2-85	4.160	99.480	-1.3	0.000	0.000	0.002	0.001	Pole HS-2-84	0.002	0.001	0.3	90.1	
								Pole CS-1-2	-0.004	-0.002	0.7	90.0	
Pole HS-2-86	4.160	99.551	-1.2	0.000	0.000	0.000	0.000	PRI_PM_10	0.077	0.038	12.0	89.9	
								Pole HS-2-12	-0.160	-0.077	24.7	90.0	
								Pole HS-2-13	0.082	0.040	12.8	90.0	
Pole HS-3-1	4.160	100.291	-1.2	0.000	0.000	0.002	0.001	BUS_HSC_4kV	-0.189	-0.091	29.0	90.0	
								Pole HS-3-2	0.187	0.090	28.7	90.0	
Pole HS-3-2	4.160	100.231	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-1	-0.186	-0.090	28.7	90.0	
								Pole HS-3-3	0.184	0.089	28.3	90.0	
Pole HS-3-3	4.160	100.142	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-2	-0.184	-0.089	28.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-3-4	0.182	0.088	28.0	90.0	
Pole HS-3-4	4.160	100.082	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-3	-0.182	-0.088	28.0	90.0	
								Pole HS-3-5	0.179	0.087	27.6	90.0	
Pole HS-3-5	4.160	100.023	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-4	-0.179	-0.087	27.6	90.0	
								Pole HS-3-6	0.177	0.086	27.3	90.0	
Pole HS-3-6	4.160	99.982	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-5	-0.177	-0.086	27.3	90.0	
								Pole HS-3-7	0.175	0.085	26.9	90.0	
Pole HS-3-7	4.160	99.933	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-6	-0.175	-0.084	26.9	90.0	
								Pole HS-3-8	0.172	0.083	26.6	90.0	
Pole HS-3-8	4.160	99.898	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-7	-0.172	-0.083	26.6	90.0	
								Pole HS-3-9	0.170	0.082	26.2	90.0	
Pole HS-3-9	4.160	99.852	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-8	-0.170	-0.082	26.2	90.0	
								Pole HS-3-10	0.168	0.081	25.9	90.0	
Pole HS-3-10	4.160	99.807	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-9	-0.168	-0.081	25.9	90.0	
								Pole HS-3-11	0.165	0.080	25.6	90.0	
Pole HS-3-11	4.160	99.775	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-10	-0.165	-0.080	25.6	90.0	
								Pole HS-3-12	0.163	0.079	25.2	90.0	
Pole HS-3-12	4.160	99.746	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-11	-0.163	-0.079	25.2	90.0	
								Pole HS-3-13	0.161	0.078	24.9	90.0	
Pole HS-3-13	4.160	99.703	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-12	-0.161	-0.078	24.9	90.0	
								Pole HS-3-14	0.159	0.077	24.5	90.0	
Pole HS-3-14	4.160	99.672	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-13	-0.158	-0.077	24.5	90.0	
								Pole HS-3-15	0.156	0.076	24.2	90.0	
Pole HS-3-15	4.160	99.636	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-14	-0.156	-0.076	24.2	90.0	
								Pole HS-3-16	0.154	0.075	23.8	90.0	
Pole HS-3-16	4.160	99.601	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-15	-0.154	-0.074	23.8	90.0	
								Pole HS-3-17	0.152	0.073	23.5	90.0	
Pole HS-3-17	4.160	99.570	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-16	-0.152	-0.073	23.5	90.0	
								Pole HS-3-18	0.098	0.047	15.2	90.0	
								Pole HS-3-23	0.054	0.026	8.3	90.0	
Pole HS-3-18	4.160	99.505	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-17	-0.098	-0.047	15.2	90.0	
								Pole HS-3-28	0.011	0.005	1.7	90.0	
								Pole HS-3-29	0.058	0.028	9.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-3-46	0.029	0.014	4.5	90.0	
Pole HS-3-19	4.160	99.511	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-20	-0.045	-0.022	6.9	90.0	
								Pole HS-3-30	0.042	0.020	6.6	90.0	
Pole HS-3-20	4.160	99.522	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-19	0.045	0.022	6.9	90.0	
								Pole HS-3-21	-0.047	-0.023	7.3	90.0	
Pole HS-3-21	4.160	99.541	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-20	0.047	0.023	7.3	90.0	
								Pole HS-3-22	-0.049	-0.024	7.6	90.0	
Pole HS-3-22	4.160	99.551	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-21	0.049	0.024	7.6	90.0	
								Pole HS-3-23	-0.051	-0.025	7.9	90.0	
Pole HS-3-23	4.160	99.560	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-17	-0.054	-0.026	8.3	90.0	
								Pole HS-3-22	0.051	0.025	7.9	90.0	
Pole HS-3-24	4.160	99.498	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-25	-0.002	-0.001	0.3	90.0	
Pole HS-3-25	4.160	99.499	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-24	0.002	0.001	0.3	90.0	
								Pole HS-3-26	-0.004	-0.002	0.7	90.0	
Pole HS-3-26	4.160	99.500	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-25	0.004	0.002	0.7	90.0	
								Pole HS-3-27	-0.007	-0.003	1.0	90.0	
Pole HS-3-27	4.160	99.502	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-26	0.007	0.003	1.0	90.0	
								Pole HS-3-28	-0.009	-0.004	1.4	90.0	
Pole HS-3-28	4.160	99.504	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-27	0.009	0.004	1.4	90.0	
								Pole HS-3-18	-0.011	-0.005	1.7	90.0	
Pole HS-3-29	4.160	99.467	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-18	-0.058	-0.028	9.0	90.0	
								Pole HS-3-34	0.009	0.004	1.4	90.0	
								Pole HS-3-35	0.022	0.011	3.5	90.0	
								Pole HS-3-59	0.027	0.013	4.1	90.0	
Pole HS-3-30	4.160	99.502	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-19	-0.042	-0.020	6.6	90.0	
								Pole HS-3-85	0.040	0.019	6.2	90.0	
Pole HS-3-31	4.160	99.461	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-32	-0.002	-0.001	0.3	90.0	
Pole HS-3-32	4.160	99.462	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-31	0.002	0.001	0.3	90.0	
								Pole HS-3-33	-0.004	-0.002	0.7	90.0	
Pole HS-3-33	4.160	99.463	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-32	0.004	0.002	0.7	90.0	
								Pole HS-3-34	-0.007	-0.003	1.0	90.0	
Pole HS-3-34	4.160	99.464	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-29	-0.009	-0.004	1.4	90.0	
								Pole HS-3-33	0.007	0.003	1.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-35	4.160	99.453	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.022	-0.011	3.5	90.0	
								Pole HS-3-37	0.004	0.002	0.7	90.0	
								Pole HS-3-38	0.018	0.009	2.8	90.0	
Pole HS-3-36	4.160	99.451	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-37	-0.002	-0.001	0.3	90.0	
Pole HS-3-37	4.160	99.451	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-35	-0.004	-0.002	0.7	90.0	
								Pole HS-3-36	0.002	0.001	0.3	90.0	
Pole HS-3-38	4.160	99.441	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-35	-0.018	-0.009	2.8	90.0	
								Pole HS-3-43	0.016	0.008	2.4	90.0	
Pole HS-3-39	4.160	99.426	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-44	0.004	0.002	0.7	90.1	
								Pole HS-3-40	-0.007	-0.003	1.0	90.0	
Pole HS-3-40	4.160	99.427	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-39	0.007	0.003	1.0	90.1	
								Pole HS-3-41	-0.009	-0.004	1.4	90.0	
Pole HS-3-41	4.160	99.429	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-40	0.009	0.004	1.4	90.0	
								Pole HS-3-42	-0.011	-0.005	1.7	90.0	
Pole HS-3-42	4.160	99.431	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-41	0.011	0.005	1.7	90.0	
								Pole HS-3-43	-0.013	-0.006	2.1	90.0	
Pole HS-3-43	4.160	99.434	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-42	0.013	0.006	2.1	90.0	
								Pole HS-3-38	-0.016	-0.008	2.4	90.0	
Pole HS-3-44	4.160	99.421	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-39	-0.004	-0.002	0.7	90.0	
								Pole HS-3-45	0.002	0.001	0.3	90.0	
Pole HS-3-45	4.160	99.420	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-44	-0.002	-0.001	0.3	90.0	
Pole HS-3-46	4.160	99.502	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-18	-0.029	-0.014	4.5	90.0	
								Pole HS-3-47	0.027	0.013	4.1	90.0	
Pole HS-3-47	4.160	99.498	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-46	-0.027	-0.013	4.1	90.0	
								Pole HS-3-48	0.025	0.012	3.8	90.0	
Pole HS-3-48	4.160	99.491	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-47	-0.025	-0.012	3.8	90.0	
								Pole HS-3-49	0.022	0.011	3.5	90.0	
Pole HS-3-49	4.160	99.485	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-50	0.020	0.010	3.1	90.0	
								Pole HS-3-48	-0.022	-0.011	3.5	90.0	
Pole HS-3-50	4.160	99.482	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-49	-0.020	-0.010	3.1	90.0	
								Pole HS-3-51	0.018	0.009	2.8	90.0	
Pole HS-3-51	4.160	99.478	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-50	-0.018	-0.009	2.8	90.0	
								Pole HS-3-52	0.016	0.008	2.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-52	4.160	99.473	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-51	-0.016	-0.008	2.4	90.0	
								Pole HS-3-53	0.013	0.006	2.1	90.0	
Pole HS-3-53	4.160	99.472	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-58	0.011	0.005	1.7	90.0	
								Pole HS-3-52	-0.013	-0.006	2.1	90.0	
Pole HS-3-54	4.160	99.463	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-55	-0.002	-0.001	0.3	90.0	
Pole HS-3-55	4.160	99.464	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-54	0.002	0.001	0.3	90.0	
								Pole HS-3-56	-0.004	-0.002	0.7	90.0	
Pole HS-3-56	4.160	99.464	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-55	0.004	0.002	0.7	90.0	
								Pole HS-3-57	-0.007	-0.003	1.0	90.0	
Pole HS-3-57	4.160	99.466	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-56	0.007	0.003	1.0	90.0	
								Pole HS-3-58	-0.009	-0.004	1.4	90.0	
Pole HS-3-58	4.160	99.471	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-53	-0.011	-0.005	1.7	90.0	
								Pole HS-3-57	0.009	0.004	1.4	90.0	
Pole HS-3-59	4.160	99.449	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.027	-0.013	4.1	90.0	
								Pole HS-3-60	0.020	0.010	3.1	90.0	
								SEC_HS-3-55	0.007	0.003	1.0	90.0	
Pole HS-3-60	4.160	99.441	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-59	-0.020	-0.010	3.1	90.0	
								Pole HS-3-61	0.018	0.009	2.8	90.0	
Pole HS-3-61	4.160	99.434	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-60	-0.018	-0.009	2.8	90.0	
								Pole HS-3-62	0.011	0.005	1.7	90.0	
								SEC_HS-3-57	0.007	0.003	1.0	90.0	
Pole HS-3-62	4.160	99.430	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-61	-0.011	-0.005	1.7	90.0	
								Pole HS-3-63	0.009	0.004	1.4	90.0	
Pole HS-3-63	4.160	99.427	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-62	-0.009	-0.004	1.4	90.0	
								Pole HS-3-64	0.002	0.001	0.3	90.0	
								SEC_HS-3-59	0.007	0.003	1.0	90.0	
Pole HS-3-64	4.160	99.426	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-63	-0.002	-0.001	0.3	90.0	
Pole HS-3-65	4.160	99.449	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-66	-0.002	-0.001	0.3	90.0	
Pole HS-3-66	4.160	99.450	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-65	0.002	0.001	0.3	90.0	
								Pole HS-3-67	-0.004	-0.002	0.7	90.0	
Pole HS-3-67	4.160	99.453	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-66	0.004	0.002	0.7	90.0	
								Pole HS-3-68	-0.007	-0.003	1.0	90.0	
Pole HS-3-68	4.160	99.455	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-67	0.007	0.003	1.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-3-69	-0.009	-0.004	1.4	90.0	
Pole HS-3-69	4.160	99.457	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-68	0.009	0.004	1.4	90.0	
								Pole HS-3-70	-0.011	-0.005	1.7	90.0	
Pole HS-3-70	4.160	99.464	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-69	0.011	0.005	1.7	90.0	
								Pole HS-3-71	-0.013	-0.006	2.1	90.0	
Pole HS-3-71	4.160	99.472	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-70	0.013	0.006	2.1	90.0	
								Pole MS-1-81	-0.016	-0.008	2.4	90.0	
Pole HS-3-74	4.160	99.457	-1.2	0.000	0.000	0.004	0.002	Pole HS-3-75	-0.004	-0.002	0.7	90.0	
Pole HS-3-75	4.160	99.458	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-74	0.004	0.002	0.7	90.0	
								Pole HS-3-76	-0.007	-0.003	1.0	90.0	
Pole HS-3-76	4.160	99.461	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-75	0.007	0.003	1.0	90.0	
								Pole HS-3-77	-0.009	-0.004	1.4	90.0	
Pole HS-3-77	4.160	99.464	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-76	0.009	0.004	1.4	90.0	
								Pole HS-3-78	-0.011	-0.005	1.7	90.0	
Pole HS-3-78	4.160	99.468	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-77	0.011	0.005	1.7	90.0	
								Pole HS-3-79	-0.013	-0.006	2.1	90.0	
Pole HS-3-79	4.160	99.480	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-78	0.013	0.006	2.1	90.0	
								Pole MS-1-81	-0.016	-0.008	2.4	90.0	
Pole HS-3-80	4.160	99.483	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-81	0.007	0.003	1.0	90.0	
								Pole HS-3-85	-0.009	-0.004	1.4	90.0	
Pole HS-3-81	4.160	99.477	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-82	0.004	0.002	0.7	90.0	
								Pole HS-3-80	-0.007	-0.003	1.0	90.0	
Pole HS-3-82	4.160	99.474	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-83	0.002	0.001	0.3	90.0	
								Pole HS-3-81	-0.004	-0.002	0.7	90.0	
Pole HS-3-83	4.160	99.473	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-82	-0.002	-0.001	0.3	90.0	
Pole HS-3-85	4.160	99.488	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-80	0.009	0.004	1.4	90.0	
								Pole MS-1-81	0.031	0.015	4.8	90.0	
								Pole HS-3-30	-0.040	-0.019	6.2	90.0	
Pole HS-3-86	4.160	99.322	-1.4	0.000	0.000	0.002	0.001	Pole CS-1-3	-0.002	-0.001	0.3	90.0	
Pole HS-3-88	4.160	99.170	-1.4	0.000	0.000	0.002	0.001	Pole CS-1-6	-0.007	-0.003	1.0	90.0	
								Pole HS-3-89	0.004	0.002	0.7	90.0	
Pole HS-3-89	4.160	99.169	-1.4	0.000	0.000	0.002	0.001	Pole HS-3-88	-0.004	-0.002	0.7	90.0	
								Pole HS-3-90	0.002	0.001	0.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-90	4.160	99.169	-1.4	0.000	0.000	0.002	0.001	Pole HS-3-89	-0.002	-0.001	0.3	90.0	
Pole HS-4-1	4.160	100.161	-1.3	0.000	0.000	0.002	0.001	BUS_HSC_4kV	-0.234	-0.114	36.1	90.0	
								Pole HS-4-2	0.232	0.112	35.7	90.0	
Pole HS-4-2	4.160	100.133	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-12	0.130	0.063	20.0	90.0	
								Pole HS-4-1	-0.232	-0.112	35.7	90.0	
								Pole HS-4-3	0.102	0.049	15.6	90.0	
Pole HS-4-3	4.160	100.085	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-44	0.035	0.017	5.3	90.0	
								Pole HS-4-53	0.022	0.011	3.4	90.0	
								Pole HS-4-2	-0.101	-0.049	15.6	90.0	
								Pole HS-4-4	0.045	0.022	6.9	90.0	
Pole HS-4-4	4.160	100.075	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-58	0.015	0.007	2.3	90.0	
								Pole HS-4-3	-0.045	-0.022	6.9	90.0	
								Pole HS-4-5	0.030	0.014	4.6	90.0	
Pole HS-4-5	4.160	100.065	-1.3	0.000	0.000	0.005	0.002	Pole HS-4-55	0.005	0.002	0.8	90.0	
								Pole HS-4-4	-0.030	-0.014	4.6	90.0	
								Pole HS-4-6	0.020	0.010	3.0	90.0	
Pole HS-4-6	4.160	100.059	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-56	0.005	0.002	0.8	90.0	
								Pole HS-4-5	-0.020	-0.010	3.0	90.0	
								Pole HS-4-7	0.012	0.006	1.9	90.0	
Pole HS-4-7	4.160	100.055	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-6	-0.012	-0.006	1.9	90.0	
								Pole HS-4-8	0.012	0.006	1.9	90.0	
Pole HS-4-8	4.160	100.051	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-7	-0.012	-0.006	1.9	90.0	
								Pole HS-4-9	0.010	0.005	1.5	90.0	
Pole HS-4-9	4.160	100.049	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-8	-0.010	-0.005	1.5	90.0	
								Pole HS-4-10	0.007	0.004	1.1	90.0	
Pole HS-4-10	4.160	100.048	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-9	-0.007	-0.004	1.1	90.0	
								Pole HS-4-11	0.000	0.000	0.0	0.0	
								SEC_HS-4-7	0.007	0.004	1.1	90.0	
Pole HS-4-11	4.160	100.048	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-10	0.000	0.000	0.0	0.0	
Pole HS-4-12	4.160	100.091	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-2	-0.130	-0.063	20.0	90.0	
								Pole HS-4-13	0.128	0.062	19.7	90.0	
Pole HS-4-13	4.160	100.067	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-12	-0.128	-0.062	19.7	90.0	
								Pole HS-4-14	0.125	0.061	19.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-4-14	4.160	100.033	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-13	-0.125	-0.061	19.3	90.0	
								Pole HS-4-15	0.123	0.060	18.9	90.0	
Pole HS-4-15	4.160	99.998	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-14	-0.123	-0.060	18.9	90.0	
								Pole HS-4-19	0.120	0.058	18.5	90.0	
Pole HS-4-16	4.160	99.619	-1.3	0.000	0.000	0.000	0.000	PRI_PM_15	0.070	0.034	10.9	89.9	
								Pole HS-4-33	-0.070	-0.034	10.9	89.9	
Pole HS-4-17	4.160	99.947	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-19	-0.118	-0.057	18.1	90.0	
								Pole HS-4-18	0.110	0.053	17.0	90.0	
								SEC_HS-4-13	0.007	0.004	1.1	90.0	
Pole HS-4-18	4.160	99.927	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-17	-0.110	-0.053	17.0	90.0	
								Pole HS-4-20	0.108	0.052	16.6	90.0	
Pole HS-4-19	4.160	99.980	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-15	-0.120	-0.058	18.5	90.0	
								Pole HS-4-17	0.118	0.057	18.1	90.0	
Pole HS-4-20	4.160	99.901	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-18	-0.108	-0.052	16.6	89.9	
								Pole HS-4-21	0.105	0.051	16.2	89.9	
Pole HS-4-21	4.160	99.878	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-20	-0.105	-0.051	16.2	89.9	
								Pole HS-4-22	0.103	0.050	15.9	89.9	
Pole HS-4-22	4.160	99.836	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-21	-0.103	-0.050	15.9	89.9	
								Pole HS-4-23	0.100	0.049	15.5	89.9	
Pole HS-4-23	4.160	99.810	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-22	-0.100	-0.049	15.5	89.9	
								Pole HS-4-24	0.098	0.047	15.1	89.9	
Pole HS-4-24	4.160	99.792	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-23	-0.098	-0.047	15.1	89.9	
								Pole HS-4-26	0.007	0.004	1.1	90.0	
								Pole HS-4-27	0.090	0.044	14.0	89.9	
Pole HS-4-26	4.160	99.790	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-24	-0.007	-0.004	1.1	90.0	
								SEC_HS-4-21	0.007	0.004	1.1	90.0	
Pole HS-4-27	4.160	99.773	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-24	-0.090	-0.044	14.0	89.9	
								Pole HS-4-28	0.088	0.043	13.6	89.9	
Pole HS-4-28	4.160	99.754	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-27	-0.088	-0.043	13.6	89.9	
								Pole HS-4-29	0.085	0.041	13.2	89.9	
Pole HS-4-29	4.160	99.697	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-28	-0.085	-0.041	13.2	89.9	
								Pole HS-4-31	0.083	0.040	12.8	89.9	
Pole HS-4-30	4.160	99.648	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-31	-0.083	-0.040	12.8	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-32	0.080	0.039	12.4	89.9	
Pole HS-4-31	4.160	99.678	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-29	-0.083	-0.040	12.8	89.9	
								Pole HS-4-30	0.083	0.040	12.8	89.9	
Pole HS-4-32	4.160	99.634	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-30	-0.080	-0.039	12.4	89.9	
								Pole HS-4-33	0.078	0.038	12.1	89.9	
Pole HS-4-33	4.160	99.626	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-32	-0.078	-0.038	12.1	89.9	
								Pole HS-4-16	0.070	0.034	10.9	89.9	
								Pole HS-4-64	0.007	0.004	1.1	90.0	
								L-SUB-FDR-EQ#20-1-96~	0.000	0.000	0.0	0.0	
Pole HS-4-34	4.160	100.043	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-35	-0.005	-0.002	0.8	90.0	
								Pole HS-4-45	0.002	0.001	0.4	90.0	
Pole HS-4-35	4.160	100.045	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-36	-0.007	-0.004	1.1	90.0	
								Pole HS-4-34	0.005	0.002	0.8	90.0	
Pole HS-4-36	4.160	100.050	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-37	-0.010	-0.005	1.5	90.0	
								Pole HS-4-35	0.007	0.004	1.1	90.0	
Pole HS-4-37	4.160	100.055	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-38	-0.012	-0.006	1.9	90.0	
								Pole HS-4-36	0.010	0.005	1.5	90.0	
Pole HS-4-38	4.160	100.057	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-39	-0.015	-0.007	2.3	90.0	
								Pole HS-4-37	0.012	0.006	1.9	90.0	
Pole HS-4-39	4.160	100.058	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-40	-0.022	-0.011	3.4	90.0	
								Pole HS-4-38	0.015	0.007	2.3	90.0	
								SEC_HS-4-32	0.007	0.004	1.1	90.0	
Pole HS-4-40	4.160	100.062	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-41	-0.025	-0.012	3.8	90.0	
								Pole HS-4-39	0.022	0.011	3.4	90.0	
Pole HS-4-41	4.160	100.067	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-42	-0.027	-0.013	4.2	90.0	
								Pole HS-4-40	0.025	0.012	3.8	90.0	
Pole HS-4-42	4.160	100.074	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-43	-0.030	-0.014	4.6	90.0	
								Pole HS-4-41	0.027	0.013	4.2	90.0	
Pole HS-4-43	4.160	100.078	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-44	-0.032	-0.016	5.0	90.0	
								Pole HS-4-42	0.030	0.014	4.6	90.0	
Pole HS-4-44	4.160	100.082	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-3	-0.035	-0.017	5.3	90.0	
								Pole HS-4-43	0.032	0.016	5.0	90.0	
Pole HS-4-45	4.160	100.042	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-34	-0.002	-0.001	0.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-4-47	4.160	100.058	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-48	-0.002	-0.001	0.4	90.1	
								HS-4-33~	0.000	0.000	0.0	0.0	
Pole HS-4-48	4.160	100.059	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-47	0.002	0.001	0.4	90.2	
								Pole HS-4-49	-0.010	-0.005	1.5	90.0	
								SEC_HS-4-44	0.007	0.004	1.1	90.0	
Pole HS-4-49	4.160	100.061	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-48	0.010	0.005	1.5	90.0	
								Pole HS-4-50	-0.012	-0.006	1.9	90.0	
Pole HS-4-50	4.160	100.064	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-49	0.012	0.006	1.9	90.0	
								Pole HS-4-51	-0.015	-0.007	2.3	90.0	
Pole HS-4-51	4.160	100.071	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-50	0.015	0.007	2.3	90.0	
								Pole HS-4-52	-0.017	-0.008	2.7	90.0	
Pole HS-4-52	4.160	100.075	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-51	0.017	0.008	2.7	90.0	
								Pole HS-4-53	-0.020	-0.010	3.0	90.0	
Pole HS-4-53	4.160	100.080	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-52	0.020	0.010	3.0	90.0	
								Pole HS-4-3	-0.022	-0.011	3.4	90.0	
Pole HS-4-54	4.160	100.062	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-55	-0.002	-0.001	0.4	90.0	
Pole HS-4-55	4.160	100.063	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-54	0.002	0.001	0.4	90.0	
								Pole HS-4-5	-0.005	-0.002	0.8	90.0	
Pole HS-4-56	4.160	100.058	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-6	-0.005	-0.002	0.8	90.0	
								Pole HS-4-57	0.002	0.001	0.4	90.0	
Pole HS-4-57	4.160	100.057	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-56	-0.002	-0.001	0.4	90.0	
Pole HS-4-58	4.160	100.062	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-4	-0.015	-0.007	2.3	90.0	
								Pole HS-4-59	0.012	0.006	1.9	90.0	
Pole HS-4-59	4.160	100.056	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-58	-0.012	-0.006	1.9	90.0	
								Pole HS-4-60	0.002	0.001	0.4	90.0	
								Pole HS-4-61	0.007	0.004	1.1	90.0	
Pole HS-4-60	4.160	100.056	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-59	-0.002	-0.001	0.4	90.0	
Pole HS-4-61	4.160	100.052	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-59	-0.007	-0.004	1.1	90.0	
								Pole HS-4-62	0.005	0.002	0.8	90.0	
Pole HS-4-62	4.160	100.050	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-61	-0.005	-0.002	0.8	90.0	
								Pole HS-4-63	0.002	0.001	0.4	90.0	
Pole HS-4-63	4.160	100.049	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-62	-0.002	-0.001	0.4	90.0	
Pole HS-4-64	4.160	99.624	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-65	0.002	0.001	0.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-33	-0.007	-0.004	1.1	90.0	
								Pole HS-4-66	0.005	0.002	0.8	90.0	
Pole HS-4-65	4.160	99.624	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-64	-0.002	-0.001	0.4	90.0	
Pole HS-4-66	4.160	99.624	-1.3	0.000	0.000	0.005	0.002	Pole HS-4-64	-0.005	-0.002	0.8	90.0	
								Pole HS-4-67	0.000	0.000	0.0	0.0	
Pole HS-4-67	4.160	99.624	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-66	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#20-1-90~	0.000	0.000	0.0	0.0	
Pole MS-1-1	4.160	99.973	-1.6	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.064	-0.031	9.9	90.0	
								Pole MS-1-2	0.048	0.023	7.5	90.0	
								Pole MS-1-76	0.016	0.008	2.4	90.0	
								L-SUB-FDR-EQ#12-9~	0.000	0.000	0.0	0.0	
Pole MS-1-2	4.160	99.963	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-1	-0.048	-0.023	7.5	90.0	
								Pole MS-1-3	0.047	0.023	7.2	90.0	
Pole MS-1-3	4.160	99.955	-1.6	0.000	0.000	0.000	0.000	Pole MS-1-2	-0.047	-0.023	7.2	90.0	
								Pole MS-1-17	0.035	0.017	5.3	90.0	
								Pole MS-1-5	0.012	0.006	1.9	90.0	
Pole MS-1-5	4.160	99.950	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-3	-0.012	-0.006	1.9	90.0	
								Pole MS-1-7	0.011	0.005	1.6	90.0	
Pole MS-1-7	4.160	99.947	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-5	-0.011	-0.005	1.6	90.0	
								Pole MS-1-9	0.009	0.004	1.4	90.0	
Pole MS-1-8	4.160	99.943	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-9	-0.008	-0.004	1.2	90.0	
								Pole MS-1-10	0.006	0.003	0.9	90.0	
Pole MS-1-9	4.160	99.945	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-8	0.008	0.004	1.2	90.0	
								Pole MS-1-7	-0.009	-0.004	1.4	90.0	
Pole MS-1-10	4.160	99.941	-1.6	0.000	0.000	0.000	0.000	Pole MS-1-8	-0.006	-0.003	0.9	90.0	
								Pole MS-1-11	0.005	0.002	0.7	90.0	
								SEC_MS-1-17	0.001	0.001	0.2	90.0	
Pole MS-1-11	4.160	99.940	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-10	-0.005	-0.002	0.7	90.0	
								Pole MS-1-13	0.003	0.002	0.5	90.0	
Pole MS-1-13	4.160	99.939	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-11	-0.003	-0.002	0.5	90.0	
								Pole MS-1-15	0.002	0.001	0.2	90.1	
Pole MS-1-15	4.160	99.938	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-13	-0.002	-0.001	0.2	90.0	
Pole MS-1-17	4.160	99.947	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-3	-0.035	-0.017	5.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-1-19	0.033	0.016	5.1	90.0	
Pole MS-1-18	4.160	99.938	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-19	-0.033	-0.016	5.1	90.0	
								Pole MS-1-28	0.031	0.015	4.9	90.0	
Pole MS-1-19	4.160	99.942	-1.7	0.000	0.000	0.000	0.000	Pole MS-1-18	0.033	0.016	5.1	90.0	
								Pole MS-1-17	-0.033	-0.016	5.1	90.0	
								L-SUB-FDR-EQ#16-12~	0.000	0.000	0.0	0.0	
Pole MS-1-28	4.160	99.930	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-18	-0.031	-0.015	4.9	90.0	
								Pole MS-1-50	0.017	0.008	2.7	90.0	
								Pole MS-1-30	0.013	0.006	1.9	90.0	
Pole MS-1-30	4.160	99.926	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-28	-0.013	-0.006	1.9	90.0	
								Pole MS-1-32	0.011	0.005	1.7	90.0	
Pole MS-1-32	4.160	99.922	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-30	-0.011	-0.005	1.7	90.0	
								Pole MS-1-34	0.009	0.005	1.5	90.0	
Pole MS-1-34	4.160	99.919	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-32	-0.009	-0.005	1.5	90.0	
								Pole MS-1-36	0.008	0.004	1.2	90.0	
Pole MS-1-36	4.160	99.916	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-34	-0.008	-0.004	1.2	90.0	
								Pole MS-1-38	0.006	0.003	1.0	90.0	
Pole MS-1-38	4.160	99.913	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-36	-0.006	-0.003	1.0	90.0	
								Pole MS-1-40	0.005	0.002	0.7	90.0	
Pole MS-1-40	4.160	99.911	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-38	-0.005	-0.002	0.7	90.0	
								Pole MS-1-42	0.003	0.002	0.5	90.0	
Pole MS-1-42	4.160	99.910	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-40	-0.003	-0.002	0.5	90.0	
								Pole MS-1-46	0.002	0.001	0.2	90.0	
Pole MS-1-46	4.160	99.910	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-42	-0.002	-0.001	0.2	90.0	
Pole MS-1-50	4.160	99.923	-1.7	0.000	0.000	0.000	0.000	Pole MS-1-28	-0.017	-0.008	2.7	90.0	
								Pole MS-1-70	0.005	0.002	0.7	90.0	
								Pole MS-1-52	0.013	0.006	1.9	90.0	
Pole MS-1-52	4.160	99.919	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-50	-0.013	-0.006	1.9	90.0	
								Pole MS-1-54	0.011	0.005	1.7	90.0	
Pole MS-1-54	4.160	99.915	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-52	-0.011	-0.005	1.7	90.0	
								Pole MS-1-56	0.009	0.005	1.5	90.0	
Pole MS-1-56	4.160	99.913	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-54	-0.009	-0.005	1.5	90.0	
								Pole MS-1-58	0.008	0.004	1.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-58	4.160	99.910	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-56	-0.008	-0.004	1.2	90.0	
								Pole MS-1-60	0.006	0.003	1.0	90.0	
Pole MS-1-60	4.160	99.908	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-58	-0.006	-0.003	1.0	90.0	
								Pole MS-1-62	0.005	0.002	0.7	90.0	
Pole MS-1-62	4.160	99.907	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-60	-0.005	-0.002	0.7	90.0	
								Pole MS-1-64	0.003	0.002	0.5	90.0	
Pole MS-1-64	4.160	99.906	-1.7	0.000	0.000	0.000	0.000	Pole MS-1-62	-0.003	-0.002	0.5	90.0	
								Pole MS-1-66	0.002	0.001	0.2	90.0	
								Pole MS-1-68	0.002	0.001	0.2	90.1	
Pole MS-1-66	4.160	99.906	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-64	-0.002	-0.001	0.2	90.0	
Pole MS-1-68	4.160	99.905	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-64	-0.002	-0.001	0.2	90.0	
Pole MS-1-70	4.160	99.922	-1.7	0.000	0.000	0.002	0.001	Pole MS-1-50	-0.005	-0.002	0.7	90.0	
								Pole MS-1-72	0.003	0.002	0.5	90.0	
Pole MS-1-72	4.160	99.922	-1.7	0.000	0.000	0.003	0.002	Pole MS-1-70	-0.003	-0.002	0.5	90.0	
Pole MS-1-73	4.160	99.950	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-74	-0.011	-0.005	1.7	90.0	
								Pole MS-1-79	0.009	0.005	1.5	90.0	
Pole MS-1-74	4.160	99.954	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-73	0.011	0.005	1.7	90.0	
								Pole MS-1-75	-0.013	-0.006	1.9	90.0	
Pole MS-1-75	4.160	99.964	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-74	0.013	0.006	1.9	90.1	
								Pole MS-1-76	-0.014	-0.007	2.2	90.0	
Pole MS-1-76	4.160	99.968	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-75	0.014	0.007	2.2	90.0	
								Pole MS-1-1	-0.016	-0.008	2.4	90.0	
Pole MS-1-79	4.160	99.946	-1.6	0.000	0.000	0.000	0.000	Pole MS-1-73	-0.009	-0.005	1.5	90.0	
								Pole MS-1-80	0.003	0.002	0.5	90.0	
								Pole MS-1-84	0.006	0.003	1.0	90.0	
Pole MS-1-80	4.160	99.945	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-79	-0.003	-0.002	0.5	90.0	
								Pole MS-1-82	0.002	0.001	0.2	90.0	
Pole MS-1-81	4.160	99.482	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-71	0.016	0.008	2.4	90.0	
								Pole HS-3-79	0.016	0.008	2.4	90.0	
								Pole HS-3-85	-0.031	-0.015	4.8	90.0	
Pole MS-1-82	4.160	99.945	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-80	-0.002	-0.001	0.2	90.0	
Pole MS-1-84	4.160	99.944	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-79	-0.006	-0.003	1.0	90.0	
								Pole MS-1-86	0.005	0.002	0.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-86	4.160	99.942	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-84	-0.005	-0.002	0.7	90.0	
								Pole MS-1-87	0.003	0.002	0.5	90.0	
Pole MS-1-87	4.160	99.939	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-86	-0.003	-0.002	0.5	90.0	
								Pole MS-1-88	0.002	0.001	0.2	90.0	
Pole MS-1-88	4.160	99.939	-1.6	0.000	0.000	0.002	0.001	Pole MS-1-87	-0.002	-0.001	0.2	90.0	
Pole MS-2-1	4.160	100.026	-1.6	0.000	0.000	0.000	0.000	Pole MS-2-180	-0.011	-0.005	1.7	90.0	
								Pole MS-2-2	0.007	0.004	1.1	90.1	
								SEC_MS-2-8	0.004	0.002	0.6	90.0	
Pole MS-2-2	4.160	100.023	-1.6	0.000	0.000	0.000	0.000	Pole MS-2-1	-0.007	-0.004	1.1	90.1	
								Pole MS-2-3	0.004	0.002	0.6	90.1	
								SEC_MS-2-37	0.004	0.002	0.6	90.0	
Pole MS-2-3	4.160	100.019	-1.6	0.000	0.000	0.000	0.000	Pole MS-2-2	-0.004	-0.002	0.6	90.1	
								L-SUB-FDR-EQ#16-173~	0.000	0.000	0.0	0.0	
								SEC_MS-2-38	0.004	0.002	0.6	90.0	
Pole MS-2-4	4.160	100.041	-1.6	0.000	0.000	0.000	0.000	PRI_PM_8	0.042	0.021	6.6	89.9	
								Pole MS-2-180	0.011	0.005	1.7	90.1	
								Pole MS-2-182	-0.054	-0.026	8.3	90.0	
Pole MS-2-90	4.160	100.080	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-182	-0.051	-0.025	7.9	90.0	
								Pole MS-2-91	0.046	0.022	7.1	90.0	
								SEC_MS-2-36	0.004	0.002	0.6	90.0	
Pole MS-2-91	4.160	100.037	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-90	-0.046	-0.022	7.1	90.0	
								Pole MS-2-92	0.044	0.021	6.8	90.0	
Pole MS-2-92	4.160	100.025	-1.6	0.000	0.000	0.000	0.000	Pole MS-2-91	-0.044	-0.021	6.8	90.0	
								Pole MS-2-93	0.041	0.020	6.2	90.0	
								SEC_MS-2-39	0.004	0.002	0.6	90.0	
Pole MS-2-93	4.160	100.013	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-92	-0.040	-0.020	6.2	90.0	
								Pole MS-2-94	0.039	0.019	6.0	90.0	
Pole MS-2-94	4.160	100.004	-1.6	0.000	0.000	0.000	0.000	Pole MS-2-93	-0.039	-0.019	6.0	90.0	
								Pole MS-2-95	0.035	0.017	5.4	90.0	
								SEC_MS-2-40	0.004	0.002	0.6	90.0	
Pole MS-2-95	4.160	99.978	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-94	-0.035	-0.017	5.4	90.0	
								Pole MS-2-96	0.034	0.016	5.2	90.0	
Pole MS-2-96	4.160	99.959	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-95	-0.034	-0.016	5.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-2-98	0.032	0.015	4.9	90.0	
Pole MS-2-98	4.160	99.953	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-96	-0.032	-0.015	4.9	90.0	
								Pole MS-2-100	0.030	0.015	4.7	90.0	
Pole MS-2-100	4.160	99.949	-1.6	0.000	0.000	0.000	0.000	Pole MS-2-98	-0.030	-0.015	4.7	90.0	
								Pole MS-2-102	0.027	0.013	4.1	90.0	
								SEC_MS-2-41	0.004	0.002	0.6	90.0	
Pole MS-2-102	4.160	99.944	-1.6	0.000	0.000	0.000	0.000	Pole MS-2-100	-0.027	-0.013	4.1	90.0	
								Pole MS-2-103	0.027	0.013	4.1	90.0	
Pole MS-2-103	4.160	99.939	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-102	-0.027	-0.013	4.1	90.0	
								Pole MS-2-107	0.025	0.012	3.9	90.0	
Pole MS-2-107	4.160	99.926	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-103	-0.025	-0.012	3.9	90.0	
								Pole MS-2-108	0.024	0.011	3.6	90.0	
Pole MS-2-108	4.160	99.921	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-107	-0.024	-0.011	3.6	90.0	
								Pole MS-2-109	0.022	0.011	3.4	90.0	
Pole MS-2-109	4.160	99.915	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-108	-0.022	-0.011	3.4	90.0	
								Pole MS-2-110	0.020	0.010	3.2	90.0	
Pole MS-2-110	4.160	99.910	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-109	-0.020	-0.010	3.2	90.0	
								Pole MS-2-111	0.019	0.009	2.9	90.0	
Pole MS-2-111	4.160	99.904	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-110	-0.019	-0.009	2.9	90.0	
								Pole MS-2-112	0.017	0.008	2.7	90.0	
Pole MS-2-112	4.160	99.900	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-111	-0.017	-0.008	2.7	90.0	
								Pole MS-2-113	0.016	0.008	2.4	90.0	
Pole MS-2-113	4.160	99.897	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-112	-0.016	-0.008	2.4	90.0	
								Pole MS-2-115	0.014	0.007	2.2	90.0	
Pole MS-2-115	4.160	99.893	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-113	-0.014	-0.007	2.2	90.0	
								Pole MS-2-116	0.013	0.006	1.9	90.0	
Pole MS-2-116	4.160	99.887	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-115	-0.013	-0.006	1.9	90.0	
								Pole MS-2-117	0.011	0.005	1.7	90.0	
Pole MS-2-117	4.160	99.881	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-116	-0.011	-0.005	1.7	90.0	
								Pole MS-2-118	0.009	0.005	1.5	90.0	
Pole MS-2-118	4.160	99.876	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-117	-0.009	-0.005	1.5	90.0	
								Pole MS-2-120	0.008	0.004	1.2	90.0	
Pole MS-2-120	4.160	99.873	-1.6	0.000	0.000	0.002	0.001	Pole MS-2-118	-0.008	-0.004	1.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-2-121	0.006	0.003	1.0	90.0	
Pole MS-2-121	4.160	99.869	-1.6	0.000	0.000	0.003	0.002	Pole MS-2-120	-0.006	-0.003	1.0	90.0	
								Pole MS-2-122	0.003	0.002	0.5	90.0	
Pole MS-2-122	4.160	99.868	-1.6	0.000	0.000	0.003	0.002	Pole MS-2-121	-0.003	-0.002	0.5	90.0	
								L-SUB-FDR-EQ#16-97~	0.000	0.000	0.0	0.0	
Pole MS-2-180	4.160	100.030	-1.6	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.011	-0.005	1.7	90.1	
								Pole MS-2-1	0.011	0.005	1.7	90.0	
								L-SUB-FDR-EQ#12-13~	0.000	0.000	0.0	0.0	
Pole MS-2-182	4.160	100.093	-1.6	0.000	0.000	0.000	0.000	Pole MS-2-4	0.054	0.026	8.3	90.0	
								BUS_5KV_LLP_2	-0.105	-0.051	16.1	90.0	
								Pole MS-2-90	0.051	0.025	7.9	90.0	
Pole MS-3-1	4.160	100.113	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-2	0.004	0.002	0.6	90.0	
								Pole MS-3-88	-0.072	-0.035	11.0	90.0	
								Pole MS-3-3	0.068	0.033	10.5	90.0	
Pole MS-3-2	4.160	100.113	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-1	-0.004	-0.002	0.6	90.0	
								SEC_MS-3-1	0.004	0.002	0.6	90.0	
Pole MS-3-3	4.160	100.075	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-4	0.068	0.033	10.5	90.0	
								Pole MS-3-1	-0.068	-0.033	10.5	90.0	
Pole MS-3-4	4.160	100.068	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-3	-0.068	-0.033	10.5	90.0	
								Pole MS-3-5	0.066	0.032	10.2	90.0	
Pole MS-3-5	4.160	100.060	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-4	-0.066	-0.032	10.2	90.0	
								Pole MS-3-6	0.065	0.031	10.0	90.0	
Pole MS-3-6	4.160	100.052	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-5	-0.065	-0.031	10.0	90.0	
								Pole MS-3-7	0.061	0.029	9.4	90.0	
								SEC_MS-3-2	0.004	0.002	0.6	90.0	
Pole MS-3-7	4.160	100.028	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-6	-0.061	-0.029	9.4	90.0	
								Pole MS-3-8	0.059	0.029	9.2	90.0	
Pole MS-3-8	4.160	100.017	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-7	-0.059	-0.029	9.2	90.0	
								Pole MS-3-9	0.056	0.027	8.6	90.1	
								SEC_MS-3-3	0.004	0.002	0.6	90.0	
Pole MS-3-9	4.160	100.008	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-8	-0.056	-0.027	8.6	90.0	
								Pole MS-3-10	0.054	0.026	8.3	90.1	
Pole MS-3-10	4.160	99.989	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-9	-0.054	-0.026	8.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-11	0.052	0.025	8.1	90.1	
Pole MS-3-11	4.160	99.983	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-10	-0.052	-0.025	8.1	90.0	
								Pole MS-3-12	0.051	0.025	7.8	90.1	
Pole MS-3-12	4.160	99.976	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-11	-0.051	-0.025	7.8	90.1	
								Pole MS-3-13	0.049	0.024	7.6	90.1	
Pole MS-3-13	4.160	99.955	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-12	-0.049	-0.024	7.6	90.0	
								Pole MS-3-14	0.048	0.023	7.4	90.1	
Pole MS-3-14	4.160	99.946	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-13	-0.048	-0.023	7.4	90.1	
								Pole MS-3-15	0.046	0.022	7.1	90.1	
Pole MS-3-15	4.160	99.926	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-14	-0.046	-0.022	7.1	90.0	
								Pole MS-3-16	0.045	0.022	6.9	90.1	
Pole MS-3-16	4.160	99.921	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-15	-0.045	-0.022	6.9	90.1	
								Pole MS-3-17	0.043	0.021	6.6	90.1	
Pole MS-3-17	4.160	99.912	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-16	-0.043	-0.021	6.6	90.1	
								Pole MS-3-18	0.041	0.020	6.4	90.1	
Pole MS-3-18	4.160	99.905	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-17	-0.041	-0.020	6.4	90.1	
								Pole MS-3-19	0.015	0.007	2.3	90.0	
								Pole MS-3-26	0.027	0.013	4.1	90.1	
Pole MS-3-19	4.160	99.901	-1.5	0.000	0.000	0.003	0.002	Pole MS-3-18	-0.015	-0.007	2.3	90.0	
								Pole MS-3-20	0.012	0.006	1.8	90.1	
Pole MS-3-20	4.160	99.899	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-19	-0.012	-0.006	1.8	90.0	
								Pole MS-3-21	0.010	0.005	1.5	90.1	
Pole MS-3-21	4.160	99.894	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-20	-0.010	-0.005	1.5	90.0	
								Pole MS-3-22	0.008	0.004	1.3	90.1	
Pole MS-3-22	4.160	99.892	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-21	-0.008	-0.004	1.3	90.0	
								Pole MS-3-23	0.007	0.003	1.1	90.1	
Pole MS-3-23	4.160	99.890	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-22	-0.007	-0.003	1.1	90.0	
								Pole MS-3-24	0.005	0.003	0.8	90.1	
Pole MS-3-24	4.160	99.888	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-23	-0.005	-0.003	0.8	90.0	
								Pole MS-3-25	0.004	0.002	0.6	90.0	
Pole MS-3-25	4.160	99.886	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-24	-0.004	-0.002	0.6	90.0	
								L-SUB-FDR-EQ#16-133~	0.000	0.000	0.0	0.0	
								SEC_MS-3-22	0.004	0.002	0.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-26	4.160	99.894	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-27	0.006	0.003	1.0	90.1	
								Pole MS-3-18	-0.027	-0.013	4.1	90.1	
								Pole MS-3-31	0.019	0.009	2.9	90.1	
Pole MS-3-27	4.160	99.892	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-26	-0.006	-0.003	1.0	90.0	
								Pole MS-3-28	0.005	0.002	0.7	90.1	
Pole MS-3-28	4.160	99.891	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-27	-0.005	-0.002	0.7	90.0	
								Pole MS-3-29	0.003	0.002	0.5	90.1	
Pole MS-3-29	4.160	99.889	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-28	-0.003	-0.002	0.5	90.0	
								Pole MS-3-30	0.002	0.001	0.2	90.0	
Pole MS-3-30	4.160	99.889	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-29	-0.002	-0.001	0.2	90.0	
Pole MS-3-31	4.160	99.885	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-26	-0.019	-0.009	2.9	90.0	
								Pole MS-3-32	0.017	0.008	2.7	90.1	
Pole MS-3-32	4.160	99.882	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-31	-0.017	-0.008	2.7	90.0	
								Pole MS-3-33	0.016	0.008	2.4	90.1	
Pole MS-3-33	4.160	99.879	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-32	-0.016	-0.008	2.4	90.1	
								Pole MS-3-34	0.014	0.007	2.2	90.1	
Pole MS-3-34	4.160	99.877	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-36	0.011	0.005	1.7	90.1	
								Pole MS-3-33	-0.014	-0.007	2.2	90.1	
								Pole MS-3-35	0.002	0.001	0.2	90.0	
Pole MS-3-35	4.160	99.876	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-34	-0.002	-0.001	0.2	90.0	
Pole MS-3-36	4.160	99.872	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-34	-0.011	-0.005	1.7	90.1	
								Pole MS-3-37	0.009	0.005	1.5	90.1	
Pole MS-3-37	4.160	99.868	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-36	-0.009	-0.005	1.5	90.1	
								Pole MS-3-39	0.006	0.003	1.0	90.0	
								Pole MS-3-38	0.003	0.002	0.5	90.1	
Pole MS-3-38	4.160	99.867	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-37	-0.003	-0.002	0.5	90.1	
								Pole MS-3-43	0.002	0.001	0.2	90.2	
Pole MS-3-39	4.160	99.866	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-37	-0.006	-0.003	1.0	90.0	
								Pole MS-3-40	0.005	0.002	0.7	90.0	
Pole MS-3-40	4.160	99.865	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-39	-0.005	-0.002	0.7	90.0	
								Pole MS-3-41	0.003	0.002	0.5	90.0	
Pole MS-3-41	4.160	99.864	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-40	-0.003	-0.002	0.5	90.0	
								Pole MS-3-42	0.002	0.001	0.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-42	4.160	99.864	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-41	-0.002	-0.001	0.2	90.0	
Pole MS-3-43	4.160	99.866	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-38	-0.002	-0.001	0.2	90.0	
								LINE MS-3-11~	0.000	0.000	0.0	0.0	
Pole MS-3-44	4.160	99.778	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-46	0.009	0.004	1.4	90.1	
								Pole MS-3-45	0.000	0.000	0.0	0.0	
								Pole MS-3-54	-0.009	-0.004	1.4	90.1	
Pole MS-3-45	4.160	99.778	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-44	0.000	0.000	0.0	0.0	
Pole MS-3-46	4.160	99.777	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-44	-0.009	-0.004	1.4	90.1	
								Pole MS-3-47	0.009	0.004	1.4	90.1	
Pole MS-3-47	4.160	99.775	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-46	-0.009	-0.004	1.4	90.1	
								Pole MS-3-48	0.007	0.003	1.1	90.1	
Pole MS-3-48	4.160	99.771	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-47	-0.007	-0.003	1.1	90.1	
								Pole MS-3-51	0.003	0.002	0.5	90.1	
								Pole MS-3-50	0.004	0.002	0.6	90.0	
Pole MS-3-49	4.160	99.770	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-50	-0.002	-0.001	0.2	90.0	
Pole MS-3-50	4.160	99.770	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-48	-0.004	-0.002	0.6	90.0	
								Pole MS-3-49	0.002	0.001	0.2	90.0	
Pole MS-3-51	4.160	99.769	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-48	-0.003	-0.002	0.5	90.0	
								Pole MS-3-53	0.002	0.001	0.2	90.0	
								Pole MS-3-52	0.002	0.001	0.2	90.1	
Pole MS-3-52	4.160	99.769	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-51	-0.002	-0.001	0.2	90.0	
Pole MS-3-53	4.160	99.769	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-51	-0.002	-0.001	0.2	90.0	
Pole MS-3-54	4.160	99.782	-1.5	0.000	0.000	0.000	0.000	PRI_PM_18	0.053	0.026	8.2	89.9	
								Pole MS-3-57	0.002	0.001	0.2	90.1	
								Pole MS-3-44	0.009	0.004	1.4	90.1	
								Pole MS-3-58	-0.064	-0.031	9.8	89.9	
Pole MS-3-55	4.160	100.019	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-90	0.036	0.017	5.6	90.0	
								Pole MS-3-71	0.140	0.068	21.6	89.9	
								Pole MS-3-79	-0.176	-0.086	27.2	90.0	
Pole MS-3-57	4.160	99.782	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-54	-0.002	-0.001	0.2	90.0	
Pole MS-3-58	4.160	99.818	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-59	0.003	0.002	0.5	90.1	
								Pole MS-3-61	-0.067	-0.033	10.3	89.9	
								Pole MS-3-54	0.064	0.031	9.8	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-59	4.160	99.817	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-58	-0.003	-0.002	0.5	90.1	
								Pole MS-3-60	0.002	0.001	0.2	90.1	
Pole MS-3-60	4.160	99.816	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-59	-0.002	-0.001	0.2	90.0	
Pole MS-3-61	4.160	99.857	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-58	0.067	0.033	10.3	89.9	
								Pole MS-3-64	-0.070	-0.034	10.8	89.9	
								Pole MS-3-62	0.003	0.002	0.5	90.0	
Pole MS-3-62	4.160	99.857	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-61	-0.003	-0.002	0.5	90.0	
								Pole MS-3-63	0.002	0.001	0.2	90.1	
Pole MS-3-63	4.160	99.856	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-62	-0.002	-0.001	0.2	90.0	
Pole MS-3-64	4.160	99.876	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-61	0.070	0.034	10.8	89.9	
								Pole MS-3-70	-0.081	-0.039	12.5	89.9	
								Pole MS-3-65	0.009	0.005	1.5	90.0	
Pole MS-3-65	4.160	99.873	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-64	-0.009	-0.005	1.5	90.0	
								Pole MS-3-66	0.008	0.004	1.2	90.0	
Pole MS-3-66	4.160	99.872	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-65	-0.008	-0.004	1.2	90.0	
								Pole MS-3-67	0.003	0.002	0.5	90.1	
								Pole MS-3-69	0.003	0.002	0.5	90.0	
Pole MS-3-67	4.160	99.870	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-66	-0.003	-0.002	0.5	90.0	
								Pole MS-3-68	0.002	0.001	0.2	90.0	
Pole MS-3-68	4.160	99.870	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-67	-0.002	-0.001	0.2	90.0	
Pole MS-3-69	4.160	99.871	-1.5	0.000	0.000	0.003	0.002	Pole MS-3-66	-0.003	-0.002	0.5	90.0	
Pole MS-3-70	4.160	99.928	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-64	0.081	0.039	12.5	89.9	
								Pole MS-3-71	-0.081	-0.039	12.5	89.9	
								L-SUB-FDR-EQ#16-177~	0.000	0.000	0.0	0.0	
Pole MS-3-71	4.160	99.985	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-55	-0.140	-0.068	21.6	89.9	
								Pole MS-3-70	0.081	0.039	12.5	90.0	
								Pole MS-3-72	0.059	0.029	9.1	89.9	
Pole MS-3-72	4.160	99.977	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-71	-0.059	-0.029	9.1	89.9	
								Pole MS-3-73	0.058	0.028	8.9	89.9	
Pole MS-3-73	4.160	99.972	-1.5	0.000	0.000	0.000	0.000	PRI_PM_7	0.051	0.025	7.9	89.9	
								Pole MS-3-72	-0.058	-0.028	8.9	89.9	
								Pole MS-3-74	0.006	0.003	1.0	90.1	
Pole MS-3-74	4.160	99.971	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-73	-0.006	-0.003	1.0	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-75	0.005	0.002	0.7	90.1	
Pole MS-3-75	4.160	99.968	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-74	-0.005	-0.002	0.7	90.0	
								Pole MS-3-76	0.003	0.002	0.5	90.1	
Pole MS-3-76	4.160	99.967	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-75	-0.003	-0.002	0.5	90.0	
								Pole MS-3-77	0.002	0.001	0.2	90.1	
Pole MS-3-77	4.160	99.966	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-76	-0.002	-0.001	0.2	90.0	
Pole MS-3-79	4.160	100.063	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-55	0.176	0.086	27.2	90.0	
								Pole MS-3-82	0.012	0.006	1.9	90.0	
								Pole MS-3-87	-0.189	-0.092	29.1	90.0	
Pole MS-3-80	4.160	100.055	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-81	-0.009	-0.004	1.4	90.0	
								Pole MS-3-83	0.008	0.004	1.2	90.0	
Pole MS-3-81	4.160	100.058	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-80	0.009	0.004	1.4	90.0	
								Pole MS-3-82	-0.011	-0.005	1.7	90.0	
Pole MS-3-82	4.160	100.060	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-81	0.011	0.005	1.7	90.0	
								Pole MS-3-79	-0.012	-0.006	1.9	90.0	
Pole MS-3-83	4.160	100.053	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-80	-0.008	-0.004	1.2	90.0	
								Pole MS-3-84	0.006	0.003	0.9	90.0	
Pole MS-3-84	4.160	100.052	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-83	-0.006	-0.003	0.9	90.0	
								Pole MS-3-85	0.005	0.002	0.7	90.0	
Pole MS-3-85	4.160	100.050	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-84	-0.005	-0.002	0.7	90.0	
								Pole MS-3-86	0.002	0.001	0.3	90.0	
Pole MS-3-86	4.160	100.050	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-85	-0.002	-0.001	0.3	90.0	
Pole MS-3-87	4.160	100.167	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-79	0.189	0.092	29.1	90.0	
								Pole MS-3-88	0.072	0.035	11.0	90.0	
								BUS_5KV_LLP_02	-0.261	-0.126	40.1	90.0	
Pole MS-3-88	4.160	100.127	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-87	-0.072	-0.035	11.0	90.0	
								Pole MS-3-1	0.072	0.035	11.0	90.0	
Pole MS-3-90	4.160	100.010	-1.5	0.000	0.000	0.004	0.002	Pole MS-3-55	-0.036	-0.017	5.6	90.0	
								Pole MS-3-92	0.032	0.015	4.9	90.0	
Pole MS-3-92	4.160	99.988	-1.5	0.000	0.000	0.004	0.002	Pole MS-3-95	0.027	0.013	4.2	90.0	
								Pole MS-3-90	-0.032	-0.015	4.9	90.0	
Pole MS-3-95	4.160	99.978	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-96	0.002	0.001	0.3	90.1	
								Pole MS-4-36	0.023	0.011	3.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-92	-0.027	-0.013	4.2	90.0	
Pole MS-3-96	4.160	99.977	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-95	-0.002	-0.001	0.3	90.0	
Pole MS-3-97	4.160	99.938	-1.5	0.000	0.000	0.002	0.001	Pole MS-3-98	0.015	0.007	2.3	90.0	
								Pole MS-4-36	-0.017	-0.008	2.7	90.0	
Pole MS-3-98	4.160	99.934	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-99	0.015	0.007	2.3	90.0	
								Pole MS-3-97	-0.015	-0.007	2.3	90.0	
Pole MS-3-99	4.160	99.930	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-100	0.005	0.003	0.8	90.0	
								Pole MS-3-101	0.010	0.005	1.5	90.0	
								Pole MS-3-98	-0.015	-0.007	2.3	90.0	
Pole MS-3-100	4.160	99.927	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-99	-0.005	-0.003	0.8	90.0	
								SEC_MS-3-49	0.005	0.003	0.8	90.0	
Pole MS-3-101	4.160	99.923	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-102	0.005	0.003	0.8	90.0	
								Pole MS-3-103	0.004	0.002	0.7	90.0	
								Pole MS-3-99	-0.010	-0.005	1.5	90.0	
Pole MS-3-102	4.160	99.923	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-101	-0.005	-0.003	0.8	90.0	
								SEC_MS-3-65	0.005	0.003	0.8	90.0	
Pole MS-3-103	4.160	99.922	-1.5	0.000	0.000	0.004	0.002	Pole MS-3-101	-0.004	-0.002	0.7	90.0	
Pole MS-4-1	4.160	100.197	-1.5	0.000	0.000	0.002	0.001	BUS_5KV-LLP_01	-0.081	-0.039	12.4	90.3	
								Pole MS-4-2	0.013	0.006	2.0	90.0	
								Pole MS-4-7	0.066	0.032	10.2	90.3	
Pole MS-4-2	4.160	100.194	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-1	-0.013	-0.006	2.0	90.0	
								Pole MS-4-3	0.011	0.005	1.7	90.0	
Pole MS-4-3	4.160	100.193	-1.5	0.000	0.000	0.000	0.000	Pole MS-4-2	-0.011	-0.005	1.7	90.0	
								Pole MS-4-5	0.008	0.004	1.2	90.0	
								SEC_MS-3-73	0.004	0.002	0.6	90.0	
Pole MS-4-5	4.160	100.192	-1.5	0.000	0.000	0.004	0.002	Pole MS-4-3	-0.008	-0.004	1.2	90.0	
								Pole MS-4-6	0.004	0.002	0.6	90.0	
Pole MS-4-6	4.160	100.191	-1.5	0.000	0.000	0.000	0.000	Pole MS-4-5	-0.004	-0.002	0.6	90.0	
								SEC_MS-3-74	0.004	0.002	0.6	90.0	
Pole MS-4-7	4.160	100.160	-1.5	0.000	0.000	0.000	0.000	Pole MS-4-1	-0.066	-0.032	10.2	90.3	
								Pole MS-4-8	0.066	0.032	10.2	90.3	
Pole MS-4-8	4.160	100.087	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-7	-0.066	-0.032	10.2	90.3	
								Pole MS-4-9	0.018	0.009	2.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-16	0.047	0.022	7.1	90.4	
Pole MS-4-9	4.160	100.082	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-8	-0.018	-0.009	2.8	90.0	
								Pole MS-4-10	0.016	0.008	2.4	90.0	
Pole MS-4-10	4.160	100.078	-1.5	0.000	0.000	0.000	0.000	Pole MS-4-9	-0.016	-0.008	2.4	90.0	
								Pole MS-4-11	0.012	0.006	1.9	90.0	
								SEC_MS-3-75	0.004	0.002	0.6	90.0	
Pole MS-4-11	4.160	100.072	-1.5	0.000	0.000	0.005	0.002	Pole MS-4-10	-0.012	-0.006	1.9	90.0	
								Pole MS-4-12	0.008	0.004	1.2	90.0	
Pole MS-4-12	4.160	100.070	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-11	-0.008	-0.004	1.2	90.0	
								Pole MS-4-13	0.006	0.003	0.9	90.0	
Pole MS-4-13	4.160	100.068	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-12	-0.006	-0.003	0.9	90.0	
								Pole MS-4-14	0.004	0.002	0.6	90.0	
Pole MS-4-14	4.160	100.067	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-13	-0.004	-0.002	0.6	90.0	
								Pole MS-4-15	0.002	0.001	0.2	90.0	
Pole MS-4-15	4.160	100.067	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-14	-0.002	-0.001	0.2	90.0	
Pole MS-4-16	4.160	100.036	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-17	0.044	0.021	6.8	90.4	
								Pole MS-4-8	-0.047	-0.022	7.1	90.4	
Pole MS-4-17	4.160	100.012	-1.5	0.000	0.000	0.000	0.000	Pole MS-4-16	-0.044	-0.021	6.8	90.4	
								Pole MS-4-18	0.039	0.018	6.0	90.5	
								SEC_MS-3-66	0.005	0.003	0.8	90.0	
Pole MS-4-18	4.160	99.989	-1.5	0.000	0.000	0.004	0.002	Pole MS-4-17	-0.039	-0.018	6.0	90.5	
								Pole MS-4-20	0.034	0.016	5.3	90.6	
Pole MS-4-20	4.160	99.976	-1.5	0.000	0.000	0.000	0.000	Pole MS-4-18	-0.034	-0.016	5.3	90.6	
								Pole MS-4-21	0.029	0.014	4.5	90.7	
								SEC_MS-3-76	0.005	0.003	0.8	90.0	
Pole MS-4-21	4.160	99.906	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-20	-0.029	-0.014	4.5	90.6	
								Pole MS-4-22	0.027	0.012	4.1	90.7	
Pole MS-4-22	4.160	99.883	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-21	-0.027	-0.012	4.1	90.7	
								Pole MS-4-23	0.025	0.011	3.8	90.7	
Pole MS-4-23	4.160	99.860	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-22	-0.025	-0.011	3.8	90.7	
								Pole MS-4-25	0.022	0.010	3.4	90.8	
Pole MS-4-24	4.160	99.642	-1.5	0.000	0.000	0.000	0.000	Pole MS-4-25	-0.020	-0.009	3.1	90.7	
								Pole MS-4-39	0.002	0.001	0.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-41	0.018	0.008	2.7	90.8	
Pole MS-4-25	4.160	99.806	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-23	-0.022	-0.010	3.4	90.8	
								Pole MS-4-24	0.020	0.009	3.1	90.9	
Pole MS-4-31	4.160	100.192	-1.5	0.000	0.000	0.000	0.000	Pole MS-5-1	0.212	0.103	32.6	89.9	
								BUS_5KV-LLP_01	-0.212	-0.103	32.6	89.9	
Pole MS-4-36	4.160	99.959	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-97	0.017	0.008	2.7	90.0	
								Pole MS-3-95	-0.023	-0.011	3.5	90.0	
								SEC_MS-3-45	0.005	0.003	0.8	90.0	
Pole MS-4-39	4.160	99.641	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-24	-0.002	-0.001	0.3	90.0	
Pole MS-4-40	4.160	99.629	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-41	-0.007	-0.003	1.0	90.1	
								Pole MS-4-42	0.004	0.002	0.7	90.2	
Pole MS-4-41	4.160	99.633	-1.5	0.000	0.000	0.000	0.000	Pole MS-4-24	-0.018	-0.008	2.7	90.8	
								Pole MS-4-40	0.007	0.003	1.0	90.2	
								Pole MS-4-44	0.011	0.005	1.7	91.1	
Pole MS-4-42	4.160	99.625	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-40	-0.004	-0.002	0.7	90.1	
								Pole MS-4-43	0.002	0.001	0.3	90.3	
Pole MS-4-43	4.160	99.621	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-42	-0.002	-0.001	0.3	90.0	
Pole MS-4-44	4.160	99.433	-1.5	0.000	0.000	0.000	0.000	Pole MS-4-41	-0.011	-0.005	1.7	90.5	
								Pole MS-4-45	0.002	0.001	0.3	90.1	
								Pole MS-4-46	0.009	0.004	1.4	90.6	
Pole MS-4-45	4.160	99.431	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-44	-0.002	-0.001	0.3	90.0	
Pole MS-4-46	4.160	99.423	-1.5	0.000	0.000	0.000	0.000	Pole MS-4-44	-0.009	-0.004	1.4	90.5	
								Pole MS-4-47	0.002	0.001	0.3	90.0	
								Pole MS-4-48	0.002	0.001	0.3	90.0	
								Pole MS-4-50	0.004	0.002	0.7	91.0	
Pole MS-4-47	4.160	99.422	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-46	-0.002	-0.001	0.3	90.0	
Pole MS-4-48	4.160	99.422	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-46	-0.002	-0.001	0.3	90.0	
Pole MS-4-49	4.160	99.409	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-50	-0.002	-0.001	0.3	90.0	
Pole MS-4-50	4.160	99.409	-1.5	0.000	0.000	0.000	0.000	Pole MS-4-46	-0.004	-0.002	0.7	90.7	
								Pole MS-4-49	0.002	0.001	0.3	90.0	
								Pole MS-4-52	0.002	0.001	0.3	91.5	
Pole MS-4-51	4.160	99.402	-1.5	0.000	0.000	0.002	0.001	Pole MS-4-52	-0.002	-0.001	0.3	90.0	
Pole MS-4-52	4.160	99.407	-1.5	0.000	0.000	0.000	0.000	Pole MS-4-50	-0.002	-0.001	0.3	91.2	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-51	0.002	0.001	0.3	90.3	
								LINE MS-4-53~	0.000	0.000	0.0	0.0	
Pole MS-5-1	4.160	99.751	-1.6	0.000	0.000	0.002	0.001	Pole MS-4-31	-0.211	-0.102	32.6	90.0	
								Pole MS-5-2	0.209	0.101	32.3	90.0	
Pole MS-5-2	4.160	99.699	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-1	-0.209	-0.101	32.3	90.0	
								Pole MS-5-3	0.009	0.004	1.4	90.0	
								Pole MS-5-7	0.198	0.096	30.6	90.0	
Pole MS-5-3	4.160	99.696	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-2	-0.009	-0.004	1.4	90.0	
								Pole MS-5-4	0.007	0.003	1.0	90.0	
Pole MS-5-4	4.160	99.692	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-3	-0.007	-0.003	1.0	90.0	
								Pole MS-5-5	0.004	0.002	0.7	90.0	
Pole MS-5-5	4.160	99.691	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-4	-0.004	-0.002	0.7	90.0	
								Pole MS-5-6	0.002	0.001	0.3	90.0	
Pole MS-5-6	4.160	99.690	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-5	-0.002	-0.001	0.3	90.0	
Pole MS-5-7	4.160	99.610	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-2	-0.197	-0.096	30.6	90.0	
								Pole MS-5-11	0.032	0.016	5.0	90.0	
								Pole MS-5-24	0.165	0.080	25.6	90.0	
Pole MS-5-8	4.160	99.585	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-9	-0.025	-0.012	3.9	90.0	
								Pole MS-5-14	0.023	0.011	3.6	90.0	
Pole MS-5-9	4.160	99.591	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-8	0.025	0.012	3.9	90.0	
								Pole MS-5-10	-0.028	-0.013	4.3	90.0	
Pole MS-5-10	4.160	99.598	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-9	0.028	0.013	4.3	90.0	
								Pole MS-5-11	-0.030	-0.014	4.6	90.0	
Pole MS-5-11	4.160	99.606	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-7	-0.032	-0.016	5.0	90.0	
								Pole MS-5-10	0.030	0.014	4.6	90.0	
Pole MS-5-12	4.160	99.564	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-13	-0.019	-0.009	2.9	90.0	
								Pole MS-5-16	0.016	0.008	2.6	90.0	
Pole MS-5-13	4.160	99.576	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-12	0.019	0.009	2.9	90.0	
								Pole MS-5-14	-0.021	-0.010	3.2	90.0	
Pole MS-5-14	4.160	99.580	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-8	-0.023	-0.011	3.6	90.0	
								Pole MS-5-13	0.021	0.010	3.2	90.0	
Pole MS-5-15	4.160	99.559	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-16	-0.013	-0.006	2.0	90.0	
								Pole MS-5-17	0.011	0.005	1.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-16	4.160	99.560	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-15	0.013	0.006	2.0	90.0	
								Pole MS-5-12	-0.016	-0.008	2.6	90.0	
								SEC_MS-5-15	0.004	0.002	0.6	90.0	
Pole MS-5-17	4.160	99.557	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-15	-0.011	-0.005	1.6	90.0	
								Pole MS-5-18	0.005	0.003	0.8	90.0	
								SEC_MS-5-16	0.005	0.003	0.8	90.0	
Pole MS-5-18	4.160	99.557	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-17	-0.005	-0.003	0.8	90.0	
								Pole MS-5-19	0.000	0.000	0.0	0.0	
								SEC_MS-5-17	0.005	0.003	0.8	90.0	
Pole MS-5-19	4.160	99.557	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-18	0.000	0.000	0.0	0.0	
Pole MS-5-24	4.160	99.536	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-7	-0.165	-0.080	25.6	90.0	
								Pole MS-5-25	0.009	0.004	1.4	90.0	
								Pole MS-5-29	0.028	0.013	4.3	90.0	
								Pole MS-5-41	0.129	0.062	19.9	90.0	
Pole MS-5-25	4.160	99.534	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-24	-0.009	-0.004	1.4	90.0	
								Pole MS-5-26	0.007	0.004	1.1	90.0	
Pole MS-5-26	4.160	99.533	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-25	-0.007	-0.004	1.1	90.0	
								Pole MS-5-28	0.004	0.002	0.6	90.0	
								SEC_MS-5-23	0.004	0.002	0.6	90.0	
Pole MS-5-27	4.160	99.501	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-41	-0.126	-0.061	19.6	90.0	
								Pole MS-5-151	0.125	0.060	19.3	90.0	
Pole MS-5-28	4.160	99.531	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-26	-0.004	-0.002	0.6	90.0	
								SEC_MS-5-25	0.004	0.002	0.6	90.0	
Pole MS-5-29	4.160	99.530	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-24	-0.028	-0.013	4.3	90.0	
								Pole MS-5-30	0.022	0.011	3.5	90.0	
								SEC_MS-5-26	0.005	0.003	0.8	90.0	
Pole MS-5-30	4.160	99.519	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-29	-0.022	-0.011	3.5	90.0	
								Pole MS-5-31	0.021	0.010	3.2	90.0	
Pole MS-5-31	4.160	99.512	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-30	-0.021	-0.010	3.2	90.0	
								Pole MS-5-32	0.019	0.009	2.9	90.0	
Pole MS-5-32	4.160	99.507	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-31	-0.019	-0.009	2.9	90.0	
								Pole MS-5-33	0.015	0.007	2.3	90.0	
								SEC_MS-5-29	0.004	0.002	0.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-33	4.160	99.504	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-32	-0.015	-0.007	2.3	90.0	
								Pole MS-5-34	0.010	0.005	1.5	90.0	
								SEC_MS-5-30	0.005	0.003	0.8	90.0	
Pole MS-5-34	4.160	99.502	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-33	-0.010	-0.005	1.5	90.0	
								Pole MS-5-35	0.008	0.004	1.3	90.0	
Pole MS-5-35	4.160	99.500	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-34	-0.008	-0.004	1.3	90.0	
								Pole MS-5-36	0.004	0.002	0.7	90.1	
								SEC_MS-5-32	0.004	0.002	0.6	90.0	
Pole MS-5-36	4.160	99.498	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-35	-0.004	-0.002	0.7	90.0	
								Pole MS-5-37	0.004	0.002	0.7	90.0	
Pole MS-5-37	4.160	99.497	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-36	-0.004	-0.002	0.7	90.0	
								Pole MS-5-38	0.002	0.001	0.3	90.0	
Pole MS-5-38	4.160	99.496	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-37	-0.002	-0.001	0.3	90.0	
								Pole MS-5-39	0.000	0.000	0.0	0.0	
Pole MS-5-39	4.160	99.496	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-38	0.000	0.000	0.0	0.0	
Pole MS-5-40	4.160	99.418	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-151	-0.125	-0.060	19.3	90.0	
								Pole MS-5-42	0.002	0.001	0.2	90.0	
								Pole MS-5-44	0.024	0.012	3.7	90.0	
								Pole MS-5-55	0.097	0.047	15.0	90.0	
Pole MS-5-41	4.160	99.508	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-27	0.126	0.061	19.6	90.0	
								Pole MS-5-24	-0.128	-0.062	19.9	90.0	
Pole MS-5-42	4.160	99.418	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-40	-0.002	-0.001	0.2	90.0	
Pole MS-5-43	4.160	99.410	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-44	-0.022	-0.010	3.4	90.0	
								Pole MS-5-45	0.019	0.009	3.0	90.0	
Pole MS-5-44	4.160	99.414	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-40	-0.024	-0.012	3.7	90.0	
								Pole MS-5-43	0.022	0.010	3.4	90.0	
Pole MS-5-45	4.160	99.407	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-43	-0.019	-0.009	3.0	90.0	
								Pole MS-5-46	0.016	0.008	2.4	90.0	
								SEC_MS-5-40	0.004	0.002	0.6	90.0	
Pole MS-5-46	4.160	99.403	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-45	-0.016	-0.008	2.4	90.0	
								Pole MS-5-47	0.014	0.007	2.2	90.0	
Pole MS-5-47	4.160	99.400	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-46	-0.014	-0.007	2.2	90.0	
								Pole MS-5-48	0.012	0.006	1.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-48	4.160	99.396	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-47	-0.012	-0.006	1.8	90.0	
								Pole MS-5-49	0.010	0.005	1.5	90.0	
Pole MS-5-49	4.160	99.394	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-48	-0.010	-0.005	1.5	90.0	
								Pole MS-5-50	0.007	0.004	1.2	90.0	
Pole MS-5-50	4.160	99.390	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-49	-0.007	-0.004	1.2	90.0	
								Pole MS-5-51	0.004	0.002	0.6	90.1	
								SEC_MS-5-45	0.004	0.002	0.6	90.0	
Pole MS-5-51	4.160	99.389	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-50	-0.004	-0.002	0.6	90.1	
								Pole MS-5-52	0.002	0.001	0.3	90.1	
Pole MS-5-52	4.160	99.388	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-51	-0.002	-0.001	0.3	90.0	
								Pole MS-5-149	0.000	0.000	0.0	0.0	
Pole MS-5-55	4.160	99.395	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-40	-0.097	-0.047	15.0	90.0	
								Pole MS-5-68	0.095	0.046	14.7	90.0	
Pole MS-5-56	4.160	99.331	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-68	-0.092	-0.045	14.4	90.0	
								Pole MS-5-57	0.018	0.009	2.8	90.0	
								Pole MS-5-64	0.007	0.003	1.0	90.1	
								Pole MS-5-67	0.066	0.032	10.2	90.0	
Pole MS-5-57	4.160	99.326	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-56	-0.018	-0.009	2.8	90.0	
								Pole MS-5-58	0.016	0.008	2.4	90.0	
Pole MS-5-58	4.160	99.321	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-57	-0.016	-0.008	2.4	90.0	
								Pole MS-5-59	0.013	0.006	2.1	90.0	
Pole MS-5-59	4.160	99.319	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-58	-0.013	-0.006	2.1	90.0	
								Pole MS-5-60	0.011	0.005	1.7	90.0	
Pole MS-5-60	4.160	99.316	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-59	-0.011	-0.005	1.7	90.0	
								Pole MS-5-61	0.009	0.004	1.4	90.0	
Pole MS-5-61	4.160	99.315	-1.7	0.000	0.000	0.004	0.002	Pole MS-5-60	-0.009	-0.004	1.4	90.0	
								Pole MS-5-62	0.004	0.002	0.7	90.0	
Pole MS-5-62	4.160	99.314	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-61	-0.004	-0.002	0.7	90.0	
								Pole MS-5-63	0.002	0.001	0.3	90.0	
Pole MS-5-63	4.160	99.313	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-62	-0.002	-0.001	0.3	90.0	
Pole MS-5-64	4.160	99.330	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-56	-0.007	-0.003	1.0	90.0	
								Pole MS-5-65	0.004	0.002	0.7	90.1	
Pole MS-5-65	4.160	99.329	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-64	-0.004	-0.002	0.7	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-66	0.002	0.001	0.3	90.2	
Pole MS-5-66	4.160	99.326	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-65	-0.002	-0.001	0.3	90.0	
Pole MS-5-67	4.160	99.301	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-56	-0.066	-0.032	10.2	90.0	
								Pole MS-5-69	0.016	0.008	2.6	90.0	
								Pole MS-5-78	0.015	0.007	2.4	90.0	
								Pole MS-5-86	0.034	0.016	5.3	90.0	
Pole MS-5-68	4.160	99.353	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-56	0.092	0.045	14.4	90.0	
								Pole MS-5-55	-0.095	-0.046	14.7	90.0	
Pole MS-5-69	4.160	99.298	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-67	-0.016	-0.008	2.6	90.0	
								Pole MS-5-70	0.014	0.007	2.2	90.0	
Pole MS-5-70	4.160	99.292	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-69	-0.014	-0.007	2.2	90.0	
								Pole MS-5-71	0.012	0.006	1.9	90.0	
Pole MS-5-71	4.160	99.290	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-70	-0.012	-0.006	1.9	90.0	
								Pole MS-5-72	0.010	0.005	1.5	90.0	
Pole MS-5-72	4.160	99.290	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-71	-0.010	-0.005	1.5	90.0	
								Pole MS-5-73	0.008	0.004	1.2	90.0	
Pole MS-5-73	4.160	99.288	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-72	-0.008	-0.004	1.2	90.0	
								Pole MS-5-74	0.005	0.003	0.8	90.0	
Pole MS-5-74	4.160	99.287	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-73	-0.005	-0.003	0.8	90.0	
								Pole MS-5-75	0.003	0.002	0.5	90.1	
Pole MS-5-75	4.160	99.286	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-74	-0.003	-0.002	0.5	90.0	
								Pole MS-5-76	0.002	0.001	0.2	90.1	
Pole MS-5-76	4.160	99.286	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-75	-0.002	-0.001	0.2	90.1	
								Line MS-5-79~	0.000	0.000	0.0	0.0	
Pole MS-5-77	4.160	99.295	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-78	-0.014	-0.007	2.1	90.0	
								Pole MS-5-79	0.012	0.006	1.9	90.1	
Pole MS-5-78	4.160	99.298	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-67	-0.015	-0.007	2.4	90.0	
								Pole MS-5-77	0.014	0.007	2.1	90.0	
Pole MS-5-79	4.160	99.294	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-77	-0.012	-0.006	1.9	90.0	
								Pole MS-5-80	0.011	0.005	1.7	90.1	
Pole MS-5-80	4.160	99.289	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-79	-0.011	-0.005	1.7	90.0	
								Pole MS-5-81	0.009	0.004	1.4	90.1	
Pole MS-5-81	4.160	99.287	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-80	-0.009	-0.004	1.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-82	0.008	0.004	1.2	90.1	
Pole MS-5-82	4.160	99.286	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-81	-0.008	-0.004	1.2	90.1	
								Pole MS-5-83	0.006	0.003	0.9	90.1	
Pole MS-5-83	4.160	99.286	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-82	-0.006	-0.003	0.9	90.1	
								Pole MS-5-84	0.004	0.002	0.6	90.1	
Pole MS-5-84	4.160	99.285	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-83	-0.004	-0.002	0.6	90.1	
								Pole MS-5-85	0.002	0.001	0.2	90.3	
Pole MS-5-85	4.160	99.283	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-84	-0.002	-0.001	0.2	90.0	
Pole MS-5-86	4.160	99.286	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-67	-0.034	-0.016	5.3	90.0	
								Pole MS-5-89	0.005	0.002	0.7	90.0	
								Pole MS-5-90	0.011	0.005	1.7	90.0	
								Pole MS-5-96	0.019	0.009	2.9	90.0	
Pole MS-5-87	4.160	99.284	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-88	-0.002	-0.001	0.2	90.0	
Pole MS-5-88	4.160	99.284	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-87	0.002	0.001	0.2	90.0	
								Pole MS-5-89	-0.003	-0.002	0.5	90.0	
Pole MS-5-89	4.160	99.285	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-86	-0.005	-0.002	0.7	90.0	
								Pole MS-5-88	0.003	0.002	0.5	90.0	
Pole MS-5-90	4.160	99.283	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-86	-0.011	-0.005	1.7	90.0	
								Pole MS-5-91	0.009	0.004	1.4	90.0	
Pole MS-5-91	4.160	99.280	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-90	-0.009	-0.004	1.4	90.0	
								Pole MS-5-92	0.008	0.004	1.2	90.0	
Pole MS-5-92	4.160	99.278	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-91	-0.008	-0.004	1.2	90.0	
								Pole MS-5-93	0.006	0.003	0.9	90.0	
Pole MS-5-93	4.160	99.277	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-92	-0.006	-0.003	0.9	90.0	
								Pole MS-5-94	0.004	0.002	0.6	90.0	
Pole MS-5-94	4.160	99.276	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-93	-0.004	-0.002	0.6	90.0	
								Pole MS-5-95	0.002	0.001	0.2	90.0	
Pole MS-5-95	4.160	99.275	-1.7	0.000	0.000	0.002	0.001	Pole MS-5-94	-0.002	-0.001	0.2	90.0	
Pole MS-5-96	4.160	99.278	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-86	-0.019	-0.009	2.9	90.0	
								Pole MS-5-111	0.019	0.009	2.9	90.0	
Pole MS-5-106	4.160	99.925	-1.6	0.000	0.000	0.017	0.008	Pole MS-5-108	-0.064	-0.031	9.8	90.0	
								Pole MS-5-122	0.047	0.023	7.2	90.0	
Pole MS-5-107	4.160	99.963	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-108	-0.007	-0.003	1.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-109	0.005	0.003	0.8	90.0	
Pole MS-5-108	4.160	99.965	-1.6	0.000	0.000	0.000	0.000	Pole MS-5-107	0.007	0.003	1.1	90.0	
								Pole MS-5-106	0.064	0.031	9.8	90.0	
								SF-2-30	-0.071	-0.034	10.9	90.0	
Pole MS-5-109	4.160	99.962	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-107	-0.005	-0.003	0.8	90.0	
								Pole MS-5-110	0.004	0.002	0.6	90.0	
Pole MS-5-110	4.160	99.961	-1.6	0.000	0.000	0.000	0.000	Pole MS-5-109	-0.004	-0.002	0.6	90.0	
								SEC_MS-5-99	0.004	0.002	0.6	90.0	
Pole MS-5-111	4.160	99.271	-1.8	0.000	0.000	0.000	0.000	Pole MS-5-96	-0.019	-0.009	2.9	90.0	
								Pole MS-5-124	0.019	0.009	2.9	90.0	
Pole MS-5-122	4.160	99.893	-1.6	0.000	0.000	0.021	0.010	Pole MS-5-106	-0.047	-0.023	7.2	90.0	
								Pole MS-5-123	0.026	0.012	4.0	90.1	
Pole MS-5-123	4.160	99.876	-1.6	0.000	0.000	0.000	0.000	Pole MS-5-122	-0.026	-0.012	4.0	90.0	
								Pole MS-5-134	0.021	0.010	3.3	90.0	
								Pole MS-5-135	0.004	0.002	0.7	90.1	
Pole MS-5-124	4.160	99.264	-1.8	0.000	0.000	0.000	0.000	Pole MS-5-111	-0.019	-0.009	2.9	90.0	
								Pole MS-5-139	0.019	0.009	2.9	90.0	
Pole MS-5-125	4.160	99.837	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-126	-0.002	-0.001	0.2	90.0	
								Line MS-5-129~	0.000	0.000	0.0	0.0	
Pole MS-5-126	4.160	99.837	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-125	0.002	0.001	0.2	90.1	
								Pole MS-5-127	-0.004	-0.002	0.6	90.0	
Pole MS-5-127	4.160	99.838	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-126	0.004	0.002	0.6	90.0	
								Pole MS-5-128	-0.006	-0.003	0.9	90.0	
Pole MS-5-128	4.160	99.839	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-127	0.006	0.003	0.9	90.0	
								Pole MS-5-129	-0.008	-0.004	1.3	90.0	
Pole MS-5-129	4.160	99.843	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-128	0.008	0.004	1.3	90.0	
								Pole MS-5-130	-0.011	-0.005	1.6	90.0	
Pole MS-5-130	4.160	99.845	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-129	0.011	0.005	1.6	90.0	
								Pole MS-5-131	-0.012	-0.006	1.9	90.0	
Pole MS-5-131	4.160	99.850	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-130	0.012	0.006	1.9	90.0	
								Pole MS-5-132	-0.014	-0.007	2.1	90.0	
Pole MS-5-132	4.160	99.854	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-131	0.014	0.007	2.1	90.0	
								Pole MS-5-137	-0.015	-0.007	2.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-133	4.160	99.868	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-137	0.017	0.008	2.7	90.0	
								Pole MS-5-134	-0.019	-0.009	2.9	90.0	
Pole MS-5-134	4.160	99.872	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-133	0.019	0.009	2.9	90.0	
								Pole MS-5-123	-0.021	-0.010	3.3	90.0	
Pole MS-5-135	4.160	99.872	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-123	-0.004	-0.002	0.7	90.0	
								Pole MS-5-136	0.002	0.001	0.3	90.1	
Pole MS-5-136	4.160	99.870	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-135	-0.002	-0.001	0.3	90.0	
Pole MS-5-137	4.160	99.860	-1.6	0.000	0.000	0.002	0.001	Pole MS-5-133	-0.017	-0.008	2.7	90.0	
								Pole MS-5-132	0.015	0.007	2.4	90.0	
Pole MS-5-139	4.160	99.260	-1.8	0.000	0.000	0.019	0.009	Pole MS-5-124	-0.019	-0.009	2.9	90.0	
Pole MS-5-149	4.160	99.388	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-52	0.000	0.000	0.0	0.0	
Pole MS-5-151	4.160	99.475	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-40	0.125	0.060	19.3	90.0	
								Pole MS-5-27	-0.125	-0.060	19.3	90.0	
Pole MS-7-16	24.940	99.998	-1.0	0.000	0.000	0.000	0.000	Pole MS-7-18	-0.009	-0.004	0.2	90.0	
								SEC_MS-7-9	0.009	0.004	0.2	90.0	
Pole MS-7-17	24.940	99.999	-1.0	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	-0.024	-0.009	0.6	93.7	
								Pole MS-7-18	0.024	0.009	0.6	93.7	
Pole MS-7-18	24.940	99.998	-1.0	0.000	0.000	0.000	0.000	Pole MS-7-19	0.015	0.006	0.4	93.6	
								Pole MS-7-16	0.009	0.004	0.2	90.4	
								Pole MS-7-17	-0.024	-0.010	0.6	92.4	
Pole MS-7-19	24.940	99.998	-1.0	0.000	0.000	0.015	0.007	Pole MS-7-18	-0.015	-0.007	0.4	89.6	
Pole MS-8-1	4.160	100.182	-1.5	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	-0.074	-0.036	11.3	89.9	
								Pole MS-8-2	0.074	0.036	11.3	89.9	
Pole MS-8-2	4.160	100.133	-1.5	0.000	0.000	0.002	0.001	Pole MS-8-1	-0.074	-0.036	11.3	90.0	
								Pole MS-8-3	0.072	0.035	11.1	90.0	
Pole MS-8-3	4.160	100.117	-1.5	0.000	0.000	0.002	0.001	Pole MS-8-2	-0.072	-0.035	11.1	90.0	
								Pole MS-8-4	0.070	0.034	10.9	90.0	
Pole MS-8-4	4.160	100.109	-1.5	0.000	0.000	0.000	0.000	Pole MS-8-3	-0.070	-0.034	10.9	90.0	
								Pole MS-8-5	0.063	0.031	9.7	90.0	
								SEC_MS-8-3	0.007	0.004	1.1	90.0	
Pole MS-8-5	4.160	100.101	-1.6	0.000	0.000	0.002	0.001	Pole MS-8-4	-0.063	-0.031	9.7	90.0	
								Pole MS-8-6	0.061	0.030	9.5	90.0	
Pole MS-8-6	4.160	100.087	-1.6	0.000	0.000	0.002	0.001	Pole MS-8-5	-0.061	-0.030	9.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-8-7	0.060	0.029	9.2	90.0	
Pole MS-8-7	4.160	100.080	-1.6	0.000	0.000	0.003	0.002	Pole MS-8-6	-0.060	-0.029	9.2	90.0	
								Pole MS-8-8	0.057	0.028	8.7	89.9	
Pole MS-8-8	4.160	100.073	-1.6	0.000	0.000	0.000	0.000	Pole MS-8-7	-0.057	-0.028	8.7	89.9	
								Pole MS-8-9	0.011	0.005	1.6	90.0	
								Pole MS-8-10	0.046	0.022	7.1	89.9	
Pole MS-8-9	4.160	100.071	-1.6	0.000	0.000	0.000	0.000	Pole MS-8-8	-0.011	-0.005	1.6	89.9	
								SEC_MS-8-8	0.011	0.005	1.6	89.9	
Pole MS-8-10	4.160	100.061	-1.6	0.000	0.000	0.002	0.001	Pole MS-8-8	-0.046	-0.022	7.1	89.9	
								Pole MS-8-11	0.044	0.022	6.8	89.9	
Pole MS-8-11	4.160	100.050	-1.6	0.000	0.000	0.002	0.001	Pole MS-8-10	-0.044	-0.022	6.8	89.9	
								Pole MS-8-12	0.042	0.020	6.5	89.9	
Pole MS-8-12	4.160	100.040	-1.6	0.000	0.000	0.002	0.001	Pole MS-8-11	-0.042	-0.020	6.5	89.9	
								Pole MS-8-13	0.040	0.019	6.2	89.9	
Pole MS-8-13	4.160	100.038	-1.6	0.000	0.000	0.002	0.001	Pole MS-8-12	-0.040	-0.019	6.2	89.9	
								Pole MS-8-14	0.038	0.018	5.8	89.9	
Pole MS-8-14	4.160	100.032	-1.6	0.000	0.000	0.002	0.001	Pole MS-8-15	0.035	0.017	5.5	89.9	
								Pole MS-8-13	-0.038	-0.018	5.8	89.9	
Pole MS-8-15	4.160	100.027	-1.6	0.000	0.000	0.000	0.000	PRI_PM_9	0.035	0.017	5.5	89.9	
								Pole MS-8-14	-0.035	-0.017	5.5	89.9	
Pole MS-9-1	4.160	100.191	-1.5	0.000	0.000	0.002	0.001	BUS_5KV-LLP_01	-0.167	-0.081	25.7	89.9	
								Pole MS-9-2	0.164	0.080	25.3	89.9	
Pole MS-9-2	4.160	100.156	-1.5	0.000	0.000	0.000	0.000	Pole MS-9-1	-0.164	-0.080	25.3	89.9	
								Pole MS-9-12	0.164	0.080	25.3	89.9	
Pole MS-9-12	4.160	100.089	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-2	-0.164	-0.080	25.3	89.9	
								Pole MS-9-13	0.164	0.080	25.3	89.9	
Pole MS-9-13	4.160	100.078	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-12	-0.164	-0.080	25.3	89.9	
								Pole MS-9-14	0.164	0.080	25.3	89.9	
Pole MS-9-14	4.160	100.058	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-13	-0.164	-0.080	25.3	89.9	
								Pole MS-9-15	0.163	0.079	25.1	89.9	
Pole MS-9-15	4.160	100.029	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-14	-0.163	-0.079	25.1	90.0	
								Pole MS-9-16	0.155	0.075	23.9	90.0	
								SEC_MS-9-12	0.007	0.004	1.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-9-16	4.160	99.996	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-15	-0.155	-0.075	23.9	90.0	
								Pole MS-9-17	0.153	0.075	23.7	90.0	
Pole MS-9-17	4.160	99.976	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-16	-0.153	-0.074	23.7	90.0	
								Pole MS-9-18	0.043	0.021	6.7	90.0	
								Pole MS-9-33	0.110	0.053	17.0	89.9	
Pole MS-9-18	4.160	99.974	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-17	-0.043	-0.021	6.7	90.0	
								Pole MS-9-19	0.036	0.017	5.6	90.0	
								SEC_MS-9-14	0.007	0.004	1.1	90.0	
Pole MS-9-19	4.160	99.967	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-18	-0.036	-0.017	5.6	90.0	
								Pole MS-9-20	0.034	0.017	5.3	90.0	
Pole MS-9-20	4.160	99.958	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-19	-0.034	-0.017	5.3	90.0	
								Pole MS-9-21	0.032	0.016	5.0	90.0	
Pole MS-9-21	4.160	99.950	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-20	-0.032	-0.016	5.0	90.0	
								Pole MS-9-23	0.025	0.012	3.8	90.0	
								SEC_MS-9-17	0.007	0.004	1.1	90.0	
Pole MS-9-22	4.160	99.847	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-42	-0.079	-0.038	12.2	90.0	
								Pole MS-9-43	0.011	0.005	1.7	90.0	
								Pole MS-9-47	0.068	0.033	10.5	90.0	
Pole MS-9-23	4.160	99.948	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-21	-0.025	-0.012	3.8	90.0	
								Pole MS-9-24	0.022	0.011	3.5	90.0	
Pole MS-9-24	4.160	99.946	-1.6	0.000	0.000	0.004	0.002	Pole MS-9-23	-0.022	-0.011	3.5	90.0	
								Pole MS-9-25	0.018	0.009	2.8	90.0	
Pole MS-9-25	4.160	99.944	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-24	-0.018	-0.009	2.8	90.0	
								Pole MS-9-26	0.007	0.004	1.1	90.0	
								Pole MS-9-28	0.011	0.005	1.6	90.0	
Pole MS-9-26	4.160	99.941	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-27	0.000	0.000	0.0	0.0	
								Pole MS-9-25	-0.007	-0.004	1.1	90.0	
								SEC_MS-9-22	0.007	0.004	1.1	90.0	
Pole MS-9-27	4.160	99.941	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-26	0.000	0.000	0.0	0.0	
Pole MS-9-28	4.160	99.942	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-25	-0.011	-0.005	1.6	90.0	
								Pole MS-9-29	0.009	0.004	1.4	90.0	
Pole MS-9-29	4.160	99.941	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-28	-0.009	-0.004	1.4	90.0	
								Pole MS-9-30	0.007	0.003	1.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-9-30	4.160	99.939	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-29	-0.007	-0.003	1.0	90.0	
								Pole MS-9-31	0.004	0.002	0.7	90.0	
Pole MS-9-31	4.160	99.939	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-30	-0.004	-0.002	0.7	90.0	
								Pole MS-9-32	0.002	0.001	0.3	90.0	
Pole MS-9-32	4.160	99.939	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-31	-0.002	-0.001	0.3	90.0	
Pole MS-9-33	4.160	99.955	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-17	-0.110	-0.053	17.0	90.0	
								Pole MS-9-34	0.108	0.052	16.6	90.0	
Pole MS-9-34	4.160	99.939	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-33	-0.108	-0.052	16.6	90.0	
								Pole MS-9-35	0.105	0.051	16.3	90.0	
Pole MS-9-35	4.160	99.926	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-34	-0.105	-0.051	16.3	90.0	
								Pole MS-9-36	0.002	0.001	0.3	90.0	
								Pole MS-9-37	0.103	0.050	15.9	90.0	
Pole MS-9-36	4.160	99.925	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-35	-0.002	-0.001	0.3	90.0	
Pole MS-9-37	4.160	99.921	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-35	-0.103	-0.050	15.9	90.0	
								Pole MS-9-38	0.096	0.047	14.8	90.0	
								SEC_MS-9-31	0.007	0.004	1.1	90.0	
Pole MS-9-38	4.160	99.909	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-37	-0.096	-0.047	14.8	90.0	
								Pole MS-9-39	0.085	0.041	13.2	90.0	
								SEC_MS-9-32	0.011	0.005	1.6	89.9	
Pole MS-9-39	4.160	99.885	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-38	-0.085	-0.041	13.2	90.0	
								Pole MS-9-40	0.002	0.001	0.2	90.0	
								Pole MS-9-41	0.084	0.041	12.9	90.0	
Pole MS-9-40	4.160	99.885	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-39	-0.002	-0.001	0.2	90.0	
Pole MS-9-41	4.160	99.874	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-39	-0.084	-0.041	12.9	90.0	
								Pole MS-9-42	0.081	0.039	12.6	90.0	
Pole MS-9-42	4.160	99.855	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-22	0.079	0.038	12.2	90.0	
								Pole MS-9-41	-0.081	-0.039	12.6	90.0	
Pole MS-9-43	4.160	99.846	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-22	-0.011	-0.005	1.7	90.0	
								Pole MS-9-44	0.010	0.005	1.5	90.0	
Pole MS-9-44	4.160	99.844	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-43	-0.010	-0.005	1.5	90.0	
								Pole MS-9-45	0.002	0.001	0.3	90.0	
								Pole MS-9-46	0.007	0.004	1.1	90.0	
Pole MS-9-45	4.160	99.844	-1.6	0.000	0.000	0.002	0.001	Pole MS-9-44	-0.002	-0.001	0.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-9-46	4.160	99.842	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-44	-0.007	-0.004	1.1	90.0	
								SEC_MS-9-37	0.007	0.004	1.1	90.0	
Pole MS-9-47	4.160	99.838	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-22	-0.068	-0.033	10.5	90.0	
								Pole MS-9-48	0.060	0.029	9.3	90.0	
								SEC_MS-9-38	0.007	0.004	1.1	90.0	
Pole MS-9-48	4.160	99.830	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-47	-0.060	-0.029	9.3	90.0	
								Pole MS-9-49	0.050	0.024	7.7	90.0	
								SEC_MS-9-39	0.011	0.005	1.6	89.9	
Pole MS-9-49	4.160	99.816	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-48	-0.050	-0.024	7.7	90.0	
								Pole MS-9-50	0.039	0.019	6.1	90.0	
								SEC_MS-9-40	0.011	0.005	1.6	89.9	
Pole MS-9-50	4.160	99.811	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-49	-0.039	-0.019	6.1	90.0	
								Pole MS-9-51	0.029	0.014	4.4	90.0	
								SEC_MS-9-41	0.011	0.005	1.6	89.9	
Pole MS-9-51	4.160	99.806	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-50	-0.029	-0.014	4.4	90.0	
								Pole MS-9-52	0.018	0.009	2.8	90.0	
								SEC_MS-9-42	0.011	0.005	1.6	89.9	
Pole MS-9-52	4.160	99.802	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-51	-0.018	-0.009	2.8	90.0	
								Pole MS-9-53	0.007	0.004	1.1	90.0	
								SEC_MS-9-43	0.011	0.005	1.6	89.9	
Pole MS-9-53	4.160	99.801	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-52	-0.007	-0.004	1.1	90.0	
								Pole MS-9-54	0.000	0.000	0.0	0.0	
								SEC_MS-9-44	0.007	0.004	1.1	90.0	
Pole MS-9-54	4.160	99.801	-1.6	0.000	0.000	0.000	0.000	Pole MS-9-53	0.000	0.000	0.0	0.0	
PRI_PM_1	4.160	99.413	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-0.017	-0.008	2.7	89.9	
								SEC_PM_1	0.017	0.008	2.7	89.9	
PRI_PM_1-1	4.160	98.396	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.017	-0.008	2.7	89.9	
								SEC_PM_1-1	0.017	0.008	2.7	89.9	
PRI_PM_2	4.160	99.223	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-0.017	-0.008	2.7	89.9	
								SEC_PM_2	0.017	0.008	2.7	89.9	
PRI_PM_3	4.160	99.065	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-3	-0.017	-0.008	2.7	89.9	
								SEC_PM_3	0.017	0.008	2.7	89.9	
PRI_PM_4	4.160	98.552	-1.9	0.000	0.000	0.000	0.000	SF-1-60	-0.069	-0.034	10.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_PM_4	0.069	0.034	10.8	89.8	
PRI_PM_5	4.160	98.930	-1.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-5	-0.017	-0.008	2.7	89.9	
								SEC_PM_5	0.017	0.008	2.7	89.9	
PRI_PM_6	4.160	98.803	-1.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.017	-0.008	2.7	89.9	
								SEC_PM_6	0.017	0.008	2.7	89.9	
PRI_PM_7	4.160	99.965	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-73	-0.051	-0.025	7.9	89.8	
								SEC_PM_7	0.051	0.025	7.9	89.8	
PRI_PM_8	4.160	100.035	-1.6	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.042	-0.021	6.6	89.9	
								SEC_PM_8	0.042	0.021	6.6	89.9	
PRI_PM_9	4.160	100.022	-1.6	0.000	0.000	0.000	0.000	Pole MS-8-15	-0.035	-0.017	5.5	89.9	
								SEC_PM_9	0.035	0.017	5.5	89.9	
PRI_PM_10	4.160	99.540	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-86	-0.077	-0.038	12.0	89.9	
								PRI_PM_28	0.039	0.019	6.0	89.9	
								SEC_PM_10	0.039	0.019	6.0	89.9	
PRI_PM_11	4.160	99.520	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-11	-0.035	-0.017	5.5	89.9	
								SEC_PM_11	0.035	0.017	5.5	89.9	
PRI_PM_12	4.160	98.589	-1.9	0.000	0.000	0.000	0.000	SF-1-59	-0.069	-0.034	10.8	89.8	
								SEC_PM_12	0.069	0.034	10.8	89.8	
PRI_PM_13	4.160	98.248	-1.8	0.000	0.000	0.000	0.000	SF-1-40	-0.131	-0.064	20.5	89.8	
								SEC_PM_13	0.131	0.064	20.5	89.8	
PRI_PM_14	4.160	98.455	-1.8	0.000	0.000	0.000	0.000	SF-1-17	-0.104	-0.051	16.2	89.8	
								SEC_PM_14	0.104	0.051	16.2	89.8	
PRI_PM_15	4.160	99.609	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-16	-0.070	-0.034	10.9	89.9	
								SEC_PM_15	0.070	0.034	10.9	89.9	
PRI_PM_16	4.160	99.476	-1.3	0.000	0.000	0.000	0.000	Pole CS-1-2	-0.039	-0.019	6.0	89.9	
								SEC_PM_16	0.039	0.019	6.0	89.9	
PRI_PM_17	4.160	99.130	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.035	-0.017	5.4	89.9	
								SEC_PM_17	0.035	0.017	5.4	89.9	
PRI_PM_18	4.160	99.775	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-54	-0.053	-0.026	8.2	89.8	
								SEC_PM_18	0.053	0.026	8.2	89.8	
PRI_PM_19	4.160	98.310	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-37	-0.038	-0.018	6.0	89.9	
								SEC_PM_19	0.038	0.018	6.0	89.9	
PRI_PM_20	4.160	98.475	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-21	-0.035	-0.017	5.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_PM_20	0.035	0.017	5.4	89.9	
PRI_PM_21	4.160	98.555	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-20	-0.035	-0.017	5.4	89.9	
								SEC_PM_21	0.035	0.017	5.4	89.9	
PRI_PM_22	4.160	99.315	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-6	-0.039	-0.019	6.0	89.9	
								SEC_PM_22	0.039	0.019	6.0	89.9	
PRI_PM_23	4.160	98.571	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-20	-0.038	-0.019	6.0	89.9	
								SEC_PM_23	0.038	0.019	6.0	89.9	
PRI_PM_24	4.160	98.531	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-22	-0.038	-0.019	6.0	89.9	
								SEC_PM_24	0.038	0.019	6.0	89.9	
PRI_PM_25	4.160	99.474	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-22	-0.018	-0.009	2.7	89.9	
								SEC_PM_25	0.018	0.009	2.7	89.9	
PRI_PM_26	4.160	99.292	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-31	-0.019	-0.009	3.0	89.9	
								SEC_PM_26	0.019	0.009	3.0	89.9	
PRI_PM_28	4.160	99.535	-1.2	0.000	0.000	0.000	0.000	PRI_PM_10	-0.039	-0.019	6.0	89.9	
								SEC_PM_28	0.039	0.019	6.0	89.9	
PV-PMS-Pri	24.900	100.173	-1.0	0.000	0.000	0.000	0.000	P_526_2	0.000	0.000	0.0	0.0	
P_526_2	24.900	100.173	-1.0	0.000	0.000	0.000	0.000	PV-PMS-Pri	0.000	-0.001	0.0	0.0	
								BUS_WTG6	0.000	0.001	0.0	0.0	
SEC_6M-1-1	0.208	99.661	-0.8	0.000	0.000	0.005	0.002	Pole 6M-1-1	-0.005	-0.002	14.7	90.0	
SEC_6M-1-2	0.208	99.604	-0.8	0.000	0.000	0.005	0.002	Pole 6M-1-3	-0.005	-0.002	14.7	90.0	
SEC_6M-1-12	0.208	99.368	-0.8	0.000	0.000	0.005	0.002	Pole 6M-1-19	-0.005	-0.002	14.7	90.0	
SEC_6M-E-1	0.208	98.246	-0.7	0.000	0.000	0.007	0.004	Pole 6M-E-5	-0.007	-0.004	22.7	90.0	
SEC_6M-E-2	0.208	98.591	-0.7	0.000	0.000	0.007	0.004	Pole 6M-E-2	-0.007	-0.004	22.8	90.0	
SEC_6M-E-3	0.208	98.366	-0.7	0.000	0.000	0.007	0.004	Pole 6M-E-3	-0.007	-0.004	22.7	90.0	
SEC_6M-E-4	0.208	98.128	-0.7	0.000	0.000	0.007	0.004	Pole 6M-E-6	-0.007	-0.004	22.7	90.0	
SEC_6M-E-5	0.208	97.940	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-8	-0.007	-0.003	22.7	90.0	
SEC_6M-E-6	0.208	97.598	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-10	-0.007	-0.003	22.6	90.0	
SEC_6M-E-7	0.208	97.573	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-11	-0.007	-0.003	22.6	90.0	
SEC_6M-E-8	0.208	97.540	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-14	-0.007	-0.003	22.6	90.0	
SEC_6M-E-10	0.208	97.503	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-19	-0.007	-0.003	22.6	90.0	
SEC_6M-E-11	0.208	97.494	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-20	-0.007	-0.003	22.6	90.0	
SEC_6M-E-13	0.208	98.497	-0.7	0.000	0.000	0.007	0.004	Pole 6M-E-29	-0.007	-0.004	22.8	90.0	
SEC_CS-1-1	0.208	114.337	-1.4	0.000	0.000	0.007	0.003	Pole CS-1-4	-0.007	-0.003	17.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_CS-1-2	0.208	114.339	-1.4	0.000	0.000	0.007	0.003	Pole CS-1-5	-0.007	-0.003	17.9	90.0	
SEC_CS-1-7	0.208	113.997	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-13	-0.007	-0.003	17.9	90.0	
SEC_CS-1-9	0.208	113.936	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-15	-0.007	-0.003	17.9	90.0	
SEC_CS-1-10	0.208	113.947	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-18	-0.007	-0.003	17.9	90.0	
SEC_CS-1-11	0.208	113.945	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-19	-0.007	-0.003	17.9	90.0	
SEC_CS-1-12	0.208	113.948	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-20	-0.007	-0.003	17.9	90.0	
SEC_CS-1-15	0.208	113.883	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-23	-0.007	-0.003	17.9	90.0	
SEC_CS-1-16	0.208	113.855	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-24	-0.007	-0.003	17.9	90.0	
SEC_CS-1-29	0.208	113.690	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-40	-0.007	-0.003	17.9	90.0	
SEC_CS-1-32	0.208	113.697	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-43	-0.007	-0.003	17.9	90.0	
SEC_CS-1-46	0.208	113.749	-1.6	0.000	0.000	0.007	0.003	Pole CS-1-59	-0.007	-0.003	17.9	90.0	
SEC_CS-1-53	0.208	113.693	-1.6	0.000	0.000	0.007	0.003	Pole CS-1-68	-0.007	-0.003	17.9	90.0	
SEC_CS-2-5	0.208	113.553	-1.3	0.000	0.000	0.007	0.003	Pole CS-2-8	-0.007	-0.003	17.8	90.0	
SEC_CS-2-7	0.208	113.549	-1.3	0.000	0.000	0.007	0.003	Pole CS-2-10	-0.007	-0.003	17.8	90.0	
SEC_CS-2-8	0.208	113.546	-1.3	0.000	0.000	0.007	0.003	Pole CS-2-11	-0.007	-0.003	17.8	90.0	
SEC_CS-2-10	0.208	113.489	-1.3	0.000	0.000	0.007	0.003	Pole CS-2-15	-0.007	-0.003	17.8	90.0	
SEC_CS-2-46	0.208	114.613	-1.4	0.000	0.000	0.007	0.003	Pole CS-2-66	-0.007	-0.003	18.0	90.0	
SEC_CS-2-47	0.208	114.364	-1.4	0.000	0.000	0.007	0.003	Pole CS-3-29	-0.007	-0.003	17.9	90.0	
SEC_CS-2-48	0.208	114.216	-1.4	0.000	0.000	0.007	0.003	Pole CS-3-33	-0.007	-0.003	17.9	90.0	
SEC_CS-2-49	0.208	114.057	-1.4	0.000	0.000	0.007	0.003	Pole CS-2-73	-0.007	-0.003	17.9	90.0	
SEC_CS-4-8	0.208	114.228	-1.3	0.000	0.000	0.007	0.003	Pole CS-4-12	-0.007	-0.003	17.9	90.0	
SEC_CS-5-10	0.240	98.607	-1.0	0.000	0.000	0.026	0.013	UG-JUNC-CS-5-8	-0.026	-0.013	71.5	90.0	
SEC_CS-5-12	0.240	99.034	-0.8	0.000	0.000	0.027	0.013	UG-JUNC-CS-5-9	-0.027	-0.013	71.7	90.0	
SEC_HS-2-4	0.208	115.145	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-4	-0.007	-0.003	18.0	90.0	
SEC_HS-2-5	0.208	115.058	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-5	-0.007	-0.003	18.0	90.0	
SEC_HS-2-6	0.208	114.984	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-6	-0.007	-0.003	18.0	90.0	
SEC_HS-2-7	0.208	114.903	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-7	-0.007	-0.003	18.0	90.0	
SEC_HS-2-10	0.208	114.671	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-11	-0.007	-0.003	18.0	90.0	
SEC_HS-2-23	0.208	114.525	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-26	-0.007	-0.003	17.9	90.0	
SEC_HS-2-25	0.208	114.455	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-30	-0.007	-0.003	17.9	90.0	
SEC_HS-2-36	0.208	114.428	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-43	-0.007	-0.003	17.9	90.0	
SEC_HS-2-67	0.208	114.673	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-77	-0.007	-0.003	18.0	90.0	
SEC_HS-3-55	0.208	114.487	-1.3	0.000	0.000	0.007	0.003	Pole HS-3-59	-0.007	-0.003	17.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_HS-3-57	0.208	114.470	-1.3	0.000	0.000	0.007	0.003	Pole HS-3-61	-0.007	-0.003	17.9	90.0	
SEC_HS-3-59	0.208	114.461	-1.3	0.000	0.000	0.007	0.003	Pole HS-3-63	-0.007	-0.003	17.9	90.0	
SEC_HS-4-7	0.208	115.151	-1.4	0.000	0.000	0.007	0.004	Pole HS-4-10	-0.007	-0.004	19.8	90.0	
SEC_HS-4-13	0.208	115.035	-1.3	0.000	0.000	0.007	0.004	Pole HS-4-17	-0.007	-0.004	19.8	90.0	
SEC_HS-4-21	0.208	114.853	-1.3	0.000	0.000	0.007	0.004	Pole HS-4-26	-0.007	-0.004	19.8	90.0	
SEC_HS-4-32	0.208	115.163	-1.4	0.000	0.000	0.007	0.004	Pole HS-4-39	-0.007	-0.004	19.8	90.0	
SEC_HS-4-44	0.208	115.164	-1.4	0.000	0.000	0.007	0.004	Pole HS-4-48	-0.007	-0.004	19.8	90.0	
SEC_MS-1-17	0.208	99.899	-1.7	0.000	0.000	0.001	0.001	Pole MS-1-10	-0.001	-0.001	3.8	90.0	
SEC_MS-2-8	0.208	99.900	-1.6	0.000	0.000	0.004	0.002	Pole MS-2-1	-0.004	-0.002	11.5	90.0	
SEC_MS-2-36	0.208	99.954	-1.6	0.000	0.000	0.004	0.002	Pole MS-2-90	-0.004	-0.002	11.5	90.0	
SEC_MS-2-37	0.208	99.897	-1.6	0.000	0.000	0.004	0.002	Pole MS-2-2	-0.004	-0.002	11.5	90.0	
SEC_MS-2-38	0.208	99.893	-1.6	0.000	0.000	0.004	0.002	Pole MS-2-3	-0.004	-0.002	11.5	90.0	
SEC_MS-2-39	0.208	99.899	-1.6	0.000	0.000	0.004	0.002	Pole MS-2-92	-0.004	-0.002	11.5	90.0	
SEC_MS-2-40	0.208	99.878	-1.6	0.000	0.000	0.004	0.002	Pole MS-2-94	-0.004	-0.002	11.5	90.0	
SEC_MS-2-41	0.208	99.823	-1.6	0.000	0.000	0.004	0.002	Pole MS-2-100	-0.004	-0.002	11.5	90.0	
SEC_MS-3-1	0.208	99.987	-1.6	0.000	0.000	0.004	0.002	Pole MS-3-2	-0.004	-0.002	11.5	90.0	
SEC_MS-3-2	0.208	99.926	-1.6	0.000	0.000	0.004	0.002	Pole MS-3-6	-0.004	-0.002	11.5	90.0	
SEC_MS-3-3	0.208	99.891	-1.6	0.000	0.000	0.004	0.002	Pole MS-3-8	-0.004	-0.002	11.5	90.0	
SEC_MS-3-22	0.208	99.761	-1.6	0.000	0.000	0.004	0.002	Pole MS-3-25	-0.004	-0.002	11.5	90.0	
SEC_MS-3-45	0.208	99.779	-1.6	0.000	0.000	0.005	0.003	Pole MS-4-36	-0.005	-0.003	16.4	90.0	
SEC_MS-3-49	0.208	99.748	-1.6	0.000	0.000	0.005	0.003	Pole MS-3-100	-0.005	-0.003	16.4	90.0	
SEC_MS-3-65	0.208	99.743	-1.6	0.000	0.000	0.005	0.003	Pole MS-3-102	-0.005	-0.003	16.4	90.0	
SEC_MS-3-66	0.208	99.833	-1.6	0.000	0.000	0.005	0.003	Pole MS-4-17	-0.005	-0.003	16.4	90.0	
SEC_MS-3-73	0.208	100.067	-1.6	0.000	0.000	0.004	0.002	Pole MS-4-3	-0.004	-0.002	11.5	90.0	
SEC_MS-3-74	0.208	100.065	-1.6	0.000	0.000	0.004	0.002	Pole MS-4-6	-0.004	-0.002	11.5	90.0	
SEC_MS-3-75	0.208	99.952	-1.6	0.000	0.000	0.004	0.002	Pole MS-4-10	-0.004	-0.002	11.5	90.0	
SEC_MS-3-76	0.208	99.796	-1.6	0.000	0.000	0.005	0.003	Pole MS-4-20	-0.005	-0.003	16.4	90.0	
SEC_MS-5-15	0.208	99.435	-1.7	0.000	0.000	0.004	0.002	Pole MS-5-16	-0.004	-0.002	11.4	90.0	
SEC_MS-5-16	0.208	99.378	-1.7	0.000	0.000	0.005	0.003	Pole MS-5-17	-0.005	-0.003	16.4	90.0	
SEC_MS-5-17	0.208	99.377	-1.7	0.000	0.000	0.005	0.003	Pole MS-5-18	-0.005	-0.003	16.4	90.0	
SEC_MS-5-23	0.208	99.407	-1.7	0.000	0.000	0.004	0.002	Pole MS-5-26	-0.004	-0.002	11.4	90.0	
SEC_MS-5-25	0.208	99.405	-1.7	0.000	0.000	0.004	0.002	Pole MS-5-28	-0.004	-0.002	11.4	90.0	
SEC_MS-5-26	0.208	99.351	-1.7	0.000	0.000	0.005	0.003	Pole MS-5-29	-0.005	-0.003	16.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_MS-5-29	0.208	99.381	-1.7	0.000	0.000	0.004	0.002	Pole MS-5-32	-0.004	-0.002	11.4	90.0	
SEC_MS-5-30	0.208	99.324	-1.7	0.000	0.000	0.005	0.003	Pole MS-5-33	-0.005	-0.003	16.3	90.0	
SEC_MS-5-32	0.208	99.374	-1.7	0.000	0.000	0.004	0.002	Pole MS-5-35	-0.004	-0.002	11.4	90.0	
SEC_MS-5-40	0.208	99.282	-1.7	0.000	0.000	0.004	0.002	Pole MS-5-45	-0.004	-0.002	11.4	90.0	
SEC_MS-5-45	0.208	99.265	-1.7	0.000	0.000	0.004	0.002	Pole MS-5-50	-0.004	-0.002	11.4	90.0	
SEC_MS-5-99	0.208	99.835	-1.7	0.000	0.000	0.004	0.002	Pole MS-5-110	-0.004	-0.002	11.5	90.0	
SEC_MS-7-9	0.208	99.967	-1.0	0.000	0.000	0.009	0.004	Pole MS-7-16	-0.009	-0.004	27.9	90.0	
SEC_MS-8-3	0.208	99.981	-1.6	0.000	0.000	0.007	0.004	Pole MS-8-4	-0.007	-0.004	23.0	90.0	
SEC_MS-8-8	0.208	99.888	-1.6	0.000	0.000	0.011	0.005	Pole MS-8-9	-0.011	-0.005	32.8	90.0	
SEC_MS-9-12	0.208	99.900	-1.6	0.000	0.000	0.007	0.004	Pole MS-9-15	-0.007	-0.004	23.0	90.0	
SEC_MS-9-14	0.208	99.845	-1.6	0.000	0.000	0.007	0.004	Pole MS-9-18	-0.007	-0.004	23.0	90.0	
SEC_MS-9-17	0.208	99.822	-1.6	0.000	0.000	0.007	0.004	Pole MS-9-21	-0.007	-0.004	23.0	90.0	
SEC_MS-9-22	0.208	99.813	-1.6	0.000	0.000	0.007	0.004	Pole MS-9-26	-0.007	-0.004	23.0	90.0	
SEC_MS-9-31	0.208	99.792	-1.6	0.000	0.000	0.007	0.004	Pole MS-9-37	-0.007	-0.004	22.9	90.0	
SEC_MS-9-32	0.208	99.725	-1.7	0.000	0.000	0.011	0.005	Pole MS-9-38	-0.011	-0.005	32.8	90.0	
SEC_MS-9-37	0.208	99.714	-1.7	0.000	0.000	0.007	0.004	Pole MS-9-46	-0.007	-0.004	22.9	90.0	
SEC_MS-9-38	0.208	99.710	-1.7	0.000	0.000	0.007	0.004	Pole MS-9-47	-0.007	-0.004	22.9	90.0	
SEC_MS-9-39	0.208	99.646	-1.7	0.000	0.000	0.011	0.005	Pole MS-9-48	-0.011	-0.005	32.8	90.0	
SEC_MS-9-40	0.208	99.633	-1.7	0.000	0.000	0.011	0.005	Pole MS-9-49	-0.011	-0.005	32.8	90.0	
SEC_MS-9-41	0.208	99.628	-1.7	0.000	0.000	0.011	0.005	Pole MS-9-50	-0.011	-0.005	32.8	90.0	
SEC_MS-9-42	0.208	99.623	-1.7	0.000	0.000	0.011	0.005	Pole MS-9-51	-0.011	-0.005	32.8	90.0	
SEC_MS-9-43	0.208	99.619	-1.7	0.000	0.000	0.011	0.005	Pole MS-9-52	-0.011	-0.005	32.8	90.0	
SEC_MS-9-44	0.208	99.673	-1.7	0.000	0.000	0.007	0.004	Pole MS-9-53	-0.007	-0.004	22.9	90.0	
SEC_PM_1	0.208	99.236	-1.5	0.000	0.000	0.017	0.008	PRI_PM_1	-0.017	-0.008	53.9	90.0	
SEC_PM_1-1	0.208	98.220	-1.4	0.000	0.000	0.017	0.008	PRI_PM_1-1	-0.017	-0.008	53.6	90.0	
SEC_PM_2	0.208	99.046	-1.4	0.000	0.000	0.017	0.008	PRI_PM_2	-0.017	-0.008	53.8	90.0	
SEC_PM_3	0.208	98.888	-1.4	0.000	0.000	0.017	0.008	PRI_PM_3	-0.017	-0.008	53.8	90.0	
SEC_PM_4	0.208	98.102	-2.1	0.000	0.000	0.069	0.033	PRI_PM_4	-0.069	-0.033	216.3	90.0	
SEC_PM_5	0.208	98.753	-1.4	0.000	0.000	0.017	0.008	PRI_PM_5	-0.017	-0.008	53.7	90.0	
SEC_PM_6	0.208	98.627	-1.4	0.000	0.000	0.017	0.008	PRI_PM_6	-0.017	-0.008	53.7	90.0	
SEC_PM_7	0.208	99.636	-1.7	0.000	0.000	0.051	0.025	PRI_PM_7	-0.051	-0.025	158.3	90.0	
SEC_PM_8	0.208	99.763	-1.7	0.000	0.000	0.042	0.021	PRI_PM_8	-0.042	-0.021	131.1	90.0	
SEC_PM_9	0.208	99.795	-1.7	0.000	0.000	0.035	0.017	PRI_PM_9	-0.035	-0.017	109.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_PM_10	0.208	99.291	-1.4	0.000	0.000	0.039	0.019	PRI_PM_10	-0.039	-0.019	119.8	90.0	
SEC_PM_11	0.208	99.367	-1.4	0.000	0.000	0.035	0.017	PRI_PM_11	-0.035	-0.017	109.0	90.0	
SEC_PM_12	0.208	98.212	-2.1	0.000	0.000	0.069	0.033	PRI_PM_12	-0.069	-0.033	216.4	90.0	
SEC_PM_13	0.208	97.894	-2.1	0.000	0.000	0.130	0.063	PRI_PM_13	-0.130	-0.063	410.4	90.0	
SEC_PM_14	0.208	98.190	-2.0	0.000	0.000	0.103	0.050	PRI_PM_14	-0.103	-0.050	324.6	90.0	
SEC_PM_15	0.208	99.457	-1.4	0.000	0.000	0.070	0.034	PRI_PM_15	-0.070	-0.034	218.1	90.0	
SEC_PM_16	0.208	99.301	-1.5	0.000	0.000	0.039	0.019	PRI_PM_16	-0.039	-0.019	119.8	90.0	
SEC_PM_17	0.208	98.977	-1.6	0.000	0.000	0.035	0.017	PRI_PM_17	-0.035	-0.017	108.7	90.0	
SEC_PM_18	0.208	99.509	-1.7	0.000	0.000	0.053	0.026	PRI_PM_18	-0.053	-0.026	163.6	90.0	
SEC_PM_19	0.208	98.135	-1.4	0.000	0.000	0.038	0.018	PRI_PM_19	-0.038	-0.018	119.0	90.0	
SEC_PM_20	0.208	98.324	-1.4	0.000	0.000	0.035	0.017	PRI_PM_20	-0.035	-0.017	108.3	90.0	
SEC_PM_21	0.208	98.403	-1.4	0.000	0.000	0.035	0.017	PRI_PM_21	-0.035	-0.017	108.3	90.0	
SEC_PM_22	0.208	99.140	-1.5	0.000	0.000	0.038	0.019	PRI_PM_22	-0.038	-0.019	119.7	90.0	
SEC_PM_23	0.208	98.397	-1.4	0.000	0.000	0.038	0.018	PRI_PM_23	-0.038	-0.018	119.2	90.0	
SEC_PM_24	0.208	98.357	-1.4	0.000	0.000	0.038	0.018	PRI_PM_24	-0.038	-0.018	119.1	90.0	
SEC_PM_25	0.208	99.322	-1.4	0.000	0.000	0.018	0.008	PRI_PM_25	-0.018	-0.008	54.5	90.0	
SEC_PM_26	0.208	99.117	-1.5	0.000	0.000	0.019	0.009	PRI_PM_26	-0.019	-0.009	59.9	90.0	
SEC_PM_28	0.208	99.286	-1.4	0.000	0.000	0.039	0.019	PRI_PM_28	-0.039	-0.019	119.8	90.0	
SEC_SF-1-26	0.208	98.652	-1.9	0.000	0.000	0.009	0.004	SF-1-11	-0.009	-0.004	27.7	90.0	
SEC_SF-1-47	0.208	98.466	-1.9	0.000	0.000	0.009	0.004	SF-1-14	-0.009	-0.004	27.6	90.0	
SEC_SF-1-49	0.208	98.767	-2.0	0.000	0.000	0.009	0.004	SF-1-28	-0.009	-0.004	27.7	90.0	
SEC_SF-1-51	0.208	98.683	-2.0	0.000	0.000	0.009	0.004	SF-1-29	-0.009	-0.004	27.7	90.0	
SEC_SF-1-55	0.208	98.511	-2.0	0.000	0.000	0.009	0.004	SF-1-31	-0.009	-0.004	27.6	90.0	
SEC_SF-1-57	0.208	98.441	-2.0	0.000	0.000	0.009	0.004	SF-1-32	-0.009	-0.004	27.6	90.0	
SEC_SF-1-59	0.208	98.290	-2.0	0.000	0.000	0.009	0.004	SF-1-18	-0.009	-0.004	27.6	90.0	
SEC_SF-1-61	0.208	98.197	-2.0	0.000	0.000	0.009	0.004	SF-1-27	-0.009	-0.004	27.6	90.0	
SEC_SF-1-63	0.208	98.016	-2.0	0.000	0.000	0.009	0.004	SF-1-39	-0.009	-0.004	27.6	90.0	
SEC_SF-1-65	0.208	98.236	-2.0	0.000	0.000	0.009	0.004	SF-1-62	-0.009	-0.004	27.6	90.0	
SEC_SF-1-67	0.208	97.914	-2.0	0.000	0.000	0.009	0.004	SF-1-50	-0.009	-0.004	27.5	90.0	
SEC_SF-1-69	0.208	98.353	-2.0	0.000	0.000	0.009	0.004	SF-1-58	-0.009	-0.004	27.6	90.0	
SEC_SF-1-71	0.208	98.508	-2.0	0.000	0.000	0.009	0.004	SF-1-56	-0.009	-0.004	27.6	90.0	
SEC_SF-1-73	0.208	98.599	-2.0	0.000	0.000	0.009	0.004	SF-1-54	-0.009	-0.004	27.7	90.0	
SEC_SF-1-75	0.208	98.669	-2.0	0.000	0.000	0.009	0.004	SF-1-55	-0.009	-0.004	27.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_SF-2-7	0.208	99.327	-1.8	0.000	0.000	0.009	0.004	SF-2-12	-0.009	-0.004	27.8	90.0	
SEC_SF-2-11	0.208	99.313	-1.8	0.000	0.000	0.009	0.004	SF-2-25	-0.009	-0.004	27.8	90.0	
SEC_SF-2-15	0.208	99.279	-1.8	0.000	0.000	0.009	0.004	SF-2-17	-0.009	-0.004	27.8	90.0	
SEC_SF-2-18	0.208	99.274	-1.8	0.000	0.000	0.009	0.004	SF-2-20	-0.009	-0.004	27.8	90.0	
SEC_SF-2-19	0.208	99.332	-1.8	0.000	0.000	0.009	0.004	SF-2-22	-0.009	-0.004	27.8	90.0	
SEC_SF-2-20	0.208	99.329	-1.8	0.000	0.000	0.009	0.004	SF-2-23	-0.009	-0.004	27.8	90.0	
SEC_SF-4-01	0.208	99.599	-1.8	0.000	0.000	0.009	0.004	SF-2-46	-0.009	-0.004	27.8	90.0	
SEC_SF-4-2	0.208	99.761	-1.7	0.000	0.000	0.004	0.002	SF-2-47	-0.004	-0.002	13.1	90.0	
SEC_SF-4-3	0.208	99.760	-1.7	0.000	0.000	0.004	0.002	SF-2-48	-0.004	-0.002	13.1	90.0	
SEC_SUB_FDR_XFMR#25-49	0.208	98.548	-1.9	0.000	0.000	0.005	0.003	SF-1-57	-0.005	-0.003	16.3	90.0	
SF-1-1	4.160	99.712	-1.7	0.000	0.000	0.004	0.002	BUS_SAF_4kV	-0.651	-0.320	101.0	89.8	
								SF-1-2	0.647	0.318	100.4	89.8	
SF-1-2	4.160	99.510	-1.8	0.000	0.000	0.000	0.000	SF-1-4	0.011	0.006	1.8	89.9	
								SF-1-1	-0.646	-0.317	100.4	89.8	
								SF-1-3	0.635	0.311	98.6	89.8	
SF-1-3	4.160	99.416	-1.8	0.000	0.000	0.004	0.002	SF-1-2	-0.634	-0.311	98.6	89.8	
								SF-1-7	0.631	0.309	98.0	89.8	
SF-1-4	4.160	99.504	-1.8	0.000	0.000	0.004	0.002	SF-1-2	-0.011	-0.006	1.8	89.9	
								SF-1-5	0.008	0.004	1.2	89.9	
SF-1-5	4.160	99.499	-1.8	0.000	0.000	0.004	0.002	SF-1-4	-0.008	-0.004	1.2	89.9	
								SF-1-6	0.004	0.002	0.6	89.9	
SF-1-6	4.160	99.497	-1.8	0.000	0.000	0.004	0.002	SF-1-5	-0.004	-0.002	0.6	89.9	
SF-1-7	4.160	99.219	-1.8	0.000	0.000	0.000	0.000	SF-1-8	0.171	0.083	26.6	89.9	
								SF-1-3	-0.630	-0.308	98.0	89.8	
								SF-1-26	0.459	0.224	71.4	89.8	
SF-1-8	4.160	99.140	-1.8	0.000	0.000	0.008	0.004	SF-1-7	-0.171	-0.083	26.6	89.9	
								SF-1-9	0.163	0.080	25.4	89.9	
SF-1-9	4.160	99.101	-1.8	0.000	0.000	0.004	0.002	SF-1-8	-0.163	-0.080	25.4	89.9	
								SF-1-10	0.159	0.078	24.8	89.9	
SF-1-10	4.160	99.050	-1.8	0.000	0.000	0.004	0.002	SF-1-9	-0.159	-0.078	24.8	89.9	
								SF-1-11	0.156	0.076	24.3	89.9	
SF-1-11	4.160	98.961	-1.8	0.000	0.000	0.000	0.000	SF-1-10	-0.155	-0.076	24.3	89.9	
								SF-1-12	0.147	0.071	22.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_SF-1-26	0.009	0.004	1.4	89.9	
SF-1-12	4.160	98.862	-1.8	0.000	0.000	0.004	0.002	SF-1-11	-0.146	-0.071	22.9	89.9	
								SF-1-13	0.143	0.070	22.3	89.9	
SF-1-13	4.160	98.831	-1.8	0.000	0.000	0.004	0.002	SF-1-12	-0.143	-0.070	22.3	89.9	
								SF-1-14	0.139	0.068	21.7	89.9	
SF-1-14	4.160	98.775	-1.8	0.000	0.000	0.000	0.000	SF-1-13	-0.139	-0.068	21.7	89.9	
								SF-1-15	0.130	0.063	20.3	89.9	
								SEC_SF-1-47	0.009	0.004	1.4	89.9	
SF-1-15	4.160	98.693	-1.8	0.000	0.000	0.004	0.002	SF-1-14	-0.130	-0.063	20.3	89.9	
								SF-1-16	0.126	0.062	19.7	89.9	
SF-1-16	4.160	98.560	-1.8	0.000	0.000	0.004	0.002	SF-1-15	-0.126	-0.061	19.7	89.9	
								SF-1-17	0.122	0.060	19.2	89.9	
SF-1-17	4.160	98.469	-1.8	0.000	0.000	0.000	0.000	PRI_PM_14	0.104	0.051	16.2	89.8	
								SF-1-16	-0.122	-0.060	19.2	89.9	
								SF-1-19	0.019	0.009	2.9	89.9	
SF-1-18	4.160	98.599	-1.8	0.000	0.000	0.000	0.000	SF-1-34	-0.196	-0.096	30.7	89.8	
								SF-1-25	0.187	0.091	29.3	89.8	
								SEC_SF-1-59	0.009	0.004	1.4	89.9	
SF-1-19	4.160	98.460	-1.8	0.000	0.000	0.000	0.000	SF-1-17	-0.019	-0.009	2.9	89.9	
								SF-1-20	0.011	0.005	1.7	89.9	
								SF-1-23	0.007	0.004	1.2	89.9	
SF-1-20	4.160	98.459	-1.8	0.000	0.000	0.004	0.002	SF-1-21	0.007	0.004	1.2	89.9	
								SF-1-19	-0.011	-0.005	1.7	89.9	
SF-1-21	4.160	98.457	-1.8	0.000	0.000	0.004	0.002	SF-1-20	-0.007	-0.004	1.2	89.9	
								SF-1-22	0.004	0.002	0.6	89.9	
SF-1-22	4.160	98.456	-1.8	0.000	0.000	0.004	0.002	SF-1-21	-0.004	-0.002	0.6	89.9	
SF-1-23	4.160	98.450	-1.8	0.000	0.000	0.004	0.002	SF-1-19	-0.007	-0.004	1.2	89.9	
								SF-1-24	0.004	0.002	0.6	89.9	
SF-1-24	4.160	98.449	-1.8	0.000	0.000	0.004	0.002	SF-1-23	-0.004	-0.002	0.6	89.9	
SF-1-25	4.160	98.554	-1.8	0.000	0.000	0.004	0.002	SF-1-18	-0.187	-0.091	29.3	89.8	
								SF-1-27	0.183	0.090	28.7	89.8	
SF-1-26	4.160	99.152	-1.8	0.000	0.000	0.004	0.002	SF-1-28	0.244	0.119	38.0	89.9	
								SF-1-53	0.211	0.103	32.9	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-1-7	-0.459	-0.224	71.4	89.8	
SF-1-27	4.160	98.506	-1.8	0.000	0.000	0.000	0.000	SF-1-25	-0.183	-0.090	28.7	89.8	
								SF-1-35	0.174	0.085	27.4	89.8	
								SEC_SF-1-61	0.009	0.004	1.4	89.9	
SF-1-28	4.160	99.077	-1.8	0.000	0.000	0.000	0.000	SF-1-26	-0.244	-0.119	38.0	89.9	
								SF-1-29	0.235	0.115	36.6	89.9	
								SEC_SF-1-49	0.009	0.004	1.4	89.9	
SF-1-29	4.160	98.993	-1.8	0.000	0.000	0.000	0.000	SF-1-28	-0.235	-0.115	36.6	89.9	
								SF-1-30	0.226	0.110	35.2	89.9	
								SEC_SF-1-51	0.009	0.004	1.4	89.9	
SF-1-30	4.160	98.937	-1.8	0.000	0.000	0.004	0.002	SF-1-29	-0.226	-0.110	35.2	89.9	
								SF-1-31	0.222	0.108	34.6	89.9	
SF-1-31	4.160	98.820	-1.8	0.000	0.000	0.000	0.000	SF-1-30	-0.222	-0.108	34.6	89.9	
								SF-1-33	0.213	0.104	33.3	89.8	
								SEC_SF-1-55	0.009	0.004	1.4	89.9	
SF-1-32	4.160	98.751	-1.8	0.000	0.000	0.000	0.000	SF-1-33	-0.209	-0.102	32.7	89.8	
								SF-1-34	0.200	0.098	31.3	89.8	
								SEC_SF-1-57	0.009	0.004	1.4	89.9	
SF-1-33	4.160	98.774	-1.8	0.000	0.000	0.004	0.002	SF-1-32	0.209	0.102	32.7	89.8	
								SF-1-31	-0.213	-0.104	33.3	89.8	
SF-1-34	4.160	98.651	-1.8	0.000	0.000	0.004	0.002	SF-1-18	0.196	0.096	30.7	89.8	
								SF-1-32	-0.200	-0.098	31.3	89.8	
SF-1-35	4.160	98.467	-1.8	0.000	0.000	0.004	0.002	SF-1-27	-0.174	-0.085	27.4	89.8	
								SF-1-36	0.171	0.083	26.8	89.8	
SF-1-36	4.160	98.423	-1.8	0.000	0.000	0.004	0.002	SF-1-35	-0.171	-0.083	26.8	89.8	
								SF-1-37	0.167	0.082	26.2	89.8	
SF-1-37	4.160	98.374	-1.8	0.000	0.000	0.004	0.002	SF-1-36	-0.167	-0.082	26.2	89.8	
								SF-1-38	0.163	0.080	25.6	89.8	
SF-1-38	4.160	98.326	-1.8	0.000	0.000	0.000	0.000	SF-1-37	-0.163	-0.080	25.6	89.8	
								SF-1-39	0.009	0.004	1.4	89.9	
								SF-1-40	0.154	0.075	24.2	89.8	
SF-1-39	4.160	98.324	-1.8	0.000	0.000	0.000	0.000	SF-1-38	-0.009	-0.004	1.4	89.9	
								SEC_SF-1-63	0.009	0.004	1.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-40	4.160	98.266	-1.8	0.000	0.000	0.000	0.000	PRI_PM_13	0.131	0.064	20.5	89.8	
								SF-1-38	-0.154	-0.075	24.2	89.8	
								SF-1-42	0.024	0.011	3.7	89.9	
SF-1-42	4.160	98.251	-1.8	0.000	0.000	0.000	0.000	SF-1-40	-0.024	-0.011	3.7	89.9	
								SF-1-44	0.024	0.011	3.7	89.9	
SF-1-44	4.160	98.235	-1.8	0.000	0.000	0.004	0.002	SF-1-42	-0.024	-0.011	3.7	89.9	
								SF-1-45	0.020	0.010	3.1	89.9	
SF-1-45	4.160	98.228	-1.8	0.000	0.000	0.000	0.000	SF-1-44	-0.020	-0.010	3.1	89.9	
								SF-1-47	0.020	0.010	3.1	89.9	
								L-SUB-FDR-EQ#16-1-38~	0.000	0.000	0.0	0.0	
SF-1-47	4.160	98.225	-1.8	0.000	0.000	0.004	0.002	SF-1-45	-0.020	-0.010	3.1	89.9	
								SF-1-50	0.016	0.008	2.5	89.9	
SF-1-50	4.160	98.222	-1.8	0.000	0.000	0.000	0.000	SF-1-47	-0.016	-0.008	2.5	89.9	
								SF-1-52	0.007	0.004	1.2	89.9	
								SEC_SF-1-67	0.009	0.004	1.4	89.9	
SF-1-52	4.160	98.221	-1.8	0.000	0.000	0.007	0.004	SF-1-50	-0.007	-0.004	1.2	89.9	
SF-1-53	4.160	99.058	-1.9	0.000	0.000	0.000	0.000	SF-1-55	0.211	0.103	32.9	89.8	
								SF-1-26	-0.211	-0.103	32.9	89.8	
SF-1-54	4.160	98.909	-1.9	0.000	0.000	0.000	0.000	SF-1-55	-0.202	-0.099	31.5	89.8	
								SF-1-56	0.193	0.094	30.1	89.8	
								SEC_SF-1-73	0.009	0.004	1.4	89.9	
SF-1-55	4.160	98.979	-1.9	0.000	0.000	0.000	0.000	SF-1-53	-0.211	-0.103	32.9	89.8	
								SF-1-54	0.202	0.099	31.5	89.8	
								SEC_SF-1-75	0.009	0.004	1.4	89.9	
SF-1-56	4.160	98.818	-1.9	0.000	0.000	0.000	0.000	SF-1-54	-0.192	-0.094	30.1	89.8	
								SF-1-57	0.184	0.090	28.7	89.8	
								SEC_SF-1-71	0.009	0.004	1.4	89.9	
SF-1-57	4.160	98.730	-1.9	0.000	0.000	0.004	0.002	SF-1-56	-0.183	-0.090	28.7	89.8	
								SF-1-58	0.175	0.085	27.3	89.8	
								SEC_SUB_FDR_XFMR#25-49	0.005	0.003	0.8	89.9	
SF-1-58	4.160	98.662	-1.9	0.000	0.000	0.000	0.000	SF-1-57	-0.174	-0.085	27.3	89.8	
								SF-1-59	0.166	0.081	25.9	89.8	
								SEC_SF-1-69	0.009	0.004	1.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-59	4.160	98.598	-1.9	0.000	0.000	0.000	0.000	PRI_PM_12	0.069	0.034	10.8	89.8	
								SF-1-58	-0.165	-0.081	25.9	89.8	
								SF-1-60	0.096	0.047	15.1	89.8	
SF-1-60	4.160	98.561	-1.9	0.000	0.000	0.000	0.000	PRI_PM_4	0.069	0.034	10.8	89.8	
								SF-1-59	-0.096	-0.047	15.1	89.8	
								SF-1-61	0.027	0.013	4.3	89.9	
SF-1-61	4.160	98.551	-1.9	0.000	0.000	0.004	0.002	SF-1-60	-0.027	-0.013	4.3	89.9	
								SF-1-62	0.024	0.012	3.7	89.9	
SF-1-62	4.160	98.545	-1.9	0.000	0.000	0.000	0.000	SF-1-61	-0.024	-0.012	3.7	89.9	
								SF-1-63	0.015	0.007	2.3	89.9	
								SEC_SF-1-65	0.009	0.004	1.4	89.9	
SF-1-63	4.160	98.539	-1.9	0.000	0.000	0.004	0.002	SF-1-62	-0.015	-0.007	2.3	89.9	
								SF-1-64	0.011	0.005	1.7	89.9	
SF-1-64	4.160	98.535	-1.9	0.000	0.000	0.004	0.002	SF-1-63	-0.011	-0.005	1.7	89.9	
								SF-1-65	0.007	0.004	1.2	89.9	
SF-1-65	4.160	98.532	-1.9	0.000	0.000	0.004	0.002	SF-1-64	-0.007	-0.004	1.2	89.9	
								SF-1-66	0.004	0.002	0.6	89.9	
SF-1-66	4.160	98.531	-1.9	0.000	0.000	0.004	0.002	SF-1-65	-0.004	-0.002	0.6	89.9	
SF-2-1	4.160	99.944	-1.6	0.000	0.000	0.004	0.002	BUS_SAF_4kV	-0.115	-0.056	17.7	89.9	
								SF-2-2	0.111	0.054	17.1	89.9	
SF-2-2	4.160	99.907	-1.6	0.000	0.000	0.000	0.000	SF-2-1	-0.111	-0.054	17.1	89.9	
								SF-2-3	0.004	0.002	0.6	89.9	
								SF-2-5	0.107	0.052	16.6	89.9	
SF-2-3	4.160	99.906	-1.6	0.000	0.000	0.004	0.002	SF-2-2	-0.004	-0.002	0.6	89.9	
								SF-2-4	0.000	0.000	0.0	0.0	
SF-2-4	4.160	99.906	-1.6	0.000	0.000	0.000	0.000	SF-2-3	0.000	0.000	0.0	0.0	
SF-2-5	4.160	99.889	-1.6	0.000	0.000	0.000	0.000	SF-2-2	-0.107	-0.052	16.6	89.9	
								SF-2-7	0.008	0.004	1.2	89.9	
								SF-2-9	0.004	0.002	0.6	89.9	
								SF-2-10	0.096	0.047	14.8	89.9	
SF-2-7	4.160	99.888	-1.6	0.000	0.000	0.004	0.002	SF-2-5	-0.008	-0.004	1.2	89.9	
								SF-2-8	0.004	0.002	0.6	89.9	
SF-2-8	4.160	99.887	-1.6	0.000	0.000	0.004	0.002	SF-2-7	-0.004	-0.002	0.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-2-9	4.160	99.888	-1.6	0.000	0.000	0.004	0.002	SF-2-5	-0.004	-0.002	0.6	89.9	
SF-2-10	4.160	99.765	-1.6	0.000	0.000	0.004	0.002	SF-2-5	-0.096	-0.046	14.8	89.9	
								SF-2-11	0.092	0.045	14.2	89.9	
SF-2-11	4.160	99.648	-1.6	0.000	0.000	0.000	0.000	SF-2-10	-0.092	-0.045	14.2	89.9	
								SF-2-12	0.053	0.026	8.3	89.9	
								SF-2-14	0.020	0.010	3.1	90.0	
								SF-2-22	0.018	0.009	2.8	89.9	
SF-2-12	4.160	99.639	-1.6	0.000	0.000	0.000	0.000	SF-2-11	-0.053	-0.026	8.3	89.9	
								SF-2-13	0.044	0.022	6.9	89.9	
								SEC_SF-2-7	0.009	0.004	1.4	89.9	
SF-2-13	4.160	99.632	-1.6	0.000	0.000	0.008	0.004	SF-2-12	-0.044	-0.022	6.9	89.9	
								SF-2-15	0.037	0.018	5.7	89.9	
SF-2-14	4.160	99.638	-1.6	0.000	0.000	0.004	0.002	SF-2-11	-0.020	-0.010	3.1	90.0	
								SF-2-26	0.017	0.008	2.6	90.0	
SF-2-15	4.160	99.612	-1.6	0.000	0.000	0.008	0.004	SF-2-13	-0.037	-0.018	5.7	89.9	
								SF-2-16	0.029	0.014	4.5	89.9	
SF-2-16	4.160	99.596	-1.6	0.000	0.000	0.004	0.002	SF-2-15	-0.029	-0.014	4.5	89.9	
								SF-2-17	0.025	0.012	4.0	89.9	
SF-2-17	4.160	99.590	-1.6	0.000	0.000	0.000	0.000	SF-2-16	-0.025	-0.012	4.0	89.9	
								SF-2-18	0.017	0.008	2.6	89.9	
								SEC_SF-2-15	0.009	0.004	1.4	89.9	
SF-2-18	4.160	99.589	-1.6	0.000	0.000	0.004	0.002	SF-2-17	-0.017	-0.008	2.6	89.9	
								SF-2-19	0.013	0.006	2.0	89.9	
SF-2-19	4.160	99.588	-1.6	0.000	0.000	0.004	0.002	SF-2-18	-0.013	-0.006	2.0	89.9	
								SF-2-20	0.009	0.004	1.4	89.9	
SF-2-20	4.160	99.585	-1.6	0.000	0.000	0.000	0.000	SF-2-19	-0.009	-0.004	1.4	89.9	
								SF-2-21	0.000	0.000	0.0	0.0	
								SEC_SF-2-18	0.009	0.004	1.4	89.9	
SF-2-21	4.160	99.585	-1.6	0.000	0.000	0.000	0.000	SF-2-20	0.000	0.000	0.0	0.0	
SF-2-22	4.160	99.643	-1.6	0.000	0.000	0.000	0.000	SF-2-11	-0.018	-0.009	2.8	89.9	
								SF-2-23	0.009	0.004	1.4	89.9	
								SEC_SF-2-19	0.009	0.004	1.4	89.9	
SF-2-23	4.160	99.641	-1.6	0.000	0.000	0.000	0.000	SF-2-22	-0.009	-0.004	1.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-2-24	0.000	0.000	0.0	0.0	
								SEC_SF-2-20	0.009	0.004	1.4	89.9	
SF-2-24	4.160	99.641	-1.6	0.000	0.000	0.000	0.000	SF-2-23	0.000	0.000	0.0	0.0	
SF-2-25	4.160	99.624	-1.6	0.000	0.000	0.000	0.000	SF-2-26	-0.017	-0.008	2.6	89.9	
								SF-2-27	0.008	0.004	1.2	90.0	
								SEC_SF-2-11	0.009	0.004	1.4	89.9	
SF-2-26	4.160	99.635	-1.6	0.000	0.000	0.000	0.000	SF-2-25	0.017	0.008	2.6	90.0	
								SF-2-14	-0.017	-0.008	2.6	90.0	
SF-2-27	4.160	99.614	-1.6	0.000	0.000	0.004	0.002	SF-2-25	-0.008	-0.004	1.2	89.9	
								SF-2-28	0.004	0.002	0.6	90.0	
SF-2-28	4.160	99.612	-1.6	0.000	0.000	0.004	0.002	SF-2-27	-0.004	-0.002	0.6	89.9	
								SF-2-29	0.000	0.000	0.0	0.0	
SF-2-29	4.160	99.612	-1.6	0.000	0.000	0.000	0.000	SF-2-28	0.000	0.000	0.0	0.0	
SF-2-30	4.160	99.979	-1.6	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.088	-0.043	13.6	90.0	
								Pole MS-5-108	0.071	0.034	10.9	90.0	
								SF-2-33	0.018	0.008	2.7	90.1	
SF-2-33	4.160	99.947	-1.6	0.000	0.000	0.000	0.000	SF-2-37	0.018	0.008	2.7	90.0	
								SF-2-30	-0.018	-0.008	2.7	90.0	
								Line SF-2-45~	0.000	0.000	0.0	0.0	
SF-2-37	4.160	99.937	-1.6	0.000	0.000	0.000	0.000	SF-2-33	-0.018	-0.008	2.7	90.0	
								SF-2-42	0.018	0.008	2.7	90.0	
								Line SF-2-37~	0.000	0.000	0.0	0.0	
SF-2-42	4.160	99.925	-1.6	0.000	0.000	0.000	0.000	SF-2-37	-0.018	-0.008	2.7	90.0	
								SF-2-44	0.018	0.008	2.7	90.0	
								Line SF-2-49~	0.000	0.000	0.0	0.0	
SF-2-44	4.160	99.913	-1.6	0.000	0.000	0.000	0.000	SF-2-42	-0.017	-0.008	2.7	90.0	
								SF-2-46	0.017	0.008	2.7	90.0	
								Line SF-2-53~	0.000	0.000	0.0	0.0	
SF-2-46	4.160	99.910	-1.6	0.000	0.000	0.000	0.000	SF-2-44	-0.017	-0.008	2.7	90.0	
								SF-2-47	0.008	0.004	1.3	90.1	
								SEC_SF-4-01	0.009	0.004	1.4	89.9	
SF-2-47	4.160	99.908	-1.6	0.000	0.000	0.000	0.000	SF-2-46	-0.008	-0.004	1.3	90.0	
								SF-2-48	0.004	0.002	0.7	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_SF-4-2	0.004	0.002	0.7	90.0	
SF-2-48	4.160	99.907	-1.6	0.000	0.000	0.000	0.000	SF-2-47	-0.004	-0.002	0.7	90.1	
								SF-2-50	0.000	0.000	0.0	0.0	
								SEC_SF-4-3	0.004	0.002	0.7	90.0	
SF-2-50	4.160	99.907	-1.6	0.000	0.000	0.000	0.000	SF-2-48	0.000	0.000	0.0	0.0	
								Line SF-2-61~	0.000	0.000	0.0	0.0	
UG-JUNC-CS-5-8	24.900	99.141	-0.7	0.000	0.000	0.000	0.000	Pole CS-5-20	-0.026	-0.013	0.7	89.8	
								SEC_CS-5-10	0.026	0.013	0.7	89.8	
UG-JUNC-CS-5-9	24.900	99.141	-0.7	0.000	0.000	0.000	0.000	Pole CS-5-19	-0.027	-0.013	0.7	90.0	
								SEC_CS-5-12	0.027	0.013	0.7	90.0	
UG_JUNC-CS-1	4.160	99.415	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	0.303	0.146	46.9	90.1	
								Pole CS-2-5	-0.320	-0.154	49.6	90.1	
								PRI_PM_1	0.017	0.008	2.7	90.0	
UG_JUNC-CS-2	4.160	99.226	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-0.302	-0.146	47.0	90.1	
								UG_JUNC-CS-3	0.285	0.137	44.3	90.1	
								PRI_PM_2	0.017	0.008	2.7	90.0	
UG_JUNC-CS-3	4.160	99.068	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-0.285	-0.137	44.3	90.1	
								PRI_PM_3	0.017	0.008	2.7	90.0	
								UG_JUNC-CS-5	0.267	0.129	41.6	90.1	
UG_JUNC-CS-5	4.160	98.932	-1.2	0.000	0.000	0.000	0.000	PRI_PM_5	0.017	0.008	2.7	90.0	
								UG_JUNC-CS-3	-0.267	-0.129	41.6	90.0	
								UG_JUNC-CS-6	0.250	0.121	38.9	90.0	
UG_JUNC-CS-6	4.160	98.806	-1.2	0.000	0.000	0.000	0.000	PRI_PM_6	0.017	0.008	2.7	90.0	
								UG_JUNC-CS-5	-0.249	-0.121	38.9	90.0	
								Pole CS-2-7	0.232	0.112	36.2	90.0	
UG_JUNC-CS-7	4.160	98.583	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-17	0.000	0.000	0.0	0.0	
								C_SUB-FDR-EQ#7-3-8~	0.000	0.000	0.0	0.0	
C_SUB-FDR-EQ#7-3-8~	4.160	98.583	-1.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
LINE 6M-26~	4.160	99.520	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-23	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-173~	4.160	98.823	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-57	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-84~	4.160	99.062	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-10	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-86~	4.160	98.737	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-54	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-237~	4.160	99.558	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-66	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
L-SUB-FDR-EQ#18-1-246~	4.160	98.835	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-36	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-276~	4.160	98.876	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-74	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-283~	4.160	99.652	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-4	0.000	0.000	0.0	0.0	
LINE MS-4-53~	4.160	99.407	-1.5	0.000	0.000	0.000	0.000	Pole MS-4-52	0.000	0.000	0.0	0.0	
Line MS-5-79~	4.160	99.286	-1.7	0.000	0.000	0.000	0.000	Pole MS-5-76	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-97~	4.160	99.868	-1.6	0.000	0.000	0.000	0.000	Pole MS-2-122	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-173~	4.160	100.019	-1.6	0.000	0.000	0.000	0.000	Pole MS-2-3	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-13~	4.160	100.030	-1.6	0.000	0.000	0.000	0.000	Pole MS-2-180	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-133~	4.160	99.886	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-25	0.000	0.000	0.0	0.0	
LINE MS-3-11~	4.160	99.866	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-43	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-177~	4.160	99.928	-1.5	0.000	0.000	0.000	0.000	Pole MS-3-70	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-1-38~	4.160	98.228	-1.8	0.000	0.000	0.000	0.000	SF-1-45	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-12~	4.160	99.942	-1.7	0.000	0.000	0.000	0.000	Pole MS-1-19	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-9~	4.160	99.973	-1.6	0.000	0.000	0.000	0.000	Pole MS-1-1	0.000	0.000	0.0	0.0	
Line MS-5-129~	4.160	99.837	-1.6	0.000	0.000	0.000	0.000	Pole MS-5-125	0.000	0.000	0.0	0.0	
Line SF-2-37~	4.160	99.937	-1.6	0.000	0.000	0.000	0.000	SF-2-37	0.000	0.000	0.0	0.0	
Line SF-2-45~	4.160	99.947	-1.6	0.000	0.000	0.000	0.000	SF-2-33	0.000	0.000	0.0	0.0	
Line SF-2-49~	4.160	99.925	-1.6	0.000	0.000	0.000	0.000	SF-2-42	0.000	0.000	0.0	0.0	
Line SF-2-53~	4.160	99.913	-1.6	0.000	0.000	0.000	0.000	SF-2-44	0.000	0.000	0.0	0.0	
Line SF-2-61~	4.160	99.907	-1.6	0.000	0.000	0.000	0.000	SF-2-50	0.000	0.000	0.0	0.0	
HS-4-33~	4.160	100.058	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-47	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-90~	4.160	99.624	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-67	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-96~	4.160	99.626	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-33	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-278~	4.160	99.400	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-49	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-301~	4.160	99.615	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-66	0.000	0.000	0.0	0.0	
L-25-LAM-L1-02~	24.900	100.195	-0.5	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.000	0.000	0.0	0.0	
L-25-LLP-SW-03~	24.900	100.061	-1.0	0.000	0.000	0.000	0.000	BUS_SAF_25kV	0.000	0.000	0.0	0.0	
L-25-XFMR-03~	24.900	100.177	-1.0	0.000	0.000	0.000	0.000	BUS_25kV_03	0.000	0.000	0.0	0.0	
Line51~	69.000	99.942	-0.1	0.000	0.000	0.000	0.000	BUS_LLP_69kV_02	0.000	0.000	0.0	0.0	
L-25-LLP-E-06~	24.900	99.146	-1.2	0.000	0.000	0.000	0.000	BUS_25kV_E-04	0.000	0.000	0.0	0.0	
Line15~	24.900	100.086	-1.0	0.000	0.000	0.000	0.000	BUS_25kV_W-02	0.000	0.000	0.0	0.0	
L-25-LLP-W-03~	24.900	99.873	-1.0	0.000	0.000	0.000	0.000	BUS_25kV_W-03	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
L_25_WTG_2~	24.900	100.189	-1.0	0.000	0.000	0.000	0.000	BUS_WTG6	0.000	0.000	0.0	0.0	

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)

# Indicates a bus with a load mismatch of more than 0.1 MVA

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Bus1	4.160	99.869	-4.4	0.000	0.000	0.000	0.000	BUS_5KV_LLP_2	0.000	0.000	0.0	0.0	
Bus2	4.160	88.978	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.000	0.000	0.0	0.0	
BUS_5KV-LLP_01	4.160	99.940	-4.4	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	-1.687	-0.843	261.9	89.5	
								BUS_5KV_LLP_02	0.144	0.078	22.7	88.0	
								Pole MS-9-1	0.560	0.277	86.7	89.7	
								Pole MS-4-1	0.275	0.133	42.4	90.0	
								Pole MS-4-31	0.709	0.355	110.1	89.4	
BUS_5KV_LLP_01	4.160	99.877	-4.4	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.547	-0.307	87.2	87.2	
								BUS_5KV_LLP_PLTLDCTR	0.297	0.184	48.5	85.0	
								Pole MS-8-1	0.250	0.124	38.8	89.7	
BUS_5KV_LLP_2	4.160	99.869	-4.4	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.342	-0.168	53.0	89.7	
								Bus1	0.000	0.000	0.0	0.0	
								Pole MS-2-182	0.342	0.169	53.0	89.7	
BUS_5KV_LLP_02	4.160	99.918	-4.4	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	0.547	0.306	87.1	87.2	
								BUS_5KV_XFMR_02	-1.975	-0.998	307.3	89.3	
								BUS_5KV-LLP_01	-0.144	-0.078	22.8	87.9	
								BUS_5KV_LLP_2	0.342	0.168	52.9	89.7	
								Pole CS-1-90	0.366	0.176	56.4	90.1	
								Pole MS-3-87	0.864	0.425	133.8	89.7	
BUS_5KV_LLP_PLTLDCTR	4.160	99.829	-4.4	0.000	0.000	0.297	0.184	BUS_5KV_LLP_01	-0.297	-0.184	48.5	85.0	
BUS_5KV_XFMR_02	4.160	100.062	-4.4	0.000	0.000	0.000	0.000	BUS_5KV-LLP_01	1.689	0.844	261.8	89.5	
								BUS_5KV_LLP_02	1.977	1.000	307.3	89.2	
								BUS_25kV_SUB_02	-3.666	-1.844	569.1	89.3	1.875
BUS_5_NEOPLAN	4.160	98.739	-4.4	0.000	0.000	0.361	0.175	Pole CS-1-90	-0.361	-0.175	56.4	90.0	
BUS_6M_5kV	4.160	99.841	-3.4	0.000	0.000	0.000	0.000	BUS_6M_SEC	-0.602	-0.291	92.9	90.0	
								Pole 6M-1-1	0.191	0.093	29.5	89.9	
								Pole 6M-E-1	0.411	0.198	63.4	90.1	
BUS_6M_25kV	24.900	99.979	-2.1	0.000	0.000	0.000	0.000	BUS_L1_01	-0.603	-0.308	15.7	89.1	
								L-25-LAM-L1-02~	0.000	0.000	0.0	0.0	
								BUS_6M_SEC	0.603	0.309	15.7	89.0	
BUS_6M_SEC	4.160	98.914	-3.2	0.000	0.000	0.000	0.000	BUS_6M_5kV	0.603	0.294	94.1	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_6M_25kV	-0.603	-0.294	94.1	89.9	
BUS-25kV-BEEFCITY	24.900	96.787	-1.5	0.000	0.000	0.475	0.294	BUS-25kV-MCCLAVE	-0.475	-0.294	13.4	85.0	
BUS-25kV-BIG-BEND	24.900	98.850	-1.6	0.000	0.000	0.492	0.305	BUS_25kV_W-10	-0.492	-0.305	13.6	85.0	
BUS-25KV-E-10	24.900	97.251	-12.4	0.000	0.000	2.195	1.361	BUS_25kV_E-09	-2.195	-1.361	61.6	85.0	
BUS-25kV-HS-01	24.900	94.369	-3.3	0.000	0.000	0.146	0.091	BUS_HIS_25kV	-0.146	-0.091	4.2	85.0	
BUS-25kV-MCCLAVE	24.900	96.885	-1.5	0.000	0.000	0.564	0.350	BUS_25kV_W-11	-1.039	-0.641	29.2	85.1	
								BUS-25kV-BEEFCITY	0.475	0.292	13.3	85.2	
BUS-25kV-TS-01	24.900	94.647	-3.2	0.000	0.000	0.147	0.091	BUS_TS_25kV	-0.147	-0.091	4.2	85.0	
BUS-25kV-TS-AREA	24.900	94.654	-3.2	0.000	0.000	0.147	0.091	BUS_TSA_25kV	-0.147	-0.091	4.2	85.0	
BUS-25kV-WILEY	24.900	98.895	-1.6	0.000	0.000	0.584	0.362	BUS_25kV_W-10	-0.584	-0.362	16.1	85.0	
BUS_25kV_03	24.900	100.152	-2.5	0.000	0.000	0.000	0.000	L-25-XFMR-03~	0.000	-0.001	0.0	0.0	
								BUS_25kV_SUB_01	-12.002	-7.151	323.4	85.9	
								BUS_25kV_SUB_02	12.002	7.152	323.5	85.9	
BUS_25kV_BRISTOL	24.900	96.457	-8.4	0.000	0.000	0.144	0.089	BUS_25kV_E-07	-0.144	-0.089	4.1	85.0	
BUS_25kV_CO-BEEF	24.900	98.757	-1.5	0.000	0.000	0.998	0.619	BUS_25kV_W-08	-0.998	-0.619	27.6	85.0	
BUS_25kV_DECHANT	24.900	92.870	-3.7	0.000	0.000	0.203	0.126	BUS_25kV_E-05	-0.203	-0.126	6.0	85.0	
BUS_25kV_E_01	24.900	100.152	-2.5	0.000	0.000	0.000	0.000	BUS_25kV_E-02	3.369	2.272	94.1	82.9	
								BUS_25kV_SUB_01	-3.369	-2.272	94.1	82.9	
BUS_25kV_E-02	24.900	100.023	-2.6	0.000	0.000	0.000	0.000	BUS_25kV_E_01	-3.365	-2.269	94.1	82.9	
								BUS_25kV_SUTRAK	0.128	0.079	3.5	85.0	
								BUS_25kV_E-03	3.237	2.190	90.6	82.8	
BUS_25kV_E-03	24.900	99.887	-2.6	0.000	0.000	0.000	0.000	BUS_25kV_E-02	-3.234	-2.186	90.6	82.8	
								BUS_25kV_SWL	0.153	0.094	4.2	85.1	
								BUS_25kV_E-04	3.081	2.092	86.5	82.7	
BUS_25kV_E-04	24.900	95.965	-3.2	0.000	0.000	0.000	0.000	BUS_25kV_E-03	-2.981	-2.002	86.8	83.0	
								BUS_25kV_E-05	2.981	2.003	86.8	83.0	
								L-25-LLP-E-06~	0.000	-0.001	0.0	0.0	
BUS_25kV_E-05	24.900	92.878	-3.7	0.000	0.000	0.000	0.000	BUS_25kV_E-04	-2.902	-1.930	87.0	83.3	
								BUS_25kV_DECHANT	0.203	0.125	5.9	85.1	
								BUS_25kV_E-06	2.700	1.805	81.1	83.1	
BUS_25kV_E-06	24.900	100.426	-7.8	0.000	0.000	0.000	0.000	BUS_25kV_E-05	-2.672	-1.721	73.4	84.1	
								BUS_25kV_E-07	2.672	1.721	73.4	84.1	
BUS_25kV_E-07	24.900	96.464	-8.4	0.000	0.000	0.000	0.000	BUS_25kV_E-06	-2.586	-1.651	73.8	84.3	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_BRISTOL	0.144	0.088	4.1	85.3	
								BUS_25kV_E-08	2.442	1.563	69.7	84.2	
BUS_25kV_E-08	24.900	94.436	-8.8	0.000	0.000	0.000	0.000	BUS_25kV_E-07	-2.400	-1.530	69.9	84.3	
								BUS_25kV_HARTMAN	0.139	0.081	3.9	86.5	
								BUS_25kV_E-09	2.262	1.449	65.9	84.2	
BUS_25kV_E-09	24.900	99.869	-11.9	0.000	0.000	0.000	0.000	BUS_25kV_E-08	-2.243	-1.392	61.3	85.0	
								BUS-25KV-E-10	2.243	1.392	61.3	85.0	
BUS_25kV_HARTMAN	24.900	94.393	-8.8	0.000	0.000	0.139	0.086	BUS_25kV_E-08	-0.139	-0.086	4.0	85.0	
BUS_25kV_KMART	24.900	99.872	-2.6	0.000	0.000	0.000	0.000	BUS_25kV_W-2	0.000	0.000	0.0	0.0	
BUS_25kV_KORMAN	24.900	95.964	-3.2	0.000	0.000	1.606	0.995	BUS_25kV_W-04	-1.606	-0.995	45.7	85.0	
BUS_25kV_ROAD 13	24.900	91.838	-3.9	0.000	0.000	0.000	0.000	BUS_25kV_W-05	0.000	0.000	0.0	0.0	
BUS_25kV_SUB_01	24.900	100.152	-2.5	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	-7.816	-8.395	265.5	68.1	6.250
								BUS_LLP_69kV_01	-3.960	-4.253	134.5	68.1	6.250
								BUS_25kV_E_01	3.369	2.272	94.1	82.9	
								BUS_25_LLP_SE_01	-3.595	3.226	111.8	-74.4	
								BUS_25kV_03	12.002	7.151	323.4	85.9	
BUS_25kV_SUB_02	24.900	100.152	-2.5	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	3.677	1.997	96.9	87.9	
								BUS_25kV_SW_01	3.131	1.739	82.9	87.4	
								BUS_25kV_W-01	5.194	3.416	143.9	83.6	
								BUS_25kV_03	-12.002	-7.152	323.5	85.9	
BUS_25kV_SUTRAK	24.900	100.023	-2.6	0.000	0.000	0.128	0.079	BUS_25kV_E-02	-0.128	-0.079	3.5	85.0	
BUS_25kV_SWL	24.900	99.884	-2.6	0.000	0.000	0.153	0.095	BUS_25kV_E-03	-0.153	-0.095	4.2	85.0	
BUS_25kV_SW_01	24.900	100.152	-2.5	0.000	0.000	0.000	0.000	BUS_25kV_W-2	3.131	1.739	82.9	87.4	
								BUS_25kV_SUB_02	-3.131	-1.739	82.9	87.4	
BUS_25kV_W-01	24.900	100.152	-2.5	0.000	0.000	0.000	0.000	BUS_25kV_W-02	5.194	3.416	143.9	83.6	
								BUS_25kV_SUB_02	-5.194	-3.416	143.9	83.6	
BUS_25kV_W-2	24.900	99.872	-2.6	0.000	0.000	0.000	0.000	BUS_25kV_SW_01	-3.124	-1.733	82.9	87.5	
								BUS_SAF_25kV	3.124	1.733	82.9	87.5	
								BUS_25kV_KMART	0.000	0.000	0.0	0.0	
BUS_25kV_W-02	24.900	99.799	-2.6	0.000	0.000	0.000	0.000	BUS_25kV_W-01	-5.179	-3.400	143.9	83.6	
								BUS_25kV_W-03	5.179	3.401	144.0	83.6	
								Line15~	0.000	-0.001	0.0	0.0	
BUS_25kV_W-03	24.900	98.969	-2.7	0.000	0.000	0.000	0.000	BUS_25kV_W-02	-5.144	-3.364	144.0	83.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_W-04	5.144	3.364	144.0	83.7	
								L-25-LLP-W-03~	0.000	0.000	0.0	0.0	
BUS_25kV_W-04	24.900	96.094	-3.2	0.000	0.000	0.000	0.000	BUS_25kV_W-03	-5.022	-3.235	144.1	84.1	
								BUS_25kV_KORMAN	1.608	0.996	45.6	85.0	
								BUS_25kV_W-05	3.414	2.239	98.5	83.6	
BUS_25kV_W-05	24.900	91.837	-3.9	0.000	0.000	0.000	0.000	BUS_25kV_W-04	-3.290	-2.118	98.8	84.1	
								BUS_25kV_ROAD 13	0.000	-0.007	0.2	0.0	
								BUS_25kV_W-06	3.290	2.125	98.9	84.0	
BUS_25kV_W-06	24.900	99.664	-1.5	0.000	0.000	0.000	0.000	BUS_25kV_W-05	-3.159	-1.912	85.9	85.5	
								BUS_25kV_W-07	3.159	1.912	85.9	85.5	
BUS_25kV_W-07	24.900	99.317	-1.5	0.000	0.000	0.000	0.000	BUS_25kV_W-06	-3.150	-1.904	85.9	85.6	
								BUS_25kV_W-08	1.004	0.614	27.5	85.3	
								BUS_25kV_W-09	2.146	1.291	58.5	85.7	
BUS_25kV_W-08	24.900	99.312	-1.5	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-1.004	-0.614	27.5	85.3	
								BUS_25kV_CO-BEEF	1.004	0.614	27.5	85.3	
BUS_25kV_W-09	24.900	98.990	-1.6	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-2.140	-1.287	58.5	85.7	
								BUS_25kV_W-10	1.077	0.662	29.6	85.2	
								BUS_25kV_W-11	1.063	0.625	28.9	86.2	
BUS_25kV_W-10	24.900	98.968	-1.6	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-1.077	-0.662	29.6	85.2	
								BUS-25kV-WILEY	0.584	0.360	16.1	85.1	
								BUS-25kV-BIG-BEND	0.492	0.302	13.5	85.3	
BUS_25kV_W-11	24.900	98.976	-1.6	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-1.063	-0.625	28.9	86.2	
								BUS-25kV-MCCLAVE	1.063	0.625	28.9	86.2	
BUS_25_LLP_SE_01	24.900	100.152	-2.5	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	-3.595	3.226	111.8	-74.4	
								BUS_25kV_SUB_01	3.595	-3.226	111.8	-74.4	
BUS_25_LLP_SE_02	24.900	100.145	-2.1	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_01	3.621	-3.200	111.9	-74.9	
								BUS_25_LLP_SE_03	0.400	0.247	10.9	85.1	
								BUS_25_LLP_SE_04	-4.020	2.953	115.5	-80.6	
BUS_25_LLP_SE_03	24.900	100.129	-2.1	0.000	0.000	0.400	0.248	BUS_25_LLP_SE_02	-0.400	-0.248	10.9	85.0	
BUS_25_LLP_SE_04	24.900	100.225	-1.6	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	4.050	-2.924	115.6	-81.1	
								Pole MS-7-17	0.083	0.037	2.1	91.1	
								BUS_WTG_SOL	-4.133	2.886	116.6	-82.0	
BUS_ATT	24.900	99.868	-2.2	0.000	0.000	0.093	0.058	BUS_L3_SEC	-0.093	-0.058	2.5	85.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_CLG_4kV	4.160	99.742	-6.1	0.000	0.000	0.000	0.000	Pole CS-2-1	1.476	0.727	228.9	89.7	
								Pole CS-1-1	1.321	0.674	206.4	89.1	
								Pole CS-3-1	0.872	0.431	135.3	89.6	
								Pole CS-4-1	0.819	0.409	127.3	89.5	
								BUS_CLG_SEC	-4.488	-2.241	698.0	89.5	
BUS_CLG_25kV	24.900	94.948	-3.2	0.000	0.000	0.000	0.000	BUS_L2_SEC	-8.440	-4.739	236.4	87.2	
								BUS_HSP_25kV	3.918	2.186	109.6	87.3	
								BUS_CLG_SEC	4.522	2.553	126.8	87.1	
BUS_CLG_SEC	4.160	93.128	-4.9	0.000	0.000	0.000	0.000	BUS_CLG_4kV	4.510	2.367	759.1	88.5	
								BUS_CLG_25kV	-4.510	-2.367	759.1	88.5	
BUS_HIS_25kV	24.900	94.375	-3.3	0.000	0.000	0.000	0.000	BUS_TS_25kV	-3.497	-1.938	98.2	87.5	
								BUS-25kV-HS-01	0.146	0.090	4.2	85.2	
								BUS_HSC_25kV	3.351	1.848	94.0	87.6	
BUS_HSC_4kV	4.160	99.882	-6.0	0.000	0.000	0.000	0.000	Pole HS-1-001	0.097	0.047	15.0	89.9	
								Pole HS-2-1	1.282	0.630	198.5	89.8	
								Pole HS-3-1	0.876	0.428	135.4	89.9	
								Pole HS-4-1	1.067	0.531	165.6	89.5	
								BUS_HSC_SEC	-3.322	-1.635	514.5	89.7	
BUS_HSC_25kV	24.900	94.123	-3.3	0.000	0.000	0.000	0.000	BUS_HIS_25kV	-3.344	-1.841	94.0	87.6	
								BUS_HSC_SEC	3.344	1.841	94.0	87.6	
BUS_HSC_SEC	4.160	92.354	-5.1	0.000	0.000	0.000	0.000	BUS_HSC_4kV	3.335	1.704	562.8	89.0	
								BUS_HSC_25kV	-3.335	-1.704	562.8	89.0	
BUS_HSP_25kV	24.900	94.802	-3.2	0.000	0.000	0.000	0.000	BUS_CLG_25kV	-3.913	-2.181	109.6	87.3	
								Pole CS-5-21	0.109	0.049	2.9	91.1	
								BUS_TSA_25kV	3.805	2.132	106.7	87.2	
BUS_L1_01	24.900	99.999	-2.1	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.604	0.308	15.7	89.1	
								BUS_LAMSO_25kV	-0.604	-0.308	15.7	89.1	
BUS_L2_SEC	24.900	99.999	-2.1	0.000	0.000	0.000	0.000	BUS_CLG_25kV	8.798	5.137	236.2	86.4	
								BUS_LAMSO_25kV	-8.798	-5.137	236.2	86.4	
BUS_L3_SEC	24.900	99.999	-2.1	0.000	0.000	0.000	0.000	BUS_ATT	0.093	0.026	2.2	96.4	
								BUS_LAMSO_25kV	-0.093	-0.026	2.2	96.4	
BUS_LAMSO_25kV	24.900	99.999	-2.1	0.000	0.000	0.000	0.000	BUS_LAMSO_115kV	-9.495	-5.470	254.1	86.6	2.500
								BUS_L1_01	0.604	0.308	15.7	89.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_L2_SEC	8.798	5.137	236.2	86.4	
								BUS_L3_SEC	0.093	0.026	2.2	96.4	
* BUS_LAMSO_115kV	115.000	100.000	0.0	9.516	5.967	0.000	0.000	BUS_LAMSO_25kV	9.516	5.967	56.4	84.7	
BUS_LLP_69kV_01	69.000	99.438	-0.1	0.000	0.000	0.000	0.000	BUS_25kV_SUB_01	7.859	9.200	101.8	65.0	
								BUS_25kV_SUB_01	3.982	4.661	51.6	65.0	
								BUS_LLP_69kV_03	-5.920	-6.931	76.7	65.0	
								BUS_LLP_69kV_04	-5.920	-6.931	76.7	65.0	
BUS_LLP_69kV_02	69.000	99.438	-0.1	0.000	0.000	0.000	0.000	Line51~	0.000	-0.506	4.3	0.0	
								BUS_LLP_69kV_03	-5.920	-6.424	73.5	67.8	
								BUS_LLP_69kV_04	5.920	6.931	76.7	65.0	
BUS_LLP_69kV_03	69.000	99.438	-0.1	0.000	0.000	0.000	0.000	BUS_WC_69KV_01	-11.841	-13.355	150.2	66.3	
								BUS_LLP_69kV_01	5.920	6.931	76.7	65.0	
								BUS_LLP_69kV_02	5.920	6.424	73.5	67.8	
BUS_LLP_69kV_04	69.000	99.438	-0.1	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	5.920	6.931	76.7	65.0	
								BUS_LLP_69kV_02	-5.920	-6.931	76.7	65.0	
BUS_SAF_4kV	4.160	100.265	-4.8	0.000	0.000	0.000	0.000	SF-2-30	0.301	0.147	46.4	89.9	
								Pole MS-1-1	0.219	0.107	33.7	89.9	
								SF-1-1	2.189	1.125	340.7	88.9	
								SF-2-1	0.395	0.195	61.0	89.7	
								BUS_SAF_SEC	-3.104	-1.574	481.8	89.2	
BUS_SAF_25kV	24.900	99.739	-2.6	0.000	0.000	0.000	0.000	BUS_25kV_W-2	-3.121	-1.730	83.0	87.5	
								L-25-LLP-SW-03~	0.000	-0.004	0.1	0.0	
								BUS_SAF_SEC	3.121	1.734	83.0	87.4	
BUS_SAF_SEC	4.160	98.161	-4.1	0.000	0.000	0.000	0.000	BUS_SAF_4kV	3.114	1.628	496.8	88.6	
								BUS_SAF_25kV	-3.114	-1.628	496.8	88.6	
BUS_SW_8.5EES23	24.900	100.456	-0.5	0.000	0.000	0.000	0.000	BUS_WTG_SOL	0.000	0.000	0.0	0.0	
BUS_TSA_25kV	24.900	94.660	-3.2	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-3.800	-2.127	106.7	87.3	
								BUS-25kV-TS-AREA	0.147	0.091	4.2	85.2	
								BUS_TS_25kV	3.653	2.037	102.4	87.3	
BUS_TS_25kV	24.900	94.653	-3.2	0.000	0.000	0.000	0.000	BUS_TSA_25kV	-3.653	-2.036	102.4	87.3	
								BUS-25kV-TS-01	0.147	0.091	4.2	85.2	
								BUS_HIS_25kV	3.505	1.946	98.2	87.4	
BUS_T_WTG1_SEC	0.690	98.620	8.3	1.500	-0.726	0.000	0.000	BUS_WTG1	1.500	-0.726	1413.9	-90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_T_WTG2_SEC	0.690	98.599	8.3	1.500	-0.726	0.000	0.000	BUS_WTG2	1.500	-0.726	1414.4	-90.0	
BUS_T_WTG3_SEC	0.690	101.613	3.5	0.000	0.000	0.000	0.000	BUS_WTG3	0.000	0.000	0.0	0.0	
BUS_T_WTG4_SEC	0.690	98.525	8.3	1.500	-0.726	0.000	0.000	BUS_WTG5	1.500	-0.726	1415.4	-90.0	
* BUS_WC_69KV_01	69.000	100.000	0.0	11.887	13.386	0.000	0.000	BUS_LLP_69kV_03	11.887	13.386	149.8	66.4	
BUS_WTG1	24.900	101.666	3.6	0.000	0.000	0.000	0.000	BUS_WTG2	1.479	-0.874	39.2	-86.1	
								BUS_T_WTG1_SEC	-1.479	0.874	39.2	-86.1	
BUS_WTG2	24.900	101.648	3.6	0.000	0.000	0.000	0.000	BUS_WTG1	-1.479	0.861	39.0	-86.4	
								BUS_WTG3	2.958	-1.736	78.2	-86.2	
								BUS_T_WTG2_SEC	-1.479	0.874	39.2	-86.1	
BUS_WTG3	24.900	101.613	3.5	0.000	0.000	0.000	0.000	BUS_WTG2	-2.956	1.724	78.1	-86.4	
								BUS_WTG5	2.956	-1.724	78.1	-86.4	
								BUS_T_WTG3_SEC	0.000	0.000	0.0	0.0	
BUS_WTG5	24.900	101.577	3.5	0.000	0.000	0.000	0.000	BUS_WTG3	-2.954	1.712	77.9	-86.5	
								BUS_WTG6	4.433	-2.587	117.2	-86.4	
								BUS_T_WTG4_SEC	-1.479	0.874	39.2	-86.1	
BUS_WTG6	24.900	100.474	-0.4	0.000	0.000	0.000	0.000	BUS_WTG_SOL	4.202	-2.817	116.7	-83.1	
								BUS_WTG5	-4.202	2.819	116.8	-83.1	
								P_526_2	0.000	-0.002	0.0	0.0	
BUS_WTG_SOL	24.900	100.456	-0.5	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	4.198	-2.821	116.7	-83.0	
								BUS_SW_8.5EES23	0.000	-0.001	0.0	0.0	
								BUS_WTG6	-4.198	2.822	116.7	-83.0	
Pole 6M-1-1	4.160	99.416	-3.4	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.190	-0.093	29.5	89.9	
								Pole 6M-1-2	0.167	0.082	26.0	89.9	
								SEC_6M-1-1	0.023	0.011	3.5	89.9	
Pole 6M-1-2	4.160	99.154	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-1	-0.167	-0.081	26.0	89.9	
								Pole 6M-1-3	0.022	0.011	3.5	89.9	
								Pole 6M-1-4	0.145	0.070	22.5	89.9	
Pole 6M-1-3	4.160	99.150	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.022	-0.011	3.5	89.9	
								SEC_6M-1-2	0.022	0.011	3.5	89.9	
Pole 6M-1-4	4.160	98.771	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.144	-0.070	22.5	89.9	
								Pole 6M-1-5	0.009	0.005	1.5	89.8	
								Pole 6M-1-6	0.135	0.066	21.0	89.9	
Pole 6M-1-5	4.160	98.766	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-4	-0.009	-0.005	1.5	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-1-6	4.160	98.660	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-4	-0.134	-0.065	21.0	89.9	
								Pole 6M-1-7	0.019	0.009	2.9	89.9	
								Pole 6M-1-9	0.116	0.056	18.1	89.9	
Pole 6M-1-7	4.160	98.622	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-6	-0.019	-0.009	2.9	89.8	
								Pole 6M-1-8	0.009	0.005	1.5	89.8	
Pole 6M-1-8	4.160	98.617	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-7	-0.009	-0.005	1.5	89.8	
Pole 6M-1-9	4.160	98.517	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-6	-0.116	-0.056	18.1	89.9	
								Pole 6M-1-10	0.106	0.052	16.6	89.9	
Pole 6M-1-10	4.160	98.478	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-9	-0.106	-0.052	16.6	89.9	
								Pole 6M-1-11	0.106	0.052	16.6	89.9	
Pole 6M-1-11	4.160	98.443	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-10	-0.106	-0.052	16.6	89.9	
								Pole 6M-1-12	0.097	0.047	15.2	89.9	
Pole 6M-1-12	4.160	98.380	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-11	-0.097	-0.047	15.2	89.9	
								Pole 6M-1-13	0.009	0.005	1.5	90.0	
								Pole 6M-1-14	0.087	0.043	13.7	89.9	
Pole 6M-1-13	4.160	98.330	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-12	-0.009	-0.005	1.5	89.8	
Pole 6M-1-14	4.160	98.237	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-12	-0.087	-0.043	13.7	89.9	
								Pole 6M-1-15	0.078	0.038	12.2	89.9	
Pole 6M-1-15	4.160	98.199	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-14	-0.078	-0.038	12.2	89.9	
								Pole 6M-1-16	0.069	0.033	10.8	89.9	
Pole 6M-1-16	4.160	98.072	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-15	-0.068	-0.033	10.8	89.9	
								Pole 6M-1-17	0.031	0.015	4.9	89.9	
								Pole 6M-1-20	0.037	0.018	5.8	89.9	
Pole 6M-1-17	4.160	98.070	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-16	-0.031	-0.015	4.9	89.9	
								Pole 6M-1-18	0.022	0.011	3.5	89.9	
Pole 6M-1-18	4.160	98.043	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-17	-0.022	-0.011	3.5	89.9	
								Pole 6M-1-19	0.022	0.011	3.5	89.9	
Pole 6M-1-19	4.160	98.030	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-18	-0.022	-0.011	3.5	89.9	
								SEC_6M-1-12	0.022	0.011	3.5	89.9	
Pole 6M-1-20	4.160	97.999	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-16	-0.037	-0.018	5.8	89.9	
								Pole 6M-1-21	0.019	0.009	2.9	89.9	
								Pole 6M-1-23	0.019	0.009	2.9	89.9	
Pole 6M-1-21	4.160	97.991	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-20	-0.019	-0.009	2.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole 6M-1-22	0.009	0.005	1.5	89.9	
Pole 6M-1-22	4.160	97.967	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-21	-0.009	-0.005	1.5	89.8	
Pole 6M-1-23	4.160	97.987	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-20	-0.019	-0.009	2.9	89.9	
								Pole 6M-1-24	0.019	0.009	2.9	89.8	
								LINE 6M-26~	0.000	0.000	0.0	0.0	
Pole 6M-1-24	4.160	97.985	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-23	-0.019	-0.009	2.9	89.8	
								Pole 6M-1-25	0.009	0.005	1.5	89.8	
Pole 6M-1-25	4.160	97.980	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-24	-0.009	-0.005	1.5	89.8	
Pole 6M-E-1	4.160	94.340	-3.3	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.388	-0.188	63.4	90.0	
								Pole 6M-E-2	0.033	0.016	5.4	89.9	
								Pole 6M-E-30	0.355	0.172	58.1	90.0	
Pole 6M-E-2	4.160	94.287	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-1	-0.033	-0.016	5.4	89.9	
								SEC_6M-E-2	0.033	0.016	5.4	89.9	
Pole 6M-E-3	4.160	93.244	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.032	-0.016	5.3	89.9	
								SEC_6M-E-3	0.032	0.016	5.3	89.9	
Pole 6M-E-4	4.160	93.252	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.319	-0.155	52.7	90.0	
								Pole 6M-E-3	0.032	0.016	5.3	89.9	
								Pole 6M-E-5	0.287	0.139	47.4	90.0	
Pole 6M-E-5	4.160	92.691	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.285	-0.138	47.4	90.0	
								Pole 6M-E-6	0.253	0.123	42.1	90.0	
								SEC_6M-E-1	0.032	0.016	5.3	89.9	
Pole 6M-E-6	4.160	92.143	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-5	-0.251	-0.122	42.1	90.0	
								Pole 6M-E-7	0.220	0.106	36.8	90.0	
								SEC_6M-E-4	0.032	0.015	5.3	89.9	
Pole 6M-E-7	4.160	91.313	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-6	-0.218	-0.106	36.8	90.0	
								Pole 6M-E-8	0.031	0.015	5.3	89.9	
								Pole 6M-E-9	0.187	0.090	31.5	90.0	
Pole 6M-E-8	4.160	91.276	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.031	-0.015	5.3	89.9	
								SEC_6M-E-5	0.031	0.015	5.3	89.9	
Pole 6M-E-9	4.160	89.931	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.184	-0.089	31.5	90.0	
								Pole 6M-E-10	0.061	0.030	10.4	89.9	
								Pole 6M-E-13	0.123	0.060	21.1	90.0	
Pole 6M-E-10	4.160	89.702	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-9	-0.061	-0.030	10.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole 6M-E-11	0.030	0.015	5.2	89.9	
								SEC_6M-E-6	0.030	0.015	5.2	89.9	
Pole 6M-E-11	4.160	89.586	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-10	-0.030	-0.015	5.2	89.9	
								SEC_6M-E-7	0.030	0.015	5.2	89.9	
Pole 6M-E-12	4.160	89.693	-3.2	0.000	0.000	0.008	0.004	Pole 6M-E-13	-0.008	-0.004	1.4	89.8	
Pole 6M-E-13	4.160	89.697	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-12	0.008	0.004	1.4	89.8	
								Pole 6M-E-9	-0.123	-0.059	21.1	90.0	
								Pole 6M-E-15	0.115	0.056	19.7	90.0	
Pole 6M-E-14	4.160	89.437	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.030	-0.015	5.2	89.9	
								SEC_6M-E-8	0.030	0.015	5.2	89.9	
Pole 6M-E-15	4.160	89.478	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-14	0.030	0.015	5.2	89.9	
								Pole 6M-E-13	-0.114	-0.055	19.7	90.0	
								Pole 6M-E-18	0.084	0.041	14.5	90.0	
Pole 6M-E-18	4.160	89.288	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.084	-0.041	14.5	90.0	
								Pole 6M-E-19	0.030	0.015	5.2	89.9	
								Pole 6M-E-20	0.054	0.026	9.3	90.0	
Pole 6M-E-19	4.160	89.268	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.030	-0.015	5.2	89.9	
								SEC_6M-E-10	0.030	0.015	5.2	89.9	
Pole 6M-E-20	4.160	89.227	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.054	-0.026	9.3	90.0	
								Pole 6M-E-21	0.024	0.011	4.1	90.2	
								SEC_6M-E-11	0.030	0.015	5.2	89.9	
Pole 6M-E-21	4.160	89.215	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-20	-0.024	-0.011	4.1	90.2	
								Pole 6M-E-22	0.008	0.004	1.4	90.2	
								Pole 6M-E-23	0.016	0.008	2.7	90.2	
Pole 6M-E-22	4.160	89.140	-3.2	0.000	0.000	0.008	0.004	Pole 6M-E-21	-0.008	-0.004	1.4	89.8	
Pole 6M-E-23	4.160	89.013	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.008	0.004	1.4	90.0	
								Pole 6M-E-21	-0.016	-0.008	2.7	90.0	
								Pole 6M-E-24	0.008	0.004	1.4	90.0	
Pole 6M-E-24	4.160	88.976	-3.2	0.000	0.000	0.008	0.004	Pole 6M-E-23	-0.008	-0.004	1.4	89.8	
Pole 6M-E-25	4.160	88.974	-3.2	0.000	0.000	0.008	0.004	Pole 6M-E-26	-0.008	-0.004	1.4	89.8	
Pole 6M-E-26	4.160	88.978	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-23	-0.008	-0.004	1.4	89.9	
								Pole 6M-E-25	0.008	0.004	1.4	89.8	
								Bus2	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-E-29	4.160	93.851	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.033	-0.016	5.4	89.9	
								SEC_6M-E-13	0.033	0.016	5.4	89.9	
Pole 6M-E-30	4.160	93.859	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	0.321	0.156	52.7	90.0	
								Pole 6M-E-29	0.033	0.016	5.4	89.9	
								Pole 6M-E-1	-0.353	-0.171	58.1	90.0	
Pole CS-1-1	4.160	98.714	-6.3	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-1.310	-0.662	206.4	89.3	
								Pole CS-1-2	1.310	0.662	206.4	89.3	
Pole CS-1-2	4.160	98.360	-6.4	0.000	0.000	0.000	0.000	PRI_PM_16	0.171	0.085	26.9	89.5	
								Pole CS-1-1	-1.307	-0.658	206.4	89.3	
								Pole CS-1-3	1.115	0.562	176.2	89.3	
								Pole HS-2-85	0.021	0.010	3.3	89.8	
Pole CS-1-3	4.160	97.619	-6.6	0.000	0.000	0.000	0.000	Pole CS-1-4	0.031	0.015	4.9	89.8	
								Pole CS-1-5	0.031	0.015	4.9	89.8	
								Pole HS-3-86	0.010	0.005	1.6	89.8	
								Pole CS-1-2	-1.108	-0.555	176.2	89.4	
								Pole CS-1-6	1.037	0.519	164.8	89.4	
Pole CS-1-4	4.160	97.605	-6.6	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.031	-0.015	4.9	89.8	
								SEC_CS-1-1	0.031	0.015	4.9	89.8	
Pole CS-1-5	4.160	97.609	-6.6	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.031	-0.015	4.9	89.8	
								SEC_CS-1-2	0.031	0.015	4.9	89.8	
Pole CS-1-6	4.160	96.927	-6.7	0.000	0.000	0.000	0.000	Pole HS-3-88	0.030	0.015	4.9	89.8	
								Pole CS-1-3	-1.031	-0.513	164.8	89.5	
								Pole CS-1-9	1.000	0.498	160.0	89.5	
Pole CS-1-9	4.160	96.748	-6.8	0.000	0.000	0.000	0.000	PRI_PM_17	0.150	0.075	24.0	89.5	
								Pole CS-1-6	-0.999	-0.496	160.0	89.6	
								Pole CS-1-10	0.849	0.422	136.0	89.6	
Pole CS-1-10	4.160	96.409	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.847	-0.419	136.0	89.6	
								Pole CS-1-11	0.847	0.419	136.0	89.6	
								L-SUB-FDR-EQ#20-1-84~	0.000	0.000	0.0	0.0	
Pole CS-1-11	4.160	96.374	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-10	-0.846	-0.419	136.0	89.6	
								Pole CS-1-12	0.846	0.419	136.0	89.6	
Pole CS-1-12	4.160	96.232	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-13	0.030	0.015	4.8	89.8	
								Pole CS-1-11	-0.845	-0.417	136.0	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-14	0.815	0.403	131.2	89.7	
Pole CS-1-13	4.160	96.229	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-12	-0.030	-0.015	4.8	89.8	
								SEC_CS-1-7	0.030	0.015	4.8	89.8	
Pole CS-1-14	4.160	96.095	-6.9	0.000	0.000	0.010	0.005	Pole CS-1-17	0.090	0.044	14.5	89.8	
								Pole CS-1-12	-0.814	-0.402	131.2	89.7	
								Pole CS-1-16	0.714	0.353	115.1	89.7	
Pole CS-1-15	4.160	95.984	-7.0	0.000	0.000	0.000	0.000	Pole CS-1-16	-0.030	-0.015	4.8	89.8	
								SEC_CS-1-9	0.030	0.015	4.8	89.8	
Pole CS-1-16	4.160	95.987	-7.0	0.000	0.000	0.000	0.000	Pole CS-1-15	0.030	0.015	4.8	89.8	
								Pole CS-1-14	-0.714	-0.352	115.1	89.7	
								Pole CS-1-21	0.684	0.337	110.3	89.7	
Pole CS-1-17	4.160	96.038	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-14	-0.090	-0.044	14.5	89.8	
								Pole CS-1-18	0.060	0.029	9.6	89.8	
								Pole CS-1-20	0.030	0.015	4.8	89.8	
Pole CS-1-18	4.160	96.030	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.060	-0.029	9.6	89.8	
								Pole CS-1-19	0.030	0.015	4.8	89.8	
								SEC_CS-1-10	0.030	0.015	4.8	89.8	
Pole CS-1-19	4.160	96.021	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-18	-0.030	-0.015	4.8	89.8	
								SEC_CS-1-11	0.030	0.015	4.8	89.8	
Pole CS-1-20	4.160	96.034	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.030	-0.015	4.8	89.8	
								SEC_CS-1-12	0.030	0.015	4.8	89.8	
Pole CS-1-21	4.160	95.882	-7.0	0.000	0.000	0.010	0.005	Pole CS-1-16	-0.683	-0.337	110.3	89.7	
								Pole CS-1-22	0.673	0.332	108.6	89.7	
Pole CS-1-22	4.160	95.782	-7.0	0.000	0.000	0.010	0.005	Pole CS-1-23	0.030	0.015	4.8	89.8	
								Pole CS-1-21	-0.673	-0.331	108.6	89.7	
								Pole CS-1-24	0.633	0.312	102.2	89.7	
Pole CS-1-23	4.160	95.770	-7.0	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.030	-0.015	4.8	89.8	
								SEC_CS-1-15	0.030	0.015	4.8	89.8	
Pole CS-1-24	4.160	95.656	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.632	-0.311	102.2	89.7	
								Pole CS-1-25	0.603	0.296	97.4	89.7	
								SEC_CS-1-16	0.030	0.015	4.8	89.8	
Pole CS-1-25	4.160	95.536	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-28	0.286	0.140	46.3	89.8	
								Pole CS-1-55	0.296	0.146	47.9	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-24	-0.602	-0.296	97.4	89.8	
								Pole CS-1-26	0.020	0.010	3.2	89.8	
Pole CS-1-26	4.160	95.533	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-25	-0.020	-0.010	3.2	89.8	
								Pole CS-1-27	0.010	0.005	1.6	89.8	
Pole CS-1-27	4.160	95.532	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-26	-0.010	-0.005	1.6	89.8	
Pole CS-1-28	4.160	95.516	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-25	-0.286	-0.140	46.3	89.8	
								Pole CS-1-29	0.276	0.135	44.7	89.8	
Pole CS-1-29	4.160	95.438	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-28	-0.276	-0.135	44.7	89.8	
								Pole CS-1-32	0.256	0.126	41.5	89.8	
								Pole CS-1-31	0.020	0.010	3.2	89.8	
Pole CS-1-30	4.160	95.434	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-31	-0.010	-0.005	1.6	89.8	
Pole CS-1-31	4.160	95.436	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-30	0.010	0.005	1.6	89.8	
								Pole CS-1-29	-0.020	-0.010	3.2	89.8	
Pole CS-1-32	4.160	95.367	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-29	-0.256	-0.126	41.5	89.8	
								Pole CS-1-33	0.246	0.121	39.9	89.8	
Pole CS-1-33	4.160	95.256	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-32	-0.246	-0.121	39.9	89.8	
								Pole CS-1-36	0.216	0.106	35.1	89.8	
								Pole CS-1-35	0.020	0.010	3.2	89.8	
Pole CS-1-34	4.160	95.252	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-35	-0.010	-0.005	1.6	89.8	
Pole CS-1-35	4.160	95.254	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-34	0.010	0.005	1.6	89.8	
								Pole CS-1-33	-0.020	-0.010	3.2	89.8	
Pole CS-1-36	4.160	95.160	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-33	-0.216	-0.106	35.1	89.8	
								Pole CS-1-37	0.206	0.101	33.5	89.8	
Pole CS-1-37	4.160	95.117	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-36	-0.206	-0.101	33.5	89.8	
								Pole CS-1-38	0.196	0.096	31.9	89.8	
Pole CS-1-38	4.160	95.069	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-37	-0.196	-0.096	31.9	89.8	
								Pole CS-1-39	0.187	0.091	30.3	89.8	
Pole CS-1-39	4.160	95.028	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-40	0.049	0.024	8.0	89.8	
								Pole CS-1-38	-0.186	-0.091	30.3	89.8	
								Pole CS-1-43	0.137	0.067	22.3	89.8	
Pole CS-1-40	4.160	94.989	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.049	-0.024	8.0	89.8	
								Pole CS-1-41	0.020	0.010	3.2	89.8	
								SEC_CS-1-29	0.029	0.014	4.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-1-41	4.160	94.985	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-40	-0.020	-0.010	3.2	89.8	
								Pole CS-1-42	0.010	0.005	1.6	89.8	
Pole CS-1-42	4.160	94.982	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-41	-0.010	-0.005	1.6	89.8	
Pole CS-1-43	4.160	95.016	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.137	-0.067	22.3	89.8	
								Pole CS-1-44	0.108	0.053	17.6	89.8	
								SEC_CS-1-32	0.029	0.014	4.8	89.8	
Pole CS-1-44	4.160	95.000	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-43	-0.108	-0.053	17.6	89.8	
								Pole CS-1-45	0.098	0.048	16.0	89.8	
Pole CS-1-45	4.160	94.985	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-44	-0.098	-0.048	16.0	89.8	
								Pole CS-1-46	0.088	0.043	14.4	89.8	
Pole CS-1-46	4.160	94.968	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-45	-0.088	-0.043	14.4	89.8	
								Pole CS-1-47	0.078	0.038	12.8	89.8	
Pole CS-1-47	4.160	94.946	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-46	-0.078	-0.038	12.8	89.8	
								Pole CS-1-48	0.069	0.034	11.2	89.8	
Pole CS-1-48	4.160	94.933	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-47	-0.069	-0.034	11.2	89.8	
								Pole CS-1-49	0.059	0.029	9.6	89.8	
Pole CS-1-49	4.160	94.924	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-48	-0.059	-0.029	9.6	89.8	
								Pole CS-1-50	0.049	0.024	8.0	89.8	
Pole CS-1-50	4.160	94.915	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-49	-0.049	-0.024	8.0	89.8	
								Pole CS-1-51	0.039	0.019	6.4	89.8	
Pole CS-1-51	4.160	94.909	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-50	-0.039	-0.019	6.4	89.8	
								Pole CS-1-52	0.029	0.014	4.8	89.8	
Pole CS-1-52	4.160	94.901	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-51	-0.029	-0.014	4.8	89.8	
								Pole CS-1-53	0.020	0.010	3.2	89.8	
Pole CS-1-53	4.160	94.897	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-52	-0.020	-0.010	3.2	89.8	
								Pole CS-1-54	0.010	0.005	1.6	89.8	
Pole CS-1-54	4.160	94.895	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-53	-0.010	-0.005	1.6	89.8	
								L-SUB-FDR-EQ#20-1-86~	0.000	0.000	0.0	0.0	
Pole CS-1-55	4.160	95.423	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-25	-0.295	-0.145	47.9	89.7	
								Pole CS-1-56	0.010	0.005	1.6	89.8	
								Pole CS-1-58	0.286	0.141	46.3	89.7	
Pole CS-1-56	4.160	95.422	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-55	-0.010	-0.005	1.6	89.8	
Pole CS-1-57	4.160	95.297	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-58	-0.275	-0.135	44.7	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-60	0.275	0.135	44.7	89.7	
								L-SUB-FDR-EQ#18-1-173~	0.000	0.000	0.0	0.0	
Pole CS-1-58	4.160	95.353	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-57	0.275	0.135	44.7	89.7	
								Pole CS-1-55	-0.285	-0.140	46.3	89.7	
Pole CS-1-59	4.160	95.226	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-61	-0.030	-0.014	4.8	89.8	
								SEC_CS-1-46	0.030	0.014	4.8	89.8	
Pole CS-1-60	4.160	95.245	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-57	-0.275	-0.135	44.7	89.8	
								Pole CS-1-61	0.265	0.130	43.1	89.8	
Pole CS-1-61	4.160	95.227	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-59	0.030	0.014	4.8	89.8	
								Pole CS-1-60	-0.265	-0.130	43.1	89.8	
								Pole CS-1-62	0.236	0.116	38.3	89.7	
Pole CS-1-62	4.160	95.192	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-61	-0.236	-0.116	38.3	89.8	
								Pole CS-1-63	0.226	0.111	36.7	89.8	
Pole CS-1-63	4.160	95.157	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-62	-0.226	-0.111	36.7	89.8	
								Pole CS-1-64	0.216	0.106	35.1	89.8	
Pole CS-1-64	4.160	95.124	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-63	-0.216	-0.106	35.1	89.8	
								Pole CS-1-65	0.000	0.000	0.0	0.0	
								Pole CS-1-66	0.216	0.106	35.1	89.8	
Pole CS-1-65	4.160	95.124	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-64	0.000	0.000	0.0	0.0	
Pole CS-1-66	4.160	95.052	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-64	-0.216	-0.106	35.1	89.8	
								Pole CS-1-67	0.206	0.101	33.5	89.8	
Pole CS-1-67	4.160	95.027	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-66	-0.206	-0.101	33.5	89.8	
								Pole CS-1-68	0.196	0.096	31.9	89.8	
Pole CS-1-68	4.160	94.999	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-67	-0.196	-0.096	31.9	89.8	
								Pole CS-1-69	0.167	0.082	27.1	89.8	
								SEC_CS-1-53	0.029	0.014	4.8	89.8	
Pole CS-1-69	4.160	94.973	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-68	-0.167	-0.082	27.1	89.8	
								Pole CS-1-70	0.157	0.077	25.5	89.8	
Pole CS-1-70	4.160	94.940	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-69	-0.157	-0.077	25.5	89.8	
								Pole CS-1-71	0.147	0.072	23.9	89.8	
Pole CS-1-71	4.160	94.918	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-70	-0.147	-0.072	23.9	89.8	
								Pole CS-1-72	0.137	0.067	22.3	89.8	
Pole CS-1-72	4.160	94.893	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-71	-0.137	-0.067	22.3	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-73	0.127	0.062	20.7	89.8	
Pole CS-1-73	4.160	94.869	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-72	-0.127	-0.062	20.7	89.8	
								Pole CS-1-74	0.010	0.005	1.6	89.8	
								Pole CS-1-75	0.117	0.058	19.1	89.8	
Pole CS-1-74	4.160	94.868	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-73	-0.010	-0.005	1.6	89.8	
Pole CS-1-75	4.160	94.800	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-73	-0.117	-0.057	19.1	89.8	
								Pole CS-1-76	0.049	0.024	8.0	89.8	
								Pole CS-1-86	0.068	0.034	11.2	89.8	
Pole CS-1-76	4.160	94.787	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-75	-0.049	-0.024	8.0	89.8	
								Pole CS-1-77	0.039	0.019	6.4	89.8	
Pole CS-1-77	4.160	94.773	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-76	-0.039	-0.019	6.4	89.8	
								Pole CS-1-78	0.029	0.014	4.8	89.8	
Pole CS-1-78	4.160	94.768	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-77	-0.029	-0.014	4.8	89.8	
								Pole CS-1-79	0.020	0.010	3.2	89.8	
Pole CS-1-79	4.160	94.763	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-78	-0.020	-0.010	3.2	89.8	
								Pole CS-1-80	0.010	0.005	1.6	89.8	
Pole CS-1-80	4.160	94.761	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-79	-0.010	-0.005	1.6	89.8	
Pole CS-1-81	4.160	94.676	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-82	-0.029	-0.014	4.8	89.8	
								Pole CS-1-88	0.020	0.010	3.2	89.8	
Pole CS-1-82	4.160	94.683	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-81	0.029	0.014	4.8	89.8	
								Pole CS-1-83	-0.039	-0.019	6.4	89.8	
Pole CS-1-83	4.160	94.697	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-82	0.039	0.019	6.4	89.8	
								Pole CS-1-84	-0.049	-0.024	8.0	89.8	
Pole CS-1-84	4.160	94.709	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-83	0.049	0.024	8.0	89.8	
								Pole CS-1-85	-0.059	-0.029	9.6	89.8	
Pole CS-1-85	4.160	94.740	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-84	0.059	0.029	9.6	89.8	
								Pole CS-1-86	-0.068	-0.033	11.2	89.8	
Pole CS-1-86	4.160	94.766	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-75	-0.068	-0.033	11.2	89.8	
								Pole CS-1-85	0.068	0.033	11.2	89.8	
Pole CS-1-87	4.160	94.666	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-88	-0.010	-0.005	1.6	89.8	
Pole CS-1-88	4.160	94.669	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-81	-0.020	-0.010	3.2	89.8	
								Pole CS-1-87	0.010	0.005	1.6	89.8	
Pole CS-1-90	4.160	99.699	-4.4	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.365	-0.176	56.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_5_NEOPLAN	0.365	0.176	56.4	90.0	
Pole CS-2-1	4.160	99.431	-6.2	0.000	0.000	0.000	0.000	Pole CS-2-2	1.472	0.723	228.9	89.8	
								BUS_CLG_4kV	-1.472	-0.723	228.9	89.8	
Pole CS-2-2	4.160	99.120	-6.2	0.000	0.000	0.011	0.005	Pole CS-2-1	-1.469	-0.718	228.9	89.8	
								Pole CS-2-3	0.032	0.015	4.9	89.8	
								Pole CS-2-5	1.427	0.698	222.4	89.8	
Pole CS-2-3	4.160	99.108	-6.2	0.000	0.000	0.021	0.010	Pole CS-2-2	-0.032	-0.015	4.9	89.8	
								Pole CS-2-4	0.011	0.005	1.6	89.8	
Pole CS-2-4	4.160	99.104	-6.2	0.000	0.000	0.011	0.005	Pole CS-2-3	-0.011	-0.005	1.6	89.8	
Pole CS-2-5	4.160	98.819	-6.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	1.423	0.694	222.4	89.9	
								Pole CS-2-2	-1.423	-0.694	222.4	89.9	
Pole CS-2-7	4.160	94.854	-5.7	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.994	-0.495	162.5	89.5	
								Pole CS-2-8	0.994	0.495	162.5	89.5	
Pole CS-2-8	4.160	94.633	-5.8	0.000	0.000	0.000	0.000	Pole CS-2-7	-0.992	-0.493	162.5	89.5	
								Pole CS-2-9	0.068	0.033	11.1	89.8	
								Pole CS-2-12	0.895	0.446	146.6	89.5	
								SEC_CS-2-5	0.029	0.014	4.8	89.8	
Pole CS-2-9	4.160	94.620	-5.8	0.000	0.000	0.010	0.005	Pole CS-2-8	-0.068	-0.033	11.1	89.8	
								Pole CS-2-10	0.058	0.029	9.5	89.8	
Pole CS-2-10	4.160	94.613	-5.8	0.000	0.000	0.000	0.000	Pole CS-2-9	-0.058	-0.029	9.5	89.8	
								Pole CS-2-11	0.029	0.014	4.8	89.8	
								SEC_CS-2-7	0.029	0.014	4.8	89.8	
Pole CS-2-11	4.160	94.604	-5.8	0.000	0.000	0.000	0.000	Pole CS-2-10	-0.029	-0.014	4.8	89.8	
								SEC_CS-2-8	0.029	0.014	4.8	89.8	
Pole CS-2-12	4.160	94.521	-5.8	0.000	0.000	0.010	0.005	Pole CS-2-8	-0.894	-0.445	146.6	89.5	
								Pole CS-2-13	0.884	0.440	145.0	89.5	
Pole CS-2-13	4.160	94.394	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-12	-0.883	-0.439	145.0	89.6	
								Pole CS-2-14	0.039	0.019	6.3	89.9	
								Pole CS-2-20	0.844	0.420	138.6	89.5	
Pole CS-2-14	4.160	94.387	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-13	-0.039	-0.019	6.3	89.9	
								Pole CS-2-15	0.029	0.014	4.8	89.8	
								Pole CS-2-16	0.010	0.005	1.6	90.3	
Pole CS-2-15	4.160	94.382	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.029	-0.014	4.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_CS-2-10	0.029	0.014	4.8	89.8	
Pole CS-2-16	4.160	94.383	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.010	-0.005	1.6	90.3	
								Pole CS-2-17	0.010	0.005	1.6	90.3	
Pole CS-2-17	4.160	94.381	-5.9	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
								Pole CS-2-16	-0.010	-0.005	1.6	90.3	
								Pole CS-2-18	0.010	0.005	1.6	89.8	
Pole CS-2-18	4.160	94.379	-5.9	0.000	0.000	0.010	0.005	Pole CS-2-17	-0.010	-0.005	1.6	89.8	
Pole CS-2-20	4.160	94.279	-5.9	0.000	0.000	0.000	0.000	PRI_PM_21	0.144	0.072	23.6	89.5	
								Pole CS-2-13	-0.843	-0.419	138.6	89.6	
								Pole CS-2-21	0.700	0.347	115.0	89.6	
Pole CS-2-21	4.160	93.922	-6.0	0.000	0.000	0.000	0.000	PRI_PM_20	0.143	0.071	23.6	89.5	
								Pole CS-2-20	-0.698	-0.345	115.0	89.6	
								Pole CS-2-22	0.555	0.274	91.4	89.7	
Pole CS-2-22	4.160	93.776	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-21	-0.554	-0.273	91.4	89.7	
								Pole CS-2-23	0.544	0.269	89.8	89.7	
Pole CS-2-23	4.160	93.718	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-22	-0.544	-0.268	89.8	89.7	
								Pole CS-2-24	0.157	0.078	26.0	89.7	
								Pole CS-2-35	0.387	0.191	63.8	89.7	
Pole CS-2-24	4.160	93.652	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-23	-0.157	-0.078	26.0	89.7	
								Pole CS-2-25	0.148	0.073	24.4	89.7	
Pole CS-2-25	4.160	93.634	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-24	-0.148	-0.073	24.4	89.7	
								Pole CS-2-26	0.138	0.068	22.8	89.6	
Pole CS-2-26	4.160	93.598	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-25	-0.138	-0.068	22.8	89.6	
								Pole CS-2-27	0.128	0.063	21.2	89.6	
Pole CS-2-27	4.160	93.556	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-28	0.057	0.028	9.5	89.9	
								Pole CS-2-26	-0.128	-0.063	21.2	89.6	
								PRI_PM_1-1	0.071	0.035	11.8	89.4	
Pole CS-2-28	4.160	93.530	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.057	-0.028	9.5	89.8	
								Pole CS-2-29	0.057	0.028	9.5	89.8	
Pole CS-2-29	4.160	93.521	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-28	-0.057	-0.028	9.5	89.8	
								Pole CS-2-30	0.048	0.023	7.9	89.8	
Pole CS-2-30	4.160	93.512	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-29	-0.048	-0.023	7.9	89.8	
								Pole CS-2-31	0.038	0.019	6.3	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-31	4.160	93.502	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-30	-0.038	-0.019	6.3	89.8	
								Pole CS-2-32	0.029	0.014	4.7	89.8	
Pole CS-2-32	4.160	93.495	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-31	-0.029	-0.014	4.7	89.8	
								Pole CS-2-33	0.019	0.009	3.2	89.8	
Pole CS-2-33	4.160	93.492	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-32	-0.019	-0.009	3.2	89.8	
								Pole CS-2-34	0.010	0.005	1.6	89.8	
Pole CS-2-34	4.160	93.490	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-33	-0.010	-0.005	1.6	89.8	
Pole CS-2-35	4.160	93.599	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-23	-0.386	-0.191	63.8	89.7	
								Pole CS-2-36	0.386	0.191	63.8	89.7	
Pole CS-2-36	4.160	93.326	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-35	-0.385	-0.190	63.8	89.7	
								Pole CS-2-37	0.385	0.190	63.8	89.7	
Pole CS-2-37	4.160	93.177	-6.0	0.000	0.000	0.000	0.000	PRI_PM_19	0.157	0.078	26.1	89.4	
								Pole CS-2-36	-0.384	-0.190	63.8	89.7	
								Pole CS-2-38	0.029	0.014	4.7	89.8	
								Pole CS-2-41	0.199	0.098	33.0	89.8	
Pole CS-2-38	4.160	93.173	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-37	-0.029	-0.014	4.7	89.8	
								Pole CS-2-39	0.019	0.009	3.2	89.8	
Pole CS-2-39	4.160	93.158	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-38	-0.019	-0.009	3.2	89.8	
								Pole CS-2-40	0.010	0.005	1.6	89.8	
Pole CS-2-40	4.160	93.155	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-39	-0.010	-0.005	1.6	89.8	
Pole CS-2-41	4.160	93.125	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-37	-0.199	-0.098	33.0	89.8	
								Pole CS-2-42	0.190	0.093	31.5	89.8	
Pole CS-2-42	4.160	93.049	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-41	-0.190	-0.093	31.5	89.8	
								Pole CS-2-43	0.009	0.005	1.6	89.8	
								Pole CS-2-44	0.180	0.088	29.9	89.8	
Pole CS-2-43	4.160	93.047	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-42	-0.009	-0.005	1.6	89.8	
Pole CS-2-44	4.160	92.993	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-42	-0.180	-0.088	29.9	89.8	
								Pole CS-2-45	0.047	0.023	7.9	89.8	
								Pole CS-2-50	0.019	0.009	3.1	89.8	
								Pole CS-2-52	0.114	0.056	18.9	89.8	
Pole CS-2-45	4.160	92.987	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-44	-0.047	-0.023	7.9	89.8	
								Pole CS-2-46	0.038	0.019	6.3	89.8	
Pole CS-2-46	4.160	92.978	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-45	-0.038	-0.019	6.3	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-2-47	0.028	0.014	4.7	89.8	
Pole CS-2-47	4.160	92.971	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-46	-0.028	-0.014	4.7	89.8	
								Pole CS-2-48	0.019	0.009	3.1	89.8	
Pole CS-2-48	4.160	92.963	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-47	-0.019	-0.009	3.1	89.8	
								Pole CS-2-49	0.009	0.005	1.6	89.8	
Pole CS-2-49	4.160	92.961	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-48	-0.009	-0.005	1.6	89.8	
Pole CS-2-50	4.160	92.988	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-44	-0.019	-0.009	3.1	89.8	
								Pole CS-2-51	0.009	0.005	1.6	89.8	
Pole CS-2-51	4.160	92.986	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-50	-0.009	-0.005	1.6	89.8	
Pole CS-2-52	4.160	92.950	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-44	-0.114	-0.056	18.9	89.8	
								Pole CS-2-56	0.038	0.019	6.3	89.8	
								Pole CS-2-58	0.019	0.009	3.1	89.8	
								Pole CS-2-61	0.057	0.028	9.4	89.8	
Pole CS-2-53	4.160	92.930	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-54	-0.009	-0.005	1.6	89.8	
Pole CS-2-54	4.160	92.931	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-53	0.009	0.005	1.6	89.8	
								Pole CS-2-55	-0.019	-0.009	3.1	89.8	
Pole CS-2-55	4.160	92.936	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-54	0.019	0.009	3.1	89.8	
								Pole CS-2-56	-0.028	-0.014	4.7	89.8	
Pole CS-2-56	4.160	92.943	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-52	-0.038	-0.019	6.3	89.8	
								Pole CS-2-55	0.028	0.014	4.7	89.8	
Pole CS-2-57	4.160	92.939	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-58	-0.009	-0.005	1.6	89.8	
Pole CS-2-58	4.160	92.943	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-57	0.009	0.005	1.6	89.8	
								Pole CS-2-52	-0.019	-0.009	3.1	89.8	
Pole CS-2-60	4.160	92.918	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-61	-0.047	-0.023	7.9	89.8	
								Pole CS-2-62	0.038	0.019	6.3	89.8	
Pole CS-2-61	4.160	92.940	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-52	-0.057	-0.028	9.4	89.8	
								Pole CS-2-60	0.047	0.023	7.9	89.8	
Pole CS-2-62	4.160	92.902	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-60	-0.038	-0.019	6.3	89.8	
								Pole CS-2-63	0.028	0.014	4.7	89.8	
Pole CS-2-63	4.160	92.890	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-62	-0.028	-0.014	4.7	89.8	
								Pole CS-2-64	0.019	0.009	3.1	89.8	
Pole CS-2-64	4.160	92.885	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-63	-0.019	-0.009	3.1	89.8	
								Pole CS-2-65	0.009	0.005	1.6	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-65	4.160	92.883	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-64	-0.009	-0.005	1.6	89.8	
Pole CS-2-66	4.160	98.697	-6.3	0.000	0.000	0.000	0.000	Pole CS-3-10	-0.031	-0.015	4.9	89.8	
								L-SUB-FDR-EQ#18-1-237~	0.000	0.000	0.0	0.0	
								SEC_CS-2-46	0.031	0.015	4.9	89.8	
Pole CS-2-73	4.160	96.451	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-27	-0.030	-0.015	4.8	89.8	
								SEC_CS-2-49	0.030	0.015	4.8	89.8	
Pole CS-3-1	4.160	98.999	-6.3	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-0.867	-0.425	135.3	89.8	
								Pole CS-3-2	0.221	0.108	34.4	89.8	
								Pole CS-3-21	0.646	0.317	100.9	89.8	
Pole CS-3-2	4.160	98.936	-6.3	0.000	0.000	0.011	0.005	Pole CS-3-3	0.084	0.041	13.1	89.8	
								Pole CS-3-1	-0.220	-0.108	34.4	89.8	
								Pole CS-3-11	0.126	0.062	19.7	89.8	
Pole CS-3-3	4.160	98.916	-6.3	0.000	0.000	0.011	0.005	Pole CS-3-2	-0.084	-0.041	13.1	89.8	
								Pole CS-3-4	0.073	0.036	11.5	89.8	
Pole CS-3-4	4.160	98.874	-6.3	0.000	0.000	0.011	0.005	Pole CS-3-3	-0.073	-0.036	11.5	89.8	
								Pole CS-3-5	0.063	0.031	9.8	89.8	
Pole CS-3-5	4.160	98.838	-6.3	0.000	0.000	0.000	0.000	Pole CS-3-4	-0.063	-0.031	9.8	89.8	
								Pole CS-3-6	0.063	0.031	9.8	89.8	
Pole CS-3-6	4.160	98.799	-6.3	0.000	0.000	0.010	0.005	Pole CS-3-5	-0.063	-0.031	9.8	89.8	
								Pole CS-3-7	0.052	0.026	8.2	89.8	
Pole CS-3-7	4.160	98.781	-6.3	0.000	0.000	0.000	0.000	Pole CS-3-6	-0.052	-0.026	8.2	89.8	
								Pole CS-3-8	0.052	0.026	8.2	89.8	
Pole CS-3-8	4.160	98.765	-6.3	0.000	0.000	0.010	0.005	Pole CS-3-7	-0.052	-0.026	8.2	89.8	
								Pole CS-3-9	0.042	0.020	6.6	89.8	
Pole CS-3-9	4.160	98.726	-6.3	0.000	0.000	0.000	0.000	Pole CS-3-8	-0.042	-0.020	6.6	89.8	
								Pole CS-3-10	0.042	0.020	6.6	89.8	
Pole CS-3-10	4.160	98.700	-6.3	0.000	0.000	0.010	0.005	Pole CS-2-66	0.031	0.015	4.9	89.8	
								Pole CS-3-9	-0.042	-0.020	6.6	89.8	
Pole CS-3-11	4.160	98.917	-6.3	0.000	0.000	0.011	0.005	Pole CS-3-2	-0.126	-0.062	19.7	89.8	
								Pole CS-3-12	0.115	0.056	18.0	89.8	
Pole CS-3-12	4.160	98.784	-6.3	0.000	0.000	0.021	0.010	Pole CS-3-11	-0.115	-0.056	18.0	89.8	
								Pole CS-3-13	0.094	0.046	14.7	89.8	
Pole CS-3-13	4.160	98.759	-6.3	0.000	0.000	0.010	0.005	Pole CS-3-12	-0.094	-0.046	14.7	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-14	0.084	0.041	13.1	89.8	
Pole CS-3-14	4.160	98.692	-6.3	0.000	0.000	0.010	0.005	Pole CS-3-13	-0.084	-0.041	13.1	89.8	
								Pole CS-3-15	0.073	0.036	11.5	89.8	
Pole CS-3-15	4.160	98.638	-6.2	0.000	0.000	0.021	0.010	Pole CS-3-14	-0.073	-0.036	11.5	89.8	
								Pole CS-3-16	0.052	0.026	8.2	89.8	
Pole CS-3-16	4.160	98.582	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-15	-0.052	-0.026	8.2	89.8	
								Pole CS-3-17	0.042	0.020	6.6	89.8	
Pole CS-3-17	4.160	98.573	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-16	-0.042	-0.020	6.6	89.8	
								Pole CS-3-18	0.031	0.015	4.9	89.8	
Pole CS-3-18	4.160	98.557	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-17	-0.031	-0.015	4.9	89.8	
								Pole CS-3-19	0.021	0.010	3.3	89.8	
Pole CS-3-19	4.160	98.547	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-18	-0.021	-0.010	3.3	89.8	
								Pole CS-3-20	0.010	0.005	1.6	89.8	
Pole CS-3-20	4.160	98.545	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-19	-0.010	-0.005	1.6	89.8	
Pole CS-3-21	4.160	98.853	-6.3	0.000	0.000	0.010	0.005	Pole CS-3-1	-0.645	-0.317	100.9	89.8	
								Pole CS-3-22	0.635	0.312	99.3	89.8	
Pole CS-3-22	4.160	98.320	-6.2	0.000	0.000	0.000	0.000	PRI_PM_25	0.085	0.043	13.5	89.5	
								Pole CS-3-21	-0.631	-0.310	99.3	89.7	
								Pole CS-3-23	0.546	0.268	85.8	89.8	
Pole CS-3-23	4.160	97.991	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-29	0.534	0.262	84.2	89.8	
								Pole CS-3-22	-0.544	-0.267	85.8	89.8	
Pole CS-3-24	4.160	97.205	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-32	-0.041	-0.020	6.5	89.8	
								Pole CS-3-25	0.031	0.015	4.9	89.8	
Pole CS-3-25	4.160	97.196	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-24	-0.031	-0.015	4.9	89.8	
								Pole CS-3-26	0.020	0.010	3.2	89.8	
Pole CS-3-26	4.160	97.188	-6.2	0.000	0.000	0.020	0.010	Pole CS-3-25	-0.020	-0.010	3.2	89.8	
Pole CS-3-27	4.160	96.462	-6.2	0.000	0.000	0.010	0.005	Pole CS-2-73	0.030	0.015	4.8	89.8	
								Pole CS-3-34	-0.040	-0.020	6.5	89.8	
Pole CS-3-28	4.160	96.160	-6.2	0.000	0.000	0.020	0.010	Pole CS-3-35	-0.020	-0.010	3.2	89.8	
Pole CS-3-29	4.160	97.694	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-23	-0.532	-0.261	84.2	89.8	
								Pole CS-3-30	0.501	0.246	79.3	89.8	
								SEC_CS-2-47	0.031	0.015	4.9	89.8	
Pole CS-3-30	4.160	97.481	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-29	-0.500	-0.245	79.3	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-31	0.084	0.042	13.4	89.5	
								Pole CS-3-32	0.416	0.203	65.9	89.8	
Pole CS-3-31	4.160	97.475	-6.2	0.000	0.000	0.000	0.000	PRI_PM_26	0.084	0.042	13.4	89.5	
								Pole CS-3-30	-0.084	-0.042	13.4	89.5	
Pole CS-3-32	4.160	97.217	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-30	-0.415	-0.203	65.9	89.8	
								Pole CS-3-33	0.374	0.183	59.4	89.8	
								Pole CS-3-24	0.041	0.020	6.5	89.8	
Pole CS-3-33	4.160	97.097	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-32	-0.373	-0.183	59.4	89.8	
								Pole CS-3-34	0.343	0.168	54.6	89.8	
								SEC_CS-2-48	0.031	0.015	4.9	89.8	
Pole CS-3-34	4.160	96.479	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-33	-0.341	-0.167	54.6	89.8	
								Pole CS-3-35	0.300	0.147	48.1	89.8	
								Pole CS-3-27	0.040	0.020	6.5	89.8	
Pole CS-3-35	4.160	96.166	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-34	-0.299	-0.147	48.1	89.8	
								Pole CS-3-52	0.279	0.137	44.9	89.8	
								Pole CS-3-28	0.020	0.010	3.2	89.8	
Pole CS-3-36	4.160	95.329	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-37	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-246~	0.000	0.000	0.0	0.0	
Pole CS-3-37	4.160	95.329	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-36	0.000	0.000	0.0	0.0	
								Pole CS-3-38	-0.010	-0.005	1.6	89.8	
Pole CS-3-38	4.160	95.330	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-37	0.010	0.005	1.6	89.8	
								Pole CS-3-39	-0.020	-0.010	3.2	89.8	
Pole CS-3-39	4.160	95.342	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-38	0.020	0.010	3.2	89.8	
								Pole CS-3-40	-0.030	-0.014	4.8	89.8	
Pole CS-3-40	4.160	95.351	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-39	0.030	0.014	4.8	89.8	
								Pole CS-3-41	-0.040	-0.019	6.4	89.8	
Pole CS-3-41	4.160	95.371	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-40	0.040	0.019	6.4	89.8	
								Pole CS-3-42	-0.049	-0.024	8.0	89.8	
Pole CS-3-42	4.160	95.387	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-41	0.049	0.024	8.0	89.8	
								Pole CS-3-43	-0.059	-0.029	9.6	89.8	
Pole CS-3-43	4.160	95.417	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-42	0.059	0.029	9.6	89.8	
								Pole CS-3-45	-0.079	-0.039	12.8	89.8	
								Pole CS-3-44	0.010	0.005	1.6	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-3-44	4.160	95.416	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-43	-0.010	-0.005	1.6	89.8	
Pole CS-3-45	4.160	95.459	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-43	0.079	0.039	12.8	89.8	
								Pole CS-3-50	-0.099	-0.048	16.0	89.8	
								Pole CS-3-46	0.010	0.005	1.6	89.8	
								Pole CS-3-47	0.010	0.005	1.6	89.8	
Pole CS-3-46	4.160	95.458	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-45	-0.010	-0.005	1.6	89.8	
Pole CS-3-47	4.160	95.458	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-45	-0.010	-0.005	1.6	89.8	
Pole CS-3-48	4.160	95.512	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-50	-0.010	-0.005	1.6	89.8	
Pole CS-3-49	4.160	95.512	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-50	-0.010	-0.005	1.6	89.8	
Pole CS-3-50	4.160	95.513	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-45	0.099	0.048	16.0	89.8	
								Pole CS-3-51	-0.119	-0.058	19.2	89.8	
								Pole CS-3-48	0.010	0.005	1.6	89.8	
								Pole CS-3-49	0.010	0.005	1.6	89.8	
Pole CS-3-51	4.160	95.523	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-50	0.119	0.058	19.2	89.8	
								Pole CS-3-63	-0.198	-0.097	32.0	89.8	
								Pole CS-3-66	0.079	0.039	12.8	89.8	
								Pole CS-3-74	0.000	0.000	0.0	0.0	
Pole CS-3-52	4.160	96.004	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-35	-0.279	-0.136	44.9	89.8	
								Pole CS-3-59	0.249	0.122	40.1	89.8	
								Pole CS-3-53	0.030	0.015	4.8	89.8	
Pole CS-3-53	4.160	95.993	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-52	-0.030	-0.015	4.8	89.8	
								Pole CS-3-54	0.020	0.010	3.2	89.8	
Pole CS-3-54	4.160	95.988	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-53	-0.020	-0.010	3.2	89.8	
								Pole CS-3-55	0.010	0.005	1.6	89.8	
Pole CS-3-55	4.160	95.985	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-54	-0.010	-0.005	1.6	89.8	
Pole CS-3-56	4.160	95.866	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-57	-0.010	-0.005	1.6	89.8	
Pole CS-3-57	4.160	95.872	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-56	0.010	0.005	1.6	89.8	
								Pole CS-3-58	-0.020	-0.010	3.2	89.8	
Pole CS-3-58	4.160	95.882	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-57	0.020	0.010	3.2	89.8	
								Pole CS-3-59	-0.030	-0.015	4.8	89.8	
Pole CS-3-59	4.160	95.887	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-52	-0.249	-0.122	40.1	89.8	
								Pole CS-3-60	0.219	0.107	35.2	89.8	
								Pole CS-3-58	0.030	0.015	4.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-3-60	4.160	95.786	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-59	-0.219	-0.107	35.2	89.8	
								Pole CS-3-62	0.219	0.107	35.2	89.8	
Pole CS-3-61	4.160	95.683	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-62	-0.208	-0.102	33.6	89.8	
								Pole CS-3-63	0.198	0.097	32.0	89.8	
Pole CS-3-62	4.160	95.733	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-61	0.208	0.102	33.6	89.8	
								Pole CS-3-60	-0.218	-0.107	35.2	89.8	
Pole CS-3-63	4.160	95.605	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-61	-0.198	-0.097	32.0	89.8	
								Pole CS-3-51	0.198	0.097	32.0	89.8	
								Pole CS-3-75	0.000	0.000	0.0	0.0	
Pole CS-3-66	4.160	95.508	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-51	-0.079	-0.039	12.8	89.8	
								Pole CS-3-67	0.069	0.034	11.2	89.8	
Pole CS-3-67	4.160	95.489	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-66	-0.069	-0.034	11.2	89.8	
								Pole CS-3-68	0.059	0.029	9.6	89.8	
Pole CS-3-68	4.160	95.470	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-67	-0.059	-0.029	9.6	89.8	
								Pole CS-3-69	0.049	0.024	8.0	89.8	
Pole CS-3-69	4.160	95.455	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-68	-0.049	-0.024	8.0	89.8	
								Pole CS-3-70	0.040	0.019	6.4	89.8	
Pole CS-3-70	4.160	95.443	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-69	-0.040	-0.019	6.4	89.8	
								Pole CS-3-71	0.030	0.015	4.8	89.8	
Pole CS-3-71	4.160	95.434	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-70	-0.030	-0.015	4.8	89.8	
								Pole CS-3-72	0.020	0.010	3.2	89.8	
Pole CS-3-72	4.160	95.427	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-71	-0.020	-0.010	3.2	89.8	
								Pole CS-3-73	0.010	0.005	1.6	89.8	
Pole CS-3-73	4.160	95.424	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-72	-0.010	-0.005	1.6	89.8	
Pole CS-3-74	4.160	95.523	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-51	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-276~	0.000	0.000	0.0	0.0	
Pole CS-3-75	4.160	95.605	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-63	0.000	0.000	0.0	0.0	
Pole CS-4-1	4.160	99.165	-6.2	0.000	0.000	0.011	0.005	Pole CS-4-11	0.783	0.389	122.4	89.6	
								Pole CS-4-3	0.021	0.010	3.3	89.8	
								BUS_CLG_4kV	-0.815	-0.405	127.3	89.6	
Pole CS-4-2	4.160	98.115	-6.2	0.000	0.000	0.010	0.005	Pole CS-4-11	-0.604	-0.300	95.4	89.6	
								Pole CS-4-6	0.594	0.295	93.8	89.6	
Pole CS-4-3	4.160	99.165	-6.2	0.000	0.000	0.011	0.005	Pole CS-4-1	-0.021	-0.010	3.3	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-4-4	0.011	0.005	1.6	89.9	
Pole CS-4-4	4.160	99.155	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-3	-0.011	-0.005	1.6	89.8	
								Pole CS-4-5	0.011	0.005	1.6	89.8	
								L-SUB-FDR-EQ#18-1-283~	0.000	0.000	0.0	0.0	
Pole CS-4-5	4.160	99.153	-6.2	0.000	0.000	0.011	0.005	Pole CS-4-4	-0.011	-0.005	1.6	89.8	
Pole CS-4-6	4.160	97.662	-6.2	0.000	0.000	0.000	0.000	PRI_PM_22	0.169	0.084	26.8	89.5	
								Pole CS-4-2	-0.591	-0.294	93.8	89.5	
								Pole CS-4-7	0.422	0.210	67.0	89.6	
Pole CS-4-7	4.160	97.513	-6.2	0.000	0.000	0.021	0.010	Pole CS-4-6	-0.422	-0.209	67.0	89.6	
								Pole CS-4-8	0.401	0.199	63.8	89.6	
Pole CS-4-8	4.160	97.360	-6.2	0.000	0.000	0.010	0.005	Pole CS-4-7	-0.401	-0.199	63.8	89.6	
								Pole CS-4-9	0.390	0.194	62.1	89.6	
Pole CS-4-9	4.160	97.240	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-8	-0.390	-0.194	62.1	89.6	
								Pole CS-4-12	0.031	0.015	4.9	89.8	
								Pole CS-4-13	0.359	0.179	57.3	89.5	
Pole CS-4-11	4.160	98.575	-6.2	0.000	0.000	0.000	0.000	PRI_PM_11	0.171	0.086	27.0	89.5	
								Pole CS-4-1	-0.778	-0.387	122.4	89.5	
								Pole CS-4-2	0.607	0.301	95.4	89.6	
Pole CS-4-12	4.160	97.235	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.031	-0.015	4.9	89.8	
								SEC_CS-4-8	0.031	0.015	4.9	89.8	
Pole CS-4-13	4.160	97.108	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.359	-0.178	57.3	89.5	
								Pole CS-4-14	0.359	0.178	57.3	89.5	
Pole CS-4-14	4.160	96.966	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-13	-0.358	-0.178	57.3	89.5	
								Pole CS-4-15	0.358	0.178	57.3	89.5	
Pole CS-4-15	4.160	96.027	-6.1	0.000	0.000	0.000	0.000	Pole CS-4-14	-0.355	-0.177	57.3	89.5	
								Pole CS-4-16	0.355	0.177	57.3	89.5	
Pole CS-4-16	4.160	94.553	-6.1	0.000	0.000	0.000	0.000	Pole CS-4-15	-0.349	-0.174	57.3	89.5	
								Pole CS-4-18	0.019	0.010	3.2	89.8	
								Pole CS-4-20	0.330	0.165	54.1	89.5	
Pole CS-4-17	4.160	94.544	-6.1	0.000	0.000	0.010	0.005	Pole CS-4-18	-0.010	-0.005	1.6	89.8	
Pole CS-4-18	4.160	94.547	-6.1	0.000	0.000	0.000	0.000	Pole CS-4-17	0.010	0.005	1.6	89.8	
								Pole CS-4-16	-0.019	-0.010	3.2	89.8	
								Pole CS-4-19	0.010	0.005	1.6	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-4-19	4.160	94.539	-6.1	0.000	0.000	0.010	0.005	Pole CS-4-18	-0.010	-0.005	1.6	89.8	
Pole CS-4-20	4.160	94.369	-6.1	0.000	0.000	0.000	0.000	PRI_PM_23	0.160	0.080	26.3	89.4	
								Pole CS-4-16	-0.329	-0.164	54.1	89.5	
								Pole CS-4-21	0.169	0.085	27.8	89.5	
Pole CS-4-21	4.160	94.262	-6.1	0.000	0.000	0.010	0.005	Pole CS-4-20	-0.169	-0.084	27.8	89.5	
								Pole CS-4-22	0.159	0.080	26.2	89.4	
Pole CS-4-22	4.160	94.192	-6.1	0.000	0.000	0.000	0.000	PRI_PM_24	0.159	0.080	26.2	89.4	
								Pole CS-4-21	-0.159	-0.080	26.2	89.4	
Pole CS-5-18	24.940	94.640	-3.2	0.000	0.000	0.015	0.008	Pole CS-5-19	-0.015	-0.008	0.4	89.6	
Pole CS-5-19	24.940	94.640	-3.2	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-9	0.047	0.021	1.3	90.9	
								Pole CS-5-18	0.015	0.008	0.4	89.8	
								Pole CS-5-20	-0.062	-0.029	1.7	90.6	
Pole CS-5-20	24.940	94.640	-3.2	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-8	0.046	0.022	1.3	90.3	
								Pole CS-5-19	0.062	0.029	1.7	90.7	
								Pole CS-5-21	-0.109	-0.051	2.9	90.5	
Pole CS-5-21	24.940	94.646	-3.2	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-0.109	-0.050	2.9	90.8	
								Pole CS-5-20	0.109	0.050	2.9	90.8	
Pole HS-1-001	4.160	99.825	-6.0	0.000	0.000	0.013	0.006	BUS_HSC_4kV	-0.097	-0.047	15.0	89.9	
								Pole HS-1-4	0.084	0.041	13.0	89.9	
Pole HS-1-4	4.160	99.806	-6.0	0.000	0.000	0.019	0.009	Pole HS-1-001	-0.084	-0.041	13.0	89.9	
								Pole HS-1-16	0.065	0.032	10.0	89.9	
Pole HS-1-16	4.160	99.792	-6.0	0.000	0.000	0.039	0.019	Pole HS-1-17	0.026	0.013	4.0	89.9	
								Pole HS-1-4	-0.065	-0.032	10.0	89.9	
Pole HS-1-17	4.160	99.787	-6.0	0.000	0.000	0.006	0.003	Pole HS-1-16	-0.026	-0.013	4.0	89.9	
								Pole HS-1-19	0.019	0.009	3.0	89.9	
Pole HS-1-19	4.160	99.782	-6.0	0.000	0.000	0.019	0.009	Pole HS-1-17	-0.019	-0.009	3.0	89.9	
Pole HS-2-1	4.160	99.558	-6.0	0.000	0.000	0.011	0.005	BUS_HSC_4kV	-1.278	-0.628	198.5	89.8	
								Pole HS-2-2	1.267	0.622	196.8	89.8	
Pole HS-2-2	4.160	99.186	-6.0	0.000	0.000	0.011	0.005	Pole HS-2-1	-1.263	-0.620	196.8	89.8	
								Pole HS-2-3	1.252	0.615	195.2	89.8	
Pole HS-2-3	4.160	98.860	-6.0	0.000	0.000	0.011	0.005	Pole HS-2-2	-1.248	-0.613	195.2	89.7	
								Pole HS-2-4	1.237	0.608	193.6	89.7	
Pole HS-2-4	4.160	98.537	-6.0	0.000	0.000	0.000	0.000	Pole HS-2-3	-1.233	-0.606	193.6	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-5	1.202	0.591	188.6	89.7	
								SEC_HS-2-4	0.031	0.015	4.9	89.8	
Pole HS-2-5	4.160	98.191	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-4	-1.198	-0.589	188.6	89.7	
								Pole HS-2-6	1.167	0.574	183.7	89.7	
								SEC_HS-2-5	0.031	0.015	4.9	89.8	
Pole HS-2-6	4.160	97.895	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-5	-1.163	-0.572	183.7	89.7	
								Pole HS-2-7	1.132	0.557	178.9	89.7	
								SEC_HS-2-6	0.031	0.015	4.9	89.8	
Pole HS-2-7	4.160	97.573	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-6	-1.128	-0.555	178.9	89.7	
								Pole HS-2-8	1.098	0.540	174.0	89.7	
								SEC_HS-2-7	0.031	0.015	4.9	89.8	
Pole HS-2-8	4.160	97.260	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-7	-1.094	-0.539	174.0	89.7	
								Pole HS-2-9	0.768	0.379	122.3	89.7	
								Pole HS-2-50	0.326	0.159	51.7	89.8	
Pole HS-2-9	4.160	97.052	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-8	-0.767	-0.378	122.3	89.7	
								Pole HS-2-10	0.756	0.373	120.6	89.7	
Pole HS-2-10	4.160	96.860	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-9	-0.755	-0.373	120.6	89.7	
								Pole HS-2-11	0.745	0.368	119.0	89.7	
Pole HS-2-11	4.160	96.653	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-10	-0.743	-0.367	119.0	89.7	
								Pole HS-2-12	0.713	0.352	114.2	89.7	
								SEC_HS-2-10	0.030	0.015	4.8	89.8	
Pole HS-2-12	4.160	96.519	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-11	-0.712	-0.352	114.2	89.7	
								Pole HS-2-86	0.702	0.347	112.6	89.7	
Pole HS-2-13	4.160	96.319	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-14	0.100	0.049	16.1	89.8	
								Pole HS-2-24	0.270	0.132	43.3	89.8	
								Pole HS-2-86	-0.371	-0.181	59.5	89.8	
Pole HS-2-14	4.160	96.286	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-13	-0.100	-0.049	16.1	89.8	
								Pole HS-2-15	0.090	0.044	14.5	89.8	
Pole HS-2-15	4.160	96.252	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-14	-0.090	-0.044	14.5	89.8	
								Pole HS-2-16	0.080	0.039	12.9	89.8	
Pole HS-2-16	4.160	96.218	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-15	-0.080	-0.039	12.9	89.8	
								Pole HS-2-17	0.070	0.034	11.3	89.8	
Pole HS-2-17	4.160	96.195	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-16	-0.070	-0.034	11.3	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-18	0.060	0.029	9.7	89.8	
Pole HS-2-18	4.160	96.180	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-17	-0.060	-0.029	9.7	89.8	
								Pole HS-2-19	0.050	0.025	8.1	89.8	
Pole HS-2-19	4.160	96.168	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-18	-0.050	-0.025	8.1	89.8	
								Pole HS-2-20	0.040	0.020	6.4	89.8	
Pole HS-2-20	4.160	96.145	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-19	-0.040	-0.020	6.4	89.8	
								Pole HS-2-21	0.030	0.015	4.8	89.8	
Pole HS-2-21	4.160	96.137	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-20	-0.030	-0.015	4.8	89.8	
								Pole HS-2-22	0.020	0.010	3.2	89.8	
Pole HS-2-22	4.160	96.130	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-21	-0.020	-0.010	3.2	89.8	
								Pole HS-2-23	0.010	0.005	1.6	89.8	
Pole HS-2-23	4.160	96.128	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-22	-0.010	-0.005	1.6	89.8	
Pole HS-2-24	4.160	96.094	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-13	-0.270	-0.132	43.3	89.8	
								Pole HS-2-25	0.230	0.112	36.9	89.8	
								Pole HS-2-26	0.030	0.015	4.8	89.8	
Pole HS-2-25	4.160	96.018	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.229	-0.112	36.9	89.8	
								Pole HS-2-27	0.229	0.112	36.9	89.8	
Pole HS-2-26	4.160	96.068	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.030	-0.015	4.8	89.8	
								SEC_HS-2-23	0.030	0.015	4.8	89.8	
Pole HS-2-27	4.160	95.943	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-25	-0.229	-0.112	36.9	89.8	
								Pole HS-2-28	0.229	0.112	36.9	89.8	
Pole HS-2-28	4.160	95.819	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-27	-0.229	-0.112	36.9	89.8	
								Pole HS-2-29	0.080	0.039	12.8	89.8	
								Pole HS-2-35	0.149	0.073	24.1	89.8	
Pole HS-2-29	4.160	95.793	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-28	-0.080	-0.039	12.8	89.8	
								Pole HS-2-30	0.070	0.034	11.2	89.8	
Pole HS-2-30	4.160	95.785	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-31	0.040	0.019	6.4	89.8	
								Pole HS-2-29	-0.070	-0.034	11.2	89.8	
								SEC_HS-2-25	0.030	0.015	4.8	89.8	
Pole HS-2-31	4.160	95.779	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-30	-0.040	-0.019	6.4	89.8	
								Pole HS-2-32	0.030	0.015	4.8	89.8	
Pole HS-2-32	4.160	95.771	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-31	-0.030	-0.015	4.8	89.8	
								Pole HS-2-33	0.020	0.010	3.2	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-2-33	4.160	95.764	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-32	-0.020	-0.010	3.2	89.8	
								Pole HS-2-34	0.010	0.005	1.6	89.8	
Pole HS-2-34	4.160	95.761	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-33	-0.010	-0.005	1.6	89.8	
Pole HS-2-35	4.160	95.738	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-28	-0.149	-0.073	24.1	89.8	
								Pole HS-2-36	0.060	0.029	9.6	89.8	
								Pole HS-2-42	0.080	0.039	12.8	89.8	
								Pole HS-2-48	0.010	0.005	1.6	89.8	
Pole HS-2-36	4.160	95.714	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-35	-0.060	-0.029	9.6	89.8	
								Pole HS-2-37	0.050	0.024	8.0	89.8	
Pole HS-2-37	4.160	95.701	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-36	-0.050	-0.024	8.0	89.8	
								Pole HS-2-38	0.040	0.019	6.4	89.8	
Pole HS-2-38	4.160	95.691	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-37	-0.040	-0.019	6.4	89.8	
								Pole HS-2-39	0.030	0.015	4.8	89.8	
Pole HS-2-39	4.160	95.684	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-38	-0.030	-0.015	4.8	89.8	
								Pole HS-2-40	0.020	0.010	3.2	89.8	
Pole HS-2-40	4.160	95.679	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-39	-0.020	-0.010	3.2	89.8	
								Pole HS-2-41	0.010	0.005	1.6	89.8	
Pole HS-2-41	4.160	95.677	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-40	-0.010	-0.005	1.6	89.8	
Pole HS-2-42	4.160	95.695	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-35	-0.079	-0.039	12.8	89.8	
								Pole HS-2-43	0.070	0.034	11.2	89.8	
								Pole HS-2-49	0.010	0.005	1.6	89.8	
Pole HS-2-43	4.160	95.676	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-42	-0.070	-0.034	11.2	89.8	
								Pole HS-2-44	0.040	0.019	6.4	89.8	
								SEC_HS-2-36	0.030	0.015	4.8	89.8	
Pole HS-2-44	4.160	95.666	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-43	-0.040	-0.019	6.4	89.8	
								Pole HS-2-45	0.030	0.015	4.8	89.8	
Pole HS-2-45	4.160	95.657	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-44	-0.030	-0.015	4.8	89.8	
								Pole HS-2-46	0.020	0.010	3.2	89.8	
Pole HS-2-46	4.160	95.653	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-45	-0.020	-0.010	3.2	89.8	
								Pole HS-2-47	0.010	0.005	1.6	89.8	
Pole HS-2-47	4.160	95.650	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-46	-0.010	-0.005	1.6	89.8	
Pole HS-2-48	4.160	95.735	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-35	-0.010	-0.005	1.6	89.8	
Pole HS-2-49	4.160	95.689	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-42	-0.010	-0.005	1.6	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								L-SUB-FDR-EQ#18-1-278~	0.000	0.000	0.0	0.0	
Pole HS-2-50	4.160	97.086	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-8	-0.325	-0.159	51.7	89.8	
								Pole HS-2-51	0.315	0.154	50.1	89.8	
Pole HS-2-51	4.160	96.918	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-50	-0.314	-0.154	50.1	89.8	
								Pole HS-2-52	0.051	0.025	8.1	89.8	
								Pole HS-2-57	0.264	0.129	42.0	89.8	
Pole HS-2-52	4.160	96.912	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-51	-0.051	-0.025	8.1	89.8	
								Pole HS-2-53	0.041	0.020	6.5	89.8	
Pole HS-2-53	4.160	96.906	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-52	-0.041	-0.020	6.5	89.8	
								Pole HS-2-54	0.030	0.015	4.9	89.8	
Pole HS-2-54	4.160	96.900	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-53	-0.030	-0.015	4.9	89.8	
								Pole HS-2-55	0.020	0.010	3.2	89.8	
Pole HS-2-55	4.160	96.898	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-54	-0.020	-0.010	3.2	89.8	
								Pole HS-2-56	0.010	0.005	1.6	89.8	
Pole HS-2-56	4.160	96.896	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-55	-0.010	-0.005	1.6	89.8	
Pole HS-2-57	4.160	96.777	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-51	-0.263	-0.129	42.0	89.8	
								Pole HS-2-58	0.101	0.050	16.2	89.8	
								Pole HS-2-76	0.162	0.079	25.8	89.8	
Pole HS-2-58	4.160	96.762	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-57	-0.101	-0.050	16.2	89.8	
								Pole HS-2-67	0.091	0.045	14.5	89.8	
Pole HS-2-59	4.160	96.727	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-67	-0.081	-0.040	12.9	89.8	
								Pole HS-2-60	0.071	0.035	11.3	89.8	
Pole HS-2-60	4.160	96.713	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-59	-0.071	-0.035	11.3	89.8	
								Pole HS-2-61	0.061	0.030	9.7	89.8	
Pole HS-2-61	4.160	96.701	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-60	-0.061	-0.030	9.7	89.8	
								Pole HS-2-62	0.051	0.025	8.1	89.8	
Pole HS-2-62	4.160	96.686	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-61	-0.051	-0.025	8.1	89.8	
								Pole HS-2-63	0.040	0.020	6.5	89.8	
Pole HS-2-63	4.160	96.679	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-62	-0.040	-0.020	6.5	89.8	
								Pole HS-2-64	0.030	0.015	4.8	89.8	
Pole HS-2-64	4.160	96.674	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-63	-0.030	-0.015	4.8	89.8	
								Pole HS-2-65	0.020	0.010	3.2	89.8	
Pole HS-2-65	4.160	96.670	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-64	-0.020	-0.010	3.2	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-66	0.010	0.005	1.6	89.8	
Pole HS-2-66	4.160	96.667	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-65	-0.010	-0.005	1.6	89.8	
								L-SUB-FDR-EQ#18-1-301~	0.000	0.000	0.0	0.0	
Pole HS-2-67	4.160	96.741	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-59	0.081	0.040	12.9	89.8	
								Pole HS-2-58	-0.091	-0.045	14.5	89.8	
Pole HS-2-68	4.160	96.619	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-69	-0.010	-0.005	1.6	89.8	
Pole HS-2-69	4.160	96.621	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-68	0.010	0.005	1.6	89.8	
								Pole HS-2-70	-0.020	-0.010	3.2	89.8	
Pole HS-2-70	4.160	96.624	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-69	0.020	0.010	3.2	89.8	
								Pole HS-2-71	-0.030	-0.015	4.8	89.8	
Pole HS-2-71	4.160	96.633	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-70	0.030	0.015	4.8	89.8	
								Pole HS-2-72	-0.040	-0.020	6.5	89.8	
Pole HS-2-72	4.160	96.641	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-71	0.040	0.020	6.5	89.8	
								Pole HS-2-73	-0.051	-0.025	8.1	89.8	
Pole HS-2-73	4.160	96.651	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-72	0.051	0.025	8.1	89.8	
								Pole HS-2-74	-0.061	-0.030	9.7	89.8	
Pole HS-2-74	4.160	96.662	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-73	0.061	0.030	9.7	89.8	
								Pole HS-2-75	-0.071	-0.035	11.3	89.8	
Pole HS-2-75	4.160	96.678	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-74	0.071	0.035	11.3	89.8	
								Pole HS-2-76	-0.081	-0.040	12.9	89.8	
Pole HS-2-76	4.160	96.690	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-75	0.081	0.040	12.9	89.8	
								Pole HS-2-57	-0.162	-0.079	25.8	89.8	
								Pole HS-2-77	0.081	0.040	12.9	89.8	
Pole HS-2-77	4.160	96.644	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-76	-0.081	-0.040	12.9	89.8	
								Pole HS-2-78	0.051	0.025	8.1	89.8	
								SEC_HS-2-67	0.030	0.015	4.8	89.8	
Pole HS-2-78	4.160	96.610	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-77	-0.050	-0.025	8.1	89.8	
								Pole HS-2-79	0.010	0.005	1.6	89.8	
								Pole HS-2-80	0.040	0.020	6.5	89.8	
Pole HS-2-79	4.160	96.604	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-78	-0.010	-0.005	1.6	89.8	
Pole HS-2-80	4.160	96.584	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-78	-0.040	-0.020	6.5	89.8	
								Pole HS-2-81	0.030	0.015	4.8	89.8	
Pole HS-2-81	4.160	96.570	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-80	-0.030	-0.015	4.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-82	0.020	0.010	3.2	89.8	
Pole HS-2-82	4.160	96.551	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-81	-0.020	-0.010	3.2	89.8	
								Pole HS-2-83	0.010	0.005	1.6	89.8	
Pole HS-2-83	4.160	96.543	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-82	-0.010	-0.005	1.6	89.8	
Pole HS-2-84	4.160	98.346	-6.4	0.000	0.000	0.010	0.005	Pole HS-2-85	-0.010	-0.005	1.6	89.8	
Pole HS-2-85	4.160	98.353	-6.4	0.000	0.000	0.010	0.005	Pole HS-2-84	0.010	0.005	1.6	89.8	
								Pole CS-1-2	-0.021	-0.010	3.3	89.8	
Pole HS-2-86	4.160	96.388	-5.9	0.000	0.000	0.000	0.000	PRI_PM_10	0.330	0.165	53.1	89.5	
								Pole HS-2-12	-0.701	-0.346	112.6	89.6	
								Pole HS-2-13	0.371	0.181	59.5	89.8	
Pole HS-3-1	4.160	99.786	-6.0	0.000	0.000	0.011	0.005	BUS_HSC_4kV	-0.875	-0.427	135.4	89.9	
								Pole HS-3-2	0.864	0.422	133.8	89.9	
Pole HS-3-2	4.160	99.502	-6.0	0.000	0.000	0.011	0.005	Pole HS-3-1	-0.862	-0.421	133.8	89.9	
								Pole HS-3-3	0.851	0.416	132.1	89.9	
Pole HS-3-3	4.160	99.090	-6.0	0.000	0.000	0.011	0.005	Pole HS-3-2	-0.848	-0.414	132.1	89.9	
								Pole HS-3-4	0.837	0.409	130.5	89.9	
Pole HS-3-4	4.160	98.810	-6.0	0.000	0.000	0.010	0.005	Pole HS-3-3	-0.835	-0.408	130.5	89.8	
								Pole HS-3-5	0.824	0.403	128.8	89.8	
Pole HS-3-5	4.160	98.534	-6.0	0.000	0.000	0.010	0.005	Pole HS-3-4	-0.822	-0.402	128.8	89.8	
								Pole HS-3-6	0.811	0.397	127.2	89.8	
Pole HS-3-6	4.160	98.343	-6.0	0.000	0.000	0.010	0.005	Pole HS-3-5	-0.810	-0.396	127.2	89.8	
								Pole HS-3-7	0.799	0.391	125.6	89.8	
Pole HS-3-7	4.160	98.116	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-6	-0.797	-0.390	125.6	89.8	
								Pole HS-3-8	0.787	0.385	123.9	89.8	
Pole HS-3-8	4.160	97.953	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-7	-0.786	-0.384	123.9	89.8	
								Pole HS-3-9	0.775	0.379	122.3	89.8	
Pole HS-3-9	4.160	97.740	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-8	-0.774	-0.378	122.3	89.8	
								Pole HS-3-10	0.763	0.373	120.7	89.8	
Pole HS-3-10	4.160	97.529	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-9	-0.762	-0.373	120.7	89.8	
								Pole HS-3-11	0.751	0.368	119.0	89.8	
Pole HS-3-11	4.160	97.379	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-10	-0.750	-0.367	119.0	89.8	
								Pole HS-3-12	0.740	0.362	117.4	89.8	
Pole HS-3-12	4.160	97.242	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-11	-0.739	-0.361	117.4	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-3-13	0.729	0.356	115.8	89.8	
Pole HS-3-13	4.160	97.044	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-12	-0.727	-0.356	115.8	89.8	
								Pole HS-3-14	0.717	0.351	114.2	89.8	
Pole HS-3-14	4.160	96.900	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-13	-0.716	-0.350	114.2	89.8	
								Pole HS-3-15	0.706	0.345	112.6	89.8	
Pole HS-3-15	4.160	96.731	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-14	-0.705	-0.345	112.6	89.8	
								Pole HS-3-16	0.695	0.340	110.9	89.8	
Pole HS-3-16	4.160	96.567	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-15	-0.693	-0.339	110.9	89.8	
								Pole HS-3-17	0.683	0.334	109.3	89.8	
Pole HS-3-17	4.160	96.426	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-16	-0.682	-0.334	109.3	89.8	
								Pole HS-3-18	0.441	0.216	70.7	89.8	
								Pole HS-3-23	0.241	0.118	38.6	89.8	
Pole HS-3-18	4.160	96.124	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-17	-0.440	-0.215	70.7	89.8	
								Pole HS-3-28	0.050	0.025	8.0	89.8	
								Pole HS-3-29	0.260	0.127	41.8	89.8	
								Pole HS-3-46	0.130	0.064	20.9	89.8	
Pole HS-3-19	4.160	96.152	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-20	-0.200	-0.098	32.2	89.8	
								Pole HS-3-30	0.190	0.093	30.5	89.8	
Pole HS-3-20	4.160	96.199	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-19	0.200	0.098	32.2	89.8	
								Pole HS-3-21	-0.210	-0.103	33.8	89.8	
Pole HS-3-21	4.160	96.291	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-20	0.210	0.103	33.8	89.8	
								Pole HS-3-22	-0.220	-0.108	35.4	89.8	
Pole HS-3-22	4.160	96.337	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-21	0.221	0.108	35.4	89.8	
								Pole HS-3-23	-0.231	-0.113	37.0	89.8	
Pole HS-3-23	4.160	96.377	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-17	-0.241	-0.118	38.6	89.8	
								Pole HS-3-22	0.231	0.113	37.0	89.8	
Pole HS-3-24	4.160	96.089	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-25	-0.010	-0.005	1.6	89.8	
Pole HS-3-25	4.160	96.092	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-24	0.010	0.005	1.6	89.8	
								Pole HS-3-26	-0.020	-0.010	3.2	89.8	
Pole HS-3-26	4.160	96.099	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-25	0.020	0.010	3.2	89.8	
								Pole HS-3-27	-0.030	-0.015	4.8	89.8	
Pole HS-3-27	4.160	96.107	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-26	0.030	0.015	4.8	89.8	
								Pole HS-3-28	-0.040	-0.020	6.4	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-28	4.160	96.117	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-27	0.040	0.020	6.4	89.8	
								Pole HS-3-18	-0.050	-0.025	8.0	89.8	
Pole HS-3-29	4.160	95.946	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-18	-0.259	-0.127	41.8	89.8	
								Pole HS-3-34	0.040	0.020	6.4	89.8	
								Pole HS-3-35	0.100	0.049	16.1	89.8	
								Pole HS-3-59	0.120	0.059	19.3	89.8	
Pole HS-3-30	4.160	96.109	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-19	-0.190	-0.093	30.5	89.8	
								Pole HS-3-85	0.180	0.088	28.9	89.8	
Pole HS-3-31	4.160	95.919	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-32	-0.010	-0.005	1.6	89.8	
Pole HS-3-32	4.160	95.921	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-31	0.010	0.005	1.6	89.8	
								Pole HS-3-33	-0.020	-0.010	3.2	89.8	
Pole HS-3-33	4.160	95.926	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-32	0.020	0.010	3.2	89.8	
								Pole HS-3-34	-0.030	-0.015	4.8	89.8	
Pole HS-3-34	4.160	95.932	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-29	-0.040	-0.020	6.4	89.8	
								Pole HS-3-33	0.030	0.015	4.8	89.8	
Pole HS-3-35	4.160	95.878	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.100	-0.049	16.1	89.8	
								Pole HS-3-37	0.020	0.010	3.2	89.8	
								Pole HS-3-38	0.080	0.039	12.8	89.8	
Pole HS-3-36	4.160	95.869	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-37	-0.010	-0.005	1.6	89.8	
Pole HS-3-37	4.160	95.871	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-35	-0.020	-0.010	3.2	89.8	
								Pole HS-3-36	0.010	0.005	1.6	89.8	
Pole HS-3-38	4.160	95.824	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-35	-0.080	-0.039	12.8	89.8	
								Pole HS-3-43	0.070	0.034	11.2	89.8	
Pole HS-3-39	4.160	95.754	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-44	0.020	0.010	3.2	89.8	
								Pole HS-3-40	-0.030	-0.015	4.8	89.8	
Pole HS-3-40	4.160	95.759	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-39	0.030	0.015	4.8	89.8	
								Pole HS-3-41	-0.040	-0.019	6.4	89.8	
Pole HS-3-41	4.160	95.768	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-40	0.040	0.019	6.4	89.8	
								Pole HS-3-42	-0.050	-0.024	8.0	89.8	
Pole HS-3-42	4.160	95.778	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-41	0.050	0.024	8.0	89.8	
								Pole HS-3-43	-0.060	-0.029	9.6	89.8	
Pole HS-3-43	4.160	95.791	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-42	0.060	0.029	9.6	89.8	
								Pole HS-3-38	-0.070	-0.034	11.2	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-44	4.160	95.732	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-39	-0.020	-0.010	3.2	89.8	
								Pole HS-3-45	0.010	0.005	1.6	89.8	
Pole HS-3-45	4.160	95.728	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-44	-0.010	-0.005	1.6	89.8	
Pole HS-3-46	4.160	96.107	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-18	-0.130	-0.064	20.9	89.8	
								Pole HS-3-47	0.120	0.059	19.3	89.8	
Pole HS-3-47	4.160	96.088	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-46	-0.120	-0.059	19.3	89.8	
								Pole HS-3-48	0.110	0.054	17.7	89.8	
Pole HS-3-48	4.160	96.055	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-47	-0.110	-0.054	17.7	89.8	
								Pole HS-3-49	0.100	0.049	16.1	89.8	
Pole HS-3-49	4.160	96.029	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-50	0.090	0.044	14.5	89.8	
								Pole HS-3-48	-0.100	-0.049	16.1	89.8	
Pole HS-3-50	4.160	96.013	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-49	-0.090	-0.044	14.5	89.8	
								Pole HS-3-51	0.080	0.039	12.9	89.8	
Pole HS-3-51	4.160	95.994	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-50	-0.080	-0.039	12.9	89.8	
								Pole HS-3-52	0.070	0.034	11.3	89.8	
Pole HS-3-52	4.160	95.974	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-51	-0.070	-0.034	11.3	89.8	
								Pole HS-3-53	0.060	0.029	9.6	89.8	
Pole HS-3-53	4.160	95.967	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-58	0.050	0.024	8.0	89.8	
								Pole HS-3-52	-0.060	-0.029	9.6	89.8	
Pole HS-3-54	4.160	95.925	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-55	-0.010	-0.005	1.6	89.8	
Pole HS-3-55	4.160	95.929	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-54	0.010	0.005	1.6	89.8	
								Pole HS-3-56	-0.020	-0.010	3.2	89.8	
Pole HS-3-56	4.160	95.933	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-55	0.020	0.010	3.2	89.8	
								Pole HS-3-57	-0.030	-0.015	4.8	89.8	
Pole HS-3-57	4.160	95.939	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-56	0.030	0.015	4.8	89.8	
								Pole HS-3-58	-0.040	-0.020	6.4	89.8	
Pole HS-3-58	4.160	95.961	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-53	-0.050	-0.024	8.0	89.8	
								Pole HS-3-57	0.040	0.020	6.4	89.8	
Pole HS-3-59	4.160	95.861	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.119	-0.059	19.3	89.8	
								Pole HS-3-60	0.090	0.044	14.4	89.8	
								SEC_HS-3-55	0.030	0.015	4.8	89.8	
Pole HS-3-60	4.160	95.822	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-59	-0.090	-0.044	14.4	89.8	
								Pole HS-3-61	0.080	0.039	12.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-61	4.160	95.791	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-60	-0.080	-0.039	12.8	89.8	
								Pole HS-3-62	0.050	0.024	8.0	89.8	
								SEC_HS-3-57	0.030	0.015	4.8	89.8	
Pole HS-3-62	4.160	95.773	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-61	-0.050	-0.024	8.0	89.8	
								Pole HS-3-63	0.040	0.019	6.4	89.8	
Pole HS-3-63	4.160	95.758	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-62	-0.040	-0.019	6.4	89.8	
								Pole HS-3-64	0.010	0.005	1.6	89.8	
								SEC_HS-3-59	0.030	0.015	4.8	89.8	
Pole HS-3-64	4.160	95.755	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-63	-0.010	-0.005	1.6	89.8	
Pole HS-3-65	4.160	95.862	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-66	-0.010	-0.005	1.6	89.8	
Pole HS-3-66	4.160	95.866	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-65	0.010	0.005	1.6	89.8	
								Pole HS-3-67	-0.020	-0.010	3.2	89.8	
Pole HS-3-67	4.160	95.879	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-66	0.020	0.010	3.2	89.8	
								Pole HS-3-68	-0.030	-0.015	4.8	89.8	
Pole HS-3-68	4.160	95.887	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-67	0.030	0.015	4.8	89.8	
								Pole HS-3-69	-0.040	-0.020	6.4	89.8	
Pole HS-3-69	4.160	95.898	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-68	0.040	0.020	6.4	89.8	
								Pole HS-3-70	-0.050	-0.024	8.0	89.8	
Pole HS-3-70	4.160	95.931	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-69	0.050	0.024	8.0	89.8	
								Pole HS-3-71	-0.060	-0.029	9.6	89.8	
Pole HS-3-71	4.160	95.969	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-70	0.060	0.029	9.6	89.8	
								Pole MS-1-81	-0.070	-0.034	11.3	89.8	
Pole HS-3-74	4.160	95.898	-5.9	0.000	0.000	0.020	0.010	Pole HS-3-75	-0.020	-0.010	3.2	89.8	
Pole HS-3-75	4.160	95.903	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-74	0.020	0.010	3.2	89.8	
								Pole HS-3-76	-0.030	-0.015	4.8	89.8	
Pole HS-3-76	4.160	95.916	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-75	0.030	0.015	4.8	89.8	
								Pole HS-3-77	-0.040	-0.020	6.4	89.8	
Pole HS-3-77	4.160	95.930	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-76	0.040	0.020	6.4	89.8	
								Pole HS-3-78	-0.050	-0.024	8.0	89.8	
Pole HS-3-78	4.160	95.948	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-77	0.050	0.024	8.0	89.8	
								Pole HS-3-79	-0.060	-0.029	9.6	89.8	
Pole HS-3-79	4.160	96.004	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-78	0.060	0.029	9.6	89.8	
								Pole MS-1-81	-0.070	-0.034	11.3	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-80	4.160	96.018	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-81	0.030	0.015	4.8	89.8	
								Pole HS-3-85	-0.040	-0.020	6.4	89.8	
Pole HS-3-81	4.160	95.992	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-82	0.020	0.010	3.2	89.8	
								Pole HS-3-80	-0.030	-0.015	4.8	89.8	
Pole HS-3-82	4.160	95.978	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-83	0.010	0.005	1.6	89.8	
								Pole HS-3-81	-0.020	-0.010	3.2	89.8	
Pole HS-3-83	4.160	95.974	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-82	-0.010	-0.005	1.6	89.8	
Pole HS-3-85	4.160	96.045	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-80	0.040	0.020	6.4	89.8	
								Pole MS-1-81	0.140	0.068	22.5	89.8	
								Pole HS-3-30	-0.180	-0.088	28.9	89.8	
Pole HS-3-86	4.160	97.617	-6.6	0.000	0.000	0.010	0.005	Pole CS-1-3	-0.010	-0.005	1.6	89.8	
Pole HS-3-88	4.160	96.913	-6.7	0.000	0.000	0.010	0.005	Pole CS-1-6	-0.030	-0.015	4.9	89.8	
								Pole HS-3-89	0.020	0.010	3.2	89.8	
Pole HS-3-89	4.160	96.909	-6.7	0.000	0.000	0.010	0.005	Pole HS-3-88	-0.020	-0.010	3.2	89.8	
								Pole HS-3-90	0.010	0.005	1.6	89.8	
Pole HS-3-90	4.160	96.906	-6.7	0.000	0.000	0.010	0.005	Pole HS-3-89	-0.010	-0.005	1.6	89.8	
Pole HS-4-1	4.160	99.186	-6.1	0.000	0.000	0.011	0.005	BUS_HSC_4kV	-1.061	-0.524	165.6	89.7	
								Pole HS-4-2	1.050	0.519	163.9	89.7	
Pole HS-4-2	4.160	99.055	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-12	0.601	0.297	93.9	89.6	
								Pole HS-4-1	-1.049	-0.517	163.9	89.7	
								Pole HS-4-3	0.448	0.220	70.0	89.8	
Pole HS-4-3	4.160	98.843	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-44	0.153	0.075	23.9	89.8	
								Pole HS-4-53	0.098	0.048	15.4	89.8	
								Pole HS-4-2	-0.448	-0.219	70.0	89.8	
								Pole HS-4-4	0.196	0.096	30.7	89.8	
Pole HS-4-4	4.160	98.795	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-58	0.065	0.032	10.2	89.8	
								Pole HS-4-3	-0.196	-0.096	30.7	89.8	
								Pole HS-4-5	0.131	0.064	20.5	89.8	
Pole HS-4-5	4.160	98.752	-6.2	0.000	0.000	0.022	0.011	Pole HS-4-55	0.022	0.011	3.4	89.8	
								Pole HS-4-4	-0.131	-0.064	20.5	89.8	
								Pole HS-4-6	0.087	0.043	13.7	89.8	
Pole HS-4-6	4.160	98.723	-6.3	0.000	0.000	0.011	0.005	Pole HS-4-56	0.022	0.011	3.4	89.8	
								Pole HS-4-5	-0.087	-0.043	13.7	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-7	0.054	0.027	8.5	89.8	
Pole HS-4-7	4.160	98.705	-6.3	0.000	0.000	0.000	0.000	Pole HS-4-6	-0.054	-0.027	8.5	89.8	
								Pole HS-4-8	0.054	0.027	8.5	89.8	
Pole HS-4-8	4.160	98.687	-6.3	0.000	0.000	0.011	0.005	Pole HS-4-7	-0.054	-0.027	8.5	89.8	
								Pole HS-4-9	0.044	0.021	6.8	89.8	
Pole HS-4-9	4.160	98.681	-6.3	0.000	0.000	0.011	0.005	Pole HS-4-8	-0.044	-0.021	6.8	89.8	
								Pole HS-4-10	0.033	0.016	5.1	89.8	
Pole HS-4-10	4.160	98.676	-6.3	0.000	0.000	0.000	0.000	Pole HS-4-9	-0.033	-0.016	5.1	89.8	
								Pole HS-4-11	0.000	0.000	0.0	0.0	
								SEC_HS-4-7	0.033	0.016	5.1	89.8	
Pole HS-4-11	4.160	98.676	-6.3	0.000	0.000	0.000	0.000	Pole HS-4-10	0.000	0.000	0.0	0.0	
Pole HS-4-12	4.160	98.862	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-2	-0.600	-0.297	93.9	89.6	
								Pole HS-4-13	0.589	0.291	92.2	89.6	
Pole HS-4-13	4.160	98.748	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-12	-0.588	-0.291	92.2	89.6	
								Pole HS-4-14	0.577	0.286	90.5	89.6	
Pole HS-4-14	4.160	98.588	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-13	-0.576	-0.285	90.5	89.6	
								Pole HS-4-15	0.565	0.280	88.8	89.6	
Pole HS-4-15	4.160	98.426	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-14	-0.564	-0.279	88.8	89.6	
								Pole HS-4-19	0.554	0.274	87.1	89.6	
Pole HS-4-16	4.160	96.617	-6.1	0.000	0.000	0.000	0.000	PRI_PM_15	0.332	0.166	53.3	89.4	
								Pole HS-4-33	-0.332	-0.166	53.3	89.4	
Pole HS-4-17	4.160	98.185	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-19	-0.541	-0.268	85.4	89.6	
								Pole HS-4-18	0.509	0.252	80.3	89.6	
								SEC_HS-4-13	0.032	0.016	5.1	89.8	
Pole HS-4-18	4.160	98.088	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-17	-0.508	-0.252	80.3	89.6	
								Pole HS-4-20	0.498	0.247	78.6	89.6	
Pole HS-4-19	4.160	98.341	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-15	-0.553	-0.274	87.1	89.6	
								Pole HS-4-17	0.542	0.269	85.4	89.6	
Pole HS-4-20	4.160	97.968	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-18	-0.497	-0.247	78.6	89.6	
								Pole HS-4-21	0.486	0.241	76.9	89.6	
Pole HS-4-21	4.160	97.856	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-20	-0.486	-0.241	76.9	89.6	
								Pole HS-4-22	0.475	0.236	75.2	89.6	
Pole HS-4-22	4.160	97.658	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-21	-0.474	-0.235	75.2	89.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-23	0.463	0.230	73.5	89.6	
Pole HS-4-23	4.160	97.535	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-22	-0.463	-0.230	73.5	89.6	
								Pole HS-4-24	0.452	0.225	71.8	89.6	
Pole HS-4-24	4.160	97.449	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-23	-0.452	-0.224	71.8	89.6	
								Pole HS-4-26	0.032	0.016	5.1	89.8	
								Pole HS-4-27	0.420	0.209	66.7	89.5	
Pole HS-4-26	4.160	97.439	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-24	-0.032	-0.016	5.1	89.8	
								SEC_HS-4-21	0.032	0.016	5.1	89.8	
Pole HS-4-27	4.160	97.357	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-24	-0.419	-0.209	66.7	89.5	
								Pole HS-4-28	0.409	0.203	65.0	89.5	
Pole HS-4-28	4.160	97.265	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-27	-0.408	-0.203	65.0	89.5	
								Pole HS-4-29	0.397	0.198	63.4	89.5	
Pole HS-4-29	4.160	96.995	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-28	-0.396	-0.197	63.4	89.5	
								Pole HS-4-31	0.386	0.192	61.7	89.5	
Pole HS-4-30	4.160	96.757	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-31	-0.385	-0.192	61.7	89.5	
								Pole HS-4-32	0.374	0.187	60.0	89.5	
Pole HS-4-31	4.160	96.904	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-29	-0.385	-0.192	61.7	89.5	
								Pole HS-4-30	0.385	0.192	61.7	89.5	
Pole HS-4-32	4.160	96.690	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-30	-0.374	-0.186	60.0	89.5	
								Pole HS-4-33	0.363	0.181	58.3	89.5	
Pole HS-4-33	4.160	96.652	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-32	-0.363	-0.181	58.3	89.5	
								Pole HS-4-16	0.332	0.166	53.3	89.5	
								Pole HS-4-64	0.032	0.015	5.0	89.8	
								L-SUB-FDR-EQ#20-1-96~	0.000	0.000	0.0	0.0	
Pole HS-4-34	4.160	98.653	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-35	-0.022	-0.011	3.4	89.8	
								Pole HS-4-45	0.011	0.005	1.7	89.8	
Pole HS-4-35	4.160	98.661	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-36	-0.033	-0.016	5.1	89.8	
								Pole HS-4-34	0.022	0.011	3.4	89.8	
Pole HS-4-36	4.160	98.686	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-37	-0.044	-0.021	6.8	89.8	
								Pole HS-4-35	0.033	0.016	5.1	89.8	
Pole HS-4-37	4.160	98.705	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-38	-0.055	-0.027	8.5	89.8	
								Pole HS-4-36	0.044	0.021	6.8	89.8	
Pole HS-4-38	4.160	98.716	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-39	-0.065	-0.032	10.2	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-37	0.055	0.027	8.5	89.8	
Pole HS-4-39	4.160	98.722	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-40	-0.098	-0.048	15.4	89.8	
								Pole HS-4-38	0.065	0.032	10.2	89.8	
								SEC_HS-4-32	0.033	0.016	5.1	89.8	
Pole HS-4-40	4.160	98.737	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-41	-0.109	-0.053	17.1	89.8	
								Pole HS-4-39	0.098	0.048	15.4	89.8	
Pole HS-4-41	4.160	98.763	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-42	-0.120	-0.059	18.8	89.8	
								Pole HS-4-40	0.109	0.053	17.1	89.8	
Pole HS-4-42	4.160	98.793	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-43	-0.131	-0.064	20.5	89.8	
								Pole HS-4-41	0.120	0.059	18.8	89.8	
Pole HS-4-43	4.160	98.811	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-44	-0.142	-0.070	22.2	89.8	
								Pole HS-4-42	0.131	0.064	20.5	89.8	
Pole HS-4-44	4.160	98.827	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-3	-0.153	-0.075	23.9	89.8	
								Pole HS-4-43	0.142	0.070	22.2	89.8	
Pole HS-4-45	4.160	98.649	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-34	-0.011	-0.005	1.7	89.8	
Pole HS-4-47	4.160	98.720	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-48	-0.011	-0.005	1.7	89.8	
								HS-4-33~	0.000	0.000	0.0	0.0	
Pole HS-4-48	4.160	98.727	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-47	0.011	0.005	1.7	89.9	
								Pole HS-4-49	-0.044	-0.021	6.8	89.8	
								SEC_HS-4-44	0.033	0.016	5.1	89.8	
Pole HS-4-49	4.160	98.736	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-48	0.044	0.021	6.8	89.8	
								Pole HS-4-50	-0.055	-0.027	8.5	89.8	
Pole HS-4-50	4.160	98.747	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-49	0.055	0.027	8.5	89.8	
								Pole HS-4-51	-0.065	-0.032	10.2	89.8	
Pole HS-4-51	4.160	98.779	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-50	0.065	0.032	10.2	89.8	
								Pole HS-4-52	-0.076	-0.037	11.9	89.8	
Pole HS-4-52	4.160	98.796	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-51	0.076	0.037	11.9	89.8	
								Pole HS-4-53	-0.087	-0.043	13.7	89.8	
Pole HS-4-53	4.160	98.821	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-52	0.087	0.043	13.7	89.8	
								Pole HS-4-3	-0.098	-0.048	15.4	89.8	
Pole HS-4-54	4.160	98.739	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-55	-0.011	-0.005	1.7	89.8	
Pole HS-4-55	4.160	98.742	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-54	0.011	0.005	1.7	89.8	
								Pole HS-4-5	-0.022	-0.011	3.4	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-4-56	4.160	98.719	-6.3	0.000	0.000	0.011	0.005	Pole HS-4-6	-0.022	-0.011	3.4	89.8	
								Pole HS-4-57	0.011	0.005	1.7	89.8	
Pole HS-4-57	4.160	98.716	-6.3	0.000	0.000	0.011	0.005	Pole HS-4-56	-0.011	-0.005	1.7	89.8	
Pole HS-4-58	4.160	98.736	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-4	-0.065	-0.032	10.2	89.8	
								Pole HS-4-59	0.055	0.027	8.5	89.8	
Pole HS-4-59	4.160	98.713	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-58	-0.055	-0.027	8.5	89.8	
								Pole HS-4-60	0.011	0.005	1.7	89.8	
								Pole HS-4-61	0.033	0.016	5.1	89.8	
Pole HS-4-60	4.160	98.710	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-59	-0.011	-0.005	1.7	89.8	
Pole HS-4-61	4.160	98.695	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-59	-0.033	-0.016	5.1	89.8	
								Pole HS-4-62	0.022	0.011	3.4	89.8	
Pole HS-4-62	4.160	98.683	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-61	-0.022	-0.011	3.4	89.8	
								Pole HS-4-63	0.011	0.005	1.7	89.8	
Pole HS-4-63	4.160	98.680	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-62	-0.011	-0.005	1.7	89.8	
Pole HS-4-64	4.160	96.644	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-65	0.011	0.005	1.7	89.8	
								Pole HS-4-33	-0.032	-0.015	5.0	89.8	
								Pole HS-4-66	0.021	0.010	3.4	89.8	
Pole HS-4-65	4.160	96.642	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-64	-0.011	-0.005	1.7	89.8	
Pole HS-4-66	4.160	96.642	-6.1	0.000	0.000	0.021	0.010	Pole HS-4-64	-0.021	-0.010	3.4	89.8	
								Pole HS-4-67	0.000	0.000	0.0	0.0	
Pole HS-4-67	4.160	96.642	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-66	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#20-1-90~	0.000	0.000	0.0	0.0	
Pole MS-1-1	4.160	100.219	-4.8	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.219	-0.107	33.7	89.9	
								Pole MS-1-2	0.159	0.078	24.5	89.9	
								Pole MS-1-76	0.060	0.029	9.2	89.9	
								L-SUB-FDR-EQ#12-9~	0.000	0.000	0.0	0.0	
Pole MS-1-2	4.160	100.185	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-1	-0.159	-0.077	24.5	89.9	
								Pole MS-1-3	0.154	0.075	23.7	89.9	
Pole MS-1-3	4.160	100.159	-4.8	0.000	0.000	0.000	0.000	Pole MS-1-2	-0.154	-0.075	23.7	89.9	
								Pole MS-1-17	0.114	0.055	17.5	89.9	
								Pole MS-1-5	0.040	0.020	6.2	89.9	
Pole MS-1-5	4.160	100.144	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-3	-0.040	-0.020	6.2	89.9	
								Pole MS-1-7	0.035	0.017	5.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-7	4.160	100.134	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-5	-0.035	-0.017	5.4	89.9	
								Pole MS-1-9	0.030	0.015	4.6	89.9	
Pole MS-1-8	4.160	100.120	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-9	-0.025	-0.012	3.8	89.9	
								Pole MS-1-10	0.020	0.010	3.0	89.9	
Pole MS-1-9	4.160	100.127	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-8	0.025	0.012	3.8	89.9	
								Pole MS-1-7	-0.030	-0.015	4.6	89.9	
Pole MS-1-10	4.160	100.115	-4.8	0.000	0.000	0.000	0.000	Pole MS-1-8	-0.020	-0.010	3.0	89.9	
								Pole MS-1-11	0.016	0.008	2.4	89.9	
								SEC_MS-1-17	0.004	0.002	0.6	90.0	
Pole MS-1-11	4.160	100.111	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-10	-0.016	-0.008	2.4	89.9	
								Pole MS-1-13	0.010	0.005	1.6	89.9	
Pole MS-1-13	4.160	100.108	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-11	-0.010	-0.005	1.6	89.9	
								Pole MS-1-15	0.005	0.003	0.8	89.9	
Pole MS-1-15	4.160	100.104	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-13	-0.005	-0.003	0.8	89.9	
Pole MS-1-17	4.160	100.135	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-3	-0.114	-0.055	17.5	89.9	
								Pole MS-1-19	0.108	0.053	16.7	89.9	
Pole MS-1-18	4.160	100.104	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-19	-0.108	-0.053	16.7	89.9	
								Pole MS-1-28	0.103	0.050	15.9	89.9	
Pole MS-1-19	4.160	100.116	-4.9	0.000	0.000	0.000	0.000	Pole MS-1-18	0.108	0.053	16.7	89.9	
								Pole MS-1-17	-0.108	-0.053	16.7	89.9	
								L-SUB-FDR-EQ#16-12~	0.000	0.000	0.0	0.0	
Pole MS-1-28	4.160	100.076	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-18	-0.103	-0.050	15.9	89.9	
								Pole MS-1-50	0.057	0.028	8.8	89.9	
								Pole MS-1-30	0.041	0.020	6.4	89.9	
Pole MS-1-30	4.160	100.063	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-28	-0.041	-0.020	6.4	89.9	
								Pole MS-1-32	0.036	0.018	5.6	89.9	
Pole MS-1-32	4.160	100.052	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-30	-0.036	-0.018	5.6	89.9	
								Pole MS-1-34	0.031	0.015	4.8	89.9	
Pole MS-1-34	4.160	100.040	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-32	-0.031	-0.015	4.8	89.9	
								Pole MS-1-36	0.026	0.013	4.0	89.9	
Pole MS-1-36	4.160	100.030	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-34	-0.026	-0.013	4.0	89.9	
								Pole MS-1-38	0.021	0.010	3.2	89.9	
Pole MS-1-38	4.160	100.022	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-36	-0.021	-0.010	3.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-1-40	0.015	0.008	2.4	89.9	
Pole MS-1-40	4.160	100.016	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-38	-0.015	-0.008	2.4	89.9	
								Pole MS-1-42	0.010	0.005	1.6	89.9	
Pole MS-1-42	4.160	100.013	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-40	-0.010	-0.005	1.6	89.9	
								Pole MS-1-46	0.005	0.003	0.8	89.9	
Pole MS-1-46	4.160	100.011	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-42	-0.005	-0.003	0.8	89.9	
Pole MS-1-50	4.160	100.054	-4.9	0.000	0.000	0.000	0.000	Pole MS-1-28	-0.057	-0.028	8.8	89.9	
								Pole MS-1-70	0.015	0.008	2.4	89.9	
								Pole MS-1-52	0.041	0.020	6.4	89.9	
Pole MS-1-52	4.160	100.040	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-50	-0.041	-0.020	6.4	89.9	
								Pole MS-1-54	0.036	0.018	5.6	89.9	
Pole MS-1-54	4.160	100.029	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-52	-0.036	-0.018	5.6	89.9	
								Pole MS-1-56	0.031	0.015	4.8	89.9	
Pole MS-1-56	4.160	100.020	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-54	-0.031	-0.015	4.8	89.9	
								Pole MS-1-58	0.026	0.013	4.0	89.9	
Pole MS-1-58	4.160	100.011	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-56	-0.026	-0.013	4.0	89.9	
								Pole MS-1-60	0.021	0.010	3.2	89.9	
Pole MS-1-60	4.160	100.006	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-58	-0.021	-0.010	3.2	89.9	
								Pole MS-1-62	0.015	0.008	2.4	89.9	
Pole MS-1-62	4.160	100.001	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-60	-0.015	-0.008	2.4	89.9	
								Pole MS-1-64	0.010	0.005	1.6	89.9	
Pole MS-1-64	4.160	100.000	-4.9	0.000	0.000	0.000	0.000	Pole MS-1-62	-0.010	-0.005	1.6	89.9	
								Pole MS-1-66	0.005	0.003	0.8	89.9	
								Pole MS-1-68	0.005	0.003	0.8	89.9	
Pole MS-1-66	4.160	99.999	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-64	-0.005	-0.003	0.8	89.9	
Pole MS-1-68	4.160	99.996	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-64	-0.005	-0.003	0.8	89.9	
Pole MS-1-70	4.160	100.052	-4.9	0.000	0.000	0.005	0.003	Pole MS-1-50	-0.015	-0.008	2.4	89.9	
								Pole MS-1-72	0.010	0.005	1.6	89.9	
Pole MS-1-72	4.160	100.050	-4.9	0.000	0.000	0.010	0.005	Pole MS-1-70	-0.010	-0.005	1.6	89.9	
Pole MS-1-73	4.160	100.142	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-74	-0.036	-0.018	5.6	89.9	
								Pole MS-1-79	0.031	0.015	4.8	89.9	
Pole MS-1-74	4.160	100.153	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-73	0.036	0.018	5.6	89.9	
								Pole MS-1-75	-0.041	-0.020	6.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-75	4.160	100.186	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-74	0.041	0.020	6.4	89.9	
								Pole MS-1-76	-0.047	-0.023	7.2	89.9	
Pole MS-1-76	4.160	100.200	-4.8	0.000	0.000	0.013	0.006	Pole MS-1-75	0.047	0.023	7.2	89.9	
								Pole MS-1-1	-0.060	-0.029	9.2	89.9	
Pole MS-1-79	4.160	100.129	-4.8	0.000	0.000	0.000	0.000	Pole MS-1-73	-0.031	-0.015	4.8	89.9	
								Pole MS-1-80	0.010	0.005	1.6	89.9	
								Pole MS-1-84	0.021	0.010	3.2	89.9	
Pole MS-1-80	4.160	100.126	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-79	-0.010	-0.005	1.6	89.9	
								Pole MS-1-82	0.005	0.003	0.8	89.9	
Pole MS-1-81	4.160	96.015	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-71	0.070	0.034	11.3	89.8	
								Pole HS-3-79	0.070	0.034	11.3	89.8	
								Pole HS-3-85	-0.140	-0.068	22.5	89.8	
Pole MS-1-82	4.160	100.124	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-80	-0.005	-0.003	0.8	89.9	
Pole MS-1-84	4.160	100.121	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-79	-0.021	-0.010	3.2	89.9	
								Pole MS-1-86	0.016	0.008	2.4	89.9	
Pole MS-1-86	4.160	100.114	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-84	-0.016	-0.008	2.4	89.9	
								Pole MS-1-87	0.010	0.005	1.6	89.9	
Pole MS-1-87	4.160	100.106	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-86	-0.010	-0.005	1.6	89.9	
								Pole MS-1-88	0.005	0.003	0.8	89.9	
Pole MS-1-88	4.160	100.105	-4.8	0.000	0.000	0.005	0.003	Pole MS-1-87	-0.005	-0.003	0.8	89.9	
Pole MS-2-1	4.160	99.307	-4.6	0.000	0.000	0.000	0.000	Pole MS-2-180	-0.036	-0.018	5.6	89.9	
								Pole MS-2-2	0.024	0.012	3.7	90.0	
								SEC_MS-2-8	0.012	0.006	1.9	89.9	
Pole MS-2-2	4.160	99.297	-4.6	0.000	0.000	0.000	0.000	Pole MS-2-1	-0.024	-0.012	3.7	89.9	
								Pole MS-2-3	0.012	0.006	1.9	90.0	
								SEC_MS-2-37	0.012	0.006	1.9	89.9	
Pole MS-2-3	4.160	99.286	-4.6	0.000	0.000	0.000	0.000	Pole MS-2-2	-0.012	-0.006	1.9	90.0	
								L-SUB-FDR-EQ#16-173~	0.000	0.000	0.0	0.0	
								SEC_MS-2-38	0.012	0.006	1.9	89.9	
Pole MS-2-4	4.160	99.357	-4.6	0.000	0.000	0.000	0.000	PRI_PM_8	0.139	0.069	21.7	89.6	
								Pole MS-2-180	0.036	0.018	5.6	90.0	
								Pole MS-2-182	-0.175	-0.087	27.3	89.7	
Pole MS-2-90	4.160	99.487	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-182	-0.165	-0.080	25.7	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-2-91	0.148	0.072	23.0	89.9	
								SEC_MS-2-36	0.012	0.006	1.9	89.9	
Pole MS-2-91	4.160	99.346	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-90	-0.148	-0.072	23.0	89.9	
								Pole MS-2-92	0.143	0.070	22.2	89.9	
Pole MS-2-92	4.160	99.306	-4.5	0.000	0.000	0.000	0.000	Pole MS-2-91	-0.143	-0.070	22.2	89.9	
								Pole MS-2-93	0.131	0.064	20.3	89.9	
								SEC_MS-2-39	0.012	0.006	1.9	89.9	
Pole MS-2-93	4.160	99.269	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-92	-0.131	-0.064	20.3	89.9	
								Pole MS-2-94	0.126	0.061	19.5	89.9	
Pole MS-2-94	4.160	99.241	-4.5	0.000	0.000	0.000	0.000	Pole MS-2-93	-0.126	-0.061	19.5	89.9	
								Pole MS-2-95	0.114	0.055	17.7	89.9	
								SEC_MS-2-40	0.012	0.006	1.9	89.9	
Pole MS-2-95	4.160	99.156	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-94	-0.114	-0.055	17.7	89.9	
								Pole MS-2-96	0.108	0.053	16.9	89.9	
Pole MS-2-96	4.160	99.094	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-95	-0.108	-0.053	16.9	89.9	
								Pole MS-2-98	0.103	0.050	16.1	89.9	
Pole MS-2-98	4.160	99.072	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-96	-0.103	-0.050	16.1	89.9	
								Pole MS-2-100	0.098	0.048	15.3	89.9	
Pole MS-2-100	4.160	99.060	-4.5	0.000	0.000	0.000	0.000	Pole MS-2-98	-0.098	-0.048	15.3	89.9	
								Pole MS-2-102	0.086	0.042	13.4	89.9	
								SEC_MS-2-41	0.012	0.006	1.9	89.9	
Pole MS-2-102	4.160	99.045	-4.5	0.000	0.000	0.000	0.000	Pole MS-2-100	-0.086	-0.042	13.4	89.9	
								Pole MS-2-103	0.086	0.042	13.4	89.9	
Pole MS-2-103	4.160	99.029	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-102	-0.086	-0.042	13.4	89.9	
								Pole MS-2-107	0.081	0.039	12.6	89.9	
Pole MS-2-107	4.160	98.986	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-103	-0.081	-0.039	12.6	89.9	
								Pole MS-2-108	0.076	0.037	11.8	89.9	
Pole MS-2-108	4.160	98.968	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-107	-0.076	-0.037	11.8	89.9	
								Pole MS-2-109	0.071	0.034	11.1	89.9	
Pole MS-2-109	4.160	98.950	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-108	-0.071	-0.034	11.1	89.9	
								Pole MS-2-110	0.066	0.032	10.3	89.9	
Pole MS-2-110	4.160	98.932	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-109	-0.066	-0.032	10.3	89.9	
								Pole MS-2-111	0.061	0.030	9.5	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-2-111	4.160	98.913	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-110	-0.061	-0.030	9.5	89.9	
								Pole MS-2-112	0.056	0.027	8.7	89.9	
Pole MS-2-112	4.160	98.901	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-111	-0.056	-0.027	8.7	89.9	
								Pole MS-2-113	0.051	0.025	7.9	89.9	
Pole MS-2-113	4.160	98.890	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-112	-0.051	-0.025	7.9	89.9	
								Pole MS-2-115	0.046	0.022	7.1	89.9	
Pole MS-2-115	4.160	98.877	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-113	-0.046	-0.022	7.1	89.9	
								Pole MS-2-116	0.040	0.020	6.3	89.9	
Pole MS-2-116	4.160	98.860	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-115	-0.040	-0.020	6.3	89.9	
								Pole MS-2-117	0.035	0.017	5.5	89.9	
Pole MS-2-117	4.160	98.839	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-116	-0.035	-0.017	5.5	89.9	
								Pole MS-2-118	0.030	0.015	4.7	89.9	
Pole MS-2-118	4.160	98.821	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-117	-0.030	-0.015	4.7	89.9	
								Pole MS-2-120	0.025	0.012	3.9	89.9	
Pole MS-2-120	4.160	98.812	-4.5	0.000	0.000	0.005	0.002	Pole MS-2-118	-0.025	-0.012	3.9	89.9	
								Pole MS-2-121	0.020	0.010	3.2	89.9	
Pole MS-2-121	4.160	98.799	-4.5	0.000	0.000	0.010	0.005	Pole MS-2-120	-0.020	-0.010	3.2	89.9	
								Pole MS-2-122	0.010	0.005	1.6	89.9	
Pole MS-2-122	4.160	98.797	-4.5	0.000	0.000	0.010	0.005	Pole MS-2-121	-0.010	-0.005	1.6	89.9	
								L-SUB-FDR-EQ#16-97~	0.000	0.000	0.0	0.0	
Pole MS-2-180	4.160	99.321	-4.6	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.036	-0.018	5.6	90.0	
								Pole MS-2-1	0.036	0.018	5.6	89.9	
								L-SUB-FDR-EQ#12-13~	0.000	0.000	0.0	0.0	
Pole MS-2-182	4.160	99.531	-4.5	0.000	0.000	0.000	0.000	Pole MS-2-4	0.175	0.087	27.3	89.6	
								BUS_5KV_LLP_2	-0.341	-0.167	53.0	89.8	
								Pole MS-2-90	0.166	0.081	25.7	89.9	
Pole MS-3-1	4.160	99.596	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-2	0.012	0.006	1.9	89.9	
								Pole MS-3-88	-0.232	-0.113	35.9	89.9	
								Pole MS-3-3	0.220	0.107	34.1	89.9	
Pole MS-3-2	4.160	99.595	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-1	-0.012	-0.006	1.9	89.9	
								SEC_MS-3-1	0.012	0.006	1.9	89.9	
Pole MS-3-3	4.160	99.472	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-4	0.220	0.107	34.1	89.9	
								Pole MS-3-1	-0.220	-0.107	34.1	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-4	4.160	99.448	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-3	-0.220	-0.107	34.1	89.9	
								Pole MS-3-5	0.214	0.104	33.3	89.9	
Pole MS-3-5	4.160	99.424	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-4	-0.214	-0.104	33.3	89.9	
								Pole MS-3-6	0.209	0.102	32.5	89.9	
Pole MS-3-6	4.160	99.395	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-5	-0.209	-0.102	32.5	89.9	
								Pole MS-3-7	0.197	0.096	30.6	89.9	
								SEC_MS-3-2	0.012	0.006	1.9	89.9	
Pole MS-3-7	4.160	99.317	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-6	-0.197	-0.096	30.6	89.9	
								Pole MS-3-8	0.192	0.093	29.8	89.9	
Pole MS-3-8	4.160	99.282	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-7	-0.192	-0.093	29.8	89.9	
								Pole MS-3-9	0.180	0.087	27.9	89.9	
								SEC_MS-3-3	0.012	0.006	1.9	89.9	
Pole MS-3-9	4.160	99.252	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-8	-0.180	-0.087	27.9	89.9	
								Pole MS-3-10	0.175	0.085	27.1	89.9	
Pole MS-3-10	4.160	99.191	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-9	-0.174	-0.085	27.1	89.9	
								Pole MS-3-11	0.169	0.082	26.4	89.9	
Pole MS-3-11	4.160	99.171	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-10	-0.169	-0.082	26.4	89.9	
								Pole MS-3-12	0.164	0.080	25.6	89.9	
Pole MS-3-12	4.160	99.150	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-11	-0.164	-0.080	25.6	89.9	
								Pole MS-3-13	0.159	0.077	24.8	89.9	
Pole MS-3-13	4.160	99.079	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-12	-0.159	-0.077	24.8	89.9	
								Pole MS-3-14	0.154	0.075	24.0	89.9	
Pole MS-3-14	4.160	99.051	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-13	-0.154	-0.075	24.0	89.9	
								Pole MS-3-15	0.149	0.072	23.2	89.9	
Pole MS-3-15	4.160	98.987	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-14	-0.149	-0.072	23.2	89.9	
								Pole MS-3-16	0.144	0.070	22.4	89.9	
Pole MS-3-16	4.160	98.969	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-15	-0.144	-0.070	22.4	89.9	
								Pole MS-3-17	0.139	0.067	21.6	89.9	
Pole MS-3-17	4.160	98.940	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-16	-0.139	-0.067	21.6	89.9	
								Pole MS-3-18	0.133	0.065	20.8	89.9	
Pole MS-3-18	4.160	98.917	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-17	-0.133	-0.065	20.8	89.9	
								Pole MS-3-19	0.047	0.023	7.4	89.9	
								Pole MS-3-26	0.086	0.042	13.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-19	4.160	98.906	-4.4	0.000	0.000	0.010	0.005	Pole MS-3-18	-0.047	-0.023	7.4	89.9	
								Pole MS-3-20	0.037	0.018	5.8	89.9	
Pole MS-3-20	4.160	98.898	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-19	-0.037	-0.018	5.8	89.9	
								Pole MS-3-21	0.032	0.016	5.0	89.9	
Pole MS-3-21	4.160	98.883	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-20	-0.032	-0.016	5.0	89.9	
								Pole MS-3-22	0.027	0.013	4.2	89.9	
Pole MS-3-22	4.160	98.875	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-21	-0.027	-0.013	4.2	89.9	
								Pole MS-3-23	0.022	0.011	3.4	89.9	
Pole MS-3-23	4.160	98.868	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-22	-0.022	-0.011	3.4	89.9	
								Pole MS-3-24	0.017	0.008	2.7	89.9	
Pole MS-3-24	4.160	98.862	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-23	-0.017	-0.008	2.7	89.9	
								Pole MS-3-25	0.012	0.006	1.9	89.9	
Pole MS-3-25	4.160	98.857	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-24	-0.012	-0.006	1.9	89.9	
								L-SUB-FDR-EQ#16-133~	0.000	0.000	0.0	0.0	
								SEC_MS-3-22	0.012	0.006	1.9	89.9	
Pole MS-3-26	4.160	98.883	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-27	0.020	0.010	3.2	89.9	
								Pole MS-3-18	-0.086	-0.042	13.4	89.9	
								Pole MS-3-31	0.061	0.030	9.5	89.9	
Pole MS-3-27	4.160	98.874	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-26	-0.020	-0.010	3.2	89.9	
								Pole MS-3-28	0.015	0.007	2.4	89.9	
Pole MS-3-28	4.160	98.871	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-27	-0.015	-0.007	2.4	89.9	
								Pole MS-3-29	0.010	0.005	1.6	89.9	
Pole MS-3-29	4.160	98.865	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-28	-0.010	-0.005	1.6	89.9	
								Pole MS-3-30	0.005	0.002	0.8	89.9	
Pole MS-3-30	4.160	98.864	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-29	-0.005	-0.002	0.8	89.9	
Pole MS-3-31	4.160	98.852	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-26	-0.061	-0.030	9.5	89.9	
								Pole MS-3-32	0.056	0.027	8.7	89.9	
Pole MS-3-32	4.160	98.844	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-31	-0.056	-0.027	8.7	89.9	
								Pole MS-3-33	0.051	0.025	7.9	89.9	
Pole MS-3-33	4.160	98.834	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-32	-0.051	-0.025	7.9	89.9	
								Pole MS-3-34	0.045	0.022	7.1	89.9	
Pole MS-3-34	4.160	98.826	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-36	0.035	0.017	5.5	89.9	
								Pole MS-3-33	-0.045	-0.022	7.1	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-35	0.005	0.002	0.8	89.9	
Pole MS-3-35	4.160	98.825	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-34	-0.005	-0.002	0.8	89.9	
Pole MS-3-36	4.160	98.810	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-34	-0.035	-0.017	5.5	89.9	
								Pole MS-3-37	0.030	0.015	4.7	89.9	
Pole MS-3-37	4.160	98.796	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-36	-0.030	-0.015	4.7	89.9	
								Pole MS-3-39	0.020	0.010	3.2	89.9	
								Pole MS-3-38	0.010	0.005	1.6	89.9	
Pole MS-3-38	4.160	98.793	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-37	-0.010	-0.005	1.6	89.9	
								Pole MS-3-43	0.005	0.002	0.8	90.0	
Pole MS-3-39	4.160	98.790	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-37	-0.020	-0.010	3.2	89.9	
								Pole MS-3-40	0.015	0.007	2.4	89.9	
Pole MS-3-40	4.160	98.787	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-39	-0.015	-0.007	2.4	89.9	
								Pole MS-3-41	0.010	0.005	1.6	89.9	
Pole MS-3-41	4.160	98.785	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-40	-0.010	-0.005	1.6	89.9	
								Pole MS-3-42	0.005	0.002	0.8	89.9	
Pole MS-3-42	4.160	98.784	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-41	-0.005	-0.002	0.8	89.9	
Pole MS-3-43	4.160	98.791	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-38	-0.005	-0.002	0.8	89.9	
								LINE MS-3-11~	0.000	0.000	0.0	0.0	
Pole MS-3-44	4.160	98.479	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-46	0.030	0.015	4.8	89.9	
								Pole MS-3-45	0.000	0.000	0.0	0.0	
								Pole MS-3-54	-0.030	-0.015	4.8	89.9	
Pole MS-3-45	4.160	98.479	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-44	0.000	0.000	0.0	0.0	
Pole MS-3-46	4.160	98.475	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-44	-0.030	-0.015	4.8	89.9	
								Pole MS-3-47	0.030	0.015	4.8	89.9	
Pole MS-3-47	4.160	98.468	-4.4	0.000	0.000	0.008	0.004	Pole MS-3-46	-0.030	-0.015	4.8	89.9	
								Pole MS-3-48	0.023	0.011	3.6	89.9	
Pole MS-3-48	4.160	98.456	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-47	-0.023	-0.011	3.6	89.9	
								Pole MS-3-51	0.010	0.005	1.6	89.9	
								Pole MS-3-50	0.013	0.006	2.0	89.9	
Pole MS-3-49	4.160	98.452	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-50	-0.005	-0.002	0.8	89.9	
Pole MS-3-50	4.160	98.453	-4.4	0.000	0.000	0.008	0.004	Pole MS-3-48	-0.013	-0.006	2.0	89.9	
								Pole MS-3-49	0.005	0.002	0.8	89.9	
Pole MS-3-51	4.160	98.451	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-48	-0.010	-0.005	1.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-53	0.005	0.002	0.8	89.9	
								Pole MS-3-52	0.005	0.002	0.8	89.9	
Pole MS-3-52	4.160	98.448	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-51	-0.005	-0.002	0.8	89.9	
Pole MS-3-53	4.160	98.450	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-51	-0.005	-0.002	0.8	89.9	
Pole MS-3-54	4.160	98.494	-4.4	0.000	0.000	0.000	0.000	PRI_PM_18	0.171	0.085	26.9	89.5	
								Pole MS-3-57	0.005	0.002	0.8	89.9	
								Pole MS-3-44	0.030	0.015	4.8	89.9	
								Pole MS-3-58	-0.206	-0.103	32.5	89.5	
Pole MS-3-55	4.160	99.275	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-90	0.124	0.061	19.3	89.9	
								Pole MS-3-71	0.462	0.229	72.1	89.6	
								Pole MS-3-79	-0.587	-0.290	91.5	89.7	
Pole MS-3-57	4.160	98.491	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-54	-0.005	-0.002	0.8	89.9	
Pole MS-3-58	4.160	98.610	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-59	0.010	0.005	1.6	89.9	
								Pole MS-3-61	-0.217	-0.108	34.1	89.6	
								Pole MS-3-54	0.207	0.103	32.5	89.5	
Pole MS-3-59	4.160	98.608	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-58	-0.010	-0.005	1.6	89.9	
								Pole MS-3-60	0.005	0.002	0.8	90.0	
Pole MS-3-60	4.160	98.605	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-59	-0.005	-0.002	0.8	89.9	
Pole MS-3-61	4.160	98.741	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-58	0.217	0.108	34.1	89.6	
								Pole MS-3-64	-0.227	-0.113	35.6	89.6	
								Pole MS-3-62	0.010	0.005	1.6	89.9	
Pole MS-3-62	4.160	98.739	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-61	-0.010	-0.005	1.6	89.9	
								Pole MS-3-63	0.005	0.002	0.8	89.9	
Pole MS-3-63	4.160	98.737	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-62	-0.005	-0.002	0.8	89.9	
Pole MS-3-64	4.160	98.802	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-61	0.227	0.113	35.6	89.6	
								Pole MS-3-70	-0.263	-0.130	41.2	89.6	
								Pole MS-3-65	0.030	0.015	4.7	89.9	
Pole MS-3-65	4.160	98.793	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-64	-0.030	-0.015	4.7	89.9	
								Pole MS-3-66	0.025	0.012	3.9	89.9	
Pole MS-3-66	4.160	98.789	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-65	-0.025	-0.012	3.9	89.9	
								Pole MS-3-67	0.010	0.005	1.6	89.9	
								Pole MS-3-69	0.010	0.005	1.6	89.9	
Pole MS-3-67	4.160	98.784	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-66	-0.010	-0.005	1.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-68	0.005	0.002	0.8	89.9	
Pole MS-3-68	4.160	98.782	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-67	-0.005	-0.002	0.8	89.9	
Pole MS-3-69	4.160	98.787	-4.4	0.000	0.000	0.010	0.005	Pole MS-3-66	-0.010	-0.005	1.6	89.9	
Pole MS-3-70	4.160	98.973	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-64	0.263	0.130	41.2	89.6	
								Pole MS-3-71	-0.263	-0.130	41.2	89.6	
								L-SUB-FDR-EQ#16-177~	0.000	0.000	0.0	0.0	
Pole MS-3-71	4.160	99.160	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-55	-0.462	-0.229	72.1	89.6	
								Pole MS-3-70	0.264	0.130	41.2	89.6	
								Pole MS-3-72	0.198	0.099	31.0	89.5	
Pole MS-3-72	4.160	99.134	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-71	-0.198	-0.099	31.0	89.5	
								Pole MS-3-73	0.193	0.096	30.2	89.5	
Pole MS-3-73	4.160	99.115	-4.4	0.000	0.000	0.000	0.000	PRI_PM_7	0.173	0.086	27.0	89.5	
								Pole MS-3-72	-0.193	-0.096	30.2	89.5	
								Pole MS-3-74	0.020	0.010	3.2	89.9	
Pole MS-3-74	4.160	99.113	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-73	-0.020	-0.010	3.2	89.9	
								Pole MS-3-75	0.015	0.007	2.4	89.9	
Pole MS-3-75	4.160	99.104	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-74	-0.015	-0.007	2.4	89.9	
								Pole MS-3-76	0.010	0.005	1.6	89.9	
Pole MS-3-76	4.160	99.099	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-75	-0.010	-0.005	1.6	89.9	
								Pole MS-3-77	0.005	0.002	0.8	89.9	
Pole MS-3-77	4.160	99.098	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-76	-0.005	-0.002	0.8	89.9	
Pole MS-3-79	4.160	99.422	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-55	0.587	0.290	91.5	89.7	
								Pole MS-3-82	0.041	0.020	6.4	89.9	
								Pole MS-3-87	-0.628	-0.310	97.8	89.7	
Pole MS-3-80	4.160	99.394	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-81	-0.031	-0.015	4.8	89.9	
								Pole MS-3-83	0.026	0.013	4.0	89.9	
Pole MS-3-81	4.160	99.405	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-80	0.031	0.015	4.8	89.9	
								Pole MS-3-82	-0.036	-0.017	5.6	89.9	
Pole MS-3-82	4.160	99.413	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-81	0.036	0.017	5.6	89.9	
								Pole MS-3-79	-0.041	-0.020	6.4	89.9	
Pole MS-3-83	4.160	99.389	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-80	-0.026	-0.013	4.0	89.9	
								Pole MS-3-84	0.021	0.010	3.2	89.9	
Pole MS-3-84	4.160	99.385	-4.4	0.000	0.000	0.005	0.002	Pole MS-3-83	-0.021	-0.010	3.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-85	0.015	0.008	2.4	89.9	
Pole MS-3-85	4.160	99.379	-4.4	0.000	0.000	0.008	0.004	Pole MS-3-84	-0.015	-0.008	2.4	89.9	
								Pole MS-3-86	0.008	0.004	1.2	89.9	
Pole MS-3-86	4.160	99.378	-4.4	0.000	0.000	0.008	0.004	Pole MS-3-85	-0.008	-0.004	1.2	89.9	
Pole MS-3-87	4.160	99.770	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-79	0.631	0.311	97.8	89.7	
								Pole MS-3-88	0.232	0.113	35.9	89.9	
								BUS_5KV_LLP_02	-0.863	-0.424	133.8	89.7	
Pole MS-3-88	4.160	99.642	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-87	-0.232	-0.113	35.9	89.9	
								Pole MS-3-1	0.232	0.113	35.9	89.9	
Pole MS-3-90	4.160	99.244	-4.4	0.000	0.000	0.015	0.008	Pole MS-3-55	-0.124	-0.061	19.3	89.9	
								Pole MS-3-92	0.109	0.053	16.9	89.9	
Pole MS-3-92	4.160	99.165	-4.4	0.000	0.000	0.015	0.008	Pole MS-3-95	0.093	0.045	14.5	89.9	
								Pole MS-3-90	-0.109	-0.053	16.9	89.9	
Pole MS-3-95	4.160	99.133	-4.4	0.000	0.000	0.008	0.004	Pole MS-3-96	0.008	0.004	1.2	89.9	
								Pole MS-4-36	0.078	0.038	12.1	89.9	
								Pole MS-3-92	-0.093	-0.045	14.5	89.9	
Pole MS-3-96	4.160	99.128	-4.4	0.000	0.000	0.008	0.004	Pole MS-3-95	-0.008	-0.004	1.2	89.9	
Pole MS-3-97	4.160	98.994	-4.4	0.000	0.000	0.008	0.004	Pole MS-3-98	0.052	0.025	8.1	89.9	
								Pole MS-4-36	-0.060	-0.029	9.3	89.9	
Pole MS-3-98	4.160	98.980	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-99	0.052	0.025	8.1	89.9	
								Pole MS-3-97	-0.052	-0.025	8.1	89.9	
Pole MS-3-99	4.160	98.965	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-100	0.018	0.009	2.8	89.9	
								Pole MS-3-101	0.034	0.016	5.2	89.9	
								Pole MS-3-98	-0.052	-0.025	8.1	89.9	
Pole MS-3-100	4.160	98.956	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-99	-0.018	-0.009	2.8	89.9	
								SEC_MS-3-49	0.018	0.009	2.8	89.9	
Pole MS-3-101	4.160	98.942	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-102	0.018	0.009	2.8	89.9	
								Pole MS-3-103	0.015	0.008	2.4	89.9	
								Pole MS-3-99	-0.034	-0.016	5.2	89.9	
Pole MS-3-102	4.160	98.939	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-101	-0.018	-0.009	2.8	89.9	
								SEC_MS-3-65	0.018	0.009	2.8	89.9	
Pole MS-3-103	4.160	98.937	-4.4	0.000	0.000	0.015	0.008	Pole MS-3-101	-0.015	-0.008	2.4	89.9	
Pole MS-4-1	4.160	99.869	-4.4	0.000	0.000	0.005	0.003	BUS_5KV-LLP_01	-0.274	-0.133	42.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-2	0.042	0.021	6.6	89.9	
								Pole MS-4-7	0.227	0.110	35.0	90.0	
Pole MS-4-2	4.160	99.858	-4.4	0.000	0.000	0.005	0.003	Pole MS-4-1	-0.042	-0.021	6.6	89.9	
								Pole MS-4-3	0.037	0.018	5.8	89.9	
Pole MS-4-3	4.160	99.856	-4.4	0.000	0.000	0.000	0.000	Pole MS-4-2	-0.037	-0.018	5.8	89.9	
								Pole MS-4-5	0.025	0.012	3.9	89.9	
								SEC_MS-3-73	0.012	0.006	1.9	89.9	
Pole MS-4-5	4.160	99.851	-4.4	0.000	0.000	0.013	0.006	Pole MS-4-3	-0.025	-0.012	3.9	89.9	
								Pole MS-4-6	0.012	0.006	1.9	89.9	
Pole MS-4-6	4.160	99.849	-4.4	0.000	0.000	0.000	0.000	Pole MS-4-5	-0.012	-0.006	1.9	89.9	
								SEC_MS-3-74	0.012	0.006	1.9	89.9	
Pole MS-4-7	4.160	99.741	-4.4	0.000	0.000	0.000	0.000	Pole MS-4-1	-0.226	-0.110	35.0	90.0	
								Pole MS-4-8	0.226	0.110	35.0	90.0	
Pole MS-4-8	4.160	99.491	-4.4	0.000	0.000	0.005	0.002	Pole MS-4-7	-0.226	-0.110	35.0	90.0	
								Pole MS-4-9	0.061	0.030	9.5	89.9	
								Pole MS-4-16	0.160	0.077	24.7	90.0	
Pole MS-4-9	4.160	99.475	-4.4	0.000	0.000	0.008	0.004	Pole MS-4-8	-0.061	-0.030	9.5	89.9	
								Pole MS-4-10	0.053	0.026	8.3	89.9	
Pole MS-4-10	4.160	99.461	-4.4	0.000	0.000	0.000	0.000	Pole MS-4-9	-0.053	-0.026	8.3	89.9	
								Pole MS-4-11	0.041	0.020	6.4	89.9	
								SEC_MS-3-75	0.012	0.006	1.9	89.9	
Pole MS-4-11	4.160	99.441	-4.4	0.000	0.000	0.016	0.008	Pole MS-4-10	-0.041	-0.020	6.4	89.9	
								Pole MS-4-12	0.026	0.013	4.0	89.9	
Pole MS-4-12	4.160	99.434	-4.4	0.000	0.000	0.005	0.002	Pole MS-4-11	-0.026	-0.013	4.0	89.9	
								Pole MS-4-13	0.021	0.010	3.2	89.9	
Pole MS-4-13	4.160	99.425	-4.4	0.000	0.000	0.008	0.004	Pole MS-4-12	-0.021	-0.010	3.2	89.9	
								Pole MS-4-14	0.013	0.006	2.0	89.9	
Pole MS-4-14	4.160	99.423	-4.4	0.000	0.000	0.008	0.004	Pole MS-4-13	-0.013	-0.006	2.0	89.9	
								Pole MS-4-15	0.005	0.002	0.8	89.9	
Pole MS-4-15	4.160	99.422	-4.4	0.000	0.000	0.005	0.002	Pole MS-4-14	-0.005	-0.002	0.8	89.9	
Pole MS-4-16	4.160	99.314	-4.4	0.000	0.000	0.008	0.004	Pole MS-4-17	0.152	0.073	23.5	90.0	
								Pole MS-4-8	-0.159	-0.077	24.7	90.0	
Pole MS-4-17	4.160	99.233	-4.4	0.000	0.000	0.000	0.000	Pole MS-4-16	-0.152	-0.073	23.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-18	0.133	0.064	20.7	90.0	
								SEC_MS-3-66	0.018	0.009	2.8	89.9	
Pole MS-4-18	4.160	99.152	-4.4	0.000	0.000	0.015	0.008	Pole MS-4-17	-0.133	-0.064	20.7	90.0	
								Pole MS-4-20	0.118	0.057	18.3	90.0	
Pole MS-4-20	4.160	99.106	-4.4	0.000	0.000	0.000	0.000	Pole MS-4-18	-0.118	-0.057	18.3	90.0	
								Pole MS-4-21	0.099	0.048	15.5	90.1	
								SEC_MS-3-76	0.018	0.009	2.8	89.9	
Pole MS-4-21	4.160	98.865	-4.4	0.000	0.000	0.008	0.004	Pole MS-4-20	-0.099	-0.048	15.5	90.1	
								Pole MS-4-22	0.091	0.044	14.3	90.1	
Pole MS-4-22	4.160	98.783	-4.4	0.000	0.000	0.008	0.004	Pole MS-4-21	-0.091	-0.044	14.3	90.1	
								Pole MS-4-23	0.084	0.040	13.1	90.1	
Pole MS-4-23	4.160	98.704	-4.4	0.000	0.000	0.008	0.004	Pole MS-4-22	-0.084	-0.040	13.1	90.1	
								Pole MS-4-25	0.076	0.037	11.9	90.1	
Pole MS-4-24	4.160	97.950	-4.4	0.000	0.000	0.000	0.000	Pole MS-4-25	-0.068	-0.033	10.7	90.1	
								Pole MS-4-39	0.008	0.004	1.2	89.9	
								Pole MS-4-41	0.060	0.029	9.5	90.1	
Pole MS-4-25	4.160	98.519	-4.4	0.000	0.000	0.008	0.004	Pole MS-4-23	-0.076	-0.037	11.9	90.1	
								Pole MS-4-24	0.068	0.033	10.7	90.1	
Pole MS-4-31	4.160	99.854	-4.4	0.000	0.000	0.000	0.000	Pole MS-5-1	0.708	0.355	110.1	89.4	
								BUS_5KV-LLP_01	-0.708	-0.355	110.1	89.4	
Pole MS-4-36	4.160	99.066	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-97	0.060	0.029	9.3	89.9	
								Pole MS-3-95	-0.078	-0.038	12.1	89.9	
								SEC_MS-3-45	0.018	0.009	2.8	89.9	
Pole MS-4-39	4.160	97.947	-4.4	0.000	0.000	0.008	0.004	Pole MS-4-24	-0.008	-0.004	1.2	89.9	
Pole MS-4-40	4.160	97.907	-4.4	0.000	0.000	0.008	0.004	Pole MS-4-41	-0.023	-0.011	3.6	89.9	
								Pole MS-4-42	0.015	0.007	2.4	89.9	
Pole MS-4-41	4.160	97.919	-4.4	0.000	0.000	0.000	0.000	Pole MS-4-24	-0.060	-0.029	9.5	90.1	
								Pole MS-4-40	0.023	0.011	3.6	89.9	
								Pole MS-4-44	0.038	0.018	5.9	90.2	
Pole MS-4-42	4.160	97.891	-4.4	0.000	0.000	0.008	0.004	Pole MS-4-40	-0.015	-0.007	2.4	89.9	
								Pole MS-4-43	0.008	0.004	1.2	89.9	
Pole MS-4-43	4.160	97.877	-4.4	0.000	0.000	0.008	0.004	Pole MS-4-42	-0.008	-0.004	1.2	89.9	
Pole MS-4-44	4.160	97.230	-4.3	0.000	0.000	0.000	0.000	Pole MS-4-41	-0.037	-0.018	5.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-45	0.007	0.004	1.2	89.9	
								Pole MS-4-46	0.030	0.014	4.7	90.0	
Pole MS-4-45	4.160	97.222	-4.3	0.000	0.000	0.007	0.004	Pole MS-4-44	-0.007	-0.004	1.2	89.9	
Pole MS-4-46	4.160	97.195	-4.3	0.000	0.000	0.000	0.000	Pole MS-4-44	-0.030	-0.014	4.7	90.0	
								Pole MS-4-47	0.007	0.004	1.2	89.9	
								Pole MS-4-48	0.007	0.004	1.2	89.9	
								Pole MS-4-50	0.015	0.007	2.4	90.2	
Pole MS-4-47	4.160	97.193	-4.3	0.000	0.000	0.007	0.004	Pole MS-4-46	-0.007	-0.004	1.2	89.9	
Pole MS-4-48	4.160	97.192	-4.3	0.000	0.000	0.007	0.004	Pole MS-4-46	-0.007	-0.004	1.2	89.9	
Pole MS-4-49	4.160	97.147	-4.3	0.000	0.000	0.007	0.004	Pole MS-4-50	-0.007	-0.004	1.2	89.9	
Pole MS-4-50	4.160	97.148	-4.3	0.000	0.000	0.000	0.000	Pole MS-4-46	-0.015	-0.007	2.4	90.1	
								Pole MS-4-49	0.007	0.004	1.2	89.9	
								Pole MS-4-52	0.007	0.004	1.2	90.3	
Pole MS-4-51	4.160	97.122	-4.3	0.000	0.000	0.007	0.004	Pole MS-4-52	-0.007	-0.004	1.2	89.9	
Pole MS-4-52	4.160	97.138	-4.3	0.000	0.000	0.000	0.000	Pole MS-4-50	-0.007	-0.004	1.2	90.2	
								Pole MS-4-51	0.007	0.004	1.2	90.0	
								LINE MS-4-53~	0.000	0.000	0.0	0.0	
Pole MS-5-1	4.160	98.362	-4.8	0.000	0.000	0.008	0.004	Pole MS-4-31	-0.700	-0.345	110.1	89.7	
								Pole MS-5-2	0.692	0.341	108.9	89.7	
Pole MS-5-2	4.160	98.183	-4.8	0.000	0.000	0.008	0.004	Pole MS-5-1	-0.691	-0.340	108.9	89.7	
								Pole MS-5-3	0.030	0.015	4.8	89.9	
								Pole MS-5-7	0.653	0.322	102.9	89.7	
Pole MS-5-3	4.160	98.174	-4.8	0.000	0.000	0.008	0.004	Pole MS-5-2	-0.030	-0.015	4.8	89.9	
								Pole MS-5-4	0.023	0.011	3.6	89.9	
Pole MS-5-4	4.160	98.161	-4.8	0.000	0.000	0.008	0.004	Pole MS-5-3	-0.023	-0.011	3.6	89.9	
								Pole MS-5-5	0.015	0.007	2.4	89.9	
Pole MS-5-5	4.160	98.157	-4.8	0.000	0.000	0.008	0.004	Pole MS-5-4	-0.015	-0.007	2.4	89.9	
								Pole MS-5-6	0.008	0.004	1.2	89.9	
Pole MS-5-6	4.160	98.155	-4.8	0.000	0.000	0.008	0.004	Pole MS-5-5	-0.008	-0.004	1.2	89.9	
Pole MS-5-7	4.160	97.885	-4.9	0.000	0.000	0.000	0.000	Pole MS-5-2	-0.652	-0.320	102.9	89.8	
								Pole MS-5-11	0.108	0.053	17.0	89.9	
								Pole MS-5-24	0.544	0.267	85.9	89.7	
Pole MS-5-8	4.160	97.798	-4.9	0.000	0.000	0.008	0.004	Pole MS-5-9	-0.085	-0.042	13.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-14	0.078	0.038	12.3	89.9	
Pole MS-5-9	4.160	97.818	-4.9	0.000	0.000	0.008	0.004	Pole MS-5-8	0.085	0.042	13.4	89.9	
								Pole MS-5-10	-0.093	-0.045	14.6	89.9	
Pole MS-5-10	4.160	97.844	-4.9	0.000	0.000	0.008	0.004	Pole MS-5-9	0.093	0.045	14.6	89.9	
								Pole MS-5-11	-0.100	-0.049	15.8	89.9	
Pole MS-5-11	4.160	97.871	-4.9	0.000	0.000	0.008	0.004	Pole MS-5-7	-0.108	-0.053	17.0	89.9	
								Pole MS-5-10	0.100	0.049	15.8	89.9	
Pole MS-5-12	4.160	97.726	-4.9	0.000	0.000	0.008	0.004	Pole MS-5-13	-0.063	-0.030	9.9	89.9	
								Pole MS-5-16	0.055	0.027	8.7	89.9	
Pole MS-5-13	4.160	97.769	-4.9	0.000	0.000	0.008	0.004	Pole MS-5-12	0.063	0.030	9.9	89.9	
								Pole MS-5-14	-0.070	-0.034	11.1	89.9	
Pole MS-5-14	4.160	97.781	-4.9	0.000	0.000	0.008	0.004	Pole MS-5-8	-0.078	-0.038	12.3	89.9	
								Pole MS-5-13	0.070	0.034	11.1	89.9	
Pole MS-5-15	4.160	97.709	-4.9	0.000	0.000	0.008	0.004	Pole MS-5-16	-0.043	-0.021	6.8	89.9	
								Pole MS-5-17	0.036	0.017	5.6	89.9	
Pole MS-5-16	4.160	97.715	-4.9	0.000	0.000	0.000	0.000	Pole MS-5-15	0.043	0.021	6.8	89.9	
								Pole MS-5-12	-0.055	-0.027	8.7	89.9	
								SEC_MS-5-15	0.012	0.006	1.9	89.9	
Pole MS-5-17	4.160	97.703	-4.9	0.000	0.000	0.000	0.000	Pole MS-5-15	-0.036	-0.017	5.6	89.9	
								Pole MS-5-18	0.018	0.009	2.8	89.9	
								SEC_MS-5-16	0.018	0.009	2.8	89.9	
Pole MS-5-18	4.160	97.702	-4.9	0.000	0.000	0.000	0.000	Pole MS-5-17	-0.018	-0.009	2.8	89.9	
								Pole MS-5-19	0.000	0.000	0.0	0.0	
								SEC_MS-5-17	0.018	0.009	2.8	89.9	
Pole MS-5-19	4.160	97.702	-4.9	0.000	0.000	0.000	0.000	Pole MS-5-18	0.000	0.000	0.0	0.0	
Pole MS-5-24	4.160	97.635	-4.9	0.000	0.000	0.000	0.000	Pole MS-5-7	-0.543	-0.266	85.9	89.8	
								Pole MS-5-25	0.028	0.014	4.5	89.9	
								Pole MS-5-29	0.092	0.045	14.5	89.9	
								Pole MS-5-41	0.423	0.208	66.9	89.8	
Pole MS-5-25	4.160	97.630	-4.9	0.000	0.000	0.005	0.002	Pole MS-5-24	-0.028	-0.014	4.5	89.9	
								Pole MS-5-26	0.023	0.011	3.7	89.9	
Pole MS-5-26	4.160	97.625	-4.9	0.000	0.000	0.000	0.000	Pole MS-5-25	-0.023	-0.011	3.7	89.9	
								Pole MS-5-28	0.012	0.006	1.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_MS-5-23	0.012	0.006	1.9	89.9	
Pole MS-5-27	4.160	97.518	-5.0	0.000	0.000	0.005	0.002	Pole MS-5-41	-0.415	-0.203	65.8	89.8	
								Pole MS-5-151	0.410	0.201	65.0	89.8	
Pole MS-5-28	4.160	97.618	-4.9	0.000	0.000	0.000	0.000	Pole MS-5-26	-0.012	-0.006	1.9	89.9	
								SEC_MS-5-25	0.012	0.006	1.9	89.9	
Pole MS-5-29	4.160	97.617	-4.9	0.000	0.000	0.000	0.000	Pole MS-5-24	-0.092	-0.045	14.5	89.9	
								Pole MS-5-30	0.074	0.036	11.7	89.9	
								SEC_MS-5-26	0.018	0.009	2.8	89.9	
Pole MS-5-30	4.160	97.580	-4.9	0.000	0.000	0.005	0.002	Pole MS-5-29	-0.074	-0.036	11.7	89.9	
								Pole MS-5-31	0.069	0.033	10.9	89.9	
Pole MS-5-31	4.160	97.555	-4.9	0.000	0.000	0.008	0.004	Pole MS-5-30	-0.069	-0.033	10.9	89.9	
								Pole MS-5-32	0.061	0.030	9.7	89.9	
Pole MS-5-32	4.160	97.538	-4.9	0.000	0.000	0.000	0.000	Pole MS-5-31	-0.061	-0.030	9.7	89.9	
								Pole MS-5-33	0.049	0.024	7.8	89.9	
								SEC_MS-5-29	0.012	0.006	1.9	89.9	
Pole MS-5-33	4.160	97.527	-4.9	0.000	0.000	0.000	0.000	Pole MS-5-32	-0.049	-0.024	7.8	89.9	
								Pole MS-5-34	0.032	0.015	5.0	89.9	
								SEC_MS-5-30	0.018	0.009	2.8	89.9	
Pole MS-5-34	4.160	97.521	-4.9	0.000	0.000	0.005	0.002	Pole MS-5-33	-0.032	-0.015	5.0	89.9	
								Pole MS-5-35	0.027	0.013	4.2	89.9	
Pole MS-5-35	4.160	97.514	-4.9	0.000	0.000	0.000	0.000	Pole MS-5-34	-0.027	-0.013	4.2	89.9	
								Pole MS-5-36	0.015	0.007	2.4	89.9	
								SEC_MS-5-32	0.012	0.006	1.9	89.9	
Pole MS-5-36	4.160	97.507	-4.9	0.000	0.000	0.000	0.000	Pole MS-5-35	-0.015	-0.007	2.4	89.9	
								Pole MS-5-37	0.015	0.007	2.4	89.9	
Pole MS-5-37	4.160	97.503	-4.9	0.000	0.000	0.008	0.004	Pole MS-5-36	-0.015	-0.007	2.4	89.9	
								Pole MS-5-38	0.007	0.004	1.2	89.9	
Pole MS-5-38	4.160	97.501	-4.9	0.000	0.000	0.007	0.004	Pole MS-5-37	-0.007	-0.004	1.2	89.9	
								Pole MS-5-39	0.000	0.000	0.0	0.0	
Pole MS-5-39	4.160	97.501	-4.9	0.000	0.000	0.000	0.000	Pole MS-5-38	0.000	0.000	0.0	0.0	
Pole MS-5-40	4.160	97.239	-5.0	0.000	0.000	0.007	0.004	Pole MS-5-151	-0.409	-0.200	65.0	89.8	
								Pole MS-5-42	0.005	0.002	0.8	89.9	
								Pole MS-5-44	0.078	0.038	12.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-55	0.319	0.156	50.6	89.8	
Pole MS-5-41	4.160	97.542	-5.0	0.000	0.000	0.008	0.004	Pole MS-5-27	0.415	0.204	65.8	89.8	
								Pole MS-5-24	-0.422	-0.207	66.9	89.8	
Pole MS-5-42	4.160	97.238	-5.0	0.000	0.000	0.005	0.002	Pole MS-5-40	-0.005	-0.002	0.8	89.9	
Pole MS-5-43	4.160	97.212	-5.0	0.000	0.000	0.007	0.004	Pole MS-5-44	-0.070	-0.034	11.2	89.9	
								Pole MS-5-45	0.063	0.031	10.0	89.9	
Pole MS-5-44	4.160	97.225	-5.0	0.000	0.000	0.007	0.004	Pole MS-5-40	-0.078	-0.038	12.4	89.9	
								Pole MS-5-43	0.070	0.034	11.2	89.9	
Pole MS-5-45	4.160	97.203	-5.0	0.000	0.000	0.000	0.000	Pole MS-5-43	-0.063	-0.031	10.0	89.9	
								Pole MS-5-46	0.051	0.025	8.1	89.9	
								SEC_MS-5-40	0.012	0.006	1.9	89.9	
Pole MS-5-46	4.160	97.188	-5.0	0.000	0.000	0.005	0.002	Pole MS-5-45	-0.051	-0.025	8.1	89.9	
								Pole MS-5-47	0.046	0.023	7.4	89.9	
Pole MS-5-47	4.160	97.179	-5.0	0.000	0.000	0.007	0.004	Pole MS-5-46	-0.046	-0.023	7.4	89.9	
								Pole MS-5-48	0.039	0.019	6.2	89.9	
Pole MS-5-48	4.160	97.165	-5.0	0.000	0.000	0.007	0.004	Pole MS-5-47	-0.039	-0.019	6.2	89.9	
								Pole MS-5-49	0.031	0.015	5.0	89.9	
Pole MS-5-49	4.160	97.157	-5.0	0.000	0.000	0.007	0.004	Pole MS-5-48	-0.031	-0.015	5.0	89.9	
								Pole MS-5-50	0.024	0.012	3.8	89.9	
Pole MS-5-50	4.160	97.145	-5.0	0.000	0.000	0.000	0.000	Pole MS-5-49	-0.024	-0.012	3.8	89.9	
								Pole MS-5-51	0.012	0.006	2.0	89.9	
								SEC_MS-5-45	0.012	0.006	1.8	89.9	
Pole MS-5-51	4.160	97.143	-5.0	0.000	0.000	0.005	0.002	Pole MS-5-50	-0.012	-0.006	2.0	89.9	
								Pole MS-5-52	0.007	0.004	1.2	89.9	
Pole MS-5-52	4.160	97.139	-5.0	0.000	0.000	0.007	0.004	Pole MS-5-51	-0.007	-0.004	1.2	89.9	
								Pole MS-5-149	0.000	0.000	0.0	0.0	
Pole MS-5-55	4.160	97.160	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-40	-0.318	-0.156	50.6	89.8	
								Pole MS-5-68	0.311	0.152	49.5	89.8	
Pole MS-5-56	4.160	96.944	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-68	-0.303	-0.148	48.3	89.9	
								Pole MS-5-57	0.059	0.029	9.5	89.9	
								Pole MS-5-64	0.022	0.011	3.5	89.9	
								Pole MS-5-67	0.214	0.104	34.1	89.9	
Pole MS-5-57	4.160	96.929	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-56	-0.059	-0.029	9.5	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-58	0.052	0.025	8.3	89.9	
Pole MS-5-58	4.160	96.912	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-57	-0.052	-0.025	8.3	89.9	
								Pole MS-5-59	0.045	0.022	7.1	89.9	
Pole MS-5-59	4.160	96.904	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-58	-0.045	-0.022	7.1	89.9	
								Pole MS-5-60	0.037	0.018	5.9	89.9	
Pole MS-5-60	4.160	96.892	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-59	-0.037	-0.018	5.9	89.9	
								Pole MS-5-61	0.030	0.014	4.7	89.9	
Pole MS-5-61	4.160	96.888	-5.1	0.000	0.000	0.015	0.007	Pole MS-5-60	-0.030	-0.014	4.7	89.9	
								Pole MS-5-62	0.015	0.007	2.4	89.9	
Pole MS-5-62	4.160	96.885	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-61	-0.015	-0.007	2.4	89.9	
								Pole MS-5-63	0.007	0.004	1.2	89.9	
Pole MS-5-63	4.160	96.884	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-62	-0.007	-0.004	1.2	89.9	
Pole MS-5-64	4.160	96.940	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-56	-0.022	-0.011	3.5	89.9	
								Pole MS-5-65	0.015	0.007	2.4	89.9	
Pole MS-5-65	4.160	96.937	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-64	-0.015	-0.007	2.4	89.9	
								Pole MS-5-66	0.007	0.004	1.2	89.9	
Pole MS-5-66	4.160	96.928	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-65	-0.007	-0.004	1.2	89.9	
Pole MS-5-67	4.160	96.845	-5.1	0.000	0.000	0.000	0.000	Pole MS-5-56	-0.214	-0.104	34.1	89.9	
								Pole MS-5-69	0.054	0.026	8.6	89.9	
								Pole MS-5-78	0.049	0.024	7.8	89.9	
								Pole MS-5-86	0.110	0.054	17.6	89.9	
Pole MS-5-68	4.160	97.020	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-56	0.303	0.148	48.3	89.9	
								Pole MS-5-55	-0.311	-0.152	49.5	89.9	
Pole MS-5-69	4.160	96.834	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-67	-0.054	-0.026	8.6	89.9	
								Pole MS-5-70	0.047	0.023	7.5	89.9	
Pole MS-5-70	4.160	96.812	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-69	-0.047	-0.023	7.5	89.9	
								Pole MS-5-71	0.039	0.019	6.3	89.9	
Pole MS-5-71	4.160	96.808	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-70	-0.039	-0.019	6.3	89.9	
								Pole MS-5-72	0.032	0.016	5.1	89.9	
Pole MS-5-72	4.160	96.806	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-71	-0.032	-0.016	5.1	89.9	
								Pole MS-5-73	0.025	0.012	3.9	89.9	
Pole MS-5-73	4.160	96.800	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-72	-0.025	-0.012	3.9	89.9	
								Pole MS-5-74	0.017	0.008	2.7	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-74	4.160	96.796	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-73	-0.017	-0.008	2.7	89.9	
								Pole MS-5-75	0.010	0.005	1.6	89.9	
Pole MS-5-75	4.160	96.793	-5.1	0.000	0.000	0.005	0.002	Pole MS-5-74	-0.010	-0.005	1.6	89.9	
								Pole MS-5-76	0.005	0.002	0.8	89.9	
Pole MS-5-76	4.160	96.792	-5.1	0.000	0.000	0.005	0.002	Pole MS-5-75	-0.005	-0.002	0.8	89.9	
								Line MS-5-79~	0.000	0.000	0.0	0.0	
Pole MS-5-77	4.160	96.824	-5.1	0.000	0.000	0.005	0.002	Pole MS-5-78	-0.044	-0.021	7.0	89.9	
								Pole MS-5-79	0.039	0.019	6.3	89.9	
Pole MS-5-78	4.160	96.833	-5.1	0.000	0.000	0.005	0.002	Pole MS-5-67	-0.049	-0.024	7.8	89.9	
								Pole MS-5-77	0.044	0.021	7.0	89.9	
Pole MS-5-79	4.160	96.821	-5.1	0.000	0.000	0.005	0.002	Pole MS-5-77	-0.039	-0.019	6.3	89.9	
								Pole MS-5-80	0.034	0.017	5.5	89.9	
Pole MS-5-80	4.160	96.806	-5.1	0.000	0.000	0.005	0.002	Pole MS-5-79	-0.034	-0.017	5.5	89.9	
								Pole MS-5-81	0.029	0.014	4.7	89.9	
Pole MS-5-81	4.160	96.797	-5.1	0.000	0.000	0.005	0.002	Pole MS-5-80	-0.029	-0.014	4.7	89.9	
								Pole MS-5-82	0.025	0.012	3.9	89.9	
Pole MS-5-82	4.160	96.795	-5.1	0.000	0.000	0.005	0.002	Pole MS-5-81	-0.025	-0.012	3.9	89.9	
								Pole MS-5-83	0.020	0.010	3.1	89.9	
Pole MS-5-83	4.160	96.794	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-82	-0.020	-0.010	3.1	89.9	
								Pole MS-5-84	0.012	0.006	2.0	89.9	
Pole MS-5-84	4.160	96.792	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-83	-0.012	-0.006	2.0	89.9	
								Pole MS-5-85	0.005	0.002	0.8	90.0	
Pole MS-5-85	4.160	96.785	-5.1	0.000	0.000	0.005	0.002	Pole MS-5-84	-0.005	-0.002	0.8	89.9	
Pole MS-5-86	4.160	96.793	-5.1	0.000	0.000	0.000	0.000	Pole MS-5-67	-0.110	-0.054	17.6	89.9	
								Pole MS-5-89	0.015	0.007	2.3	89.9	
								Pole MS-5-90	0.034	0.017	5.5	89.9	
								Pole MS-5-96	0.061	0.030	9.8	89.8	
Pole MS-5-87	4.160	96.787	-5.1	0.000	0.000	0.005	0.002	Pole MS-5-88	-0.005	-0.002	0.8	89.9	
Pole MS-5-88	4.160	96.787	-5.1	0.000	0.000	0.005	0.002	Pole MS-5-87	0.005	0.002	0.8	89.9	
								Pole MS-5-89	-0.010	-0.005	1.6	89.9	
Pole MS-5-89	4.160	96.790	-5.1	0.000	0.000	0.005	0.002	Pole MS-5-86	-0.015	-0.007	2.3	89.9	
								Pole MS-5-88	0.010	0.005	1.6	89.9	
Pole MS-5-90	4.160	96.784	-5.1	0.000	0.000	0.005	0.002	Pole MS-5-86	-0.034	-0.017	5.5	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-91	0.029	0.014	4.7	89.9	
Pole MS-5-91	4.160	96.775	-5.1	0.000	0.000	0.005	0.002	Pole MS-5-90	-0.029	-0.014	4.7	89.9	
								Pole MS-5-92	0.025	0.012	3.9	89.9	
Pole MS-5-92	4.160	96.768	-5.1	0.000	0.000	0.005	0.002	Pole MS-5-91	-0.025	-0.012	3.9	89.9	
								Pole MS-5-93	0.020	0.010	3.1	89.9	
Pole MS-5-93	4.160	96.763	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-92	-0.020	-0.010	3.1	89.9	
								Pole MS-5-94	0.012	0.006	2.0	89.9	
Pole MS-5-94	4.160	96.759	-5.1	0.000	0.000	0.007	0.004	Pole MS-5-93	-0.012	-0.006	2.0	89.9	
								Pole MS-5-95	0.005	0.002	0.8	89.9	
Pole MS-5-95	4.160	96.759	-5.1	0.000	0.000	0.005	0.002	Pole MS-5-94	-0.005	-0.002	0.8	89.9	
Pole MS-5-96	4.160	96.768	-5.2	0.000	0.000	0.000	0.000	Pole MS-5-86	-0.061	-0.030	9.8	89.8	
								Pole MS-5-111	0.061	0.030	9.8	89.8	
Pole MS-5-106	4.160	100.055	-4.8	0.000	0.000	0.057	0.028	Pole MS-5-108	-0.218	-0.106	33.7	89.9	
								Pole MS-5-122	0.161	0.079	24.9	89.9	
Pole MS-5-107	4.160	100.185	-4.8	0.000	0.000	0.005	0.003	Pole MS-5-108	-0.023	-0.011	3.5	89.9	
								Pole MS-5-109	0.017	0.008	2.7	89.9	
Pole MS-5-108	4.160	100.190	-4.8	0.000	0.000	0.000	0.000	Pole MS-5-107	0.023	0.011	3.5	89.9	
								Pole MS-5-106	0.218	0.107	33.7	89.9	
								SF-2-30	-0.241	-0.118	37.1	89.9	
Pole MS-5-109	4.160	100.181	-4.8	0.000	0.000	0.005	0.003	Pole MS-5-107	-0.017	-0.008	2.7	89.9	
								Pole MS-5-110	0.012	0.006	1.9	89.9	
Pole MS-5-110	4.160	100.178	-4.8	0.000	0.000	0.000	0.000	Pole MS-5-109	-0.012	-0.006	1.9	89.9	
								SEC_MS-5-99	0.012	0.006	1.9	89.9	
Pole MS-5-111	4.160	96.743	-5.2	0.000	0.000	0.000	0.000	Pole MS-5-96	-0.061	-0.030	9.8	89.8	
								Pole MS-5-124	0.061	0.030	9.8	89.8	
Pole MS-5-122	4.160	99.945	-4.8	0.000	0.000	0.073	0.036	Pole MS-5-106	-0.161	-0.079	24.9	89.9	
								Pole MS-5-123	0.088	0.043	13.6	89.9	
Pole MS-5-123	4.160	99.888	-4.8	0.000	0.000	0.000	0.000	Pole MS-5-122	-0.088	-0.043	13.6	89.9	
								Pole MS-5-134	0.073	0.035	11.2	89.9	
								Pole MS-5-135	0.016	0.008	2.4	89.9	
Pole MS-5-124	4.160	96.719	-5.2	0.000	0.000	0.000	0.000	Pole MS-5-111	-0.061	-0.030	9.8	89.8	
								Pole MS-5-139	0.061	0.030	9.8	89.8	
Pole MS-5-125	4.160	99.752	-4.8	0.000	0.000	0.005	0.003	Pole MS-5-126	-0.005	-0.002	0.8	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Line MS-5-129~	0.000	0.000	0.0	0.0	
Pole MS-5-126	4.160	99.753	-4.8	0.000	0.000	0.008	0.004	Pole MS-5-125	0.005	0.002	0.8	89.9	
								Pole MS-5-127	-0.013	-0.006	2.0	89.9	
Pole MS-5-127	4.160	99.756	-4.8	0.000	0.000	0.008	0.004	Pole MS-5-126	0.013	0.006	2.0	89.9	
								Pole MS-5-128	-0.021	-0.010	3.2	89.9	
Pole MS-5-128	4.160	99.760	-4.8	0.000	0.000	0.008	0.004	Pole MS-5-127	0.021	0.010	3.2	89.9	
								Pole MS-5-129	-0.029	-0.014	4.4	89.9	
Pole MS-5-129	4.160	99.773	-4.8	0.000	0.000	0.008	0.004	Pole MS-5-128	0.029	0.014	4.4	89.9	
								Pole MS-5-130	-0.036	-0.018	5.6	89.9	
Pole MS-5-130	4.160	99.780	-4.8	0.000	0.000	0.005	0.003	Pole MS-5-129	0.036	0.018	5.6	89.9	
								Pole MS-5-131	-0.041	-0.020	6.4	89.9	
Pole MS-5-131	4.160	99.799	-4.8	0.000	0.000	0.005	0.003	Pole MS-5-130	0.041	0.020	6.4	89.9	
								Pole MS-5-132	-0.047	-0.023	7.2	89.9	
Pole MS-5-132	4.160	99.810	-4.8	0.000	0.000	0.005	0.003	Pole MS-5-131	0.047	0.023	7.2	89.9	
								Pole MS-5-137	-0.052	-0.025	8.0	89.9	
Pole MS-5-133	4.160	99.860	-4.8	0.000	0.000	0.005	0.003	Pole MS-5-137	0.060	0.029	9.2	89.9	
								Pole MS-5-134	-0.065	-0.032	10.0	89.9	
Pole MS-5-134	4.160	99.873	-4.8	0.000	0.000	0.008	0.004	Pole MS-5-133	0.065	0.032	10.0	89.9	
								Pole MS-5-123	-0.073	-0.035	11.2	89.9	
Pole MS-5-135	4.160	99.873	-4.8	0.000	0.000	0.008	0.004	Pole MS-5-123	-0.016	-0.008	2.4	89.9	
								Pole MS-5-136	0.008	0.004	1.2	89.9	
Pole MS-5-136	4.160	99.865	-4.8	0.000	0.000	0.008	0.004	Pole MS-5-135	-0.008	-0.004	1.2	89.9	
Pole MS-5-137	4.160	99.833	-4.8	0.000	0.000	0.008	0.004	Pole MS-5-133	-0.060	-0.029	9.2	89.9	
								Pole MS-5-132	0.052	0.025	8.0	89.9	
Pole MS-5-139	4.160	96.706	-5.2	0.000	0.000	0.061	0.030	Pole MS-5-124	-0.061	-0.030	9.8	89.8	
Pole MS-5-149	4.160	97.139	-5.0	0.000	0.000	0.000	0.000	Pole MS-5-52	0.000	0.000	0.0	0.0	
Pole MS-5-151	4.160	97.429	-5.0	0.000	0.000	0.000	0.000	Pole MS-5-40	0.410	0.201	65.0	89.8	
								Pole MS-5-27	-0.410	-0.201	65.0	89.8	
Pole MS-7-16	24.940	100.055	-1.6	0.000	0.000	0.000	0.000	Pole MS-7-18	-0.031	-0.015	0.8	90.0	
								SEC_MS-7-9	0.031	0.015	0.8	90.0	
Pole MS-7-17	24.940	100.059	-1.6	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	-0.083	-0.039	2.1	90.5	
								Pole MS-7-18	0.083	0.039	2.1	90.5	
Pole MS-7-18	24.940	100.055	-1.6	0.000	0.000	0.000	0.000	Pole MS-7-19	0.051	0.025	1.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-7-16	0.031	0.015	0.8	90.1	
								Pole MS-7-17	-0.083	-0.040	2.1	90.0	
Pole MS-7-19	24.940	100.055	-1.6	0.000	0.000	0.051	0.027	Pole MS-7-18	-0.051	-0.027	1.3	88.7	
Pole MS-8-1	4.160	99.818	-4.4	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	-0.250	-0.123	38.8	89.7	
								Pole MS-8-2	0.250	0.123	38.8	89.7	
Pole MS-8-2	4.160	99.650	-4.5	0.000	0.000	0.005	0.002	Pole MS-8-1	-0.250	-0.123	38.8	89.7	
								Pole MS-8-3	0.245	0.121	38.0	89.7	
Pole MS-8-3	4.160	99.594	-4.5	0.000	0.000	0.005	0.002	Pole MS-8-2	-0.245	-0.120	38.0	89.7	
								Pole MS-8-4	0.239	0.118	37.2	89.7	
Pole MS-8-4	4.160	99.567	-4.5	0.000	0.000	0.000	0.000	Pole MS-8-3	-0.239	-0.118	37.2	89.7	
								Pole MS-8-5	0.215	0.106	33.4	89.7	
								SEC_MS-8-3	0.024	0.012	3.8	89.9	
Pole MS-8-5	4.160	99.538	-4.5	0.000	0.000	0.005	0.002	Pole MS-8-4	-0.215	-0.106	33.4	89.7	
								Pole MS-8-6	0.210	0.104	32.7	89.7	
Pole MS-8-6	4.160	99.491	-4.5	0.000	0.000	0.005	0.002	Pole MS-8-5	-0.210	-0.103	32.7	89.7	
								Pole MS-8-7	0.205	0.101	31.9	89.7	
Pole MS-8-7	4.160	99.466	-4.5	0.000	0.000	0.010	0.005	Pole MS-8-6	-0.205	-0.101	31.9	89.7	
								Pole MS-8-8	0.195	0.096	30.3	89.7	
Pole MS-8-8	4.160	99.443	-4.5	0.000	0.000	0.000	0.000	Pole MS-8-7	-0.195	-0.096	30.3	89.7	
								Pole MS-8-9	0.037	0.018	5.7	89.8	
								Pole MS-8-10	0.158	0.078	24.6	89.7	
Pole MS-8-9	4.160	99.435	-4.5	0.000	0.000	0.000	0.000	Pole MS-8-8	-0.037	-0.018	5.7	89.8	
								SEC_MS-8-8	0.037	0.018	5.7	89.8	
Pole MS-8-10	4.160	99.402	-4.5	0.000	0.000	0.005	0.002	Pole MS-8-8	-0.158	-0.078	24.6	89.7	
								Pole MS-8-11	0.153	0.075	23.8	89.7	
Pole MS-8-11	4.160	99.362	-4.5	0.000	0.000	0.008	0.004	Pole MS-8-10	-0.153	-0.075	23.8	89.7	
								Pole MS-8-12	0.145	0.072	22.6	89.7	
Pole MS-8-12	4.160	99.327	-4.5	0.000	0.000	0.008	0.004	Pole MS-8-11	-0.145	-0.072	22.6	89.7	
								Pole MS-8-13	0.137	0.068	21.4	89.6	
Pole MS-8-13	4.160	99.319	-4.5	0.000	0.000	0.008	0.004	Pole MS-8-12	-0.137	-0.068	21.4	89.6	
								Pole MS-8-14	0.129	0.064	20.2	89.6	
Pole MS-8-14	4.160	99.299	-4.5	0.000	0.000	0.008	0.004	Pole MS-8-15	0.122	0.060	19.0	89.6	
								Pole MS-8-13	-0.129	-0.064	20.2	89.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-8-15	4.160	99.281	-4.5	0.000	0.000	0.000	0.000	PRI_PM_9	0.122	0.060	19.0	89.6	
								Pole MS-8-14	-0.122	-0.060	19.0	89.6	
Pole MS-9-1	4.160	99.849	-4.4	0.000	0.000	0.008	0.004	BUS_5KV-LLP_01	-0.559	-0.276	86.7	89.7	
								Pole MS-9-2	0.552	0.272	85.5	89.7	
Pole MS-9-2	4.160	99.730	-4.4	0.000	0.000	0.000	0.000	Pole MS-9-1	-0.551	-0.272	85.5	89.7	
								Pole MS-9-12	0.551	0.272	85.5	89.7	
Pole MS-9-12	4.160	99.505	-4.5	0.000	0.000	0.000	0.000	Pole MS-9-2	-0.550	-0.271	85.5	89.7	
								Pole MS-9-13	0.550	0.271	85.5	89.7	
Pole MS-9-13	4.160	99.467	-4.5	0.000	0.000	0.000	0.000	Pole MS-9-12	-0.550	-0.270	85.5	89.7	
								Pole MS-9-14	0.550	0.270	85.5	89.7	
Pole MS-9-14	4.160	99.399	-4.5	0.000	0.000	0.005	0.002	Pole MS-9-13	-0.550	-0.270	85.5	89.7	
								Pole MS-9-15	0.544	0.268	84.7	89.7	
Pole MS-9-15	4.160	99.300	-4.5	0.000	0.000	0.000	0.000	Pole MS-9-14	-0.544	-0.267	84.7	89.8	
								Pole MS-9-16	0.520	0.255	81.0	89.8	
								SEC_MS-9-12	0.024	0.012	3.7	89.9	
Pole MS-9-16	4.160	99.190	-4.6	0.000	0.000	0.005	0.002	Pole MS-9-15	-0.519	-0.255	81.0	89.8	
								Pole MS-9-17	0.514	0.252	80.2	89.8	
Pole MS-9-17	4.160	99.121	-4.6	0.000	0.000	0.000	0.000	Pole MS-9-16	-0.514	-0.252	80.2	89.8	
								Pole MS-9-18	0.144	0.070	22.4	89.9	
								Pole MS-9-33	0.370	0.182	57.8	89.8	
Pole MS-9-18	4.160	99.114	-4.6	0.000	0.000	0.000	0.000	Pole MS-9-17	-0.144	-0.070	22.4	89.9	
								Pole MS-9-19	0.120	0.058	18.7	89.9	
								SEC_MS-9-14	0.024	0.012	3.7	89.9	
Pole MS-9-19	4.160	99.092	-4.6	0.000	0.000	0.005	0.002	Pole MS-9-18	-0.120	-0.058	18.7	89.9	
								Pole MS-9-20	0.115	0.056	17.9	89.9	
Pole MS-9-20	4.160	99.060	-4.6	0.000	0.000	0.008	0.004	Pole MS-9-19	-0.115	-0.056	17.9	89.9	
								Pole MS-9-21	0.107	0.052	16.7	89.9	
Pole MS-9-21	4.160	99.034	-4.6	0.000	0.000	0.000	0.000	Pole MS-9-20	-0.107	-0.052	16.7	89.9	
								Pole MS-9-23	0.083	0.040	12.9	89.9	
								SEC_MS-9-17	0.024	0.012	3.7	89.9	
Pole MS-9-22	4.160	98.681	-4.7	0.000	0.000	0.000	0.000	Pole MS-9-42	-0.265	-0.130	41.5	89.8	
								Pole MS-9-43	0.037	0.018	5.7	89.9	
								Pole MS-9-47	0.229	0.112	35.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-9-23	4.160	99.027	-4.6	0.000	0.000	0.008	0.004	Pole MS-9-21	-0.083	-0.040	12.9	89.9	
								Pole MS-9-24	0.075	0.037	11.7	89.9	
Pole MS-9-24	4.160	99.019	-4.6	0.000	0.000	0.015	0.008	Pole MS-9-23	-0.075	-0.037	11.7	89.9	
								Pole MS-9-25	0.060	0.029	9.3	89.9	
Pole MS-9-25	4.160	99.014	-4.6	0.000	0.000	0.000	0.000	Pole MS-9-24	-0.060	-0.029	9.3	89.9	
								Pole MS-9-26	0.024	0.012	3.7	89.9	
								Pole MS-9-28	0.036	0.017	5.6	89.9	
Pole MS-9-26	4.160	99.004	-4.6	0.000	0.000	0.000	0.000	Pole MS-9-27	0.000	0.000	0.0	0.0	
								Pole MS-9-25	-0.024	-0.012	3.7	89.9	
								SEC_MS-9-22	0.024	0.012	3.7	89.9	
Pole MS-9-27	4.160	99.004	-4.6	0.000	0.000	0.000	0.000	Pole MS-9-26	0.000	0.000	0.0	0.0	
Pole MS-9-28	4.160	99.007	-4.6	0.000	0.000	0.005	0.002	Pole MS-9-25	-0.036	-0.017	5.6	89.9	
								Pole MS-9-29	0.031	0.015	4.8	89.9	
Pole MS-9-29	4.160	99.002	-4.6	0.000	0.000	0.008	0.004	Pole MS-9-28	-0.031	-0.015	4.8	89.9	
								Pole MS-9-30	0.023	0.011	3.6	89.9	
Pole MS-9-30	4.160	98.998	-4.6	0.000	0.000	0.008	0.004	Pole MS-9-29	-0.023	-0.011	3.6	89.9	
								Pole MS-9-31	0.015	0.008	2.4	89.9	
Pole MS-9-31	4.160	98.996	-4.6	0.000	0.000	0.008	0.004	Pole MS-9-30	-0.015	-0.008	2.4	89.9	
								Pole MS-9-32	0.008	0.004	1.2	89.9	
Pole MS-9-32	4.160	98.995	-4.6	0.000	0.000	0.008	0.004	Pole MS-9-31	-0.008	-0.004	1.2	89.9	
Pole MS-9-33	4.160	99.050	-4.6	0.000	0.000	0.008	0.004	Pole MS-9-17	-0.370	-0.182	57.8	89.8	
								Pole MS-9-34	0.362	0.178	56.6	89.8	
Pole MS-9-34	4.160	98.994	-4.6	0.000	0.000	0.008	0.004	Pole MS-9-33	-0.362	-0.178	56.6	89.8	
								Pole MS-9-35	0.354	0.174	55.4	89.8	
Pole MS-9-35	4.160	98.950	-4.6	0.000	0.000	0.000	0.000	Pole MS-9-34	-0.354	-0.174	55.4	89.8	
								Pole MS-9-36	0.008	0.004	1.2	89.9	
								Pole MS-9-37	0.347	0.170	54.2	89.8	
Pole MS-9-36	4.160	98.949	-4.6	0.000	0.000	0.008	0.004	Pole MS-9-35	-0.008	-0.004	1.2	89.9	
Pole MS-9-37	4.160	98.933	-4.6	0.000	0.000	0.000	0.000	Pole MS-9-35	-0.347	-0.170	54.2	89.8	
								Pole MS-9-38	0.323	0.158	50.4	89.8	
								SEC_MS-9-31	0.024	0.012	3.7	89.9	
Pole MS-9-38	4.160	98.892	-4.6	0.000	0.000	0.000	0.000	Pole MS-9-37	-0.323	-0.158	50.4	89.8	
								Pole MS-9-39	0.286	0.140	44.7	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_MS-9-32	0.036	0.018	5.7	89.8	
Pole MS-9-39	4.160	98.812	-4.7	0.000	0.000	0.000	0.000	Pole MS-9-38	-0.286	-0.140	44.7	89.8	
								Pole MS-9-40	0.005	0.002	0.8	89.9	
								Pole MS-9-41	0.281	0.138	43.9	89.8	
Pole MS-9-40	4.160	98.811	-4.7	0.000	0.000	0.005	0.002	Pole MS-9-39	-0.005	-0.002	0.8	89.9	
Pole MS-9-41	4.160	98.774	-4.7	0.000	0.000	0.008	0.004	Pole MS-9-39	-0.281	-0.138	43.9	89.8	
								Pole MS-9-42	0.273	0.134	42.7	89.8	
Pole MS-9-42	4.160	98.708	-4.7	0.000	0.000	0.008	0.004	Pole MS-9-22	0.265	0.130	41.5	89.8	
								Pole MS-9-41	-0.273	-0.134	42.7	89.8	
Pole MS-9-43	4.160	98.678	-4.7	0.000	0.000	0.005	0.002	Pole MS-9-22	-0.037	-0.018	5.7	89.9	
								Pole MS-9-44	0.032	0.015	4.9	89.9	
Pole MS-9-44	4.160	98.672	-4.7	0.000	0.000	0.000	0.000	Pole MS-9-43	-0.032	-0.015	4.9	89.9	
								Pole MS-9-45	0.008	0.004	1.2	89.9	
								Pole MS-9-46	0.024	0.012	3.7	89.9	
Pole MS-9-45	4.160	98.671	-4.7	0.000	0.000	0.008	0.004	Pole MS-9-44	-0.008	-0.004	1.2	89.9	
Pole MS-9-46	4.160	98.665	-4.7	0.000	0.000	0.000	0.000	Pole MS-9-44	-0.024	-0.012	3.7	89.9	
								SEC_MS-9-37	0.024	0.012	3.7	89.9	
Pole MS-9-47	4.160	98.652	-4.7	0.000	0.000	0.000	0.000	Pole MS-9-22	-0.229	-0.112	35.8	89.8	
								Pole MS-9-48	0.205	0.100	32.1	89.8	
								SEC_MS-9-38	0.024	0.012	3.7	89.9	
Pole MS-9-48	4.160	98.622	-4.7	0.000	0.000	0.000	0.000	Pole MS-9-47	-0.205	-0.100	32.1	89.8	
								Pole MS-9-49	0.169	0.083	26.4	89.8	
								SEC_MS-9-39	0.036	0.018	5.7	89.8	
Pole MS-9-49	4.160	98.576	-4.7	0.000	0.000	0.000	0.000	Pole MS-9-48	-0.169	-0.082	26.4	89.8	
								Pole MS-9-50	0.132	0.065	20.7	89.8	
								SEC_MS-9-40	0.036	0.018	5.7	89.8	
Pole MS-9-50	4.160	98.557	-4.7	0.000	0.000	0.000	0.000	Pole MS-9-49	-0.132	-0.065	20.7	89.8	
								Pole MS-9-51	0.096	0.047	15.1	89.8	
								SEC_MS-9-41	0.036	0.018	5.7	89.8	
Pole MS-9-51	4.160	98.541	-4.7	0.000	0.000	0.000	0.000	Pole MS-9-50	-0.096	-0.047	15.1	89.8	
								Pole MS-9-52	0.060	0.029	9.4	89.8	
								SEC_MS-9-42	0.036	0.018	5.7	89.8	
Pole MS-9-52	4.160	98.526	-4.7	0.000	0.000	0.000	0.000	Pole MS-9-51	-0.060	-0.029	9.4	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-9-53	0.024	0.012	3.7	89.9	
								SEC_MS-9-43	0.036	0.018	5.7	89.8	
Pole MS-9-53	4.160	98.524	-4.7	0.000	0.000	0.000	0.000	Pole MS-9-52	-0.024	-0.012	3.7	89.9	
								Pole MS-9-54	0.000	0.000	0.0	0.0	
								SEC_MS-9-44	0.024	0.012	3.7	89.9	
Pole MS-9-54	4.160	98.524	-4.7	0.000	0.000	0.000	0.000	Pole MS-9-53	0.000	0.000	0.0	0.0	
PRI_PM_1	4.160	98.095	-6.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-0.076	-0.038	12.1	89.4	
								SEC_PM_1	0.076	0.038	12.1	89.4	
PRI_PM_1-1	4.160	93.543	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.071	-0.035	11.8	89.4	
								SEC_PM_1-1	0.071	0.035	11.8	89.4	
PRI_PM_2	4.160	97.248	-6.1	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-0.075	-0.038	12.0	89.4	
								SEC_PM_2	0.075	0.038	12.0	89.4	
PRI_PM_3	4.160	96.542	-6.0	0.000	0.000	0.000	0.000	UG_JUNC-CS-3	-0.075	-0.037	12.0	89.4	
								SEC_PM_3	0.075	0.037	12.0	89.4	
PRI_PM_4	4.160	95.393	-5.5	0.000	0.000	0.000	0.000	SF-1-60	-0.226	-0.115	36.9	89.2	
								SEC_PM_4	0.226	0.115	36.9	89.2	
PRI_PM_5	4.160	95.937	-5.9	0.000	0.000	0.000	0.000	UG_JUNC-CS-5	-0.074	-0.037	11.9	89.4	
								SEC_PM_5	0.074	0.037	11.9	89.4	
PRI_PM_6	4.160	95.371	-5.8	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.073	-0.037	11.9	89.4	
								SEC_PM_6	0.073	0.037	11.9	89.4	
PRI_PM_7	4.160	99.092	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-73	-0.173	-0.086	27.0	89.4	
								SEC_PM_7	0.173	0.086	27.0	89.4	
PRI_PM_8	4.160	99.338	-4.6	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.139	-0.069	21.7	89.6	
								SEC_PM_8	0.139	0.069	21.7	89.6	
PRI_PM_9	4.160	99.264	-4.5	0.000	0.000	0.000	0.000	Pole MS-8-15	-0.122	-0.060	19.0	89.6	
								SEC_PM_9	0.122	0.060	19.0	89.6	
PRI_PM_10	4.160	96.341	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-86	-0.330	-0.165	53.1	89.4	
								PRI_PM_28	0.165	0.082	26.6	89.5	
								SEC_PM_10	0.165	0.082	26.6	89.4	
PRI_PM_11	4.160	98.552	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-11	-0.171	-0.086	27.0	89.4	
								SEC_PM_11	0.171	0.086	27.0	89.4	
PRI_PM_12	4.160	95.519	-5.5	0.000	0.000	0.000	0.000	SF-1-59	-0.227	-0.115	36.9	89.2	
								SEC_PM_12	0.227	0.115	36.9	89.2	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
PRI_PM_13	4.160	94.356	-5.4	0.000	0.000	0.000	0.000	SF-1-40	-0.426	-0.215	70.2	89.2	
								SEC_PM_13	0.426	0.215	70.2	89.2	
PRI_PM_14	4.160	95.152	-5.4	0.000	0.000	0.000	0.000	SF-1-17	-0.324	-0.162	52.8	89.4	
								SEC_PM_14	0.324	0.162	52.8	89.4	
PRI_PM_15	4.160	96.570	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-16	-0.331	-0.166	53.3	89.4	
								SEC_PM_15	0.331	0.166	53.3	89.4	
PRI_PM_16	4.160	98.336	-6.4	0.000	0.000	0.000	0.000	Pole CS-1-2	-0.171	-0.085	26.9	89.4	
								SEC_PM_16	0.171	0.085	26.9	89.4	
PRI_PM_17	4.160	96.727	-6.8	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.150	-0.075	24.0	89.5	
								SEC_PM_17	0.150	0.075	24.0	89.5	
PRI_PM_18	4.160	98.470	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-54	-0.171	-0.085	26.9	89.4	
								SEC_PM_18	0.171	0.085	26.9	89.4	
PRI_PM_19	4.160	93.154	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-37	-0.157	-0.078	26.1	89.4	
								SEC_PM_19	0.157	0.078	26.1	89.4	
PRI_PM_20	4.160	93.902	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-21	-0.143	-0.071	23.6	89.5	
								SEC_PM_20	0.143	0.071	23.6	89.5	
PRI_PM_21	4.160	94.258	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-20	-0.144	-0.072	23.6	89.5	
								SEC_PM_21	0.144	0.072	23.6	89.5	
PRI_PM_22	4.160	97.639	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-6	-0.169	-0.084	26.8	89.4	
								SEC_PM_22	0.169	0.084	26.8	89.4	
PRI_PM_23	4.160	94.346	-6.1	0.000	0.000	0.000	0.000	Pole CS-4-20	-0.160	-0.080	26.3	89.4	
								SEC_PM_23	0.160	0.080	26.3	89.4	
PRI_PM_24	4.160	94.169	-6.1	0.000	0.000	0.000	0.000	Pole CS-4-22	-0.159	-0.080	26.2	89.4	
								SEC_PM_24	0.159	0.080	26.2	89.4	
PRI_PM_25	4.160	98.308	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-22	-0.085	-0.043	13.5	89.4	
								SEC_PM_25	0.085	0.043	13.5	89.4	
PRI_PM_26	4.160	97.463	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-31	-0.084	-0.042	13.4	89.4	
								SEC_PM_26	0.084	0.042	13.4	89.4	
PRI_PM_28	4.160	96.318	-5.9	0.000	0.000	0.000	0.000	PRI_PM_10	-0.165	-0.082	26.6	89.4	
								SEC_PM_28	0.165	0.082	26.6	89.4	
PV-PMS-Pri	24.900	100.474	-0.4	0.000	0.000	0.000	0.000	P_526_2	0.000	0.000	0.0	0.0	
P_526_2	24.900	100.474	-0.4	0.000	0.000	0.000	0.000	PV-PMS-Pri	0.000	-0.001	0.0	0.0	
								BUS_WTG6	0.000	0.001	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_6M-1-1	0.208	98.648	-3.6	0.000	0.000	0.022	0.011	Pole 6M-1-1	-0.022	-0.011	70.0	90.0	
SEC_6M-1-2	0.208	98.383	-3.6	0.000	0.000	0.022	0.011	Pole 6M-1-3	-0.022	-0.011	69.9	90.0	
SEC_6M-1-12	0.208	97.269	-3.6	0.000	0.000	0.022	0.011	Pole 6M-1-19	-0.022	-0.011	69.4	90.0	
SEC_6M-E-1	0.208	92.108	-3.4	0.000	0.000	0.032	0.015	Pole 6M-E-5	-0.032	-0.015	106.3	90.0	
SEC_6M-E-2	0.208	93.698	-3.5	0.000	0.000	0.033	0.016	Pole 6M-E-2	-0.033	-0.016	107.3	90.0	
SEC_6M-E-3	0.208	92.659	-3.5	0.000	0.000	0.032	0.016	Pole 6M-E-3	-0.032	-0.016	106.7	90.0	
SEC_6M-E-4	0.208	91.563	-3.4	0.000	0.000	0.031	0.015	Pole 6M-E-6	-0.031	-0.015	105.9	90.0	
SEC_6M-E-5	0.208	90.698	-3.4	0.000	0.000	0.031	0.015	Pole 6M-E-8	-0.031	-0.015	105.4	90.0	
SEC_6M-E-6	0.208	89.129	-3.4	0.000	0.000	0.030	0.015	Pole 6M-E-10	-0.030	-0.015	104.4	90.0	
SEC_6M-E-7	0.208	89.014	-3.4	0.000	0.000	0.030	0.015	Pole 6M-E-11	-0.030	-0.015	104.3	90.0	
SEC_6M-E-8	0.208	88.866	-3.4	0.000	0.000	0.030	0.015	Pole 6M-E-14	-0.030	-0.015	104.2	90.0	
SEC_6M-E-10	0.208	88.697	-3.4	0.000	0.000	0.030	0.015	Pole 6M-E-19	-0.030	-0.015	104.1	90.0	
SEC_6M-E-11	0.208	88.656	-3.4	0.000	0.000	0.030	0.014	Pole 6M-E-20	-0.030	-0.014	104.1	90.0	
SEC_6M-E-13	0.208	93.264	-3.5	0.000	0.000	0.032	0.016	Pole 6M-E-29	-0.032	-0.016	107.1	90.0	
SEC_CS-1-1	0.208	111.386	-6.8	0.000	0.000	0.031	0.015	Pole CS-1-4	-0.031	-0.015	84.5	90.0	
SEC_CS-1-2	0.208	111.391	-6.8	0.000	0.000	0.031	0.015	Pole CS-1-5	-0.031	-0.015	84.5	90.0	
SEC_CS-1-7	0.208	109.811	-7.2	0.000	0.000	0.030	0.014	Pole CS-1-13	-0.030	-0.014	83.7	90.0	
SEC_CS-1-9	0.208	109.531	-7.2	0.000	0.000	0.030	0.014	Pole CS-1-15	-0.030	-0.014	83.6	90.0	
SEC_CS-1-10	0.208	109.582	-7.2	0.000	0.000	0.030	0.014	Pole CS-1-18	-0.030	-0.014	83.6	90.0	
SEC_CS-1-11	0.208	109.572	-7.2	0.000	0.000	0.030	0.014	Pole CS-1-19	-0.030	-0.014	83.6	90.0	
SEC_CS-1-12	0.208	109.587	-7.2	0.000	0.000	0.030	0.014	Pole CS-1-20	-0.030	-0.014	83.6	90.0	
SEC_CS-1-15	0.208	109.286	-7.3	0.000	0.000	0.030	0.014	Pole CS-1-23	-0.030	-0.014	83.4	90.0	
SEC_CS-1-16	0.208	109.154	-7.3	0.000	0.000	0.030	0.014	Pole CS-1-24	-0.030	-0.014	83.4	90.0	
SEC_CS-1-29	0.208	108.391	-7.4	0.000	0.000	0.029	0.014	Pole CS-1-40	-0.029	-0.014	83.0	90.0	
SEC_CS-1-32	0.208	108.422	-7.4	0.000	0.000	0.029	0.014	Pole CS-1-43	-0.029	-0.014	83.0	90.0	
SEC_CS-1-46	0.208	108.662	-7.4	0.000	0.000	0.029	0.014	Pole CS-1-59	-0.029	-0.014	83.1	90.0	
SEC_CS-1-53	0.208	108.403	-7.4	0.000	0.000	0.029	0.014	Pole CS-1-68	-0.029	-0.014	83.0	90.0	
SEC_CS-2-5	0.208	107.983	-6.1	0.000	0.000	0.029	0.014	Pole CS-2-8	-0.029	-0.014	82.8	90.0	
SEC_CS-2-7	0.208	107.961	-6.1	0.000	0.000	0.029	0.014	Pole CS-2-10	-0.029	-0.014	82.8	90.0	
SEC_CS-2-8	0.208	107.949	-6.1	0.000	0.000	0.029	0.014	Pole CS-2-11	-0.029	-0.014	82.8	90.0	
SEC_CS-2-10	0.208	107.695	-6.1	0.000	0.000	0.029	0.014	Pole CS-2-15	-0.029	-0.014	82.6	90.0	
SEC_CS-2-46	0.208	112.637	-6.5	0.000	0.000	0.031	0.015	Pole CS-2-66	-0.031	-0.015	85.2	90.0	
SEC_CS-2-47	0.208	111.488	-6.5	0.000	0.000	0.031	0.015	Pole CS-3-29	-0.031	-0.015	84.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_CS-2-48	0.208	110.804	-6.5	0.000	0.000	0.030	0.015	Pole CS-3-33	-0.030	-0.015	84.2	90.0	
SEC_CS-2-49	0.208	110.064	-6.5	0.000	0.000	0.030	0.014	Pole CS-2-73	-0.030	-0.014	83.8	90.0	
SEC_CS-4-8	0.208	110.963	-6.4	0.000	0.000	0.030	0.015	Pole CS-4-12	-0.030	-0.015	84.3	90.0	
SEC_CS-5-10	0.240	93.809	-3.7	0.000	0.000	0.046	0.022	UG-JUNC-CS-5-8	-0.046	-0.022	131.3	90.0	
SEC_CS-5-12	0.240	94.594	-3.3	0.000	0.000	0.047	0.023	UG-JUNC-CS-5-9	-0.047	-0.023	132.0	90.0	
SEC_HS-2-4	0.208	112.454	-6.2	0.000	0.000	0.031	0.015	Pole HS-2-4	-0.031	-0.015	85.1	90.0	
SEC_HS-2-5	0.208	112.058	-6.2	0.000	0.000	0.031	0.015	Pole HS-2-5	-0.031	-0.015	84.9	90.0	
SEC_HS-2-6	0.208	111.719	-6.2	0.000	0.000	0.031	0.015	Pole HS-2-6	-0.031	-0.015	84.7	90.0	
SEC_HS-2-7	0.208	111.350	-6.2	0.000	0.000	0.031	0.015	Pole HS-2-7	-0.031	-0.015	84.5	90.0	
SEC_HS-2-10	0.208	110.296	-6.2	0.000	0.000	0.030	0.015	Pole HS-2-11	-0.030	-0.015	84.0	90.0	
SEC_HS-2-23	0.208	109.627	-6.2	0.000	0.000	0.030	0.014	Pole HS-2-26	-0.030	-0.014	83.6	90.0	
SEC_HS-2-25	0.208	109.302	-6.2	0.000	0.000	0.030	0.014	Pole HS-2-30	-0.030	-0.014	83.4	90.0	
SEC_HS-2-36	0.208	109.178	-6.2	0.000	0.000	0.030	0.014	Pole HS-2-43	-0.030	-0.014	83.4	90.0	
SEC_HS-2-67	0.208	110.287	-6.2	0.000	0.000	0.030	0.015	Pole HS-2-77	-0.030	-0.015	84.0	90.0	
SEC_HS-3-55	0.208	109.389	-6.2	0.000	0.000	0.030	0.014	Pole HS-3-59	-0.030	-0.014	83.5	90.0	
SEC_HS-3-57	0.208	109.310	-6.2	0.000	0.000	0.030	0.014	Pole HS-3-61	-0.030	-0.014	83.4	90.0	
SEC_HS-3-59	0.208	109.271	-6.2	0.000	0.000	0.030	0.014	Pole HS-3-63	-0.030	-0.014	83.4	90.0	
SEC_HS-4-7	0.208	112.561	-6.5	0.000	0.000	0.032	0.016	Pole HS-4-10	-0.032	-0.016	88.7	90.0	
SEC_HS-4-13	0.208	111.999	-6.4	0.000	0.000	0.032	0.016	Pole HS-4-17	-0.032	-0.016	88.4	90.0	
SEC_HS-4-21	0.208	111.145	-6.4	0.000	0.000	0.032	0.015	Pole HS-4-26	-0.032	-0.015	87.9	90.0	
SEC_HS-4-32	0.208	112.614	-6.5	0.000	0.000	0.032	0.016	Pole HS-4-39	-0.032	-0.016	88.7	90.0	
SEC_HS-4-44	0.208	112.620	-6.5	0.000	0.000	0.032	0.016	Pole HS-4-48	-0.032	-0.016	88.7	90.0	
SEC_MS-1-17	0.208	99.977	-4.9	0.000	0.000	0.004	0.002	Pole MS-1-10	-0.004	-0.002	12.6	90.0	
SEC_MS-2-8	0.208	98.896	-4.7	0.000	0.000	0.012	0.006	Pole MS-2-1	-0.012	-0.006	37.5	90.0	
SEC_MS-2-36	0.208	99.075	-4.6	0.000	0.000	0.012	0.006	Pole MS-2-90	-0.012	-0.006	37.5	90.0	
SEC_MS-2-37	0.208	98.886	-4.7	0.000	0.000	0.012	0.006	Pole MS-2-2	-0.012	-0.006	37.5	90.0	
SEC_MS-2-38	0.208	98.875	-4.7	0.000	0.000	0.012	0.006	Pole MS-2-3	-0.012	-0.006	37.5	90.0	
SEC_MS-2-39	0.208	98.895	-4.6	0.000	0.000	0.012	0.006	Pole MS-2-92	-0.012	-0.006	37.5	90.0	
SEC_MS-2-40	0.208	98.830	-4.6	0.000	0.000	0.012	0.006	Pole MS-2-94	-0.012	-0.006	37.5	90.0	
SEC_MS-2-41	0.208	98.649	-4.6	0.000	0.000	0.012	0.006	Pole MS-2-100	-0.012	-0.006	37.4	90.0	
SEC_MS-3-1	0.208	99.183	-4.5	0.000	0.000	0.012	0.006	Pole MS-3-2	-0.012	-0.006	37.6	90.0	
SEC_MS-3-2	0.208	98.984	-4.5	0.000	0.000	0.012	0.006	Pole MS-3-6	-0.012	-0.006	37.5	90.0	
SEC_MS-3-3	0.208	98.871	-4.5	0.000	0.000	0.012	0.006	Pole MS-3-8	-0.012	-0.006	37.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_MS-3-22	0.208	98.447	-4.5	0.000	0.000	0.012	0.006	Pole MS-3-25	-0.012	-0.006	37.4	90.0	
SEC_MS-3-45	0.208	98.442	-4.5	0.000	0.000	0.018	0.009	Pole MS-4-36	-0.018	-0.009	56.9	90.0	
SEC_MS-3-49	0.208	98.332	-4.5	0.000	0.000	0.018	0.009	Pole MS-3-100	-0.018	-0.009	56.9	90.0	
SEC_MS-3-65	0.208	98.316	-4.5	0.000	0.000	0.018	0.009	Pole MS-3-102	-0.018	-0.009	56.9	90.0	
SEC_MS-3-66	0.208	98.608	-4.5	0.000	0.000	0.018	0.009	Pole MS-4-17	-0.018	-0.009	57.0	90.0	
SEC_MS-3-73	0.208	99.444	-4.5	0.000	0.000	0.012	0.006	Pole MS-4-3	-0.012	-0.006	37.6	90.0	
SEC_MS-3-74	0.208	99.436	-4.5	0.000	0.000	0.012	0.006	Pole MS-4-6	-0.012	-0.006	37.6	90.0	
SEC_MS-3-75	0.208	99.050	-4.5	0.000	0.000	0.012	0.006	Pole MS-4-10	-0.012	-0.006	37.5	90.0	
SEC_MS-3-76	0.208	98.482	-4.5	0.000	0.000	0.018	0.009	Pole MS-4-20	-0.018	-0.009	56.9	90.0	
SEC_MS-5-15	0.208	97.307	-5.0	0.000	0.000	0.012	0.006	Pole MS-5-16	-0.012	-0.006	37.1	90.0	
SEC_MS-5-16	0.208	97.084	-5.0	0.000	0.000	0.018	0.009	Pole MS-5-17	-0.018	-0.009	56.4	90.0	
SEC_MS-5-17	0.208	97.083	-5.0	0.000	0.000	0.018	0.009	Pole MS-5-18	-0.018	-0.009	56.4	90.0	
SEC_MS-5-23	0.208	97.218	-5.0	0.000	0.000	0.012	0.006	Pole MS-5-26	-0.012	-0.006	37.1	90.0	
SEC_MS-5-25	0.208	97.211	-5.0	0.000	0.000	0.012	0.006	Pole MS-5-28	-0.012	-0.006	37.1	90.0	
SEC_MS-5-26	0.208	96.998	-5.1	0.000	0.000	0.018	0.009	Pole MS-5-29	-0.018	-0.009	56.4	90.0	
SEC_MS-5-29	0.208	97.131	-5.0	0.000	0.000	0.012	0.006	Pole MS-5-32	-0.012	-0.006	37.1	90.0	
SEC_MS-5-30	0.208	96.909	-5.1	0.000	0.000	0.018	0.009	Pole MS-5-33	-0.018	-0.009	56.4	90.0	
SEC_MS-5-32	0.208	97.107	-5.0	0.000	0.000	0.012	0.006	Pole MS-5-35	-0.012	-0.006	37.1	90.0	
SEC_MS-5-40	0.208	96.797	-5.1	0.000	0.000	0.012	0.006	Pole MS-5-45	-0.012	-0.006	37.0	90.0	
SEC_MS-5-45	0.208	96.739	-5.1	0.000	0.000	0.012	0.006	Pole MS-5-50	-0.012	-0.006	37.0	90.0	
SEC_MS-5-99	0.208	99.764	-4.9	0.000	0.000	0.012	0.006	Pole MS-5-110	-0.012	-0.006	37.7	90.0	
SEC_MS-7-9	0.208	99.967	-1.6	0.000	0.000	0.031	0.015	Pole MS-7-16	-0.031	-0.015	96.8	90.0	
SEC_MS-8-3	0.208	99.147	-4.6	0.000	0.000	0.024	0.012	Pole MS-8-4	-0.024	-0.012	75.1	90.0	
SEC_MS-8-8	0.208	98.797	-4.8	0.000	0.000	0.037	0.018	Pole MS-8-9	-0.037	-0.018	114.0	90.0	
SEC_MS-9-12	0.208	98.880	-4.7	0.000	0.000	0.024	0.012	Pole MS-9-15	-0.024	-0.012	75.0	90.0	
SEC_MS-9-14	0.208	98.695	-4.7	0.000	0.000	0.024	0.012	Pole MS-9-18	-0.024	-0.012	74.9	90.0	
SEC_MS-9-17	0.208	98.615	-4.8	0.000	0.000	0.024	0.012	Pole MS-9-21	-0.024	-0.012	74.9	90.0	
SEC_MS-9-22	0.208	98.585	-4.8	0.000	0.000	0.024	0.012	Pole MS-9-26	-0.024	-0.012	74.8	90.0	
SEC_MS-9-31	0.208	98.514	-4.8	0.000	0.000	0.024	0.012	Pole MS-9-37	-0.024	-0.012	74.8	90.0	
SEC_MS-9-32	0.208	98.256	-4.9	0.000	0.000	0.036	0.018	Pole MS-9-38	-0.036	-0.018	113.7	90.0	
SEC_MS-9-37	0.208	98.247	-4.9	0.000	0.000	0.024	0.012	Pole MS-9-46	-0.024	-0.012	74.7	90.0	
SEC_MS-9-38	0.208	98.234	-4.9	0.000	0.000	0.024	0.012	Pole MS-9-47	-0.024	-0.012	74.7	90.0	
SEC_MS-9-39	0.208	97.987	-4.9	0.000	0.000	0.036	0.017	Pole MS-9-48	-0.036	-0.017	113.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_MS-9-40	0.208	97.941	-5.0	0.000	0.000	0.036	0.017	Pole MS-9-49	-0.036	-0.017	113.4	90.0	
SEC_MS-9-41	0.208	97.923	-5.0	0.000	0.000	0.036	0.017	Pole MS-9-50	-0.036	-0.017	113.4	90.0	
SEC_MS-9-42	0.208	97.907	-5.0	0.000	0.000	0.036	0.017	Pole MS-9-51	-0.036	-0.017	113.4	90.0	
SEC_MS-9-43	0.208	97.892	-5.0	0.000	0.000	0.036	0.017	Pole MS-9-52	-0.036	-0.017	113.4	90.0	
SEC_MS-9-44	0.208	98.107	-4.9	0.000	0.000	0.024	0.011	Pole MS-9-53	-0.024	-0.011	74.6	90.0	
SEC_PM_1	0.208	97.044	-6.9	0.000	0.000	0.076	0.037	PRI_PM_1	-0.076	-0.037	241.7	90.0	
SEC_PM_1-1	0.208	92.520	-6.7	0.000	0.000	0.071	0.034	PRI_PM_1-1	-0.071	-0.034	235.1	90.0	
SEC_PM_2	0.208	96.202	-6.8	0.000	0.000	0.075	0.036	PRI_PM_2	-0.075	-0.036	240.5	90.0	
SEC_PM_3	0.208	95.500	-6.7	0.000	0.000	0.074	0.036	PRI_PM_3	-0.074	-0.036	239.4	90.0	
SEC_PM_4	0.208	93.849	-6.5	0.000	0.000	0.224	0.109	PRI_PM_4	-0.224	-0.109	737.4	90.0	
SEC_PM_5	0.208	94.899	-6.6	0.000	0.000	0.073	0.036	PRI_PM_5	-0.073	-0.036	238.6	90.0	
SEC_PM_6	0.208	94.337	-6.6	0.000	0.000	0.073	0.035	PRI_PM_6	-0.073	-0.035	237.7	90.0	
SEC_PM_7	0.208	97.964	-5.1	0.000	0.000	0.172	0.083	PRI_PM_7	-0.172	-0.083	540.3	90.0	
SEC_PM_8	0.208	98.434	-5.1	0.000	0.000	0.138	0.067	PRI_PM_8	-0.138	-0.067	433.5	90.0	
SEC_PM_9	0.208	98.474	-5.0	0.000	0.000	0.121	0.059	PRI_PM_9	-0.121	-0.059	379.4	90.0	
SEC_PM_10	0.208	95.232	-6.6	0.000	0.000	0.164	0.079	PRI_PM_10	-0.164	-0.079	531.2	90.0	
SEC_PM_11	0.208	97.500	-6.9	0.000	0.000	0.170	0.082	PRI_PM_11	-0.170	-0.082	538.7	90.0	
SEC_PM_12	0.208	94.044	-6.5	0.000	0.000	0.225	0.109	PRI_PM_12	-0.225	-0.109	738.3	90.0	
SEC_PM_13	0.208	92.957	-6.4	0.000	0.000	0.423	0.205	PRI_PM_13	-0.423	-0.205	1403.8	90.0	
SEC_PM_14	0.208	94.121	-6.1	0.000	0.000	0.322	0.156	PRI_PM_14	-0.322	-0.156	1055.2	90.0	
SEC_PM_15	0.208	95.530	-6.8	0.000	0.000	0.330	0.160	PRI_PM_15	-0.330	-0.160	1064.4	90.0	
SEC_PM_16	0.208	97.286	-7.1	0.000	0.000	0.170	0.082	PRI_PM_16	-0.170	-0.082	538.0	90.0	
SEC_PM_17	0.208	95.797	-7.4	0.000	0.000	0.149	0.072	PRI_PM_17	-0.149	-0.072	479.8	90.0	
SEC_PM_18	0.208	97.419	-5.1	0.000	0.000	0.170	0.082	PRI_PM_18	-0.170	-0.082	538.4	90.0	
SEC_PM_19	0.208	92.135	-6.7	0.000	0.000	0.156	0.075	PRI_PM_19	-0.156	-0.075	521.2	90.0	
SEC_PM_20	0.208	92.987	-6.6	0.000	0.000	0.142	0.069	PRI_PM_20	-0.142	-0.069	471.5	90.0	
SEC_PM_21	0.208	93.342	-6.5	0.000	0.000	0.143	0.069	PRI_PM_21	-0.143	-0.069	472.5	90.0	
SEC_PM_22	0.208	96.593	-6.9	0.000	0.000	0.168	0.081	PRI_PM_22	-0.168	-0.081	535.7	90.0	
SEC_PM_23	0.208	93.320	-6.8	0.000	0.000	0.159	0.077	PRI_PM_23	-0.159	-0.077	525.0	90.0	
SEC_PM_24	0.208	93.144	-6.8	0.000	0.000	0.158	0.077	PRI_PM_24	-0.158	-0.077	524.4	90.0	
SEC_PM_25	0.208	97.257	-7.0	0.000	0.000	0.085	0.041	PRI_PM_25	-0.085	-0.041	269.0	90.0	
SEC_PM_26	0.208	96.418	-7.0	0.000	0.000	0.084	0.041	PRI_PM_26	-0.084	-0.041	267.6	90.0	
SEC_PM_28	0.208	95.209	-6.6	0.000	0.000	0.164	0.079	PRI_PM_28	-0.164	-0.079	531.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_SF-1-26	0.208	95.754	-5.8	0.000	0.000	0.029	0.014	SF-1-11	-0.029	-0.014	94.3	90.0	
SEC_SF-1-47	0.208	95.146	-5.8	0.000	0.000	0.029	0.014	SF-1-14	-0.029	-0.014	94.0	90.0	
SEC_SF-1-49	0.208	96.118	-5.9	0.000	0.000	0.029	0.014	SF-1-28	-0.029	-0.014	94.5	90.0	
SEC_SF-1-51	0.208	95.834	-5.9	0.000	0.000	0.029	0.014	SF-1-29	-0.029	-0.014	94.4	90.0	
SEC_SF-1-55	0.208	95.249	-5.9	0.000	0.000	0.029	0.014	SF-1-31	-0.029	-0.014	94.0	90.0	
SEC_SF-1-57	0.208	95.013	-5.9	0.000	0.000	0.029	0.014	SF-1-32	-0.029	-0.014	93.9	90.0	
SEC_SF-1-59	0.208	94.502	-5.9	0.000	0.000	0.029	0.014	SF-1-18	-0.029	-0.014	93.6	90.0	
SEC_SF-1-61	0.208	94.185	-5.8	0.000	0.000	0.029	0.014	SF-1-27	-0.029	-0.014	93.4	90.0	
SEC_SF-1-63	0.208	93.572	-5.8	0.000	0.000	0.028	0.014	SF-1-39	-0.028	-0.014	93.1	90.0	
SEC_SF-1-65	0.208	94.322	-5.9	0.000	0.000	0.029	0.014	SF-1-62	-0.029	-0.014	93.5	90.0	
SEC_SF-1-67	0.208	93.228	-5.8	0.000	0.000	0.028	0.014	SF-1-50	-0.028	-0.014	92.9	90.0	
SEC_SF-1-69	0.208	94.719	-5.9	0.000	0.000	0.029	0.014	SF-1-58	-0.029	-0.014	93.7	90.0	
SEC_SF-1-71	0.208	95.242	-5.9	0.000	0.000	0.029	0.014	SF-1-56	-0.029	-0.014	94.0	90.0	
SEC_SF-1-73	0.208	95.551	-5.9	0.000	0.000	0.029	0.014	SF-1-54	-0.029	-0.014	94.2	90.0	
SEC_SF-1-75	0.208	95.785	-6.0	0.000	0.000	0.029	0.014	SF-1-55	-0.029	-0.014	94.3	90.0	
SEC_SF-2-7	0.208	97.996	-5.2	0.000	0.000	0.030	0.015	SF-2-12	-0.030	-0.015	95.6	90.0	
SEC_SF-2-11	0.208	97.946	-5.2	0.000	0.000	0.030	0.015	SF-2-25	-0.030	-0.015	95.6	90.0	
SEC_SF-2-15	0.208	97.831	-5.2	0.000	0.000	0.030	0.015	SF-2-17	-0.030	-0.015	95.5	90.0	
SEC_SF-2-18	0.208	97.813	-5.2	0.000	0.000	0.030	0.015	SF-2-20	-0.030	-0.015	95.5	90.0	
SEC_SF-2-19	0.208	98.011	-5.2	0.000	0.000	0.030	0.015	SF-2-22	-0.030	-0.015	95.7	90.0	
SEC_SF-2-20	0.208	98.003	-5.2	0.000	0.000	0.030	0.015	SF-2-23	-0.030	-0.015	95.7	90.0	
SEC_SF-4-01	0.208	98.926	-5.2	0.000	0.000	0.031	0.015	SF-2-46	-0.031	-0.015	96.2	90.0	
SEC_SF-4-2	0.208	99.502	-5.0	0.000	0.000	0.014	0.007	SF-2-47	-0.014	-0.007	44.2	90.0	
SEC_SF-4-3	0.208	99.499	-5.0	0.000	0.000	0.014	0.007	SF-2-48	-0.014	-0.007	44.2	90.0	
SEC_SUB_FDR_XFMR#25-49	0.208	95.465	-5.7	0.000	0.000	0.015	0.007	SF-1-57	-0.015	-0.007	47.9	90.0	
SF-1-1	4.160	99.332	-5.0	0.000	0.000	0.013	0.006	BUS_SAF_4kV	-2.173	-1.106	340.7	89.1	
								SF-1-2	2.160	1.100	338.7	89.1	
SF-1-2	4.160	98.646	-5.2	0.000	0.000	0.000	0.000	SF-1-4	0.038	0.019	6.0	89.6	
								SF-1-1	-2.148	-1.086	338.7	89.2	
								SF-1-3	2.110	1.067	332.6	89.2	
SF-1-3	4.160	98.330	-5.3	0.000	0.000	0.013	0.006	SF-1-2	-2.104	-1.061	332.7	89.3	
								SF-1-7	2.092	1.055	330.6	89.3	
SF-1-4	4.160	98.626	-5.2	0.000	0.000	0.013	0.006	SF-1-2	-0.038	-0.019	6.0	89.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-1-5	0.026	0.013	4.0	89.6	
SF-1-5	4.160	98.609	-5.2	0.000	0.000	0.013	0.006	SF-1-4	-0.026	-0.013	4.0	89.6	
								SF-1-6	0.013	0.006	2.0	89.6	
SF-1-6	4.160	98.604	-5.2	0.000	0.000	0.013	0.006	SF-1-5	-0.013	-0.006	2.0	89.6	
SF-1-7	4.160	97.662	-5.4	0.000	0.000	0.000	0.000	SF-1-8	0.554	0.275	87.9	89.5	
								SF-1-3	-2.080	-1.042	330.6	89.4	
								SF-1-26	1.527	0.767	242.8	89.4	
SF-1-8	4.160	97.401	-5.4	0.000	0.000	0.025	0.012	SF-1-7	-0.552	-0.275	87.9	89.5	
								SF-1-9	0.527	0.262	83.9	89.5	
SF-1-9	4.160	97.270	-5.4	0.000	0.000	0.013	0.006	SF-1-8	-0.526	-0.262	83.9	89.5	
								SF-1-10	0.514	0.256	81.9	89.5	
SF-1-10	4.160	97.105	-5.4	0.000	0.000	0.012	0.006	SF-1-9	-0.513	-0.255	81.9	89.5	
								SF-1-11	0.501	0.249	79.9	89.5	
SF-1-11	4.160	96.812	-5.4	0.000	0.000	0.000	0.000	SF-1-10	-0.499	-0.248	79.9	89.5	
								SF-1-12	0.470	0.234	75.2	89.5	
								SEC_SF-1-26	0.030	0.015	4.7	89.7	
SF-1-12	4.160	96.486	-5.4	0.000	0.000	0.012	0.006	SF-1-11	-0.468	-0.233	75.2	89.5	
								SF-1-13	0.456	0.227	73.2	89.5	
SF-1-13	4.160	96.384	-5.4	0.000	0.000	0.012	0.006	SF-1-12	-0.455	-0.227	73.2	89.5	
								SF-1-14	0.443	0.221	71.2	89.5	
SF-1-14	4.160	96.201	-5.4	0.000	0.000	0.000	0.000	SF-1-13	-0.442	-0.220	71.2	89.5	
								SF-1-15	0.413	0.206	66.5	89.5	
								SEC_SF-1-47	0.029	0.014	4.7	89.7	
SF-1-15	4.160	95.932	-5.4	0.000	0.000	0.012	0.006	SF-1-14	-0.412	-0.205	66.5	89.5	
								SF-1-16	0.399	0.199	64.6	89.5	
SF-1-16	4.160	95.495	-5.4	0.000	0.000	0.012	0.006	SF-1-15	-0.398	-0.198	64.6	89.5	
								SF-1-17	0.385	0.192	62.6	89.5	
SF-1-17	4.160	95.198	-5.4	0.000	0.000	0.000	0.000	PRI_PM_14	0.324	0.162	52.8	89.4	
								SF-1-16	-0.384	-0.192	62.6	89.5	
								SF-1-19	0.060	0.030	9.8	89.6	
SF-1-18	4.160	95.552	-5.4	0.000	0.000	0.000	0.000	SF-1-34	-0.643	-0.323	104.5	89.4	
								SF-1-25	0.614	0.308	99.8	89.4	
								SEC_SF-1-59	0.029	0.014	4.7	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-19	4.160	95.169	-5.4	0.000	0.000	0.000	0.000	SF-1-17	-0.060	-0.030	9.8	89.6	
								SF-1-20	0.036	0.018	5.9	89.6	
								SF-1-23	0.024	0.012	3.9	89.6	
SF-1-20	4.160	95.163	-5.4	0.000	0.000	0.012	0.006	SF-1-21	0.024	0.012	3.9	89.6	
								SF-1-19	-0.036	-0.018	5.9	89.6	
SF-1-21	4.160	95.156	-5.4	0.000	0.000	0.012	0.006	SF-1-20	-0.024	-0.012	3.9	89.6	
								SF-1-22	0.012	0.006	2.0	89.6	
SF-1-22	4.160	95.153	-5.4	0.000	0.000	0.012	0.006	SF-1-21	-0.012	-0.006	2.0	89.6	
SF-1-23	4.160	95.134	-5.4	0.000	0.000	0.012	0.006	SF-1-19	-0.024	-0.012	3.9	89.6	
								SF-1-24	0.012	0.006	2.0	89.6	
SF-1-24	4.160	95.132	-5.4	0.000	0.000	0.012	0.006	SF-1-23	-0.012	-0.006	2.0	89.6	
SF-1-25	4.160	95.397	-5.4	0.000	0.000	0.012	0.006	SF-1-18	-0.613	-0.308	99.8	89.4	
								SF-1-27	0.601	0.302	97.9	89.4	
SF-1-26	4.160	97.431	-5.5	0.000	0.000	0.013	0.006	SF-1-28	0.812	0.406	129.3	89.5	
								SF-1-53	0.699	0.352	111.5	89.3	
								SF-1-7	-1.524	-0.763	242.8	89.4	
SF-1-27	4.160	95.233	-5.4	0.000	0.000	0.000	0.000	SF-1-25	-0.600	-0.301	97.9	89.4	
								SF-1-35	0.572	0.287	93.2	89.4	
								SEC_SF-1-61	0.029	0.014	4.7	89.7	
SF-1-28	4.160	97.179	-5.5	0.000	0.000	0.000	0.000	SF-1-26	-0.810	-0.405	129.3	89.5	
								SF-1-29	0.780	0.390	124.6	89.5	
								SEC_SF-1-49	0.030	0.015	4.7	89.7	
SF-1-29	4.160	96.893	-5.5	0.000	0.000	0.000	0.000	SF-1-28	-0.778	-0.389	124.6	89.5	
								SF-1-30	0.748	0.374	119.8	89.4	
								SEC_SF-1-51	0.030	0.015	4.7	89.7	
SF-1-30	4.160	96.702	-5.5	0.000	0.000	0.012	0.006	SF-1-29	-0.747	-0.373	119.8	89.4	
								SF-1-31	0.734	0.367	117.9	89.4	
SF-1-31	4.160	96.303	-5.4	0.000	0.000	0.000	0.000	SF-1-30	-0.731	-0.366	117.9	89.4	
								SF-1-33	0.702	0.351	113.2	89.4	
								SEC_SF-1-55	0.029	0.014	4.7	89.7	
SF-1-32	4.160	96.067	-5.4	0.000	0.000	0.000	0.000	SF-1-33	-0.688	-0.345	111.2	89.4	
								SF-1-34	0.659	0.330	106.5	89.4	
								SEC_SF-1-57	0.029	0.014	4.7	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-33	4.160	96.145	-5.4	0.000	0.000	0.012	0.006	SF-1-32	0.689	0.345	111.2	89.4	
								SF-1-31	-0.701	-0.351	113.2	89.4	
SF-1-34	4.160	95.728	-5.4	0.000	0.000	0.012	0.006	SF-1-18	0.645	0.323	104.5	89.4	
								SF-1-32	-0.657	-0.329	106.5	89.4	
SF-1-35	4.160	95.101	-5.4	0.000	0.000	0.012	0.006	SF-1-27	-0.571	-0.287	93.2	89.4	
								SF-1-36	0.559	0.281	91.2	89.4	
SF-1-36	4.160	94.951	-5.4	0.000	0.000	0.012	0.006	SF-1-35	-0.558	-0.280	91.2	89.3	
								SF-1-37	0.546	0.274	89.3	89.3	
SF-1-37	4.160	94.783	-5.4	0.000	0.000	0.012	0.006	SF-1-36	-0.545	-0.274	89.3	89.3	
								SF-1-38	0.533	0.268	87.3	89.3	
SF-1-38	4.160	94.620	-5.4	0.000	0.000	0.000	0.000	SF-1-37	-0.532	-0.268	87.3	89.3	
								SF-1-39	0.028	0.014	4.7	89.7	
								SF-1-40	0.503	0.254	82.7	89.3	
SF-1-39	4.160	94.616	-5.4	0.000	0.000	0.000	0.000	SF-1-38	-0.028	-0.014	4.7	89.7	
								SEC_SF-1-63	0.028	0.014	4.7	89.7	
SF-1-40	4.160	94.417	-5.4	0.000	0.000	0.000	0.000	PRI_PM_13	0.426	0.216	70.2	89.3	
								SF-1-38	-0.502	-0.253	82.7	89.3	
								SF-1-42	0.076	0.038	12.4	89.6	
SF-1-42	4.160	94.365	-5.4	0.000	0.000	0.000	0.000	SF-1-40	-0.076	-0.037	12.4	89.6	
								SF-1-44	0.076	0.037	12.4	89.6	
SF-1-44	4.160	94.311	-5.4	0.000	0.000	0.012	0.006	SF-1-42	-0.076	-0.037	12.4	89.6	
								SF-1-45	0.064	0.032	10.5	89.6	
SF-1-45	4.160	94.288	-5.4	0.000	0.000	0.000	0.000	SF-1-44	-0.064	-0.032	10.5	89.6	
								SF-1-47	0.064	0.032	10.5	89.6	
								L-SUB-FDR-EQ#16-1-38~	0.000	0.000	0.0	0.0	
SF-1-47	4.160	94.277	-5.4	0.000	0.000	0.012	0.006	SF-1-45	-0.064	-0.032	10.5	89.6	
								SF-1-50	0.052	0.026	8.5	89.6	
SF-1-50	4.160	94.270	-5.4	0.000	0.000	0.000	0.000	SF-1-47	-0.052	-0.026	8.5	89.6	
								SF-1-52	0.024	0.012	3.9	89.6	
								SEC_SF-1-67	0.028	0.014	4.6	89.7	
SF-1-52	4.160	94.264	-5.4	0.000	0.000	0.024	0.012	SF-1-50	-0.024	-0.012	3.9	89.6	
SF-1-53	4.160	97.111	-5.5	0.000	0.000	0.000	0.000	SF-1-55	0.697	0.350	111.5	89.4	
								SF-1-26	-0.697	-0.350	111.5	89.4	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-54	4.160	96.607	-5.5	0.000	0.000	0.000	0.000	SF-1-55	-0.664	-0.333	106.8	89.4	
								SF-1-56	0.635	0.319	102.1	89.4	
								SEC_SF-1-73	0.029	0.015	4.7	89.7	
SF-1-55	4.160	96.843	-5.5	0.000	0.000	0.000	0.000	SF-1-53	-0.695	-0.349	111.5	89.4	
								SF-1-54	0.666	0.334	106.8	89.4	
								SEC_SF-1-75	0.030	0.015	4.7	89.7	
SF-1-56	4.160	96.297	-5.5	0.000	0.000	0.000	0.000	SF-1-54	-0.633	-0.318	102.1	89.4	
								SF-1-57	0.603	0.303	97.4	89.3	
								SEC_SF-1-71	0.029	0.014	4.7	89.7	
SF-1-57	4.160	96.001	-5.5	0.000	0.000	0.012	0.006	SF-1-56	-0.602	-0.303	97.4	89.3	
								SF-1-58	0.574	0.289	93.0	89.3	
								SEC_SUB_FDR_XFMR#25-49	0.015	0.007	2.4	89.8	
SF-1-58	4.160	95.770	-5.5	0.000	0.000	0.000	0.000	SF-1-57	-0.573	-0.289	93.0	89.3	
								SF-1-59	0.544	0.274	88.3	89.3	
								SEC_SF-1-69	0.029	0.014	4.7	89.7	
SF-1-59	4.160	95.552	-5.5	0.000	0.000	0.000	0.000	PRI_PM_12	0.227	0.115	36.9	89.2	
								SF-1-58	-0.543	-0.274	88.3	89.3	
								SF-1-60	0.316	0.159	51.4	89.3	
SF-1-60	4.160	95.425	-5.5	0.000	0.000	0.000	0.000	PRI_PM_4	0.226	0.114	36.9	89.2	
								SF-1-59	-0.315	-0.159	51.4	89.3	
								SF-1-61	0.089	0.044	14.5	89.6	
SF-1-61	4.160	95.393	-5.5	0.000	0.000	0.012	0.006	SF-1-60	-0.089	-0.044	14.5	89.6	
								SF-1-62	0.077	0.038	12.5	89.6	
SF-1-62	4.160	95.371	-5.5	0.000	0.000	0.000	0.000	SF-1-61	-0.077	-0.038	12.5	89.6	
								SF-1-63	0.048	0.024	7.9	89.6	
								SEC_SF-1-65	0.029	0.014	4.7	89.7	
SF-1-63	4.160	95.351	-5.5	0.000	0.000	0.012	0.006	SF-1-62	-0.048	-0.024	7.9	89.6	
								SF-1-64	0.036	0.018	5.9	89.6	
SF-1-64	4.160	95.338	-5.5	0.000	0.000	0.012	0.006	SF-1-63	-0.036	-0.018	5.9	89.6	
								SF-1-65	0.024	0.012	3.9	89.6	
SF-1-65	4.160	95.328	-5.5	0.000	0.000	0.012	0.006	SF-1-64	-0.024	-0.012	3.9	89.6	
								SF-1-66	0.012	0.006	2.0	89.6	
SF-1-66	4.160	95.324	-5.5	0.000	0.000	0.012	0.006	SF-1-65	-0.012	-0.006	2.0	89.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-2-1	4.160	100.117	-4.8	0.000	0.000	0.013	0.007	BUS_SAF_4kV	-0.395	-0.195	61.0	89.7	
								SF-2-2	0.381	0.188	59.0	89.7	
SF-2-2	4.160	99.992	-4.8	0.000	0.000	0.000	0.000	SF-2-1	-0.381	-0.188	59.0	89.7	
								SF-2-3	0.013	0.006	2.0	89.6	
								SF-2-5	0.368	0.182	56.9	89.7	
SF-2-3	4.160	99.988	-4.8	0.000	0.000	0.013	0.006	SF-2-2	-0.013	-0.006	2.0	89.6	
								SF-2-4	0.000	0.000	0.0	0.0	
SF-2-4	4.160	99.988	-4.8	0.000	0.000	0.000	0.000	SF-2-3	0.000	0.000	0.0	0.0	
SF-2-5	4.160	99.929	-4.8	0.000	0.000	0.000	0.000	SF-2-2	-0.368	-0.182	56.9	89.7	
								SF-2-7	0.026	0.013	4.1	89.6	
								SF-2-9	0.013	0.006	2.0	89.6	
								SF-2-10	0.328	0.162	50.9	89.7	
SF-2-7	4.160	99.926	-4.8	0.000	0.000	0.013	0.006	SF-2-5	-0.026	-0.013	4.1	89.6	
								SF-2-8	0.013	0.006	2.0	89.6	
SF-2-8	4.160	99.923	-4.8	0.000	0.000	0.013	0.006	SF-2-7	-0.013	-0.006	2.0	89.6	
SF-2-9	4.160	99.924	-4.8	0.000	0.000	0.013	0.006	SF-2-5	-0.013	-0.006	2.0	89.6	
SF-2-10	4.160	99.503	-4.8	0.000	0.000	0.013	0.006	SF-2-5	-0.327	-0.161	50.9	89.7	
								SF-2-11	0.314	0.155	48.8	89.7	
SF-2-11	4.160	99.100	-4.8	0.000	0.000	0.000	0.000	SF-2-10	-0.313	-0.154	48.8	89.7	
								SF-2-12	0.182	0.090	28.4	89.7	
								SF-2-14	0.069	0.034	10.8	89.7	
								SF-2-22	0.061	0.030	9.6	89.7	
SF-2-12	4.160	99.069	-4.8	0.000	0.000	0.000	0.000	SF-2-11	-0.182	-0.090	28.4	89.7	
								SF-2-13	0.151	0.075	23.7	89.6	
								SEC_SF-2-7	0.031	0.015	4.8	89.7	
SF-2-13	4.160	99.044	-4.8	0.000	0.000	0.026	0.013	SF-2-12	-0.151	-0.075	23.7	89.6	
								SF-2-15	0.126	0.062	19.6	89.7	
SF-2-14	4.160	99.067	-4.8	0.000	0.000	0.013	0.006	SF-2-11	-0.069	-0.034	10.8	89.7	
								SF-2-26	0.056	0.028	8.8	89.7	
SF-2-15	4.160	98.977	-4.8	0.000	0.000	0.026	0.013	SF-2-13	-0.125	-0.062	19.6	89.6	
								SF-2-16	0.100	0.049	15.6	89.7	
SF-2-16	4.160	98.921	-4.8	0.000	0.000	0.013	0.006	SF-2-15	-0.100	-0.049	15.6	89.7	
								SF-2-17	0.087	0.043	13.6	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-2-17	4.160	98.902	-4.8	0.000	0.000	0.000	0.000	SF-2-16	-0.087	-0.043	13.6	89.7	
								SF-2-18	0.056	0.028	8.8	89.7	
								SEC_SF-2-15	0.031	0.015	4.8	89.7	
SF-2-18	4.160	98.900	-4.8	0.000	0.000	0.013	0.006	SF-2-17	-0.056	-0.028	8.8	89.7	
								SF-2-19	0.043	0.021	6.8	89.7	
SF-2-19	4.160	98.894	-4.8	0.000	0.000	0.013	0.006	SF-2-18	-0.043	-0.021	6.8	89.7	
								SF-2-20	0.031	0.015	4.8	89.7	
SF-2-20	4.160	98.885	-4.8	0.000	0.000	0.000	0.000	SF-2-19	-0.031	-0.015	4.8	89.7	
								SF-2-21	0.000	0.000	0.0	0.0	
								SEC_SF-2-18	0.031	0.015	4.8	89.7	
SF-2-21	4.160	98.885	-4.8	0.000	0.000	0.000	0.000	SF-2-20	0.000	0.000	0.0	0.0	
SF-2-22	4.160	99.084	-4.8	0.000	0.000	0.000	0.000	SF-2-11	-0.061	-0.030	9.6	89.7	
								SF-2-23	0.031	0.015	4.8	89.7	
								SEC_SF-2-19	0.031	0.015	4.8	89.7	
SF-2-23	4.160	99.076	-4.8	0.000	0.000	0.000	0.000	SF-2-22	-0.031	-0.015	4.8	89.7	
								SF-2-24	0.000	0.000	0.0	0.0	
								SEC_SF-2-20	0.031	0.015	4.8	89.7	
SF-2-24	4.160	99.076	-4.8	0.000	0.000	0.000	0.000	SF-2-23	0.000	0.000	0.0	0.0	
SF-2-25	4.160	99.018	-4.8	0.000	0.000	0.000	0.000	SF-2-26	-0.056	-0.028	8.8	89.7	
								SF-2-27	0.026	0.013	4.0	89.6	
								SEC_SF-2-11	0.031	0.015	4.8	89.7	
SF-2-26	4.160	99.055	-4.8	0.000	0.000	0.000	0.000	SF-2-25	0.056	0.028	8.8	89.7	
								SF-2-14	-0.056	-0.028	8.8	89.7	
SF-2-27	4.160	98.985	-4.8	0.000	0.000	0.013	0.006	SF-2-25	-0.026	-0.013	4.0	89.6	
								SF-2-28	0.013	0.006	2.0	89.6	
SF-2-28	4.160	98.978	-4.8	0.000	0.000	0.013	0.006	SF-2-27	-0.013	-0.006	2.0	89.6	
								SF-2-29	0.000	0.000	0.0	0.0	
SF-2-29	4.160	98.978	-4.8	0.000	0.000	0.000	0.000	SF-2-28	0.000	0.000	0.0	0.0	
SF-2-30	4.160	100.239	-4.8	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.301	-0.147	46.4	89.9	
								Pole MS-5-108	0.241	0.118	37.1	89.9	
								SF-2-33	0.060	0.029	9.2	89.8	
SF-2-33	4.160	100.131	-4.8	0.000	0.000	0.000	0.000	SF-2-37	0.060	0.029	9.2	89.8	
								SF-2-30	-0.060	-0.029	9.2	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Line SF-2-45~	0.000	0.000	0.0	0.0	
SF-2-37	4.160	100.094	-4.8	0.000	0.000	0.000	0.000	SF-2-33	-0.060	-0.029	9.2	89.8	
								SF-2-42	0.060	0.029	9.2	89.8	
								Line SF-2-37~	0.000	0.000	0.0	0.0	
SF-2-42	4.160	100.053	-4.8	0.000	0.000	0.000	0.000	SF-2-37	-0.060	-0.029	9.2	89.8	
								SF-2-44	0.060	0.029	9.2	89.8	
								Line SF-2-49~	0.000	0.000	0.0	0.0	
SF-2-44	4.160	100.012	-4.8	0.000	0.000	0.000	0.000	SF-2-42	-0.060	-0.029	9.2	89.8	
								SF-2-46	0.060	0.029	9.2	89.8	
								Line SF-2-53~	0.000	0.000	0.0	0.0	
SF-2-46	4.160	100.005	-4.8	0.000	0.000	0.000	0.000	SF-2-44	-0.060	-0.029	9.2	89.8	
								SF-2-47	0.029	0.014	4.4	89.9	
								SEC_SF-4-01	0.031	0.015	4.8	89.7	
SF-2-47	4.160	99.997	-4.8	0.000	0.000	0.000	0.000	SF-2-46	-0.029	-0.014	4.4	89.9	
								SF-2-48	0.014	0.007	2.2	89.9	
								SEC_SF-4-2	0.014	0.007	2.2	89.9	
SF-2-48	4.160	99.994	-4.8	0.000	0.000	0.000	0.000	SF-2-47	-0.014	-0.007	2.2	89.9	
								SF-2-50	0.000	0.000	0.0	0.0	
								SEC_SF-4-3	0.014	0.007	2.2	89.9	
SF-2-50	4.160	99.994	-4.8	0.000	0.000	0.000	0.000	SF-2-48	0.000	0.000	0.0	0.0	
								Line SF-2-61~	0.000	0.000	0.0	0.0	
UG-JUNC-CS-5-8	24.900	94.792	-3.2	0.000	0.000	0.000	0.000	Pole CS-5-20	-0.046	-0.023	1.3	89.6	
								SEC_CS-5-10	0.046	0.023	1.3	89.6	
UG-JUNC-CS-5-9	24.900	94.791	-3.2	0.000	0.000	0.000	0.000	Pole CS-5-19	-0.047	-0.023	1.3	89.9	
								SEC_CS-5-12	0.047	0.023	1.3	89.9	
UG_JUNC-CS-1	4.160	98.106	-6.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	1.335	0.653	210.3	89.8	
								Pole CS-2-5	-1.412	-0.691	222.4	89.8	
								PRI_PM_1	0.076	0.038	12.1	89.5	
UG_JUNC-CS-2	4.160	97.259	-6.1	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-1.322	-0.650	210.3	89.7	
								UG_JUNC-CS-3	1.247	0.613	198.3	89.8	
								PRI_PM_2	0.075	0.038	12.0	89.5	
UG_JUNC-CS-3	4.160	96.552	-6.0	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-1.237	-0.611	198.3	89.7	
								PRI_PM_3	0.075	0.037	12.0	89.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								UG_JUNC-CS-5	1.162	0.573	186.3	89.7	
UG_JUNC-CS-5	4.160	95.947	-5.9	0.000	0.000	0.000	0.000	PRI_PM_5	0.074	0.037	11.9	89.5	
								UG_JUNC-CS-3	-1.154	-0.572	186.3	89.6	
								UG_JUNC-CS-6	1.080	0.535	174.4	89.6	
UG_JUNC-CS-6	4.160	95.381	-5.8	0.000	0.000	0.000	0.000	PRI_PM_6	0.073	0.037	11.9	89.5	
								UG_JUNC-CS-5	-1.073	-0.533	174.4	89.6	
								Pole CS-2-7	1.000	0.497	162.5	89.6	
UG_JUNC-CS-7	4.160	94.381	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-17	0.000	0.000	0.0	0.0	
								C_SUB-FDR-EQ#7-3-8~	0.000	0.000	0.0	0.0	
C_SUB-FDR-EQ#7-3-8~	4.160	94.381	-5.9	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
LINE 6M-26~	4.160	97.987	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-23	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-173~	4.160	95.297	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-57	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-84~	4.160	96.409	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-10	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-86~	4.160	94.895	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-54	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-237~	4.160	98.697	-6.3	0.000	0.000	0.000	0.000	Pole CS-2-66	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-246~	4.160	95.329	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-36	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-276~	4.160	95.523	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-74	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-283~	4.160	99.155	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-4	0.000	0.000	0.0	0.0	
LINE MS-4-53~	4.160	97.138	-4.3	0.000	0.000	0.000	0.000	Pole MS-4-52	0.000	0.000	0.0	0.0	
Line MS-5-79~	4.160	96.792	-5.1	0.000	0.000	0.000	0.000	Pole MS-5-76	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-97~	4.160	98.797	-4.5	0.000	0.000	0.000	0.000	Pole MS-2-122	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-173~	4.160	99.286	-4.6	0.000	0.000	0.000	0.000	Pole MS-2-3	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-13~	4.160	99.321	-4.6	0.000	0.000	0.000	0.000	Pole MS-2-180	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-133~	4.160	98.857	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-25	0.000	0.000	0.0	0.0	
LINE MS-3-11~	4.160	98.791	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-43	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-177~	4.160	98.973	-4.4	0.000	0.000	0.000	0.000	Pole MS-3-70	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-1-38~	4.160	94.288	-5.4	0.000	0.000	0.000	0.000	SF-1-45	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-12~	4.160	100.116	-4.9	0.000	0.000	0.000	0.000	Pole MS-1-19	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-9~	4.160	100.219	-4.8	0.000	0.000	0.000	0.000	Pole MS-1-1	0.000	0.000	0.0	0.0	
Line MS-5-129~	4.160	99.752	-4.8	0.000	0.000	0.000	0.000	Pole MS-5-125	0.000	0.000	0.0	0.0	
Line SF-2-37~	4.160	100.094	-4.8	0.000	0.000	0.000	0.000	SF-2-37	0.000	0.000	0.0	0.0	
Line SF-2-45~	4.160	100.131	-4.8	0.000	0.000	0.000	0.000	SF-2-33	0.000	0.000	0.0	0.0	
Line SF-2-49~	4.160	100.053	-4.8	0.000	0.000	0.000	0.000	SF-2-42	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Line SF-2-53~	4.160	100.012	-4.8	0.000	0.000	0.000	0.000	SF-2-44	0.000	0.000	0.0	0.0	
Line SF-2-61~	4.160	99.994	-4.8	0.000	0.000	0.000	0.000	SF-2-50	0.000	0.000	0.0	0.0	
HS-4-33~	4.160	98.720	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-47	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-90~	4.160	96.642	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-67	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-96~	4.160	96.652	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-33	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-278~	4.160	95.689	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-49	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-301~	4.160	96.667	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-66	0.000	0.000	0.0	0.0	
L-25-LAM-L1-02~	24.900	99.979	-2.1	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.000	0.000	0.0	0.0	
L-25-LLP-SW-03~	24.900	99.739	-2.6	0.000	0.000	0.000	0.000	BUS_SAF_25kV	0.000	0.000	0.0	0.0	
L-25-XFMR-03~	24.900	100.152	-2.5	0.000	0.000	0.000	0.000	BUS_25kV_03	0.000	0.000	0.0	0.0	
Line51~	69.000	99.498	-0.1	0.000	0.000	0.000	0.000	BUS_LLP_69kV_02	0.000	0.000	0.0	0.0	
L-25-LLP-E-06~	24.900	95.965	-3.2	0.000	0.000	0.000	0.000	BUS_25kV_E-04	0.000	0.000	0.0	0.0	
Line15~	24.900	99.799	-2.6	0.000	0.000	0.000	0.000	BUS_25kV_W-02	0.000	0.000	0.0	0.0	
L-25-LLP-W-03~	24.900	98.969	-2.7	0.000	0.000	0.000	0.000	BUS_25kV_W-03	0.000	0.000	0.0	0.0	

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)

# Indicates a bus with a load mismatch of more than 0.1 MVA

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Bus1	4.160	99.966	-1.8	0.000	0.000	0.000	0.000	BUS_5KV_LLP_2	0.000	0.000	0.0	0.0	
Bus2	4.160	95.596	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.000	0.000	0.0	0.0	
BUS_5KV-LLP_01	4.160	100.004	-1.8	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	-0.884	-0.437	136.9	89.7	
								BUS_5KV_LLP_02	0.082	0.044	12.9	88.1	
								Pole MS-9-1	0.285	0.139	44.0	89.8	
								Pole MS-4-1	0.144	0.069	22.2	90.1	
								Pole MS-4-31	0.374	0.184	57.8	89.7	
BUS_5KV_LLP_01	4.160	99.969	-1.8	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.295	-0.165	46.9	87.3	
								BUS_5KV_LLP_PLTLDCTR	0.161	0.100	26.3	85.1	
								Pole MS-8-1	0.134	0.065	20.6	89.8	
BUS_5KV_LLP_2	4.160	99.966	-1.8	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.180	-0.088	27.8	89.9	
								Bus1	0.000	0.000	0.0	0.0	
								Pole MS-2-182	0.180	0.088	27.8	89.9	
BUS_5KV_LLP_02	4.160	99.992	-1.8	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	0.295	0.164	46.9	87.4	
								BUS_5KV_XFMR_02	-1.048	-0.525	162.7	89.4	
								BUS_5KV-LLP_01	-0.082	-0.044	12.9	87.9	
								BUS_5KV_LLP_2	0.180	0.087	27.8	90.0	
								Pole CS-1-90	0.197	0.095	30.4	90.1	
								Pole MS-3-87	0.457	0.223	70.6	89.9	
BUS_5KV_LLP_PLTLDCTR	4.160	99.944	-1.8	0.000	0.000	0.161	0.100	BUS_5KV_LLP_01	-0.161	-0.100	26.4	85.0	
BUS_5KV_XFMR_02	4.160	100.068	-1.8	0.000	0.000	0.000	0.000	BUS_5KV-LLP_01	0.885	0.436	136.8	89.7	
								BUS_5KV_LLP_02	1.048	0.525	162.6	89.4	
								BUS_25kV_SUB_02	-1.933	-0.961	299.4	89.5	1.250
BUS_5_NEOPLAN	4.160	99.356	-1.8	0.000	0.000	0.196	0.095	Pole CS-1-90	-0.196	-0.095	30.4	90.0	
BUS_6M_5kV	4.160	99.893	-1.3	0.000	0.000	0.000	0.000	BUS_6M_SEC	-0.234	-0.112	36.1	90.2	
								Pole 6M-1-1	0.072	0.035	11.1	90.1	
								Pole 6M-E-1	0.163	0.078	25.0	90.2	
BUS_6M_25kV	24.900	99.793	-0.8	0.000	0.000	0.000	0.000	BUS_L1_01	-0.235	-0.114	6.1	89.9	
								L-25-LAM-L1-02~	0.000	0.000	0.0	0.0	
								BUS_6M_SEC	0.235	0.115	6.1	89.8	
BUS_6M_SEC	4.160	99.390	-1.2	0.000	0.000	0.000	0.000	BUS_6M_5kV	0.235	0.113	36.3	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_6M_25kV	-0.235	-0.113	36.3	90.1	
BUS-25kV-BEEFCITY	24.900	98.619	-0.2	0.000	0.000	0.257	0.159	BUS-25kV-MCCLAVE	-0.257	-0.159	7.1	85.0	
BUS-25kV-BIG-BEND	24.900	99.716	-0.2	0.000	0.000	0.262	0.163	BUS_25kV_W-10	-0.262	-0.163	7.2	85.0	
BUS-25KV-E-10	24.900	98.861	-6.2	0.000	0.000	1.210	0.750	BUS_25kV_E-09	-1.210	-0.750	33.4	85.0	
BUS-25kV-HS-01	24.900	97.699	-1.3	0.000	0.000	0.057	0.035	BUS_HIS_25kV	-0.057	-0.035	1.6	85.0	
BUS-25kV-MCCLAVE	24.900	98.672	-0.2	0.000	0.000	0.307	0.191	BUS_25kV_W-11	-0.565	-0.347	15.6	85.2	
								BUS-25kV-BEEFCITY	0.258	0.157	7.1	85.4	
BUS-25kV-TS-01	24.900	97.802	-1.3	0.000	0.000	0.057	0.036	BUS_TS_25kV	-0.057	-0.036	1.6	85.0	
BUS-25kV-TS-AREA	24.900	97.804	-1.3	0.000	0.000	0.057	0.036	BUS_TSA_25kV	-0.057	-0.036	1.6	85.0	
BUS-25kV-WILEY	24.900	99.740	-0.2	0.000	0.000	0.313	0.194	BUS_25kV_W-10	-0.313	-0.194	8.6	85.0	
BUS_25kV_03	24.900	99.822	-0.8	0.000	0.000	0.000	0.000	L-25-XFMR-03~	0.000	-0.001	0.0	0.0	
								BUS_25kV_SUB_01	-6.218	-3.451	165.2	87.4	
								BUS_25kV_SUB_02	6.218	3.452	165.2	87.4	
BUS_25kV_BRISTOL	24.900	97.663	-3.9	0.000	0.000	0.082	0.051	BUS_25kV_E-07	-0.082	-0.051	2.3	85.0	
BUS_25kV_CO-BEEF	24.900	99.670	-0.2	0.000	0.000	0.526	0.326	BUS_25kV_W-08	-0.526	-0.326	14.4	85.0	
BUS_25kV_DECHANT	24.900	96.220	-1.5	0.000	0.000	0.119	0.074	BUS_25kV_E-05	-0.119	-0.074	3.4	85.0	
BUS_25kV_E_01	24.900	99.822	-0.8	0.000	0.000	0.000	0.000	BUS_25kV_E-02	1.761	1.052	47.6	85.9	
								BUS_25kV_SUB_01	-1.761	-1.052	47.6	85.9	
BUS_25kV_E-02	24.900	99.758	-0.8	0.000	0.000	0.000	0.000	BUS_25kV_E_01	-1.760	-1.051	47.6	85.8	
								BUS_25kV_SUTRAK	0.076	0.047	2.1	85.0	
								BUS_25kV_E-03	1.684	1.004	45.6	85.9	
BUS_25kV_E-03	24.900	99.691	-0.8	0.000	0.000	0.000	0.000	BUS_25kV_E-02	-1.683	-1.004	45.6	85.9	
								BUS_25kV_SWL	0.085	0.052	2.3	85.2	
								BUS_25kV_E-04	1.598	0.952	43.3	85.9	
BUS_25kV_E-04	24.900	97.756	-1.2	0.000	0.000	0.000	0.000	BUS_25kV_E-03	-1.573	-0.947	43.6	85.7	
								BUS_25kV_E-05	1.573	0.948	43.6	85.6	
								L-25-LLP-E-06~	0.000	-0.001	0.0	0.0	
BUS_25kV_E-05	24.900	96.225	-1.5	0.000	0.000	0.000	0.000	BUS_25kV_E-04	-1.553	-0.944	43.8	85.5	
								BUS_25kV_DECHANT	0.119	0.073	3.4	85.2	
								BUS_25kV_E-06	1.434	0.870	40.4	85.5	
BUS_25kV_E-06	24.900	99.737	-3.5	0.000	0.000	0.000	0.000	BUS_25kV_E-05	-1.427	-0.849	38.6	85.9	
								BUS_25kV_E-07	1.427	0.849	38.6	85.9	
BUS_25kV_E-07	24.900	97.667	-3.9	0.000	0.000	0.000	0.000	BUS_25kV_E-06	-1.403	-0.850	38.9	85.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_BRISTOL	0.082	0.050	2.3	85.5	
								BUS_25kV_E-08	1.321	0.801	36.7	85.5	
BUS_25kV_E-08	24.900	96.606	-4.1	0.000	0.000	0.000	0.000	BUS_25kV_E-07	-1.309	-0.803	36.9	85.3	
								BUS_25kV_HARTMAN	0.080	0.044	2.2	87.6	
								BUS_25kV_E-09	1.229	0.758	34.7	85.1	
BUS_25kV_E-09	24.900	100.276	-6.0	0.000	0.000	0.000	0.000	BUS_25kV_E-08	-1.224	-0.743	33.1	85.5	
								BUS-25KV-E-10	1.224	0.743	33.1	85.5	
BUS_25kV_HARTMAN	24.900	96.582	-4.1	0.000	0.000	0.080	0.050	BUS_25kV_E-08	-0.080	-0.050	2.3	85.0	
BUS_25kV_KMART	24.900	99.679	-0.8	0.000	0.000	0.000	0.000	BUS_25kV_W-2	0.000	0.000	0.0	0.0	
BUS_25kV_KORMAN	24.900	97.749	-1.2	0.000	0.000	0.859	0.533	BUS_25kV_W-04	-0.859	-0.533	24.0	85.0	
BUS_25kV_ROAD 13	24.900	95.762	-1.6	0.000	0.000	0.000	0.000	BUS_25kV_W-05	0.000	0.000	0.0	0.0	
BUS_25kV_SUB_01	24.900	99.822	-0.8	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	-2.761	-5.044	133.6	48.0	3.125
								BUS_LLP_69kV_01	-1.399	-2.555	67.7	48.0	3.125
								BUS_25kV_E_01	1.761	1.052	47.6	85.9	
								BUS_25_LLP_SE_01	-3.818	3.096	114.2	-77.7	
								BUS_25kV_03	6.218	3.451	165.2	87.4	
BUS_25kV_SUB_02	24.900	99.822	-0.8	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	1.936	1.003	50.6	88.8	
								BUS_25kV_SW_01	1.638	0.848	42.8	88.8	
								BUS_25kV_W-01	2.644	1.601	71.8	85.5	
								BUS_25kV_03	-6.218	-3.452	165.2	87.4	
BUS_25kV_SUTRAK	24.900	99.758	-0.8	0.000	0.000	0.076	0.047	BUS_25kV_E-02	-0.076	-0.047	2.1	85.0	
BUS_25kV_SWL	24.900	99.689	-0.8	0.000	0.000	0.085	0.052	BUS_25kV_E-03	-0.085	-0.052	2.3	85.0	
BUS_25kV_SW_01	24.900	99.822	-0.8	0.000	0.000	0.000	0.000	BUS_25kV_W-2	1.638	0.848	42.8	88.8	
								BUS_25kV_SUB_02	-1.638	-0.848	42.8	88.8	
BUS_25kV_W-01	24.900	99.822	-0.8	0.000	0.000	0.000	0.000	BUS_25kV_W-02	2.644	1.601	71.8	85.5	
								BUS_25kV_SUB_02	-2.644	-1.601	71.8	85.5	
BUS_25kV_W-2	24.900	99.679	-0.8	0.000	0.000	0.000	0.000	BUS_25kV_SW_01	-1.636	-0.847	42.9	88.8	
								BUS_SAF_25kV	1.636	0.848	42.9	88.8	
								BUS_25kV_KMART	0.000	0.000	0.0	0.0	
BUS_25kV_W-02	24.900	99.648	-0.8	0.000	0.000	0.000	0.000	BUS_25kV_W-01	-2.640	-1.599	71.8	85.5	
								BUS_25kV_W-03	2.640	1.600	71.8	85.5	
								Line15~	0.000	-0.001	0.0	0.0	
BUS_25kV_W-03	24.900	99.238	-0.9	0.000	0.000	0.000	0.000	BUS_25kV_W-02	-2.631	-1.593	71.9	85.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_W-04	2.631	1.593	71.9	85.5	
								L-25-LLP-W-03~	0.000	0.000	0.0	0.0	
BUS_25kV_W-04	24.900	97.817	-1.2	0.000	0.000	0.000	0.000	BUS_25kV_W-03	-2.601	-1.569	72.0	85.6	
								BUS_25kV_KORMAN	0.860	0.532	24.0	85.1	
								BUS_25kV_W-05	1.741	1.037	48.0	85.9	
BUS_25kV_W-05	24.900	95.761	-1.6	0.000	0.000	0.000	0.000	BUS_25kV_W-04	-1.711	-1.026	48.3	85.8	
								BUS_25kV_ROAD 13	0.000	-0.007	0.2	0.0	
								BUS_25kV_W-06	1.711	1.033	48.4	85.6	
BUS_25kV_W-06	24.900	100.144	-0.2	0.000	0.000	0.000	0.000	BUS_25kV_W-05	-1.680	-0.993	45.2	86.1	
								BUS_25kV_W-07	1.680	0.993	45.2	86.1	
BUS_25kV_W-07	24.900	99.962	-0.2	0.000	0.000	0.000	0.000	BUS_25kV_W-06	-1.677	-0.992	45.2	86.1	
								BUS_25kV_W-08	0.528	0.319	14.3	85.6	
								BUS_25kV_W-09	1.149	0.673	30.9	86.3	
BUS_25kV_W-08	24.900	99.959	-0.2	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-0.528	-0.319	14.3	85.6	
								BUS_25kV_CO-BEEF	0.528	0.319	14.3	85.6	
BUS_25kV_W-09	24.900	99.790	-0.3	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-1.147	-0.674	30.9	86.2	
								BUS_25kV_W-10	0.576	0.351	15.7	85.4	
								BUS_25kV_W-11	0.572	0.323	15.3	87.1	
BUS_25kV_W-10	24.900	99.778	-0.3	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-0.576	-0.352	15.7	85.3	
								BUS-25kV-WILEY	0.313	0.192	8.5	85.2	
								BUS-25kV-BIG-BEND	0.262	0.159	7.1	85.5	
BUS_25kV_W-11	24.900	99.783	-0.3	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-0.572	-0.323	15.3	87.1	
								BUS-25kV-MCCLAVE	0.572	0.323	15.3	87.1	
BUS_25_LLP_SE_01	24.900	99.822	-0.8	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	-3.818	3.096	114.2	-77.7	
								BUS_25kV_SUB_01	3.818	-3.096	114.2	-77.7	
BUS_25_LLP_SE_02	24.900	99.856	-0.3	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_01	3.844	-3.070	114.2	-78.1	
								BUS_25_LLP_SE_03	0.212	0.131	5.8	85.1	
								BUS_25_LLP_SE_04	-4.057	2.939	116.3	-81.0	
BUS_25_LLP_SE_03	24.900	99.848	-0.3	0.000	0.000	0.212	0.132	BUS_25_LLP_SE_02	-0.212	-0.132	5.8	85.0	
BUS_25_LLP_SE_04	24.900	99.943	0.2	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	4.087	-2.909	116.4	-81.5	
								Pole MS-7-17	0.044	0.017	1.1	93.0	
								BUS_WTG_SOL	-4.130	2.891	117.0	-81.9	
BUS_ATT	24.900	99.764	-0.8	0.000	0.000	0.034	0.021	BUS_L3_SEC	-0.034	-0.021	0.9	85.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_CLG_4kV	4.160	99.735	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-1	0.600	0.291	92.9	90.0	
								Pole CS-1-1	0.514	0.254	79.7	89.7	
								Pole CS-3-1	0.348	0.170	53.8	89.9	
								Pole CS-4-1	0.362	0.177	56.0	89.8	
								BUS_CLG_SEC	-1.824	-0.892	282.5	89.8	
BUS_CLG_25kV	24.900	97.913	-1.3	0.000	0.000	0.000	0.000	BUS_L2_SEC	-3.374	-1.732	89.8	89.0	
								BUS_HSP_25kV	1.545	0.794	41.1	88.9	
								BUS_CLG_SEC	1.829	0.938	48.7	89.0	
BUS_CLG_SEC	4.160	97.249	-1.9	0.000	0.000	0.000	0.000	BUS_CLG_4kV	1.827	0.911	291.3	89.5	
								BUS_CLG_25kV	-1.827	-0.911	291.3	89.5	
BUS_HIS_25kV	24.900	97.702	-1.3	0.000	0.000	0.000	0.000	BUS_TS_25kV	-1.374	-0.702	36.6	89.0	
								BUS-25kV-HS-01	0.057	0.035	1.6	85.5	
								BUS_HSC_25kV	1.316	0.667	35.0	89.2	
BUS_HSC_4kV	4.160	100.214	-2.3	0.000	0.000	0.000	0.000	Pole HS-1-001	0.037	0.018	5.7	90.0	
								Pole HS-2-1	0.495	0.241	76.3	89.9	
								Pole HS-3-1	0.338	0.164	52.0	90.0	
								Pole HS-4-1	0.442	0.216	68.2	89.8	
								BUS_HSC_SEC	-1.312	-0.639	202.2	89.9	
BUS_HSC_25kV	24.900	97.609	-1.3	0.000	0.000	0.000	0.000	BUS_HIS_25kV	-1.315	-0.668	35.0	89.2	
								BUS_HSC_SEC	1.315	0.668	35.0	89.2	
BUS_HSC_SEC	4.160	96.976	-2.0	0.000	0.000	0.000	0.000	BUS_HSC_4kV	1.314	0.649	209.7	89.7	
								BUS_HSC_25kV	-1.314	-0.649	209.7	89.7	
BUS_HSP_25kV	24.900	97.859	-1.3	0.000	0.000	0.000	0.000	BUS_CLG_25kV	-1.544	-0.794	41.1	88.9	
								Pole CS-5-21	0.054	0.022	1.4	92.6	
								BUS_TSA_25kV	1.490	0.772	39.8	88.8	
BUS_L1_01	24.900	99.801	-0.8	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.235	0.114	6.1	90.0	
								BUS_LAMSO_25kV	-0.235	-0.114	6.1	90.0	
BUS_L2_SEC	24.900	99.801	-0.8	0.000	0.000	0.000	0.000	BUS_CLG_25kV	3.425	1.779	89.7	88.7	
								BUS_LAMSO_25kV	-3.425	-1.779	89.7	88.7	
BUS_L3_SEC	24.900	99.801	-0.8	0.000	0.000	0.000	0.000	BUS_ATT	0.034	-0.011	0.8	-94.9	
								BUS_LAMSO_25kV	-0.034	0.011	0.8	-94.9	
BUS_LAMSO_25kV	24.900	99.801	-0.8	0.000	0.000	0.000	0.000	BUS_LAMSO_115kV	-3.694	-1.881	96.3	89.1	0.625
								BUS_L1_01	0.235	0.114	6.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_L2_SEC	3.425	1.779	89.7	88.7	
								BUS_L3_SEC	0.034	-0.011	0.8	-94.9	
* BUS_LAMSO_115kV	115.000	100.000	0.0	3.697	1.950	0.000	0.000	BUS_LAMSO_25kV	3.697	1.950	21.0	88.4	
BUS_LLP_69kV_01	69.000	99.724	0.0	0.000	0.000	0.000	0.000	BUS_25kV_SUB_01	2.772	5.236	49.7	46.8	
								BUS_25kV_SUB_01	1.404	2.653	25.2	46.8	
								BUS_LLP_69kV_03	-2.088	-3.944	37.4	46.8	
								BUS_LLP_69kV_04	-2.088	-3.944	37.4	46.8	
BUS_LLP_69kV_02	69.000	99.724	0.0	0.000	0.000	0.000	0.000	Line51~	0.000	-0.509	4.3	0.0	
								BUS_LLP_69kV_03	-2.088	-3.435	33.7	51.9	
								BUS_LLP_69kV_04	2.088	3.944	37.4	46.8	
BUS_LLP_69kV_03	69.000	99.724	0.0	0.000	0.000	0.000	0.000	BUS_WC_69KV_01	-4.176	-7.379	71.1	49.3	
								BUS_LLP_69kV_01	2.088	3.944	37.4	46.8	
								BUS_LLP_69kV_02	2.088	3.435	33.7	51.9	
BUS_LLP_69kV_04	69.000	99.724	0.0	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	2.088	3.944	37.4	46.8	
								BUS_LLP_69kV_02	-2.088	-3.944	37.4	46.8	
BUS_SAF_4kV	4.160	100.190	-2.0	0.000	0.000	0.000	0.000	SF-2-30	0.156	0.076	24.1	90.0	
								Pole MS-1-1	0.115	0.056	17.6	90.0	
								SF-1-1	1.177	0.588	182.3	89.4	
								SF-2-1	0.183	0.089	28.1	89.9	
								BUS_SAF_SEC	-1.631	-0.809	252.1	89.6	
BUS_SAF_25kV	24.900	99.611	-0.9	0.000	0.000	0.000	0.000	BUS_25kV_W-2	-1.635	-0.847	42.9	88.8	
								L-25-LLP-SW-03~	0.000	-0.004	0.1	0.0	
								BUS_SAF_SEC	1.635	0.852	42.9	88.7	
BUS_SAF_SEC	4.160	98.823	-1.6	0.000	0.000	0.000	0.000	BUS_SAF_4kV	1.633	0.823	256.9	89.3	
								BUS_SAF_25kV	-1.633	-0.823	256.9	89.3	
BUS_SW_8.5EES23	24.900	100.172	1.3	0.000	0.000	0.000	0.000	BUS_WTG_SOL	0.000	0.000	0.0	0.0	
BUS_TSA_25kV	24.900	97.807	-1.3	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-1.489	-0.772	39.8	88.8	
								BUS-25kV-TS-AREA	0.057	0.035	1.6	85.5	
								BUS_TS_25kV	1.432	0.737	38.2	88.9	
BUS_TS_25kV	24.900	97.804	-1.3	0.000	0.000	0.000	0.000	BUS_TSA_25kV	-1.432	-0.737	38.2	88.9	
								BUS-25kV-TS-01	0.057	0.035	1.6	85.5	
								BUS_HIS_25kV	1.375	0.702	36.6	89.1	
BUS_T_WTG1_SEC	0.690	98.323	10.1	1.500	-0.726	0.000	0.000	BUS_WTG1	1.500	-0.726	1418.2	-90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_T_WTG2_SEC	0.690	98.302	10.1	1.500	-0.726	0.000	0.000	BUS_WTG2	1.500	-0.726	1418.7	-90.0	
BUS_T_WTG3_SEC	0.690	101.327	5.3	0.000	0.000	0.000	0.000	BUS_WTG3	0.000	0.000	0.0	0.0	
BUS_T_WTG4_SEC	0.690	98.228	10.1	1.500	-0.726	0.000	0.000	BUS_WTG5	1.500	-0.726	1419.7	-90.0	
* BUS_WC_69KV_01	69.000	100.000	0.0	4.186	7.337	0.000	0.000	BUS_LLP_69kV_03	4.186	7.337	70.7	49.6	
BUS_WTG1	24.900	101.381	5.4	0.000	0.000	0.000	0.000	BUS_WTG2	1.479	-0.875	39.3	-86.1	
								BUS_T_WTG1_SEC	-1.479	0.875	39.3	-86.1	
BUS_WTG2	24.900	101.363	5.3	0.000	0.000	0.000	0.000	BUS_WTG1	-1.479	0.862	39.2	-86.4	
								BUS_WTG3	2.958	-1.737	78.5	-86.2	
								BUS_T_WTG2_SEC	-1.479	0.875	39.3	-86.1	
BUS_WTG3	24.900	101.327	5.3	0.000	0.000	0.000	0.000	BUS_WTG2	-2.956	1.726	78.3	-86.4	
								BUS_WTG5	2.956	-1.726	78.3	-86.4	
								BUS_T_WTG3_SEC	0.000	0.000	0.0	0.0	
BUS_WTG5	24.900	101.291	5.3	0.000	0.000	0.000	0.000	BUS_WTG3	-2.954	1.714	78.2	-86.5	
								BUS_WTG6	4.433	-2.590	117.5	-86.3	
								BUS_T_WTG4_SEC	-1.479	0.875	39.3	-86.1	
BUS_WTG6	24.900	100.190	1.4	0.000	0.000	0.000	0.000	BUS_WTG_SOL	4.201	-2.822	117.1	-83.0	
								BUS_WTG5	-4.201	2.823	117.1	-83.0	
								P_526_2	0.000	-0.002	0.0	0.0	
BUS_WTG_SOL	24.900	100.172	1.3	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	4.196	-2.825	117.1	-82.9	
								BUS_SW_8.5EES23	0.000	-0.001	0.0	0.0	
								BUS_WTG6	-4.196	2.826	117.1	-82.9	
Pole 6M-1-1	4.160	99.734	-1.3	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.072	-0.035	11.1	90.1	
								Pole 6M-1-2	0.063	0.030	9.8	90.1	
								SEC_6M-1-1	0.008	0.004	1.3	89.9	
Pole 6M-1-2	4.160	99.635	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-1	-0.063	-0.030	9.8	90.1	
								Pole 6M-1-3	0.008	0.004	1.3	90.0	
								Pole 6M-1-4	0.055	0.026	8.5	90.1	
Pole 6M-1-3	4.160	99.634	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.008	-0.004	1.3	89.9	
								SEC_6M-1-2	0.008	0.004	1.3	89.9	
Pole 6M-1-4	4.160	99.491	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.055	-0.026	8.5	90.1	
								Pole 6M-1-5	0.004	0.002	0.6	90.0	
								Pole 6M-1-6	0.051	0.025	7.9	90.1	
Pole 6M-1-5	4.160	99.489	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-4	-0.004	-0.002	0.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-1-6	4.160	99.450	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-4	-0.051	-0.025	7.9	90.1	
								Pole 6M-1-7	0.007	0.003	1.1	90.1	
								Pole 6M-1-9	0.044	0.021	6.8	90.1	
Pole 6M-1-7	4.160	99.435	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-6	-0.007	-0.003	1.1	90.0	
								Pole 6M-1-8	0.004	0.002	0.6	90.0	
Pole 6M-1-8	4.160	99.433	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-7	-0.004	-0.002	0.6	89.9	
Pole 6M-1-9	4.160	99.396	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-6	-0.044	-0.021	6.8	90.1	
								Pole 6M-1-10	0.040	0.019	6.3	90.1	
Pole 6M-1-10	4.160	99.381	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-9	-0.040	-0.019	6.3	90.1	
								Pole 6M-1-11	0.040	0.019	6.3	90.1	
Pole 6M-1-11	4.160	99.368	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-10	-0.040	-0.019	6.3	90.1	
								Pole 6M-1-12	0.037	0.018	5.7	90.1	
Pole 6M-1-12	4.160	99.344	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-11	-0.037	-0.018	5.7	90.1	
								Pole 6M-1-13	0.004	0.002	0.5	90.5	
								Pole 6M-1-14	0.033	0.016	5.2	90.1	
Pole 6M-1-13	4.160	99.325	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-12	-0.004	-0.002	0.6	89.9	
Pole 6M-1-14	4.160	99.291	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-12	-0.033	-0.016	5.2	90.1	
								Pole 6M-1-15	0.030	0.014	4.6	90.1	
Pole 6M-1-15	4.160	99.276	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-14	-0.030	-0.014	4.6	90.1	
								Pole 6M-1-16	0.026	0.013	4.1	90.1	
Pole 6M-1-16	4.160	99.228	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-15	-0.026	-0.013	4.1	90.1	
								Pole 6M-1-17	0.012	0.006	1.9	90.0	
								Pole 6M-1-20	0.014	0.007	2.2	90.1	
Pole 6M-1-17	4.160	99.228	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-16	-0.012	-0.006	1.9	90.0	
								Pole 6M-1-18	0.008	0.004	1.3	90.0	
Pole 6M-1-18	4.160	99.218	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-17	-0.008	-0.004	1.3	90.0	
								Pole 6M-1-19	0.008	0.004	1.3	90.0	
Pole 6M-1-19	4.160	99.213	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-18	-0.008	-0.004	1.3	89.9	
								SEC_6M-1-12	0.008	0.004	1.3	89.9	
Pole 6M-1-20	4.160	99.201	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-16	-0.014	-0.007	2.2	90.1	
								Pole 6M-1-21	0.007	0.003	1.1	90.1	
								Pole 6M-1-23	0.007	0.003	1.1	90.1	
Pole 6M-1-21	4.160	99.198	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-20	-0.007	-0.003	1.1	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole 6M-1-22	0.004	0.002	0.5	90.2	
Pole 6M-1-22	4.160	99.189	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-21	-0.004	-0.002	0.6	89.9	
Pole 6M-1-23	4.160	99.196	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-20	-0.007	-0.003	1.1	90.0	
								Pole 6M-1-24	0.007	0.003	1.1	90.0	
								LINE 6M-26~	0.000	0.000	0.0	0.0	
Pole 6M-1-24	4.160	99.196	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-23	-0.007	-0.003	1.1	90.0	
								Pole 6M-1-25	0.004	0.002	0.6	90.0	
Pole 6M-1-25	4.160	99.194	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-24	-0.004	-0.002	0.6	89.9	
Pole 6M-E-1	4.160	97.721	-1.3	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.159	-0.076	25.1	90.1	
								Pole 6M-E-2	0.013	0.006	2.1	90.0	
								Pole 6M-E-30	0.146	0.070	23.0	90.1	
Pole 6M-E-2	4.160	97.700	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-1	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-2	0.013	0.006	2.1	90.0	
Pole 6M-E-3	4.160	97.287	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-3	0.013	0.006	2.1	90.0	
Pole 6M-E-4	4.160	97.290	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.132	-0.063	20.9	90.1	
								Pole 6M-E-3	0.013	0.006	2.1	90.0	
								Pole 6M-E-5	0.119	0.057	18.8	90.2	
Pole 6M-E-5	4.160	97.068	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.118	-0.057	18.8	90.1	
								Pole 6M-E-6	0.105	0.050	16.7	90.2	
								SEC_6M-E-1	0.013	0.006	2.1	90.0	
Pole 6M-E-6	4.160	96.851	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-5	-0.105	-0.050	16.7	90.2	
								Pole 6M-E-7	0.092	0.044	14.6	90.2	
								SEC_6M-E-4	0.013	0.006	2.1	90.0	
Pole 6M-E-7	4.160	96.522	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-6	-0.091	-0.044	14.6	90.2	
								Pole 6M-E-8	0.013	0.006	2.1	90.0	
								Pole 6M-E-9	0.078	0.038	12.5	90.2	
Pole 6M-E-8	4.160	96.507	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-5	0.013	0.006	2.1	90.0	
Pole 6M-E-9	4.160	95.973	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.078	-0.037	12.5	90.2	
								Pole 6M-E-10	0.026	0.012	4.1	90.1	
								Pole 6M-E-13	0.052	0.025	8.4	90.2	
Pole 6M-E-10	4.160	95.882	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-9	-0.026	-0.012	4.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole 6M-E-11	0.013	0.006	2.1	90.1	
								SEC_6M-E-6	0.013	0.006	2.1	90.0	
Pole 6M-E-11	4.160	95.836	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-10	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-7	0.013	0.006	2.1	90.0	
Pole 6M-E-12	4.160	95.879	-1.3	0.000	0.000	0.003	0.002	Pole 6M-E-13	-0.003	-0.002	0.5	89.9	
Pole 6M-E-13	4.160	95.880	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-12	0.003	0.002	0.5	90.0	
								Pole 6M-E-9	-0.052	-0.025	8.4	90.2	
								Pole 6M-E-15	0.049	0.023	7.8	90.2	
Pole 6M-E-14	4.160	95.777	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-8	0.013	0.006	2.1	90.0	
Pole 6M-E-15	4.160	95.793	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-14	0.013	0.006	2.1	90.0	
								Pole 6M-E-13	-0.049	-0.023	7.8	90.2	
								Pole 6M-E-18	0.036	0.017	5.7	90.3	
Pole 6M-E-18	4.160	95.718	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.036	-0.017	5.7	90.3	
								Pole 6M-E-19	0.013	0.006	2.1	90.0	
								Pole 6M-E-20	0.023	0.011	3.7	90.4	
Pole 6M-E-19	4.160	95.710	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-10	0.013	0.006	2.1	90.0	
Pole 6M-E-20	4.160	95.694	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.023	-0.011	3.7	90.4	
								Pole 6M-E-21	0.010	0.005	1.6	91.0	
								SEC_6M-E-11	0.013	0.006	2.1	90.0	
Pole 6M-E-21	4.160	95.689	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-20	-0.010	-0.005	1.6	91.0	
								Pole 6M-E-22	0.003	0.002	0.5	90.9	
								Pole 6M-E-23	0.007	0.003	1.1	91.1	
Pole 6M-E-22	4.160	95.660	-1.3	0.000	0.000	0.003	0.002	Pole 6M-E-21	-0.003	-0.002	0.5	89.9	
Pole 6M-E-23	4.160	95.610	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.003	0.002	0.5	90.5	
								Pole 6M-E-21	-0.007	-0.003	1.1	90.4	
								Pole 6M-E-24	0.003	0.002	0.5	90.4	
Pole 6M-E-24	4.160	95.595	-1.3	0.000	0.000	0.003	0.002	Pole 6M-E-23	-0.003	-0.002	0.5	89.9	
Pole 6M-E-25	4.160	95.595	-1.3	0.000	0.000	0.003	0.002	Pole 6M-E-26	-0.003	-0.002	0.5	89.9	
Pole 6M-E-26	4.160	95.596	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-23	-0.003	-0.002	0.5	90.0	
								Pole 6M-E-25	0.003	0.002	0.5	90.0	
								Bus2	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-E-29	4.160	97.527	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-13	0.013	0.006	2.1	90.0	
Pole 6M-E-30	4.160	97.530	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	0.132	0.063	20.9	90.1	
								Pole 6M-E-29	0.013	0.006	2.1	90.0	
								Pole 6M-E-1	-0.145	-0.070	23.0	90.1	
Pole CS-1-1	4.160	99.340	-2.4	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-0.512	-0.252	79.7	89.7	
								Pole CS-1-2	0.512	0.252	79.7	89.7	
Pole CS-1-2	4.160	99.204	-2.5	0.000	0.000	0.000	0.000	PRI_PM_16	0.070	0.034	10.9	89.8	
								Pole CS-1-1	-0.512	-0.251	79.7	89.8	
								Pole CS-1-3	0.434	0.213	67.6	89.8	
								Pole HS-2-85	0.008	0.004	1.2	90.0	
Pole CS-1-3	4.160	98.921	-2.5	0.000	0.000	0.000	0.000	Pole CS-1-4	0.012	0.006	1.9	89.9	
								Pole CS-1-5	0.012	0.006	1.9	89.9	
								Pole HS-3-86	0.004	0.002	0.6	89.9	
								Pole CS-1-2	-0.433	-0.212	67.6	89.8	
								Pole CS-1-6	0.405	0.199	63.3	89.8	
Pole CS-1-4	4.160	98.915	-2.5	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.012	-0.006	1.9	89.9	
								SEC_CS-1-1	0.012	0.006	1.9	89.9	
Pole CS-1-5	4.160	98.917	-2.5	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.012	-0.006	1.9	89.9	
								SEC_CS-1-2	0.012	0.006	1.9	89.9	
Pole CS-1-6	4.160	98.656	-2.6	0.000	0.000	0.000	0.000	Pole HS-3-88	0.012	0.006	1.9	90.0	
								Pole CS-1-3	-0.404	-0.198	63.3	89.8	
								Pole CS-1-9	0.393	0.192	61.5	89.8	
Pole CS-1-9	4.160	98.587	-2.6	0.000	0.000	0.000	0.000	PRI_PM_17	0.059	0.029	9.2	89.8	
								Pole CS-1-6	-0.392	-0.192	61.5	89.9	
								Pole CS-1-10	0.334	0.163	52.3	89.9	
Pole CS-1-10	4.160	98.457	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.333	-0.162	52.3	89.9	
								Pole CS-1-11	0.333	0.162	52.3	89.9	
								L-SUB-FDR-EQ#20-1-84~	0.000	0.000	0.0	0.0	
Pole CS-1-11	4.160	98.444	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-10	-0.333	-0.162	52.3	89.9	
								Pole CS-1-12	0.333	0.162	52.3	89.9	
Pole CS-1-12	4.160	98.389	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-13	0.012	0.006	1.8	89.9	
								Pole CS-1-11	-0.333	-0.162	52.3	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-14	0.321	0.157	50.4	89.9	
Pole CS-1-13	4.160	98.388	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-12	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-7	0.012	0.006	1.8	89.9	
Pole CS-1-14	4.160	98.337	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-17	0.035	0.017	5.5	89.9	
								Pole CS-1-12	-0.321	-0.156	50.4	89.9	
								Pole CS-1-16	0.282	0.137	44.3	89.9	
Pole CS-1-15	4.160	98.294	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-16	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-9	0.012	0.006	1.8	89.9	
Pole CS-1-16	4.160	98.295	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-15	0.012	0.006	1.8	89.9	
								Pole CS-1-14	-0.282	-0.137	44.3	89.9	
								Pole CS-1-21	0.270	0.132	42.4	89.9	
Pole CS-1-17	4.160	98.315	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-14	-0.035	-0.017	5.5	89.9	
								Pole CS-1-18	0.024	0.011	3.7	89.9	
								Pole CS-1-20	0.012	0.006	1.8	89.9	
Pole CS-1-18	4.160	98.312	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.024	-0.011	3.7	89.9	
								Pole CS-1-19	0.012	0.006	1.8	89.9	
								SEC_CS-1-10	0.012	0.006	1.8	89.9	
Pole CS-1-19	4.160	98.308	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-18	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-11	0.012	0.006	1.8	89.9	
Pole CS-1-20	4.160	98.313	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-12	0.012	0.006	1.8	89.9	
Pole CS-1-21	4.160	98.255	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-16	-0.270	-0.131	42.4	89.9	
								Pole CS-1-22	0.266	0.129	41.8	89.9	
Pole CS-1-22	4.160	98.216	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-23	0.012	0.006	1.8	89.9	
								Pole CS-1-21	-0.266	-0.129	41.8	89.9	
								Pole CS-1-24	0.250	0.122	39.3	89.9	
Pole CS-1-23	4.160	98.212	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-15	0.012	0.006	1.8	89.9	
Pole CS-1-24	4.160	98.168	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.250	-0.122	39.3	89.9	
								Pole CS-1-25	0.238	0.116	37.5	89.9	
								SEC_CS-1-16	0.012	0.006	1.8	89.9	
Pole CS-1-25	4.160	98.122	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-28	0.113	0.055	17.8	89.9	
								Pole CS-1-55	0.117	0.057	18.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-24	-0.238	-0.116	37.5	89.9	
								Pole CS-1-26	0.008	0.004	1.2	89.9	
Pole CS-1-26	4.160	98.121	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-25	-0.008	-0.004	1.2	89.9	
								Pole CS-1-27	0.004	0.002	0.6	89.9	
Pole CS-1-27	4.160	98.120	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-26	-0.004	-0.002	0.6	89.9	
Pole CS-1-28	4.160	98.114	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-25	-0.113	-0.055	17.8	89.9	
								Pole CS-1-29	0.109	0.053	17.2	89.9	
Pole CS-1-29	4.160	98.085	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-28	-0.109	-0.053	17.2	89.9	
								Pole CS-1-32	0.102	0.049	16.0	89.9	
								Pole CS-1-31	0.008	0.004	1.2	89.9	
Pole CS-1-30	4.160	98.083	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-31	-0.004	-0.002	0.6	89.9	
Pole CS-1-31	4.160	98.084	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-30	0.004	0.002	0.6	89.9	
								Pole CS-1-29	-0.008	-0.004	1.2	89.9	
Pole CS-1-32	4.160	98.057	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-29	-0.102	-0.049	16.0	89.9	
								Pole CS-1-33	0.098	0.047	15.4	89.9	
Pole CS-1-33	4.160	98.014	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-32	-0.098	-0.047	15.4	89.9	
								Pole CS-1-36	0.086	0.042	13.5	89.9	
								Pole CS-1-35	0.008	0.004	1.2	89.9	
Pole CS-1-34	4.160	98.013	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-35	-0.004	-0.002	0.6	89.9	
Pole CS-1-35	4.160	98.014	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-34	0.004	0.002	0.6	90.0	
								Pole CS-1-33	-0.008	-0.004	1.2	89.9	
Pole CS-1-36	4.160	97.978	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-33	-0.086	-0.042	13.5	89.9	
								Pole CS-1-37	0.082	0.040	12.9	89.9	
Pole CS-1-37	4.160	97.961	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-36	-0.082	-0.040	12.9	89.9	
								Pole CS-1-38	0.078	0.038	12.3	89.9	
Pole CS-1-38	4.160	97.942	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-37	-0.078	-0.038	12.3	89.9	
								Pole CS-1-39	0.074	0.036	11.7	89.9	
Pole CS-1-39	4.160	97.927	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-40	0.019	0.009	3.1	90.0	
								Pole CS-1-38	-0.074	-0.036	11.7	89.9	
								Pole CS-1-43	0.055	0.027	8.6	89.9	
Pole CS-1-40	4.160	97.912	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.019	-0.009	3.1	89.9	
								Pole CS-1-41	0.008	0.004	1.2	90.0	
								SEC_CS-1-29	0.012	0.006	1.8	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-1-41	4.160	97.910	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-40	-0.008	-0.004	1.2	89.9	
								Pole CS-1-42	0.004	0.002	0.6	90.0	
Pole CS-1-42	4.160	97.909	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-41	-0.004	-0.002	0.6	89.9	
Pole CS-1-43	4.160	97.922	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.055	-0.027	8.6	89.9	
								Pole CS-1-44	0.043	0.021	6.8	89.9	
								SEC_CS-1-32	0.012	0.006	1.8	89.9	
Pole CS-1-44	4.160	97.916	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-43	-0.043	-0.021	6.8	89.9	
								Pole CS-1-45	0.039	0.019	6.1	89.9	
Pole CS-1-45	4.160	97.910	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-44	-0.039	-0.019	6.1	89.9	
								Pole CS-1-46	0.035	0.017	5.5	89.9	
Pole CS-1-46	4.160	97.904	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-45	-0.035	-0.017	5.5	89.9	
								Pole CS-1-47	0.031	0.015	4.9	89.9	
Pole CS-1-47	4.160	97.895	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-46	-0.031	-0.015	4.9	89.9	
								Pole CS-1-48	0.027	0.013	4.3	89.9	
Pole CS-1-48	4.160	97.890	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-47	-0.027	-0.013	4.3	89.9	
								Pole CS-1-49	0.023	0.011	3.7	89.9	
Pole CS-1-49	4.160	97.887	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-48	-0.023	-0.011	3.7	89.9	
								Pole CS-1-50	0.019	0.009	3.1	90.0	
Pole CS-1-50	4.160	97.883	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-49	-0.019	-0.009	3.1	89.9	
								Pole CS-1-51	0.016	0.008	2.5	90.0	
Pole CS-1-51	4.160	97.881	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-50	-0.016	-0.008	2.5	89.9	
								Pole CS-1-52	0.012	0.006	1.8	90.0	
Pole CS-1-52	4.160	97.878	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-51	-0.012	-0.006	1.8	89.9	
								Pole CS-1-53	0.008	0.004	1.2	90.0	
Pole CS-1-53	4.160	97.876	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-52	-0.008	-0.004	1.2	89.9	
								Pole CS-1-54	0.004	0.002	0.6	90.0	
Pole CS-1-54	4.160	97.876	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-53	-0.004	-0.002	0.6	89.9	
								L-SUB-FDR-EQ#20-1-86~	0.000	0.000	0.0	0.0	
Pole CS-1-55	4.160	98.079	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-25	-0.117	-0.057	18.4	89.9	
								Pole CS-1-56	0.004	0.002	0.6	90.0	
								Pole CS-1-58	0.113	0.055	17.8	89.9	
Pole CS-1-56	4.160	98.078	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-55	-0.004	-0.002	0.6	89.9	
Pole CS-1-57	4.160	98.030	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-58	-0.109	-0.053	17.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-60	0.109	0.053	17.2	89.9	
								L-SUB-FDR-EQ#18-1-173~	0.000	0.000	0.0	0.0	
Pole CS-1-58	4.160	98.052	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-57	0.109	0.053	17.2	89.9	
								Pole CS-1-55	-0.113	-0.055	17.8	89.9	
Pole CS-1-59	4.160	98.003	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-61	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-46	0.012	0.006	1.8	89.9	
Pole CS-1-60	4.160	98.010	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-57	-0.109	-0.053	17.2	89.9	
								Pole CS-1-61	0.105	0.051	16.6	89.9	
Pole CS-1-61	4.160	98.003	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-59	0.012	0.006	1.8	89.9	
								Pole CS-1-60	-0.105	-0.051	16.6	89.9	
								Pole CS-1-62	0.094	0.046	14.7	89.9	
Pole CS-1-62	4.160	97.990	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-61	-0.094	-0.046	14.7	89.9	
								Pole CS-1-63	0.090	0.044	14.1	89.9	
Pole CS-1-63	4.160	97.977	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-62	-0.090	-0.044	14.1	89.9	
								Pole CS-1-64	0.086	0.042	13.5	89.9	
Pole CS-1-64	4.160	97.964	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-63	-0.086	-0.042	13.5	89.9	
								Pole CS-1-65	0.000	0.000	0.0	0.0	
								Pole CS-1-66	0.086	0.042	13.5	89.9	
Pole CS-1-65	4.160	97.964	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-64	0.000	0.000	0.0	0.0	
Pole CS-1-66	4.160	97.936	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-64	-0.086	-0.042	13.5	89.9	
								Pole CS-1-67	0.082	0.040	12.9	89.9	
Pole CS-1-67	4.160	97.926	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-66	-0.082	-0.040	12.9	89.9	
								Pole CS-1-68	0.078	0.038	12.3	89.9	
Pole CS-1-68	4.160	97.916	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-67	-0.078	-0.038	12.3	89.9	
								Pole CS-1-69	0.066	0.032	10.4	90.0	
								SEC_CS-1-53	0.012	0.006	1.8	89.9	
Pole CS-1-69	4.160	97.906	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-68	-0.066	-0.032	10.4	90.0	
								Pole CS-1-70	0.062	0.030	9.8	90.0	
Pole CS-1-70	4.160	97.893	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-69	-0.062	-0.030	9.8	90.0	
								Pole CS-1-71	0.058	0.028	9.2	90.0	
Pole CS-1-71	4.160	97.884	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-70	-0.058	-0.028	9.2	90.0	
								Pole CS-1-72	0.055	0.026	8.6	90.0	
Pole CS-1-72	4.160	97.875	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-71	-0.055	-0.026	8.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-73	0.051	0.025	8.0	90.0	
Pole CS-1-73	4.160	97.865	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-72	-0.051	-0.025	8.0	90.0	
								Pole CS-1-74	0.004	0.002	0.6	89.9	
								Pole CS-1-75	0.047	0.023	7.4	90.0	
Pole CS-1-74	4.160	97.865	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-73	-0.004	-0.002	0.6	89.9	
Pole CS-1-75	4.160	97.839	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-73	-0.047	-0.023	7.4	90.0	
								Pole CS-1-76	0.019	0.009	3.1	90.0	
								Pole CS-1-86	0.027	0.013	4.3	90.0	
Pole CS-1-76	4.160	97.834	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-75	-0.019	-0.009	3.1	90.0	
								Pole CS-1-77	0.016	0.008	2.5	90.0	
Pole CS-1-77	4.160	97.829	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-76	-0.016	-0.008	2.5	89.9	
								Pole CS-1-78	0.012	0.006	1.8	90.0	
Pole CS-1-78	4.160	97.827	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-77	-0.012	-0.006	1.8	89.9	
								Pole CS-1-79	0.008	0.004	1.2	90.0	
Pole CS-1-79	4.160	97.825	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-78	-0.008	-0.004	1.2	89.9	
								Pole CS-1-80	0.004	0.002	0.6	89.9	
Pole CS-1-80	4.160	97.824	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-79	-0.004	-0.002	0.6	89.9	
Pole CS-1-81	4.160	97.791	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-82	-0.012	-0.006	1.8	89.9	
								Pole CS-1-88	0.008	0.004	1.2	90.0	
Pole CS-1-82	4.160	97.794	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-81	0.012	0.006	1.8	90.0	
								Pole CS-1-83	-0.016	-0.008	2.5	89.9	
Pole CS-1-83	4.160	97.799	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-82	0.016	0.008	2.5	90.0	
								Pole CS-1-84	-0.019	-0.009	3.1	89.9	
Pole CS-1-84	4.160	97.804	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-83	0.019	0.009	3.1	90.0	
								Pole CS-1-85	-0.023	-0.011	3.7	89.9	
Pole CS-1-85	4.160	97.816	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-84	0.023	0.011	3.7	90.0	
								Pole CS-1-86	-0.027	-0.013	4.3	90.0	
Pole CS-1-86	4.160	97.826	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-75	-0.027	-0.013	4.3	90.0	
								Pole CS-1-85	0.027	0.013	4.3	90.0	
Pole CS-1-87	4.160	97.788	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-88	-0.004	-0.002	0.6	89.9	
Pole CS-1-88	4.160	97.788	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-81	-0.008	-0.004	1.2	89.9	
								Pole CS-1-87	0.004	0.002	0.6	89.9	
Pole CS-1-90	4.160	99.873	-1.8	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.197	-0.095	30.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_5_NEOPLAN	0.197	0.095	30.4	90.0	
Pole CS-2-1	4.160	99.610	-2.4	0.000	0.000	0.000	0.000	Pole CS-2-2	0.600	0.291	92.9	90.0	
								BUS_CLG_4kV	-0.600	-0.291	92.9	90.0	
Pole CS-2-2	4.160	99.484	-2.4	0.000	0.000	0.004	0.002	Pole CS-2-1	-0.599	-0.290	92.9	90.0	
								Pole CS-2-3	0.012	0.006	1.9	90.0	
								Pole CS-2-5	0.583	0.282	90.4	90.0	
Pole CS-2-3	4.160	99.479	-2.4	0.000	0.000	0.008	0.004	Pole CS-2-2	-0.012	-0.006	1.9	89.9	
								Pole CS-2-4	0.004	0.002	0.6	90.0	
Pole CS-2-4	4.160	99.478	-2.4	0.000	0.000	0.004	0.002	Pole CS-2-3	-0.004	-0.002	0.6	89.9	
Pole CS-2-5	4.160	99.361	-2.4	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	0.583	0.282	90.4	90.0	
								Pole CS-2-2	-0.583	-0.282	90.4	90.0	
Pole CS-2-7	4.160	97.735	-2.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.426	-0.208	67.3	89.8	
								Pole CS-2-8	0.426	0.208	67.3	89.8	
Pole CS-2-8	4.160	97.643	-2.2	0.000	0.000	0.000	0.000	Pole CS-2-7	-0.425	-0.208	67.3	89.8	
								Pole CS-2-9	0.027	0.013	4.3	89.9	
								Pole CS-2-12	0.387	0.189	61.2	89.8	
								SEC_CS-2-5	0.012	0.006	1.8	89.9	
Pole CS-2-9	4.160	97.638	-2.2	0.000	0.000	0.004	0.002	Pole CS-2-8	-0.027	-0.013	4.3	89.9	
								Pole CS-2-10	0.023	0.011	3.7	89.9	
Pole CS-2-10	4.160	97.636	-2.2	0.000	0.000	0.000	0.000	Pole CS-2-9	-0.023	-0.011	3.7	89.9	
								Pole CS-2-11	0.012	0.006	1.8	89.9	
								SEC_CS-2-7	0.012	0.006	1.8	89.9	
Pole CS-2-11	4.160	97.632	-2.2	0.000	0.000	0.000	0.000	Pole CS-2-10	-0.012	-0.006	1.8	89.9	
								SEC_CS-2-8	0.012	0.006	1.8	89.9	
Pole CS-2-12	4.160	97.597	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-8	-0.387	-0.189	61.2	89.8	
								Pole CS-2-13	0.383	0.187	60.6	89.8	
Pole CS-2-13	4.160	97.544	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-12	-0.383	-0.187	60.6	89.9	
								Pole CS-2-14	0.015	0.007	2.4	90.3	
								Pole CS-2-20	0.367	0.179	58.1	89.8	
Pole CS-2-14	4.160	97.541	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-13	-0.015	-0.007	2.4	90.3	
								Pole CS-2-15	0.012	0.006	1.8	89.9	
								Pole CS-2-16	0.004	0.002	0.6	91.3	
Pole CS-2-15	4.160	97.539	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.012	-0.006	1.8	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_CS-2-10	0.012	0.006	1.8	89.9	
Pole CS-2-16	4.160	97.540	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.004	-0.002	0.6	91.3	
								Pole CS-2-17	0.004	0.002	0.6	91.3	
Pole CS-2-17	4.160	97.539	-2.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
								Pole CS-2-16	-0.004	-0.002	0.6	91.2	
								Pole CS-2-18	0.004	0.002	0.6	90.0	
Pole CS-2-18	4.160	97.538	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-17	-0.004	-0.002	0.6	89.9	
Pole CS-2-20	4.160	97.496	-2.3	0.000	0.000	0.000	0.000	PRI_PM_21	0.071	0.035	11.3	89.8	
								Pole CS-2-13	-0.367	-0.179	58.1	89.8	
								Pole CS-2-21	0.296	0.144	46.8	89.9	
Pole CS-2-21	4.160	97.351	-2.3	0.000	0.000	0.000	0.000	PRI_PM_20	0.068	0.033	10.7	89.8	
								Pole CS-2-20	-0.295	-0.144	46.8	89.9	
								Pole CS-2-22	0.228	0.111	36.1	89.9	
Pole CS-2-22	4.160	97.293	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-21	-0.228	-0.111	36.1	89.9	
								Pole CS-2-23	0.224	0.109	35.5	89.9	
Pole CS-2-23	4.160	97.270	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-22	-0.224	-0.109	35.5	89.9	
								Pole CS-2-24	0.064	0.031	10.1	89.9	
								Pole CS-2-35	0.160	0.078	25.4	89.9	
Pole CS-2-24	4.160	97.244	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-23	-0.064	-0.031	10.1	89.9	
								Pole CS-2-25	0.060	0.029	9.5	89.9	
Pole CS-2-25	4.160	97.238	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-24	-0.060	-0.029	9.5	89.9	
								Pole CS-2-26	0.056	0.027	8.9	89.9	
Pole CS-2-26	4.160	97.224	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-25	-0.056	-0.027	8.9	89.9	
								Pole CS-2-27	0.052	0.025	8.3	89.9	
Pole CS-2-27	4.160	97.207	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-28	0.023	0.011	3.7	90.1	
								Pole CS-2-26	-0.052	-0.025	8.3	89.9	
								PRI_PM_1-1	0.029	0.014	4.6	89.8	
Pole CS-2-28	4.160	97.197	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.023	-0.011	3.7	89.9	
								Pole CS-2-29	0.023	0.011	3.7	89.9	
Pole CS-2-29	4.160	97.194	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-28	-0.023	-0.011	3.7	89.9	
								Pole CS-2-30	0.019	0.009	3.1	89.9	
Pole CS-2-30	4.160	97.190	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-29	-0.019	-0.009	3.1	89.9	
								Pole CS-2-31	0.015	0.007	2.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-31	4.160	97.187	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-30	-0.015	-0.007	2.4	89.9	
								Pole CS-2-32	0.012	0.006	1.8	89.9	
Pole CS-2-32	4.160	97.184	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-31	-0.012	-0.006	1.8	89.9	
								Pole CS-2-33	0.008	0.004	1.2	89.9	
Pole CS-2-33	4.160	97.183	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-32	-0.008	-0.004	1.2	89.9	
								Pole CS-2-34	0.004	0.002	0.6	89.9	
Pole CS-2-34	4.160	97.182	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-33	-0.004	-0.002	0.6	89.9	
Pole CS-2-35	4.160	97.223	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-23	-0.160	-0.078	25.4	89.9	
								Pole CS-2-36	0.160	0.078	25.4	89.9	
Pole CS-2-36	4.160	97.114	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-35	-0.160	-0.078	25.4	89.9	
								Pole CS-2-37	0.160	0.078	25.4	89.9	
Pole CS-2-37	4.160	97.055	-2.3	0.000	0.000	0.000	0.000	PRI_PM_19	0.067	0.033	10.7	89.8	
								Pole CS-2-36	-0.160	-0.078	25.4	89.9	
								Pole CS-2-38	0.012	0.006	1.8	90.0	
								Pole CS-2-41	0.081	0.039	12.8	90.0	
Pole CS-2-38	4.160	97.053	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-37	-0.012	-0.006	1.8	90.0	
								Pole CS-2-39	0.008	0.004	1.2	90.0	
Pole CS-2-39	4.160	97.048	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-38	-0.008	-0.004	1.2	89.9	
								Pole CS-2-40	0.004	0.002	0.6	90.0	
Pole CS-2-40	4.160	97.047	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-39	-0.004	-0.002	0.6	89.9	
Pole CS-2-41	4.160	97.035	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-37	-0.081	-0.039	12.8	90.0	
								Pole CS-2-42	0.077	0.037	12.2	90.0	
Pole CS-2-42	4.160	97.005	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-41	-0.077	-0.037	12.2	90.0	
								Pole CS-2-43	0.004	0.002	0.6	89.9	
								Pole CS-2-44	0.073	0.035	11.6	90.0	
Pole CS-2-43	4.160	97.005	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-42	-0.004	-0.002	0.6	89.9	
Pole CS-2-44	4.160	96.983	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-42	-0.073	-0.035	11.6	90.0	
								Pole CS-2-45	0.019	0.009	3.1	89.9	
								Pole CS-2-50	0.008	0.004	1.2	89.9	
								Pole CS-2-52	0.046	0.022	7.3	90.0	
Pole CS-2-45	4.160	96.981	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-44	-0.019	-0.009	3.1	89.9	
								Pole CS-2-46	0.015	0.007	2.4	90.0	
Pole CS-2-46	4.160	96.978	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-45	-0.015	-0.007	2.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-2-47	0.012	0.006	1.8	90.0	
Pole CS-2-47	4.160	96.975	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-46	-0.012	-0.006	1.8	89.9	
								Pole CS-2-48	0.008	0.004	1.2	90.0	
Pole CS-2-48	4.160	96.972	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-47	-0.008	-0.004	1.2	89.9	
								Pole CS-2-49	0.004	0.002	0.6	89.9	
Pole CS-2-49	4.160	96.971	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-48	-0.004	-0.002	0.6	89.9	
Pole CS-2-50	4.160	96.982	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-44	-0.008	-0.004	1.2	89.9	
								Pole CS-2-51	0.004	0.002	0.6	89.9	
Pole CS-2-51	4.160	96.981	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-50	-0.004	-0.002	0.6	89.9	
Pole CS-2-52	4.160	96.967	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-44	-0.046	-0.022	7.3	90.0	
								Pole CS-2-56	0.015	0.007	2.4	89.9	
								Pole CS-2-58	0.008	0.004	1.2	90.0	
								Pole CS-2-61	0.023	0.011	3.7	90.0	
Pole CS-2-53	4.160	96.959	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-54	-0.004	-0.002	0.6	89.9	
Pole CS-2-54	4.160	96.959	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-53	0.004	0.002	0.6	89.9	
								Pole CS-2-55	-0.008	-0.004	1.2	89.9	
Pole CS-2-55	4.160	96.961	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-54	0.008	0.004	1.2	89.9	
								Pole CS-2-56	-0.012	-0.006	1.8	89.9	
Pole CS-2-56	4.160	96.964	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-52	-0.015	-0.007	2.4	89.9	
								Pole CS-2-55	0.012	0.006	1.8	89.9	
Pole CS-2-57	4.160	96.963	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-58	-0.004	-0.002	0.6	89.9	
Pole CS-2-58	4.160	96.964	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-57	0.004	0.002	0.6	90.0	
								Pole CS-2-52	-0.008	-0.004	1.2	89.9	
Pole CS-2-60	4.160	96.955	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-61	-0.019	-0.009	3.1	89.9	
								Pole CS-2-62	0.015	0.007	2.4	90.0	
Pole CS-2-61	4.160	96.963	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-52	-0.023	-0.011	3.7	90.0	
								Pole CS-2-60	0.019	0.009	3.1	90.0	
Pole CS-2-62	4.160	96.948	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-60	-0.015	-0.007	2.4	89.9	
								Pole CS-2-63	0.012	0.006	1.8	90.0	
Pole CS-2-63	4.160	96.943	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-62	-0.012	-0.006	1.8	89.9	
								Pole CS-2-64	0.008	0.004	1.2	89.9	
Pole CS-2-64	4.160	96.942	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-63	-0.008	-0.004	1.2	89.9	
								Pole CS-2-65	0.004	0.002	0.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-65	4.160	96.941	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-64	-0.004	-0.002	0.6	89.9	
Pole CS-2-66	4.160	99.326	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-10	-0.012	-0.006	1.9	90.0	
								L-SUB-FDR-EQ#18-1-237~	0.000	0.000	0.0	0.0	
								SEC_CS-2-46	0.012	0.006	1.9	89.9	
Pole CS-2-73	4.160	98.438	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-27	-0.012	-0.006	1.8	89.9	
								SEC_CS-2-49	0.012	0.006	1.8	89.9	
Pole CS-3-1	4.160	99.440	-2.4	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-0.347	-0.169	53.8	89.9	
								Pole CS-3-2	0.084	0.041	13.0	90.0	
								Pole CS-3-21	0.263	0.128	40.8	89.9	
Pole CS-3-2	4.160	99.416	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-3	0.032	0.015	5.0	90.0	
								Pole CS-3-1	-0.084	-0.041	13.0	90.0	
								Pole CS-3-11	0.048	0.023	7.4	90.0	
Pole CS-3-3	4.160	99.409	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-2	-0.032	-0.015	5.0	90.0	
								Pole CS-3-4	0.028	0.014	4.3	90.0	
Pole CS-3-4	4.160	99.393	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-3	-0.028	-0.014	4.3	90.0	
								Pole CS-3-5	0.024	0.012	3.7	90.0	
Pole CS-3-5	4.160	99.379	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-4	-0.024	-0.012	3.7	90.0	
								Pole CS-3-6	0.024	0.012	3.7	90.0	
Pole CS-3-6	4.160	99.365	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-5	-0.024	-0.012	3.7	90.0	
								Pole CS-3-7	0.020	0.010	3.1	90.0	
Pole CS-3-7	4.160	99.358	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-6	-0.020	-0.010	3.1	90.0	
								Pole CS-3-8	0.020	0.010	3.1	90.0	
Pole CS-3-8	4.160	99.352	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-7	-0.020	-0.010	3.1	90.0	
								Pole CS-3-9	0.016	0.008	2.5	90.0	
Pole CS-3-9	4.160	99.337	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-8	-0.016	-0.008	2.5	90.0	
								Pole CS-3-10	0.016	0.008	2.5	90.0	
Pole CS-3-10	4.160	99.327	-2.4	0.000	0.000	0.004	0.002	Pole CS-2-66	0.012	0.006	1.9	90.0	
								Pole CS-3-9	-0.016	-0.008	2.5	90.0	
Pole CS-3-11	4.160	99.409	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-2	-0.048	-0.023	7.4	90.0	
								Pole CS-3-12	0.044	0.021	6.8	90.0	
Pole CS-3-12	4.160	99.359	-2.4	0.000	0.000	0.008	0.004	Pole CS-3-11	-0.044	-0.021	6.8	90.0	
								Pole CS-3-13	0.036	0.017	5.6	90.0	
Pole CS-3-13	4.160	99.349	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-12	-0.036	-0.017	5.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-14	0.032	0.015	5.0	90.0	
Pole CS-3-14	4.160	99.324	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-13	-0.032	-0.016	5.0	90.0	
								Pole CS-3-15	0.028	0.014	4.3	90.0	
Pole CS-3-15	4.160	99.304	-2.4	0.000	0.000	0.008	0.004	Pole CS-3-14	-0.028	-0.014	4.3	90.0	
								Pole CS-3-16	0.020	0.010	3.1	90.0	
Pole CS-3-16	4.160	99.283	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-15	-0.020	-0.010	3.1	90.0	
								Pole CS-3-17	0.016	0.008	2.5	90.0	
Pole CS-3-17	4.160	99.279	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-16	-0.016	-0.008	2.5	90.0	
								Pole CS-3-18	0.012	0.006	1.9	90.0	
Pole CS-3-18	4.160	99.273	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-17	-0.012	-0.006	1.9	89.9	
								Pole CS-3-19	0.008	0.004	1.2	90.0	
Pole CS-3-19	4.160	99.269	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-18	-0.008	-0.004	1.2	89.9	
								Pole CS-3-20	0.004	0.002	0.6	89.9	
Pole CS-3-20	4.160	99.269	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-19	-0.004	-0.002	0.6	89.9	
Pole CS-3-21	4.160	99.381	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-1	-0.263	-0.128	40.8	89.9	
								Pole CS-3-22	0.259	0.126	40.2	89.9	
Pole CS-3-22	4.160	99.165	-2.4	0.000	0.000	0.000	0.000	PRI_PM_25	0.040	0.020	6.2	89.8	
								Pole CS-3-21	-0.258	-0.126	40.2	89.9	
								Pole CS-3-23	0.218	0.106	34.0	89.9	
Pole CS-3-23	4.160	99.035	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-29	0.214	0.104	33.3	89.9	
								Pole CS-3-22	-0.218	-0.106	34.0	89.9	
Pole CS-3-24	4.160	98.727	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-32	-0.016	-0.008	2.5	89.9	
								Pole CS-3-25	0.012	0.006	1.9	89.9	
Pole CS-3-25	4.160	98.724	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-24	-0.012	-0.006	1.9	89.9	
								Pole CS-3-26	0.008	0.004	1.2	89.9	
Pole CS-3-26	4.160	98.721	-2.4	0.000	0.000	0.008	0.004	Pole CS-3-25	-0.008	-0.004	1.2	89.9	
Pole CS-3-27	4.160	98.442	-2.4	0.000	0.000	0.004	0.002	Pole CS-2-73	0.012	0.006	1.8	89.9	
								Pole CS-3-34	-0.016	-0.008	2.5	89.9	
Pole CS-3-28	4.160	98.327	-2.4	0.000	0.000	0.008	0.004	Pole CS-3-35	-0.008	-0.004	1.2	89.9	
Pole CS-3-29	4.160	98.918	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-23	-0.214	-0.104	33.3	89.9	
								Pole CS-3-30	0.202	0.098	31.5	89.9	
								SEC_CS-2-47	0.012	0.006	1.9	89.9	
Pole CS-3-30	4.160	98.833	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-29	-0.202	-0.098	31.5	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-31	0.040	0.020	6.2	89.8	
								Pole CS-3-32	0.162	0.078	25.2	90.0	
Pole CS-3-31	4.160	98.830	-2.4	0.000	0.000	0.000	0.000	PRI_PM_26	0.040	0.020	6.2	89.8	
								Pole CS-3-30	-0.040	-0.020	6.2	89.8	
Pole CS-3-32	4.160	98.732	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-30	-0.162	-0.078	25.2	90.0	
								Pole CS-3-33	0.146	0.071	22.8	90.0	
								Pole CS-3-24	0.016	0.008	2.5	89.9	
Pole CS-3-33	4.160	98.686	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-32	-0.146	-0.071	22.8	90.0	
								Pole CS-3-34	0.134	0.065	20.9	90.0	
								SEC_CS-2-48	0.012	0.006	1.9	89.9	
Pole CS-3-34	4.160	98.449	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-33	-0.134	-0.065	20.9	90.0	
								Pole CS-3-35	0.118	0.057	18.5	90.0	
								Pole CS-3-27	0.016	0.008	2.5	89.9	
Pole CS-3-35	4.160	98.329	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-34	-0.118	-0.057	18.5	90.0	
								Pole CS-3-52	0.110	0.053	17.2	90.0	
								Pole CS-3-28	0.008	0.004	1.2	89.9	
Pole CS-3-36	4.160	98.007	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-37	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-246~	0.000	0.000	0.0	0.0	
Pole CS-3-37	4.160	98.007	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-36	0.000	0.000	0.0	0.0	
								Pole CS-3-38	-0.004	-0.002	0.6	90.0	
Pole CS-3-38	4.160	98.008	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-37	0.004	0.002	0.6	90.0	
								Pole CS-3-39	-0.008	-0.004	1.2	90.0	
Pole CS-3-39	4.160	98.012	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-38	0.008	0.004	1.2	90.0	
								Pole CS-3-40	-0.012	-0.006	1.8	90.0	
Pole CS-3-40	4.160	98.016	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-39	0.012	0.006	1.8	90.0	
								Pole CS-3-41	-0.016	-0.008	2.5	90.0	
Pole CS-3-41	4.160	98.023	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-40	0.016	0.008	2.5	90.0	
								Pole CS-3-42	-0.020	-0.009	3.1	90.0	
Pole CS-3-42	4.160	98.030	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-41	0.020	0.009	3.1	90.0	
								Pole CS-3-43	-0.023	-0.011	3.7	90.0	
Pole CS-3-43	4.160	98.041	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-42	0.023	0.011	3.7	90.0	
								Pole CS-3-45	-0.031	-0.015	4.9	90.0	
								Pole CS-3-44	0.004	0.002	0.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-3-44	4.160	98.041	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-43	-0.004	-0.002	0.6	89.9	
Pole CS-3-45	4.160	98.057	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-43	0.031	0.015	4.9	90.0	
								Pole CS-3-50	-0.039	-0.019	6.2	90.0	
								Pole CS-3-46	0.004	0.002	0.6	89.9	
								Pole CS-3-47	0.004	0.002	0.6	89.9	
Pole CS-3-46	4.160	98.057	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-45	-0.004	-0.002	0.6	89.9	
Pole CS-3-47	4.160	98.057	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-45	-0.004	-0.002	0.6	89.9	
Pole CS-3-48	4.160	98.078	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-50	-0.004	-0.002	0.6	89.9	
Pole CS-3-49	4.160	98.078	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-50	-0.004	-0.002	0.6	89.9	
Pole CS-3-50	4.160	98.078	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-45	0.039	0.019	6.2	90.0	
								Pole CS-3-51	-0.047	-0.023	7.4	90.0	
								Pole CS-3-48	0.004	0.002	0.6	89.9	
								Pole CS-3-49	0.004	0.002	0.6	89.9	
Pole CS-3-51	4.160	98.082	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-50	0.047	0.023	7.4	90.0	
								Pole CS-3-63	-0.078	-0.038	12.3	90.0	
								Pole CS-3-66	0.031	0.015	4.9	90.0	
								Pole CS-3-74	0.000	0.000	0.0	0.0	
Pole CS-3-52	4.160	98.266	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-35	-0.110	-0.053	17.2	90.0	
								Pole CS-3-59	0.098	0.048	15.4	90.0	
								Pole CS-3-53	0.012	0.006	1.8	90.0	
Pole CS-3-53	4.160	98.262	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-52	-0.012	-0.006	1.8	89.9	
								Pole CS-3-54	0.008	0.004	1.2	90.0	
Pole CS-3-54	4.160	98.260	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-53	-0.008	-0.004	1.2	89.9	
								Pole CS-3-55	0.004	0.002	0.6	90.0	
Pole CS-3-55	4.160	98.259	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-54	-0.004	-0.002	0.6	89.9	
Pole CS-3-56	4.160	98.213	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-57	-0.004	-0.002	0.6	89.9	
Pole CS-3-57	4.160	98.216	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-56	0.004	0.002	0.6	90.0	
								Pole CS-3-58	-0.008	-0.004	1.2	90.0	
Pole CS-3-58	4.160	98.220	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-57	0.008	0.004	1.2	90.0	
								Pole CS-3-59	-0.012	-0.006	1.8	90.0	
Pole CS-3-59	4.160	98.222	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-52	-0.098	-0.048	15.4	90.0	
								Pole CS-3-60	0.086	0.042	13.5	90.0	
								Pole CS-3-58	0.012	0.006	1.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-3-60	4.160	98.183	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-59	-0.086	-0.042	13.5	90.0	
								Pole CS-3-62	0.086	0.042	13.5	90.0	
Pole CS-3-61	4.160	98.143	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-62	-0.082	-0.040	12.9	90.0	
								Pole CS-3-63	0.078	0.038	12.3	90.0	
Pole CS-3-62	4.160	98.163	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-61	0.082	0.040	12.9	90.0	
								Pole CS-3-60	-0.086	-0.042	13.5	90.0	
Pole CS-3-63	4.160	98.113	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-61	-0.078	-0.038	12.3	90.0	
								Pole CS-3-51	0.078	0.038	12.3	90.0	
								Pole CS-3-75	0.000	0.000	0.0	0.0	
Pole CS-3-66	4.160	98.076	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-51	-0.031	-0.015	4.9	90.0	
								Pole CS-3-67	0.027	0.013	4.3	90.0	
Pole CS-3-67	4.160	98.069	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-66	-0.027	-0.013	4.3	90.0	
								Pole CS-3-68	0.023	0.011	3.7	90.0	
Pole CS-3-68	4.160	98.061	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-67	-0.023	-0.011	3.7	89.9	
								Pole CS-3-69	0.020	0.009	3.1	90.0	
Pole CS-3-69	4.160	98.056	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-68	-0.020	-0.009	3.1	89.9	
								Pole CS-3-70	0.016	0.008	2.5	90.0	
Pole CS-3-70	4.160	98.051	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-69	-0.016	-0.008	2.5	89.9	
								Pole CS-3-71	0.012	0.006	1.8	90.0	
Pole CS-3-71	4.160	98.048	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-70	-0.012	-0.006	1.8	89.9	
								Pole CS-3-72	0.008	0.004	1.2	90.0	
Pole CS-3-72	4.160	98.045	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-71	-0.008	-0.004	1.2	89.9	
								Pole CS-3-73	0.004	0.002	0.6	90.0	
Pole CS-3-73	4.160	98.044	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-72	-0.004	-0.002	0.6	89.9	
Pole CS-3-74	4.160	98.082	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-51	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-276~	0.000	0.000	0.0	0.0	
Pole CS-3-75	4.160	98.113	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-63	0.000	0.000	0.0	0.0	
Pole CS-4-1	4.160	99.482	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-11	0.349	0.171	54.2	89.8	
								Pole CS-4-3	0.008	0.004	1.2	90.0	
								BUS_CLG_4kV	-0.361	-0.176	56.0	89.8	
Pole CS-4-2	4.160	99.012	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-11	-0.277	-0.136	43.3	89.8	
								Pole CS-4-6	0.273	0.134	42.7	89.8	
Pole CS-4-3	4.160	99.482	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-1	-0.008	-0.004	1.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-4-4	0.004	0.002	0.6	90.1	
Pole CS-4-4	4.160	99.478	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-3	-0.004	-0.002	0.6	90.0	
								Pole CS-4-5	0.004	0.002	0.6	89.9	
								L-SUB-FDR-EQ#18-1-283~	0.000	0.000	0.0	0.0	
Pole CS-4-5	4.160	99.478	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-4	-0.004	-0.002	0.6	89.9	
Pole CS-4-6	4.160	98.806	-2.4	0.000	0.000	0.000	0.000	PRI_PM_22	0.080	0.039	12.5	89.8	
								Pole CS-4-2	-0.273	-0.134	42.7	89.8	
								Pole CS-4-7	0.193	0.095	30.2	89.8	
Pole CS-4-7	4.160	98.739	-2.4	0.000	0.000	0.008	0.004	Pole CS-4-6	-0.193	-0.094	30.2	89.8	
								Pole CS-4-8	0.185	0.091	29.0	89.8	
Pole CS-4-8	4.160	98.669	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-7	-0.185	-0.091	29.0	89.8	
								Pole CS-4-9	0.181	0.089	28.4	89.8	
Pole CS-4-9	4.160	98.615	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-8	-0.181	-0.089	28.4	89.8	
								Pole CS-4-12	0.012	0.006	1.9	89.9	
								Pole CS-4-13	0.169	0.083	26.5	89.8	
Pole CS-4-11	4.160	99.221	-2.4	0.000	0.000	0.000	0.000	PRI_PM_11	0.070	0.034	10.9	89.8	
								Pole CS-4-1	-0.348	-0.170	54.2	89.8	
								Pole CS-4-2	0.278	0.136	43.3	89.8	
Pole CS-4-12	4.160	98.613	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.012	-0.006	1.9	89.9	
								SEC_CS-4-8	0.012	0.006	1.9	89.9	
Pole CS-4-13	4.160	98.553	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.169	-0.083	26.5	89.8	
								Pole CS-4-14	0.169	0.083	26.5	89.8	
Pole CS-4-14	4.160	98.487	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-13	-0.169	-0.083	26.5	89.8	
								Pole CS-4-15	0.169	0.083	26.5	89.8	
Pole CS-4-15	4.160	98.053	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-14	-0.168	-0.082	26.5	89.8	
								Pole CS-4-16	0.168	0.082	26.5	89.8	
Pole CS-4-16	4.160	97.370	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-15	-0.167	-0.082	26.5	89.8	
								Pole CS-4-18	0.008	0.004	1.2	90.0	
								Pole CS-4-20	0.159	0.078	25.3	89.8	
Pole CS-4-17	4.160	97.366	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-18	-0.004	-0.002	0.6	89.9	
Pole CS-4-18	4.160	97.368	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-17	0.004	0.002	0.6	90.0	
								Pole CS-4-16	-0.008	-0.004	1.2	90.0	
								Pole CS-4-19	0.004	0.002	0.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-4-19	4.160	97.365	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-18	-0.004	-0.002	0.6	89.9	
Pole CS-4-20	4.160	97.284	-2.4	0.000	0.000	0.000	0.000	PRI_PM_23	0.078	0.038	12.3	89.8	
								Pole CS-4-16	-0.159	-0.078	25.3	89.8	
								Pole CS-4-21	0.082	0.040	13.0	89.8	
Pole CS-4-21	4.160	97.234	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-20	-0.081	-0.040	13.0	89.8	
								Pole CS-4-22	0.078	0.038	12.3	89.8	
Pole CS-4-22	4.160	97.201	-2.4	0.000	0.000	0.000	0.000	PRI_PM_24	0.078	0.038	12.3	89.8	
								Pole CS-4-21	-0.078	-0.038	12.3	89.8	
Pole CS-5-18	24.940	97.697	-1.3	0.000	0.000	0.008	0.004	Pole CS-5-19	-0.008	-0.004	0.2	89.8	
Pole CS-5-19	24.940	97.697	-1.3	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-9	0.023	0.010	0.6	92.0	
								Pole CS-5-18	0.008	0.004	0.2	90.3	
								Pole CS-5-20	-0.031	-0.014	0.8	91.6	
Pole CS-5-20	24.940	97.697	-1.3	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-8	0.023	0.010	0.6	91.2	
								Pole CS-5-19	0.031	0.014	0.8	91.7	
								Pole CS-5-21	-0.054	-0.024	1.4	91.5	
Pole CS-5-21	24.940	97.700	-1.3	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-0.054	-0.023	1.4	92.2	
								Pole CS-5-20	0.054	0.023	1.4	92.2	
Pole HS-1-001	4.160	100.192	-2.3	0.000	0.000	0.005	0.002	BUS_HSC_4kV	-0.037	-0.018	5.7	90.0	
								Pole HS-1-4	0.032	0.016	5.0	90.0	
Pole HS-1-4	4.160	100.185	-2.3	0.000	0.000	0.007	0.004	Pole HS-1-001	-0.032	-0.016	5.0	90.0	
								Pole HS-1-16	0.025	0.012	3.8	90.0	
Pole HS-1-16	4.160	100.180	-2.3	0.000	0.000	0.015	0.007	Pole HS-1-17	0.010	0.005	1.5	90.0	
								Pole HS-1-4	-0.025	-0.012	3.8	90.0	
Pole HS-1-17	4.160	100.178	-2.3	0.000	0.000	0.002	0.001	Pole HS-1-16	-0.010	-0.005	1.5	90.0	
								Pole HS-1-19	0.007	0.004	1.1	90.0	
Pole HS-1-19	4.160	100.176	-2.3	0.000	0.000	0.007	0.004	Pole HS-1-17	-0.007	-0.004	1.1	90.0	
Pole HS-2-1	4.160	100.089	-2.3	0.000	0.000	0.004	0.002	BUS_HSC_4kV	-0.495	-0.241	76.3	89.9	
								Pole HS-2-2	0.491	0.239	75.7	89.9	
Pole HS-2-2	4.160	99.946	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-1	-0.490	-0.238	75.7	89.9	
								Pole HS-2-3	0.486	0.236	75.0	89.9	
Pole HS-2-3	4.160	99.821	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-2	-0.485	-0.236	75.0	89.9	
								Pole HS-2-4	0.481	0.234	74.4	89.9	
Pole HS-2-4	4.160	99.697	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-3	-0.481	-0.234	74.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-5	0.469	0.228	72.5	89.9	
								SEC_HS-2-4	0.012	0.006	1.9	89.9	
Pole HS-2-5	4.160	99.564	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-4	-0.468	-0.228	72.5	89.9	
								Pole HS-2-6	0.456	0.222	70.7	89.9	
								SEC_HS-2-5	0.012	0.006	1.9	89.9	
Pole HS-2-6	4.160	99.450	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-5	-0.455	-0.222	70.7	89.9	
								Pole HS-2-7	0.443	0.216	68.8	89.9	
								SEC_HS-2-6	0.012	0.006	1.9	89.9	
Pole HS-2-7	4.160	99.326	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-6	-0.443	-0.215	68.8	89.9	
								Pole HS-2-8	0.431	0.210	67.0	89.9	
								SEC_HS-2-7	0.012	0.006	1.9	89.9	
Pole HS-2-8	4.160	99.206	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-7	-0.430	-0.209	67.0	89.9	
								Pole HS-2-9	0.303	0.148	47.1	89.9	
								Pole HS-2-50	0.127	0.062	19.8	90.0	
Pole HS-2-9	4.160	99.125	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-8	-0.303	-0.147	47.1	89.9	
								Pole HS-2-10	0.299	0.146	46.5	89.9	
Pole HS-2-10	4.160	99.051	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-9	-0.299	-0.145	46.5	89.9	
								Pole HS-2-11	0.295	0.144	45.9	89.9	
Pole HS-2-11	4.160	98.971	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-10	-0.294	-0.143	45.9	89.9	
								Pole HS-2-12	0.282	0.138	44.1	89.9	
								SEC_HS-2-10	0.012	0.006	1.9	89.9	
Pole HS-2-12	4.160	98.920	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-11	-0.282	-0.138	44.1	89.9	
								Pole HS-2-86	0.278	0.136	43.4	89.9	
Pole HS-2-13	4.160	98.843	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-14	0.040	0.019	6.2	90.0	
								Pole HS-2-24	0.107	0.052	16.7	90.0	
								Pole HS-2-86	-0.146	-0.071	22.9	90.0	
Pole HS-2-14	4.160	98.830	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-13	-0.040	-0.019	6.2	90.0	
								Pole HS-2-15	0.036	0.017	5.6	90.0	
Pole HS-2-15	4.160	98.817	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-14	-0.036	-0.017	5.6	90.0	
								Pole HS-2-16	0.032	0.015	4.9	90.0	
Pole HS-2-16	4.160	98.804	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-15	-0.032	-0.015	4.9	90.0	
								Pole HS-2-17	0.028	0.013	4.3	90.0	
Pole HS-2-17	4.160	98.795	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-16	-0.028	-0.013	4.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-18	0.024	0.012	3.7	90.0	
Pole HS-2-18	4.160	98.789	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-17	-0.024	-0.012	3.7	90.0	
								Pole HS-2-19	0.020	0.010	3.1	90.0	
Pole HS-2-19	4.160	98.785	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-18	-0.020	-0.010	3.1	90.0	
								Pole HS-2-20	0.016	0.008	2.5	90.0	
Pole HS-2-20	4.160	98.776	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-19	-0.016	-0.008	2.5	89.9	
								Pole HS-2-21	0.012	0.006	1.9	90.0	
Pole HS-2-21	4.160	98.773	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-20	-0.012	-0.006	1.9	89.9	
								Pole HS-2-22	0.008	0.004	1.2	90.0	
Pole HS-2-22	4.160	98.770	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-21	-0.008	-0.004	1.2	89.9	
								Pole HS-2-23	0.004	0.002	0.6	90.0	
Pole HS-2-23	4.160	98.769	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-22	-0.004	-0.002	0.6	89.9	
Pole HS-2-24	4.160	98.756	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-13	-0.107	-0.052	16.7	90.0	
								Pole HS-2-25	0.091	0.044	14.2	90.0	
								Pole HS-2-26	0.012	0.006	1.9	90.0	
Pole HS-2-25	4.160	98.727	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.091	-0.044	14.2	90.0	
								Pole HS-2-27	0.091	0.044	14.2	90.0	
Pole HS-2-26	4.160	98.746	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.012	-0.006	1.9	89.9	
								SEC_HS-2-23	0.012	0.006	1.9	89.9	
Pole HS-2-27	4.160	98.698	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-25	-0.091	-0.044	14.2	90.0	
								Pole HS-2-28	0.091	0.044	14.2	90.0	
Pole HS-2-28	4.160	98.650	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-27	-0.091	-0.044	14.2	90.0	
								Pole HS-2-29	0.032	0.015	4.9	89.9	
								Pole HS-2-35	0.059	0.029	9.3	90.0	
Pole HS-2-29	4.160	98.640	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-28	-0.032	-0.015	4.9	89.9	
								Pole HS-2-30	0.028	0.013	4.3	89.9	
Pole HS-2-30	4.160	98.637	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-31	0.016	0.008	2.5	89.9	
								Pole HS-2-29	-0.028	-0.013	4.3	89.9	
								SEC_HS-2-25	0.012	0.006	1.9	89.9	
Pole HS-2-31	4.160	98.635	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-30	-0.016	-0.008	2.5	89.9	
								Pole HS-2-32	0.012	0.006	1.9	90.0	
Pole HS-2-32	4.160	98.632	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-31	-0.012	-0.006	1.9	89.9	
								Pole HS-2-33	0.008	0.004	1.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-2-33	4.160	98.629	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-32	-0.008	-0.004	1.2	89.9	
								Pole HS-2-34	0.004	0.002	0.6	90.0	
Pole HS-2-34	4.160	98.628	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-33	-0.004	-0.002	0.6	89.9	
Pole HS-2-35	4.160	98.619	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-28	-0.059	-0.029	9.3	90.0	
								Pole HS-2-36	0.024	0.012	3.7	90.0	
								Pole HS-2-42	0.032	0.015	4.9	90.0	
								Pole HS-2-48	0.004	0.002	0.6	89.9	
Pole HS-2-36	4.160	98.610	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-35	-0.024	-0.012	3.7	89.9	
								Pole HS-2-37	0.020	0.010	3.1	89.9	
Pole HS-2-37	4.160	98.605	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-36	-0.020	-0.010	3.1	89.9	
								Pole HS-2-38	0.016	0.008	2.5	89.9	
Pole HS-2-38	4.160	98.601	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-37	-0.016	-0.008	2.5	89.9	
								Pole HS-2-39	0.012	0.006	1.9	89.9	
Pole HS-2-39	4.160	98.598	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-38	-0.012	-0.006	1.9	89.9	
								Pole HS-2-40	0.008	0.004	1.2	89.9	
Pole HS-2-40	4.160	98.596	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-39	-0.008	-0.004	1.2	89.9	
								Pole HS-2-41	0.004	0.002	0.6	89.9	
Pole HS-2-41	4.160	98.596	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-40	-0.004	-0.002	0.6	89.9	
Pole HS-2-42	4.160	98.603	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-35	-0.032	-0.015	4.9	90.0	
								Pole HS-2-43	0.028	0.013	4.3	89.9	
								Pole HS-2-49	0.004	0.002	0.6	90.0	
Pole HS-2-43	4.160	98.595	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-42	-0.028	-0.013	4.3	89.9	
								Pole HS-2-44	0.016	0.008	2.5	89.9	
								SEC_HS-2-36	0.012	0.006	1.8	89.9	
Pole HS-2-44	4.160	98.591	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-43	-0.016	-0.008	2.5	89.9	
								Pole HS-2-45	0.012	0.006	1.9	89.9	
Pole HS-2-45	4.160	98.588	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-44	-0.012	-0.006	1.9	89.9	
								Pole HS-2-46	0.008	0.004	1.2	89.9	
Pole HS-2-46	4.160	98.586	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-45	-0.008	-0.004	1.2	89.9	
								Pole HS-2-47	0.004	0.002	0.6	89.9	
Pole HS-2-47	4.160	98.585	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-46	-0.004	-0.002	0.6	89.9	
Pole HS-2-48	4.160	98.618	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-35	-0.004	-0.002	0.6	89.9	
Pole HS-2-49	4.160	98.600	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-42	-0.004	-0.002	0.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								L-SUB-FDR-EQ#18-1-278~	0.000	0.000	0.0	0.0	
Pole HS-2-50	4.160	99.139	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-8	-0.127	-0.062	19.8	90.0	
								Pole HS-2-51	0.123	0.060	19.2	90.0	
Pole HS-2-51	4.160	99.075	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-50	-0.123	-0.060	19.2	90.0	
								Pole HS-2-52	0.020	0.010	3.1	89.9	
								Pole HS-2-57	0.103	0.050	16.1	90.0	
Pole HS-2-52	4.160	99.072	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-51	-0.020	-0.010	3.1	89.9	
								Pole HS-2-53	0.016	0.008	2.5	89.9	
Pole HS-2-53	4.160	99.070	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-52	-0.016	-0.008	2.5	89.9	
								Pole HS-2-54	0.012	0.006	1.9	89.9	
Pole HS-2-54	4.160	99.068	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-53	-0.012	-0.006	1.9	89.9	
								Pole HS-2-55	0.008	0.004	1.2	89.9	
Pole HS-2-55	4.160	99.067	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-54	-0.008	-0.004	1.2	89.9	
								Pole HS-2-56	0.004	0.002	0.6	90.0	
Pole HS-2-56	4.160	99.066	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-55	-0.004	-0.002	0.6	89.9	
Pole HS-2-57	4.160	99.021	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-51	-0.103	-0.050	16.1	90.0	
								Pole HS-2-58	0.040	0.019	6.2	89.9	
								Pole HS-2-76	0.064	0.031	9.9	90.0	
Pole HS-2-58	4.160	99.015	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-57	-0.040	-0.019	6.2	89.9	
								Pole HS-2-67	0.036	0.017	5.6	89.9	
Pole HS-2-59	4.160	99.001	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-67	-0.032	-0.015	5.0	89.9	
								Pole HS-2-60	0.028	0.014	4.3	89.9	
Pole HS-2-60	4.160	98.996	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-59	-0.028	-0.014	4.3	89.9	
								Pole HS-2-61	0.024	0.012	3.7	89.9	
Pole HS-2-61	4.160	98.991	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-60	-0.024	-0.012	3.7	89.9	
								Pole HS-2-62	0.020	0.010	3.1	90.0	
Pole HS-2-62	4.160	98.986	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-61	-0.020	-0.010	3.1	89.9	
								Pole HS-2-63	0.016	0.008	2.5	89.9	
Pole HS-2-63	4.160	98.983	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-62	-0.016	-0.008	2.5	89.9	
								Pole HS-2-64	0.012	0.006	1.9	90.0	
Pole HS-2-64	4.160	98.981	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-63	-0.012	-0.006	1.9	89.9	
								Pole HS-2-65	0.008	0.004	1.2	90.0	
Pole HS-2-65	4.160	98.980	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-64	-0.008	-0.004	1.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-66	0.004	0.002	0.6	90.0	
Pole HS-2-66	4.160	98.979	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-65	-0.004	-0.002	0.6	89.9	
								L-SUB-FDR-EQ#18-1-301~	0.000	0.000	0.0	0.0	
Pole HS-2-67	4.160	99.007	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-59	0.032	0.015	5.0	89.9	
								Pole HS-2-58	-0.036	-0.017	5.6	89.9	
Pole HS-2-68	4.160	98.960	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-69	-0.004	-0.002	0.6	89.9	
Pole HS-2-69	4.160	98.961	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-68	0.004	0.002	0.6	89.9	
								Pole HS-2-70	-0.008	-0.004	1.2	89.9	
Pole HS-2-70	4.160	98.962	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-69	0.008	0.004	1.2	89.9	
								Pole HS-2-71	-0.012	-0.006	1.9	89.9	
Pole HS-2-71	4.160	98.966	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-70	0.012	0.006	1.9	89.9	
								Pole HS-2-72	-0.016	-0.008	2.5	89.9	
Pole HS-2-72	4.160	98.969	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-71	0.016	0.008	2.5	89.9	
								Pole HS-2-73	-0.020	-0.010	3.1	89.9	
Pole HS-2-73	4.160	98.973	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-72	0.020	0.010	3.1	89.9	
								Pole HS-2-74	-0.024	-0.012	3.7	89.9	
Pole HS-2-74	4.160	98.976	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-73	0.024	0.012	3.7	89.9	
								Pole HS-2-75	-0.028	-0.014	4.3	89.9	
Pole HS-2-75	4.160	98.983	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-74	0.028	0.014	4.3	89.9	
								Pole HS-2-76	-0.032	-0.015	5.0	89.9	
Pole HS-2-76	4.160	98.987	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-75	0.032	0.015	5.0	89.9	
								Pole HS-2-57	-0.064	-0.031	9.9	90.0	
								Pole HS-2-77	0.032	0.015	4.9	90.0	
Pole HS-2-77	4.160	98.970	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-76	-0.032	-0.015	4.9	90.0	
								Pole HS-2-78	0.020	0.010	3.1	90.0	
								SEC_HS-2-67	0.012	0.006	1.9	89.9	
Pole HS-2-78	4.160	98.957	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-77	-0.020	-0.010	3.1	90.0	
								Pole HS-2-79	0.004	0.002	0.6	90.0	
								Pole HS-2-80	0.016	0.008	2.5	90.0	
Pole HS-2-79	4.160	98.954	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-78	-0.004	-0.002	0.6	89.9	
Pole HS-2-80	4.160	98.947	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-78	-0.016	-0.008	2.5	90.0	
								Pole HS-2-81	0.012	0.006	1.9	90.0	
Pole HS-2-81	4.160	98.941	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-80	-0.012	-0.006	1.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-82	0.008	0.004	1.2	90.0	
Pole HS-2-82	4.160	98.934	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-81	-0.008	-0.004	1.2	90.0	
								Pole HS-2-83	0.004	0.002	0.6	90.0	
Pole HS-2-83	4.160	98.931	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-82	-0.004	-0.002	0.6	89.9	
Pole HS-2-84	4.160	99.199	-2.5	0.000	0.000	0.004	0.002	Pole HS-2-85	-0.004	-0.002	0.6	89.9	
Pole HS-2-85	4.160	99.201	-2.5	0.000	0.000	0.004	0.002	Pole HS-2-84	0.004	0.002	0.6	90.0	
								Pole CS-1-2	-0.008	-0.004	1.2	90.0	
Pole HS-2-86	4.160	98.869	-2.3	0.000	0.000	0.000	0.000	PRI_PM_10	0.132	0.064	20.6	89.8	
								Pole HS-2-12	-0.278	-0.136	43.4	89.9	
								Pole HS-2-13	0.146	0.071	22.9	90.0	
Pole HS-3-1	4.160	100.177	-2.3	0.000	0.000	0.004	0.002	BUS_HSC_4kV	-0.337	-0.164	52.0	90.0	
								Pole HS-3-2	0.333	0.162	51.3	90.0	
Pole HS-3-2	4.160	100.068	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-1	-0.333	-0.162	51.3	90.0	
								Pole HS-3-3	0.329	0.160	50.7	90.0	
Pole HS-3-3	4.160	99.910	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-2	-0.328	-0.159	50.7	90.0	
								Pole HS-3-4	0.324	0.157	50.1	90.0	
Pole HS-3-4	4.160	99.803	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-3	-0.324	-0.157	50.1	90.0	
								Pole HS-3-5	0.320	0.155	49.5	90.0	
Pole HS-3-5	4.160	99.697	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-4	-0.320	-0.155	49.5	90.0	
								Pole HS-3-6	0.316	0.153	48.8	90.0	
Pole HS-3-6	4.160	99.623	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-5	-0.315	-0.153	48.8	90.0	
								Pole HS-3-7	0.311	0.151	48.2	90.0	
Pole HS-3-7	4.160	99.536	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-6	-0.311	-0.151	48.2	90.0	
								Pole HS-3-8	0.307	0.149	47.6	90.0	
Pole HS-3-8	4.160	99.473	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-7	-0.307	-0.149	47.6	90.0	
								Pole HS-3-9	0.303	0.147	47.0	90.0	
Pole HS-3-9	4.160	99.391	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-8	-0.303	-0.147	47.0	90.0	
								Pole HS-3-10	0.299	0.145	46.4	90.0	
Pole HS-3-10	4.160	99.311	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-9	-0.298	-0.145	46.4	90.0	
								Pole HS-3-11	0.294	0.143	45.7	90.0	
Pole HS-3-11	4.160	99.253	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-10	-0.294	-0.143	45.7	90.0	
								Pole HS-3-12	0.290	0.141	45.1	90.0	
Pole HS-3-12	4.160	99.200	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-11	-0.290	-0.141	45.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-3-13	0.286	0.139	44.5	90.0	
Pole HS-3-13	4.160	99.124	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-12	-0.286	-0.139	44.5	90.0	
								Pole HS-3-14	0.282	0.137	43.9	90.0	
Pole HS-3-14	4.160	99.069	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-13	-0.282	-0.137	43.9	90.0	
								Pole HS-3-15	0.278	0.135	43.3	90.0	
Pole HS-3-15	4.160	99.004	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-14	-0.278	-0.135	43.3	90.0	
								Pole HS-3-16	0.274	0.133	42.6	90.0	
Pole HS-3-16	4.160	98.941	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-15	-0.273	-0.133	42.6	90.0	
								Pole HS-3-17	0.269	0.131	42.0	90.0	
Pole HS-3-17	4.160	98.887	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-16	-0.269	-0.131	42.0	90.0	
								Pole HS-3-18	0.174	0.085	27.2	90.0	
								Pole HS-3-23	0.095	0.046	14.8	90.0	
Pole HS-3-18	4.160	98.770	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-17	-0.174	-0.084	27.2	90.0	
								Pole HS-3-28	0.020	0.010	3.1	90.0	
								Pole HS-3-29	0.103	0.050	16.1	90.0	
								Pole HS-3-46	0.051	0.025	8.0	89.9	
Pole HS-3-19	4.160	98.781	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-20	-0.079	-0.038	12.4	90.0	
								Pole HS-3-30	0.075	0.037	11.7	90.0	
Pole HS-3-20	4.160	98.799	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-19	0.079	0.038	12.4	90.0	
								Pole HS-3-21	-0.083	-0.040	13.0	90.0	
Pole HS-3-21	4.160	98.835	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-20	0.083	0.040	13.0	90.0	
								Pole HS-3-22	-0.087	-0.042	13.6	90.0	
Pole HS-3-22	4.160	98.852	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-21	0.087	0.042	13.6	90.0	
								Pole HS-3-23	-0.091	-0.044	14.2	90.0	
Pole HS-3-23	4.160	98.868	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-17	-0.095	-0.046	14.8	90.0	
								Pole HS-3-22	0.091	0.044	14.2	90.0	
Pole HS-3-24	4.160	98.757	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-25	-0.004	-0.002	0.6	89.9	
Pole HS-3-25	4.160	98.758	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-24	0.004	0.002	0.6	90.0	
								Pole HS-3-26	-0.008	-0.004	1.2	89.9	
Pole HS-3-26	4.160	98.761	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-25	0.008	0.004	1.2	90.0	
								Pole HS-3-27	-0.012	-0.006	1.9	89.9	
Pole HS-3-27	4.160	98.764	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-26	0.012	0.006	1.9	90.0	
								Pole HS-3-28	-0.016	-0.008	2.5	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-28	4.160	98.768	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-27	0.016	0.008	2.5	90.0	
								Pole HS-3-18	-0.020	-0.010	3.1	89.9	
Pole HS-3-29	4.160	98.702	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-18	-0.103	-0.050	16.1	90.0	
								Pole HS-3-34	0.016	0.008	2.5	89.9	
								Pole HS-3-35	0.040	0.019	6.2	90.0	
								Pole HS-3-59	0.047	0.023	7.4	89.9	
Pole HS-3-30	4.160	98.765	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-19	-0.075	-0.037	11.7	90.0	
								Pole HS-3-85	0.071	0.035	11.1	90.0	
Pole HS-3-31	4.160	98.692	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-32	-0.004	-0.002	0.6	89.9	
Pole HS-3-32	4.160	98.693	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-31	0.004	0.002	0.6	89.9	
								Pole HS-3-33	-0.008	-0.004	1.2	89.9	
Pole HS-3-33	4.160	98.695	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-32	0.008	0.004	1.2	89.9	
								Pole HS-3-34	-0.012	-0.006	1.9	89.9	
Pole HS-3-34	4.160	98.697	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-29	-0.016	-0.008	2.5	89.9	
								Pole HS-3-33	0.012	0.006	1.9	89.9	
Pole HS-3-35	4.160	98.676	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.040	-0.019	6.2	90.0	
								Pole HS-3-37	0.008	0.004	1.2	90.0	
								Pole HS-3-38	0.032	0.015	4.9	90.0	
Pole HS-3-36	4.160	98.673	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-37	-0.004	-0.002	0.6	89.9	
Pole HS-3-37	4.160	98.673	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-35	-0.008	-0.004	1.2	89.9	
								Pole HS-3-36	0.004	0.002	0.6	89.9	
Pole HS-3-38	4.160	98.655	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-35	-0.032	-0.015	4.9	90.0	
								Pole HS-3-43	0.028	0.013	4.3	90.0	
Pole HS-3-39	4.160	98.628	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-44	0.008	0.004	1.2	90.0	
								Pole HS-3-40	-0.012	-0.006	1.9	90.0	
Pole HS-3-40	4.160	98.630	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-39	0.012	0.006	1.9	90.0	
								Pole HS-3-41	-0.016	-0.008	2.5	90.0	
Pole HS-3-41	4.160	98.634	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-40	0.016	0.008	2.5	90.0	
								Pole HS-3-42	-0.020	-0.010	3.1	90.0	
Pole HS-3-42	4.160	98.637	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-41	0.020	0.010	3.1	90.0	
								Pole HS-3-43	-0.024	-0.012	3.7	90.0	
Pole HS-3-43	4.160	98.643	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-42	0.024	0.012	3.7	90.0	
								Pole HS-3-38	-0.028	-0.013	4.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-44	4.160	98.620	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-39	-0.008	-0.004	1.2	89.9	
								Pole HS-3-45	0.004	0.002	0.6	90.0	
Pole HS-3-45	4.160	98.618	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-44	-0.004	-0.002	0.6	89.9	
Pole HS-3-46	4.160	98.764	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-18	-0.051	-0.025	8.0	89.9	
								Pole HS-3-47	0.047	0.023	7.4	89.9	
Pole HS-3-47	4.160	98.757	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-46	-0.047	-0.023	7.4	89.9	
								Pole HS-3-48	0.044	0.021	6.8	89.9	
Pole HS-3-48	4.160	98.744	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-47	-0.044	-0.021	6.8	89.9	
								Pole HS-3-49	0.040	0.019	6.2	89.9	
Pole HS-3-49	4.160	98.734	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-50	0.036	0.017	5.6	89.9	
								Pole HS-3-48	-0.040	-0.019	6.2	89.9	
Pole HS-3-50	4.160	98.728	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-49	-0.036	-0.017	5.6	89.9	
								Pole HS-3-51	0.032	0.015	4.9	89.9	
Pole HS-3-51	4.160	98.721	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-50	-0.032	-0.015	4.9	89.9	
								Pole HS-3-52	0.028	0.013	4.3	90.0	
Pole HS-3-52	4.160	98.713	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-51	-0.028	-0.013	4.3	89.9	
								Pole HS-3-53	0.024	0.012	3.7	89.9	
Pole HS-3-53	4.160	98.710	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-58	0.020	0.010	3.1	90.0	
								Pole HS-3-52	-0.024	-0.012	3.7	89.9	
Pole HS-3-54	4.160	98.694	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-55	-0.004	-0.002	0.6	89.9	
Pole HS-3-55	4.160	98.695	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-54	0.004	0.002	0.6	90.0	
								Pole HS-3-56	-0.008	-0.004	1.2	89.9	
Pole HS-3-56	4.160	98.697	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-55	0.008	0.004	1.2	90.0	
								Pole HS-3-57	-0.012	-0.006	1.9	89.9	
Pole HS-3-57	4.160	98.699	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-56	0.012	0.006	1.9	89.9	
								Pole HS-3-58	-0.016	-0.008	2.5	89.9	
Pole HS-3-58	4.160	98.708	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-53	-0.020	-0.010	3.1	90.0	
								Pole HS-3-57	0.016	0.008	2.5	90.0	
Pole HS-3-59	4.160	98.669	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.047	-0.023	7.4	89.9	
								Pole HS-3-60	0.036	0.017	5.6	89.9	
								SEC_HS-3-55	0.012	0.006	1.9	89.9	
Pole HS-3-60	4.160	98.654	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-59	-0.036	-0.017	5.6	89.9	
								Pole HS-3-61	0.032	0.015	4.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-61	4.160	98.643	-2.2	0.000	0.000	0.000	0.000	Pole HS-3-60	-0.032	-0.015	4.9	89.9	
								Pole HS-3-62	0.020	0.010	3.1	89.9	
								SEC_HS-3-57	0.012	0.006	1.9	89.9	
Pole HS-3-62	4.160	98.636	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-61	-0.020	-0.010	3.1	89.9	
								Pole HS-3-63	0.016	0.008	2.5	89.9	
Pole HS-3-63	4.160	98.630	-2.2	0.000	0.000	0.000	0.000	Pole HS-3-62	-0.016	-0.008	2.5	89.9	
								Pole HS-3-64	0.004	0.002	0.6	90.0	
								SEC_HS-3-59	0.012	0.006	1.9	89.9	
Pole HS-3-64	4.160	98.629	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-63	-0.004	-0.002	0.6	89.9	
Pole HS-3-65	4.160	98.670	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-66	-0.004	-0.002	0.6	89.9	
Pole HS-3-66	4.160	98.672	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-65	0.004	0.002	0.6	89.9	
								Pole HS-3-67	-0.008	-0.004	1.2	89.9	
Pole HS-3-67	4.160	98.676	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-66	0.008	0.004	1.2	90.0	
								Pole HS-3-68	-0.012	-0.006	1.9	89.9	
Pole HS-3-68	4.160	98.680	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-67	0.012	0.006	1.9	90.0	
								Pole HS-3-69	-0.016	-0.008	2.5	89.9	
Pole HS-3-69	4.160	98.684	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-68	0.016	0.008	2.5	89.9	
								Pole HS-3-70	-0.020	-0.010	3.1	89.9	
Pole HS-3-70	4.160	98.696	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-69	0.020	0.010	3.1	90.0	
								Pole HS-3-71	-0.024	-0.012	3.7	89.9	
Pole HS-3-71	4.160	98.711	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-70	0.024	0.012	3.7	90.0	
								Pole MS-1-81	-0.028	-0.013	4.3	89.9	
Pole HS-3-74	4.160	98.684	-2.3	0.000	0.000	0.008	0.004	Pole HS-3-75	-0.008	-0.004	1.2	89.9	
Pole HS-3-75	4.160	98.686	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-74	0.008	0.004	1.2	89.9	
								Pole HS-3-76	-0.012	-0.006	1.9	89.9	
Pole HS-3-76	4.160	98.691	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-75	0.012	0.006	1.9	89.9	
								Pole HS-3-77	-0.016	-0.008	2.5	89.9	
Pole HS-3-77	4.160	98.696	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-76	0.016	0.008	2.5	89.9	
								Pole HS-3-78	-0.020	-0.010	3.1	89.9	
Pole HS-3-78	4.160	98.703	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-77	0.020	0.010	3.1	89.9	
								Pole HS-3-79	-0.024	-0.012	3.7	89.9	
Pole HS-3-79	4.160	98.724	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-78	0.024	0.012	3.7	89.9	
								Pole MS-1-81	-0.028	-0.013	4.3	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-80	4.160	98.730	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-81	0.012	0.006	1.9	90.0	
								Pole HS-3-85	-0.016	-0.008	2.5	90.0	
Pole HS-3-81	4.160	98.720	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-82	0.008	0.004	1.2	90.0	
								Pole HS-3-80	-0.012	-0.006	1.9	89.9	
Pole HS-3-82	4.160	98.714	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-83	0.004	0.002	0.6	89.9	
								Pole HS-3-81	-0.008	-0.004	1.2	89.9	
Pole HS-3-83	4.160	98.713	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-82	-0.004	-0.002	0.6	89.9	
Pole HS-3-85	4.160	98.740	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-80	0.016	0.008	2.5	90.0	
								Pole MS-1-81	0.055	0.027	8.7	90.0	
								Pole HS-3-30	-0.071	-0.035	11.1	90.0	
Pole HS-3-86	4.160	98.920	-2.5	0.000	0.000	0.004	0.002	Pole CS-1-3	-0.004	-0.002	0.6	89.9	
Pole HS-3-88	4.160	98.650	-2.6	0.000	0.000	0.004	0.002	Pole CS-1-6	-0.012	-0.006	1.9	89.9	
								Pole HS-3-89	0.008	0.004	1.2	89.9	
Pole HS-3-89	4.160	98.649	-2.6	0.000	0.000	0.004	0.002	Pole HS-3-88	-0.008	-0.004	1.2	89.9	
								Pole HS-3-90	0.004	0.002	0.6	89.9	
Pole HS-3-90	4.160	98.648	-2.6	0.000	0.000	0.004	0.002	Pole HS-3-89	-0.004	-0.002	0.6	89.9	
Pole HS-4-1	4.160	99.928	-2.3	0.000	0.000	0.004	0.002	BUS_HSC_4kV	-0.441	-0.215	68.2	89.9	
								Pole HS-4-2	0.437	0.213	67.5	89.9	
Pole HS-4-2	4.160	99.874	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-12	0.263	0.128	40.6	89.8	
								Pole HS-4-1	-0.437	-0.213	67.5	89.9	
								Pole HS-4-3	0.174	0.085	26.9	89.9	
Pole HS-4-3	4.160	99.793	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-44	0.059	0.029	9.2	89.9	
								Pole HS-4-53	0.038	0.019	5.9	90.0	
								Pole HS-4-2	-0.174	-0.085	26.9	90.0	
								Pole HS-4-4	0.076	0.037	11.8	90.0	
Pole HS-4-4	4.160	99.774	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-58	0.025	0.012	3.9	90.0	
								Pole HS-4-3	-0.076	-0.037	11.8	90.0	
								Pole HS-4-5	0.051	0.025	7.9	89.9	
Pole HS-4-5	4.160	99.758	-2.4	0.000	0.000	0.008	0.004	Pole HS-4-55	0.008	0.004	1.3	90.0	
								Pole HS-4-4	-0.051	-0.025	7.9	89.9	
								Pole HS-4-6	0.034	0.016	5.3	89.9	
Pole HS-4-6	4.160	99.747	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-56	0.008	0.004	1.3	89.9	
								Pole HS-4-5	-0.034	-0.016	5.3	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-7	0.021	0.010	3.3	90.0	
Pole HS-4-7	4.160	99.740	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-6	-0.021	-0.010	3.3	89.9	
								Pole HS-4-8	0.021	0.010	3.3	89.9	
Pole HS-4-8	4.160	99.733	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-7	-0.021	-0.010	3.3	89.9	
								Pole HS-4-9	0.017	0.008	2.6	89.9	
Pole HS-4-9	4.160	99.730	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-8	-0.017	-0.008	2.6	89.9	
								Pole HS-4-10	0.013	0.006	2.0	89.9	
Pole HS-4-10	4.160	99.729	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-9	-0.013	-0.006	2.0	89.9	
								Pole HS-4-11	0.000	0.000	0.0	0.0	
								SEC_HS-4-7	0.013	0.006	2.0	89.9	
Pole HS-4-11	4.160	99.729	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-10	0.000	0.000	0.0	0.0	
Pole HS-4-12	4.160	99.791	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-2	-0.262	-0.128	40.6	89.8	
								Pole HS-4-13	0.258	0.126	40.0	89.8	
Pole HS-4-13	4.160	99.741	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-12	-0.258	-0.126	40.0	89.8	
								Pole HS-4-14	0.254	0.124	39.3	89.8	
Pole HS-4-14	4.160	99.672	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-13	-0.254	-0.124	39.3	89.8	
								Pole HS-4-15	0.249	0.122	38.7	89.8	
Pole HS-4-15	4.160	99.601	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-14	-0.249	-0.122	38.7	89.8	
								Pole HS-4-19	0.245	0.120	38.0	89.8	
Pole HS-4-16	4.160	98.789	-2.3	0.000	0.000	0.000	0.000	PRI_PM_15	0.159	0.078	24.9	89.8	
								Pole HS-4-33	-0.159	-0.078	24.9	89.8	
Pole HS-4-17	4.160	99.496	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-19	-0.241	-0.118	37.3	89.8	
								Pole HS-4-18	0.228	0.111	35.4	89.8	
								SEC_HS-4-13	0.013	0.006	2.0	89.9	
Pole HS-4-18	4.160	99.453	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-17	-0.228	-0.111	35.4	89.8	
								Pole HS-4-20	0.224	0.109	34.7	89.8	
Pole HS-4-19	4.160	99.564	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-15	-0.245	-0.120	38.0	89.8	
								Pole HS-4-17	0.241	0.118	37.3	89.8	
Pole HS-4-20	4.160	99.400	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-18	-0.223	-0.109	34.7	89.8	
								Pole HS-4-21	0.219	0.107	34.1	89.8	
Pole HS-4-21	4.160	99.350	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-20	-0.219	-0.107	34.1	89.8	
								Pole HS-4-22	0.215	0.105	33.4	89.8	
Pole HS-4-22	4.160	99.262	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-21	-0.215	-0.105	33.4	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-23	0.210	0.103	32.8	89.8	
Pole HS-4-23	4.160	99.208	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-22	-0.210	-0.103	32.8	89.8	
								Pole HS-4-24	0.206	0.101	32.1	89.8	
Pole HS-4-24	4.160	99.169	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-23	-0.206	-0.101	32.1	89.8	
								Pole HS-4-26	0.013	0.006	2.0	89.9	
								Pole HS-4-27	0.193	0.095	30.1	89.8	
Pole HS-4-26	4.160	99.165	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-24	-0.013	-0.006	2.0	89.9	
								SEC_HS-4-21	0.013	0.006	2.0	89.9	
Pole HS-4-27	4.160	99.128	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-24	-0.193	-0.095	30.1	89.8	
								Pole HS-4-28	0.189	0.093	29.5	89.8	
Pole HS-4-28	4.160	99.086	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-27	-0.189	-0.093	29.5	89.8	
								Pole HS-4-29	0.185	0.091	28.8	89.8	
Pole HS-4-29	4.160	98.963	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-28	-0.185	-0.091	28.8	89.8	
								Pole HS-4-31	0.180	0.088	28.2	89.8	
Pole HS-4-30	4.160	98.854	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-31	-0.180	-0.088	28.2	89.8	
								Pole HS-4-32	0.176	0.086	27.5	89.8	
Pole HS-4-31	4.160	98.922	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-29	-0.180	-0.088	28.2	89.8	
								Pole HS-4-30	0.180	0.088	28.2	89.8	
Pole HS-4-32	4.160	98.823	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-30	-0.176	-0.086	27.5	89.8	
								Pole HS-4-33	0.172	0.084	26.9	89.8	
Pole HS-4-33	4.160	98.806	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-32	-0.172	-0.084	26.9	89.8	
								Pole HS-4-16	0.159	0.078	24.9	89.8	
								Pole HS-4-64	0.013	0.006	2.0	90.0	
								L-SUB-FDR-EQ#20-1-96~	0.000	0.000	0.0	0.0	
Pole HS-4-34	4.160	99.720	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-35	-0.008	-0.004	1.3	89.9	
								Pole HS-4-45	0.004	0.002	0.7	90.0	
Pole HS-4-35	4.160	99.723	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-36	-0.013	-0.006	2.0	89.9	
								Pole HS-4-34	0.008	0.004	1.3	90.0	
Pole HS-4-36	4.160	99.732	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-37	-0.017	-0.008	2.6	90.0	
								Pole HS-4-35	0.013	0.006	2.0	90.0	
Pole HS-4-37	4.160	99.740	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-38	-0.021	-0.010	3.3	90.0	
								Pole HS-4-36	0.017	0.008	2.6	90.0	
Pole HS-4-38	4.160	99.744	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-39	-0.025	-0.012	3.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-37	0.021	0.010	3.3	90.0	
Pole HS-4-39	4.160	99.746	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-40	-0.038	-0.019	5.9	89.9	
								Pole HS-4-38	0.025	0.012	3.9	90.0	
								SEC_HS-4-32	0.013	0.006	2.0	89.9	
Pole HS-4-40	4.160	99.752	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-41	-0.042	-0.021	6.6	89.9	
								Pole HS-4-39	0.038	0.019	5.9	89.9	
Pole HS-4-41	4.160	99.762	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-42	-0.047	-0.023	7.2	89.9	
								Pole HS-4-40	0.042	0.021	6.6	89.9	
Pole HS-4-42	4.160	99.774	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-43	-0.051	-0.025	7.9	89.9	
								Pole HS-4-41	0.047	0.023	7.2	89.9	
Pole HS-4-43	4.160	99.780	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-44	-0.055	-0.027	8.5	89.9	
								Pole HS-4-42	0.051	0.025	7.9	89.9	
Pole HS-4-44	4.160	99.786	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-3	-0.059	-0.029	9.2	89.9	
								Pole HS-4-43	0.055	0.027	8.5	89.9	
Pole HS-4-45	4.160	99.718	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-34	-0.004	-0.002	0.7	89.9	
Pole HS-4-47	4.160	99.746	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-48	-0.004	-0.002	0.7	90.0	
								HS-4-33~	0.000	0.000	0.0	0.0	
Pole HS-4-48	4.160	99.748	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-47	0.004	0.002	0.7	90.1	
								Pole HS-4-49	-0.017	-0.008	2.6	90.0	
								SEC_HS-4-44	0.013	0.006	2.0	89.9	
Pole HS-4-49	4.160	99.752	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-48	0.017	0.008	2.6	90.0	
								Pole HS-4-50	-0.021	-0.010	3.3	90.0	
Pole HS-4-50	4.160	99.756	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-49	0.021	0.010	3.3	90.0	
								Pole HS-4-51	-0.025	-0.012	3.9	90.0	
Pole HS-4-51	4.160	99.768	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-50	0.025	0.012	3.9	90.0	
								Pole HS-4-52	-0.030	-0.014	4.6	90.0	
Pole HS-4-52	4.160	99.775	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-51	0.030	0.014	4.6	90.0	
								Pole HS-4-53	-0.034	-0.016	5.3	90.0	
Pole HS-4-53	4.160	99.784	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-52	0.034	0.016	5.3	90.0	
								Pole HS-4-3	-0.038	-0.019	5.9	90.0	
Pole HS-4-54	4.160	99.753	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-55	-0.004	-0.002	0.7	89.9	
Pole HS-4-55	4.160	99.754	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-54	0.004	0.002	0.7	89.9	
								Pole HS-4-5	-0.008	-0.004	1.3	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-4-56	4.160	99.745	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-6	-0.008	-0.004	1.3	89.9	
								Pole HS-4-57	0.004	0.002	0.7	89.9	
Pole HS-4-57	4.160	99.744	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-56	-0.004	-0.002	0.7	89.9	
Pole HS-4-58	4.160	99.752	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-4	-0.025	-0.012	3.9	90.0	
								Pole HS-4-59	0.021	0.010	3.3	90.0	
Pole HS-4-59	4.160	99.743	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-58	-0.021	-0.010	3.3	90.0	
								Pole HS-4-60	0.004	0.002	0.7	89.9	
								Pole HS-4-61	0.013	0.006	2.0	90.0	
Pole HS-4-60	4.160	99.742	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-59	-0.004	-0.002	0.7	89.9	
Pole HS-4-61	4.160	99.736	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-59	-0.013	-0.006	2.0	89.9	
								Pole HS-4-62	0.008	0.004	1.3	90.0	
Pole HS-4-62	4.160	99.731	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-61	-0.008	-0.004	1.3	89.9	
								Pole HS-4-63	0.004	0.002	0.7	89.9	
Pole HS-4-63	4.160	99.730	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-62	-0.004	-0.002	0.7	89.9	
Pole HS-4-64	4.160	98.803	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-65	0.004	0.002	0.7	89.9	
								Pole HS-4-33	-0.013	-0.006	2.0	90.0	
								Pole HS-4-66	0.008	0.004	1.3	90.0	
Pole HS-4-65	4.160	98.802	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-64	-0.004	-0.002	0.7	89.9	
Pole HS-4-66	4.160	98.802	-2.3	0.000	0.000	0.008	0.004	Pole HS-4-64	-0.008	-0.004	1.3	90.0	
								Pole HS-4-67	0.000	0.000	0.0	0.0	
Pole HS-4-67	4.160	98.802	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-66	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#20-1-90~	0.000	0.000	0.0	0.0	
Pole MS-1-1	4.160	100.166	-2.0	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.114	-0.056	17.6	90.0	
								Pole MS-1-2	0.083	0.040	12.8	90.0	
								Pole MS-1-76	0.031	0.015	4.8	90.0	
								L-SUB-FDR-EQ#12-9~	0.000	0.000	0.0	0.0	
Pole MS-1-2	4.160	100.148	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-1	-0.083	-0.040	12.8	90.0	
								Pole MS-1-3	0.080	0.039	12.4	90.0	
Pole MS-1-3	4.160	100.134	-2.0	0.000	0.000	0.000	0.000	Pole MS-1-2	-0.080	-0.039	12.4	90.0	
								Pole MS-1-17	0.059	0.029	9.2	90.0	
								Pole MS-1-5	0.021	0.010	3.2	90.0	
Pole MS-1-5	4.160	100.127	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-3	-0.021	-0.010	3.2	90.0	
								Pole MS-1-7	0.018	0.009	2.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-7	4.160	100.122	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-5	-0.018	-0.009	2.8	90.0	
								Pole MS-1-9	0.016	0.008	2.4	90.0	
Pole MS-1-8	4.160	100.114	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-9	-0.013	-0.006	2.0	90.0	
								Pole MS-1-10	0.010	0.005	1.6	90.0	
Pole MS-1-9	4.160	100.118	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-8	0.013	0.006	2.0	90.0	
								Pole MS-1-7	-0.016	-0.008	2.4	90.0	
Pole MS-1-10	4.160	100.111	-2.0	0.000	0.000	0.000	0.000	Pole MS-1-8	-0.010	-0.005	1.6	90.0	
								Pole MS-1-11	0.008	0.004	1.2	90.0	
								SEC_MS-1-17	0.002	0.001	0.3	90.0	
Pole MS-1-11	4.160	100.109	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-10	-0.008	-0.004	1.2	90.0	
								Pole MS-1-13	0.005	0.003	0.8	90.0	
Pole MS-1-13	4.160	100.108	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-11	-0.005	-0.003	0.8	90.0	
								Pole MS-1-15	0.003	0.001	0.4	90.0	
Pole MS-1-15	4.160	100.106	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-13	-0.003	-0.001	0.4	90.0	
Pole MS-1-17	4.160	100.122	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-3	-0.059	-0.029	9.2	90.0	
								Pole MS-1-19	0.057	0.027	8.7	90.0	
Pole MS-1-18	4.160	100.106	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-19	-0.057	-0.027	8.7	90.0	
								Pole MS-1-28	0.054	0.026	8.3	90.0	
Pole MS-1-19	4.160	100.112	-2.0	0.000	0.000	0.000	0.000	Pole MS-1-18	0.057	0.027	8.7	90.0	
								Pole MS-1-17	-0.057	-0.027	8.7	90.0	
								L-SUB-FDR-EQ#16-12~	0.000	0.000	0.0	0.0	
Pole MS-1-28	4.160	100.091	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-18	-0.054	-0.026	8.3	90.0	
								Pole MS-1-50	0.030	0.014	4.6	90.0	
								Pole MS-1-30	0.022	0.010	3.3	90.0	
Pole MS-1-30	4.160	100.084	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-28	-0.022	-0.010	3.3	90.0	
								Pole MS-1-32	0.019	0.009	2.9	90.0	
Pole MS-1-32	4.160	100.079	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-30	-0.019	-0.009	2.9	90.0	
								Pole MS-1-34	0.016	0.008	2.5	90.0	
Pole MS-1-34	4.160	100.073	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-32	-0.016	-0.008	2.5	90.0	
								Pole MS-1-36	0.013	0.007	2.1	90.0	
Pole MS-1-36	4.160	100.067	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-34	-0.013	-0.007	2.1	90.0	
								Pole MS-1-38	0.011	0.005	1.7	90.0	
Pole MS-1-38	4.160	100.063	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-36	-0.011	-0.005	1.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-1-40	0.008	0.004	1.2	90.0	
Pole MS-1-40	4.160	100.060	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-38	-0.008	-0.004	1.2	90.0	
								Pole MS-1-42	0.005	0.003	0.8	90.0	
Pole MS-1-42	4.160	100.058	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-40	-0.005	-0.003	0.8	90.0	
								Pole MS-1-46	0.003	0.001	0.4	90.0	
Pole MS-1-46	4.160	100.057	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-42	-0.003	-0.001	0.4	90.0	
Pole MS-1-50	4.160	100.080	-2.0	0.000	0.000	0.000	0.000	Pole MS-1-28	-0.030	-0.014	4.6	90.0	
								Pole MS-1-70	0.008	0.004	1.2	90.0	
								Pole MS-1-52	0.022	0.010	3.3	90.0	
Pole MS-1-52	4.160	100.072	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-50	-0.022	-0.010	3.3	90.0	
								Pole MS-1-54	0.019	0.009	2.9	90.0	
Pole MS-1-54	4.160	100.067	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-52	-0.019	-0.009	2.9	90.0	
								Pole MS-1-56	0.016	0.008	2.5	90.0	
Pole MS-1-56	4.160	100.062	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-54	-0.016	-0.008	2.5	90.0	
								Pole MS-1-58	0.013	0.007	2.1	90.0	
Pole MS-1-58	4.160	100.057	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-56	-0.013	-0.007	2.1	90.0	
								Pole MS-1-60	0.011	0.005	1.7	90.0	
Pole MS-1-60	4.160	100.055	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-58	-0.011	-0.005	1.7	90.0	
								Pole MS-1-62	0.008	0.004	1.2	90.0	
Pole MS-1-62	4.160	100.052	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-60	-0.008	-0.004	1.2	90.0	
								Pole MS-1-64	0.005	0.003	0.8	90.0	
Pole MS-1-64	4.160	100.051	-2.0	0.000	0.000	0.000	0.000	Pole MS-1-62	-0.005	-0.003	0.8	90.0	
								Pole MS-1-66	0.003	0.001	0.4	90.0	
								Pole MS-1-68	0.003	0.001	0.4	90.0	
Pole MS-1-66	4.160	100.051	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-64	-0.003	-0.001	0.4	90.0	
Pole MS-1-68	4.160	100.050	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-64	-0.003	-0.001	0.4	90.0	
Pole MS-1-70	4.160	100.079	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-50	-0.008	-0.004	1.2	90.0	
								Pole MS-1-72	0.005	0.003	0.8	90.0	
Pole MS-1-72	4.160	100.078	-2.0	0.000	0.000	0.005	0.003	Pole MS-1-70	-0.005	-0.003	0.8	90.0	
Pole MS-1-73	4.160	100.126	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-74	-0.019	-0.009	2.9	90.0	
								Pole MS-1-79	0.016	0.008	2.5	90.0	
Pole MS-1-74	4.160	100.131	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-73	0.019	0.009	2.9	90.0	
								Pole MS-1-75	-0.022	-0.010	3.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-75	4.160	100.149	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-74	0.022	0.010	3.3	90.0	
								Pole MS-1-76	-0.024	-0.012	3.7	90.0	
Pole MS-1-76	4.160	100.156	-2.0	0.000	0.000	0.007	0.003	Pole MS-1-75	0.024	0.012	3.7	90.0	
								Pole MS-1-1	-0.031	-0.015	4.8	90.0	
Pole MS-1-79	4.160	100.119	-2.0	0.000	0.000	0.000	0.000	Pole MS-1-73	-0.016	-0.008	2.5	90.0	
								Pole MS-1-80	0.005	0.003	0.8	90.0	
								Pole MS-1-84	0.011	0.005	1.7	90.0	
Pole MS-1-80	4.160	100.117	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-79	-0.005	-0.003	0.8	90.0	
								Pole MS-1-82	0.003	0.001	0.4	90.0	
Pole MS-1-81	4.160	98.729	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-71	0.028	0.013	4.3	90.0	
								Pole HS-3-79	0.028	0.013	4.3	89.9	
								Pole HS-3-85	-0.055	-0.027	8.7	90.0	
Pole MS-1-82	4.160	100.116	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-80	-0.003	-0.001	0.4	90.0	
Pole MS-1-84	4.160	100.115	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-79	-0.011	-0.005	1.7	90.0	
								Pole MS-1-86	0.008	0.004	1.2	90.0	
Pole MS-1-86	4.160	100.111	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-84	-0.008	-0.004	1.2	90.0	
								Pole MS-1-87	0.005	0.003	0.8	90.0	
Pole MS-1-87	4.160	100.107	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-86	-0.005	-0.003	0.8	90.0	
								Pole MS-1-88	0.003	0.001	0.4	90.0	
Pole MS-1-88	4.160	100.106	-2.0	0.000	0.000	0.003	0.001	Pole MS-1-87	-0.003	-0.001	0.4	90.0	
Pole MS-2-1	4.160	99.671	-1.9	0.000	0.000	0.000	0.000	Pole MS-2-180	-0.019	-0.009	2.9	90.0	
								Pole MS-2-2	0.013	0.006	2.0	90.0	
								SEC_MS-2-8	0.006	0.003	1.0	90.0	
Pole MS-2-2	4.160	99.666	-1.9	0.000	0.000	0.000	0.000	Pole MS-2-1	-0.013	-0.006	2.0	90.0	
								Pole MS-2-3	0.006	0.003	1.0	90.1	
								SEC_MS-2-37	0.006	0.003	1.0	90.0	
Pole MS-2-3	4.160	99.660	-1.9	0.000	0.000	0.000	0.000	Pole MS-2-2	-0.006	-0.003	1.0	90.0	
								L-SUB-FDR-EQ#16-173~	0.000	0.000	0.0	0.0	
								SEC_MS-2-38	0.006	0.003	1.0	90.0	
Pole MS-2-4	4.160	99.697	-1.9	0.000	0.000	0.000	0.000	PRI_PM_8	0.074	0.036	11.4	89.8	
								Pole MS-2-180	0.019	0.009	2.9	90.0	
								Pole MS-2-182	-0.093	-0.045	14.4	89.8	
Pole MS-2-90	4.160	99.765	-1.9	0.000	0.000	0.003	0.001	Pole MS-2-182	-0.087	-0.042	13.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-2-91	0.078	0.038	12.1	90.0	
								SEC_MS-2-36	0.006	0.003	1.0	90.0	
Pole MS-2-91	4.160	99.691	-1.9	0.000	0.000	0.003	0.001	Pole MS-2-90	-0.078	-0.038	12.1	90.0	
								Pole MS-2-92	0.075	0.036	11.6	90.0	
Pole MS-2-92	4.160	99.671	-1.9	0.000	0.000	0.000	0.000	Pole MS-2-91	-0.075	-0.036	11.6	90.0	
								Pole MS-2-93	0.069	0.033	10.7	90.0	
								SEC_MS-2-39	0.006	0.003	1.0	90.0	
Pole MS-2-93	4.160	99.651	-1.9	0.000	0.000	0.003	0.001	Pole MS-2-92	-0.069	-0.033	10.7	90.0	
								Pole MS-2-94	0.066	0.032	10.2	90.0	
Pole MS-2-94	4.160	99.636	-1.9	0.000	0.000	0.000	0.000	Pole MS-2-93	-0.066	-0.032	10.2	90.0	
								Pole MS-2-95	0.060	0.029	9.3	90.0	
								SEC_MS-2-40	0.006	0.003	1.0	90.0	
Pole MS-2-95	4.160	99.592	-1.9	0.000	0.000	0.003	0.001	Pole MS-2-94	-0.060	-0.029	9.3	90.0	
								Pole MS-2-96	0.057	0.028	8.9	90.0	
Pole MS-2-96	4.160	99.560	-1.9	0.000	0.000	0.003	0.001	Pole MS-2-95	-0.057	-0.028	8.9	90.0	
								Pole MS-2-98	0.054	0.026	8.4	90.0	
Pole MS-2-98	4.160	99.548	-1.9	0.000	0.000	0.003	0.001	Pole MS-2-96	-0.054	-0.026	8.4	90.0	
								Pole MS-2-100	0.052	0.025	8.0	90.0	
Pole MS-2-100	4.160	99.541	-1.8	0.000	0.000	0.000	0.000	Pole MS-2-98	-0.052	-0.025	8.0	90.0	
								Pole MS-2-102	0.045	0.022	7.0	90.0	
								SEC_MS-2-41	0.006	0.003	1.0	90.0	
Pole MS-2-102	4.160	99.534	-1.8	0.000	0.000	0.000	0.000	Pole MS-2-100	-0.045	-0.022	7.0	90.0	
								Pole MS-2-103	0.045	0.022	7.0	90.0	
Pole MS-2-103	4.160	99.525	-1.8	0.000	0.000	0.003	0.001	Pole MS-2-102	-0.045	-0.022	7.0	90.0	
								Pole MS-2-107	0.043	0.021	6.6	90.0	
Pole MS-2-107	4.160	99.503	-1.8	0.000	0.000	0.003	0.001	Pole MS-2-103	-0.043	-0.021	6.6	90.0	
								Pole MS-2-108	0.040	0.019	6.2	90.0	
Pole MS-2-108	4.160	99.494	-1.8	0.000	0.000	0.003	0.001	Pole MS-2-107	-0.040	-0.019	6.2	90.0	
								Pole MS-2-109	0.037	0.018	5.8	90.0	
Pole MS-2-109	4.160	99.484	-1.8	0.000	0.000	0.003	0.001	Pole MS-2-108	-0.037	-0.018	5.8	90.0	
								Pole MS-2-110	0.035	0.017	5.4	90.0	
Pole MS-2-110	4.160	99.475	-1.8	0.000	0.000	0.003	0.001	Pole MS-2-109	-0.035	-0.017	5.4	90.0	
								Pole MS-2-111	0.032	0.016	5.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-2-111	4.160	99.464	-1.8	0.000	0.000	0.003	0.001	Pole MS-2-110	-0.032	-0.016	5.0	90.0	
								Pole MS-2-112	0.029	0.014	4.6	90.0	
Pole MS-2-112	4.160	99.458	-1.8	0.000	0.000	0.003	0.001	Pole MS-2-111	-0.029	-0.014	4.6	90.0	
								Pole MS-2-113	0.027	0.013	4.1	90.0	
Pole MS-2-113	4.160	99.452	-1.8	0.000	0.000	0.003	0.001	Pole MS-2-112	-0.027	-0.013	4.1	90.0	
								Pole MS-2-115	0.024	0.012	3.7	90.0	
Pole MS-2-115	4.160	99.446	-1.8	0.000	0.000	0.003	0.001	Pole MS-2-113	-0.024	-0.012	3.7	90.0	
								Pole MS-2-116	0.021	0.010	3.3	90.0	
Pole MS-2-116	4.160	99.437	-1.8	0.000	0.000	0.003	0.001	Pole MS-2-115	-0.021	-0.010	3.3	90.0	
								Pole MS-2-117	0.019	0.009	2.9	90.0	
Pole MS-2-117	4.160	99.426	-1.8	0.000	0.000	0.003	0.001	Pole MS-2-116	-0.019	-0.009	2.9	90.0	
								Pole MS-2-118	0.016	0.008	2.5	90.0	
Pole MS-2-118	4.160	99.416	-1.8	0.000	0.000	0.003	0.001	Pole MS-2-117	-0.016	-0.008	2.5	90.0	
								Pole MS-2-120	0.013	0.006	2.1	90.0	
Pole MS-2-120	4.160	99.412	-1.8	0.000	0.000	0.003	0.001	Pole MS-2-118	-0.013	-0.006	2.1	90.0	
								Pole MS-2-121	0.011	0.005	1.7	90.0	
Pole MS-2-121	4.160	99.405	-1.8	0.000	0.000	0.005	0.003	Pole MS-2-120	-0.011	-0.005	1.7	90.0	
								Pole MS-2-122	0.005	0.003	0.8	90.0	
Pole MS-2-122	4.160	99.403	-1.8	0.000	0.000	0.005	0.003	Pole MS-2-121	-0.005	-0.003	0.8	90.0	
								L-SUB-FDR-EQ#16-97~	0.000	0.000	0.0	0.0	
Pole MS-2-180	4.160	99.678	-1.9	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.019	-0.009	2.9	90.0	
								Pole MS-2-1	0.019	0.009	2.9	90.0	
								L-SUB-FDR-EQ#12-13~	0.000	0.000	0.0	0.0	
Pole MS-2-182	4.160	99.789	-1.9	0.000	0.000	0.000	0.000	Pole MS-2-4	0.093	0.045	14.4	89.8	
								BUS_5KV_LLP_2	-0.180	-0.088	27.8	89.9	
								Pole MS-2-90	0.087	0.042	13.5	90.0	
Pole MS-3-1	4.160	99.822	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-2	0.006	0.003	1.0	90.0	
								Pole MS-3-88	-0.122	-0.059	18.8	90.0	
								Pole MS-3-3	0.116	0.056	17.9	90.0	
Pole MS-3-2	4.160	99.822	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-1	-0.006	-0.003	1.0	90.0	
								SEC_MS-3-1	0.006	0.003	1.0	90.0	
Pole MS-3-3	4.160	99.757	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-4	0.116	0.056	17.9	90.0	
								Pole MS-3-1	-0.116	-0.056	17.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-4	4.160	99.744	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-3	-0.116	-0.056	17.9	90.0	
								Pole MS-3-5	0.113	0.055	17.4	90.0	
Pole MS-3-5	4.160	99.732	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-4	-0.113	-0.055	17.4	90.0	
								Pole MS-3-6	0.110	0.053	17.0	90.0	
Pole MS-3-6	4.160	99.717	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-5	-0.110	-0.053	17.0	90.0	
								Pole MS-3-7	0.104	0.050	16.0	90.0	
								SEC_MS-3-2	0.006	0.003	1.0	90.0	
Pole MS-3-7	4.160	99.676	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-6	-0.104	-0.050	16.0	90.0	
								Pole MS-3-8	0.101	0.049	15.6	90.0	
Pole MS-3-8	4.160	99.658	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-7	-0.101	-0.049	15.6	90.0	
								Pole MS-3-9	0.095	0.046	14.7	90.0	
								SEC_MS-3-3	0.006	0.003	1.0	90.0	
Pole MS-3-9	4.160	99.642	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-8	-0.095	-0.046	14.7	90.0	
								Pole MS-3-10	0.092	0.045	14.2	90.0	
Pole MS-3-10	4.160	99.610	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-9	-0.092	-0.045	14.2	90.0	
								Pole MS-3-11	0.089	0.043	13.8	90.0	
Pole MS-3-11	4.160	99.599	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-10	-0.089	-0.043	13.8	90.0	
								Pole MS-3-12	0.087	0.042	13.4	90.0	
Pole MS-3-12	4.160	99.589	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-11	-0.087	-0.042	13.4	90.0	
								Pole MS-3-13	0.084	0.041	13.0	90.0	
Pole MS-3-13	4.160	99.551	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-12	-0.084	-0.041	13.0	90.0	
								Pole MS-3-14	0.081	0.039	12.6	90.0	
Pole MS-3-14	4.160	99.536	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-13	-0.081	-0.039	12.6	90.0	
								Pole MS-3-15	0.079	0.038	12.2	90.0	
Pole MS-3-15	4.160	99.503	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-14	-0.078	-0.038	12.2	90.0	
								Pole MS-3-16	0.076	0.037	11.7	90.0	
Pole MS-3-16	4.160	99.494	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-15	-0.076	-0.037	11.7	90.0	
								Pole MS-3-17	0.073	0.035	11.3	90.0	
Pole MS-3-17	4.160	99.478	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-16	-0.073	-0.035	11.3	90.0	
								Pole MS-3-18	0.070	0.034	10.9	90.0	
Pole MS-3-18	4.160	99.466	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-17	-0.070	-0.034	10.9	90.0	
								Pole MS-3-19	0.025	0.012	3.9	90.0	
								Pole MS-3-26	0.045	0.022	7.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-19	4.160	99.460	-1.8	0.000	0.000	0.005	0.003	Pole MS-3-18	-0.025	-0.012	3.9	90.0	
								Pole MS-3-20	0.020	0.010	3.1	90.0	
Pole MS-3-20	4.160	99.456	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-19	-0.020	-0.010	3.1	90.0	
								Pole MS-3-21	0.017	0.008	2.6	90.0	
Pole MS-3-21	4.160	99.448	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-20	-0.017	-0.008	2.6	90.0	
								Pole MS-3-22	0.014	0.007	2.2	90.0	
Pole MS-3-22	4.160	99.444	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-21	-0.014	-0.007	2.2	90.0	
								Pole MS-3-23	0.012	0.006	1.8	90.0	
Pole MS-3-23	4.160	99.440	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-22	-0.012	-0.006	1.8	90.0	
								Pole MS-3-24	0.009	0.004	1.4	90.0	
Pole MS-3-24	4.160	99.437	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-23	-0.009	-0.004	1.4	90.0	
								Pole MS-3-25	0.006	0.003	1.0	90.0	
Pole MS-3-25	4.160	99.435	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-24	-0.006	-0.003	1.0	90.0	
								L-SUB-FDR-EQ#16-133~	0.000	0.000	0.0	0.0	
								SEC_MS-3-22	0.006	0.003	1.0	90.0	
Pole MS-3-26	4.160	99.448	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-27	0.011	0.005	1.7	90.0	
								Pole MS-3-18	-0.045	-0.022	7.0	90.0	
								Pole MS-3-31	0.032	0.016	5.0	90.0	
Pole MS-3-27	4.160	99.444	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-26	-0.011	-0.005	1.7	90.0	
								Pole MS-3-28	0.008	0.004	1.2	90.0	
Pole MS-3-28	4.160	99.442	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-27	-0.008	-0.004	1.2	90.0	
								Pole MS-3-29	0.005	0.003	0.8	90.0	
Pole MS-3-29	4.160	99.439	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-28	-0.005	-0.003	0.8	90.0	
								Pole MS-3-30	0.003	0.001	0.4	90.0	
Pole MS-3-30	4.160	99.438	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-29	-0.003	-0.001	0.4	90.0	
Pole MS-3-31	4.160	99.432	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-26	-0.032	-0.016	5.0	90.0	
								Pole MS-3-32	0.029	0.014	4.6	90.0	
Pole MS-3-32	4.160	99.428	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-31	-0.029	-0.014	4.6	90.0	
								Pole MS-3-33	0.027	0.013	4.1	90.0	
Pole MS-3-33	4.160	99.423	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-32	-0.027	-0.013	4.1	90.0	
								Pole MS-3-34	0.024	0.012	3.7	90.0	
Pole MS-3-34	4.160	99.418	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-36	0.019	0.009	2.9	90.0	
								Pole MS-3-33	-0.024	-0.012	3.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-35	0.003	0.001	0.4	90.0	
Pole MS-3-35	4.160	99.418	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-34	-0.003	-0.001	0.4	90.0	
Pole MS-3-36	4.160	99.410	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-34	-0.019	-0.009	2.9	90.0	
								Pole MS-3-37	0.016	0.008	2.5	90.0	
Pole MS-3-37	4.160	99.403	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-36	-0.016	-0.008	2.5	90.0	
								Pole MS-3-39	0.011	0.005	1.7	90.0	
								Pole MS-3-38	0.005	0.003	0.8	90.0	
Pole MS-3-38	4.160	99.401	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-37	-0.005	-0.003	0.8	90.0	
								Pole MS-3-43	0.003	0.001	0.4	90.1	
Pole MS-3-39	4.160	99.399	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-37	-0.011	-0.005	1.7	90.0	
								Pole MS-3-40	0.008	0.004	1.2	90.0	
Pole MS-3-40	4.160	99.398	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-39	-0.008	-0.004	1.2	90.0	
								Pole MS-3-41	0.005	0.003	0.8	90.0	
Pole MS-3-41	4.160	99.397	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-40	-0.005	-0.003	0.8	90.0	
								Pole MS-3-42	0.003	0.001	0.4	90.0	
Pole MS-3-42	4.160	99.396	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-41	-0.003	-0.001	0.4	90.0	
Pole MS-3-43	4.160	99.400	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-38	-0.003	-0.001	0.4	90.0	
								LINE MS-3-11~	0.000	0.000	0.0	0.0	
Pole MS-3-44	4.160	99.233	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-46	0.016	0.008	2.5	90.0	
								Pole MS-3-45	0.000	0.000	0.0	0.0	
								Pole MS-3-54	-0.016	-0.008	2.5	90.0	
Pole MS-3-45	4.160	99.233	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-44	0.000	0.000	0.0	0.0	
Pole MS-3-46	4.160	99.231	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-44	-0.016	-0.008	2.5	90.0	
								Pole MS-3-47	0.016	0.008	2.5	90.0	
Pole MS-3-47	4.160	99.227	-1.8	0.000	0.000	0.004	0.002	Pole MS-3-46	-0.016	-0.008	2.5	90.0	
								Pole MS-3-48	0.012	0.006	1.9	90.0	
Pole MS-3-48	4.160	99.220	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-47	-0.012	-0.006	1.9	90.0	
								Pole MS-3-51	0.005	0.003	0.8	90.0	
								Pole MS-3-50	0.007	0.003	1.1	90.0	
Pole MS-3-49	4.160	99.219	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-50	-0.003	-0.001	0.4	90.0	
Pole MS-3-50	4.160	99.219	-1.8	0.000	0.000	0.004	0.002	Pole MS-3-48	-0.007	-0.003	1.1	89.9	
								Pole MS-3-49	0.003	0.001	0.4	90.0	
Pole MS-3-51	4.160	99.218	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-48	-0.005	-0.003	0.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-53	0.003	0.001	0.4	90.0	
								Pole MS-3-52	0.003	0.001	0.4	90.0	
Pole MS-3-52	4.160	99.217	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-51	-0.003	-0.001	0.4	90.0	
Pole MS-3-53	4.160	99.218	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-51	-0.003	-0.001	0.4	89.9	
Pole MS-3-54	4.160	99.241	-1.8	0.000	0.000	0.000	0.000	PRI_PM_18	0.091	0.045	14.1	89.7	
								Pole MS-3-57	0.003	0.001	0.4	90.0	
								Pole MS-3-44	0.016	0.008	2.5	90.0	
								Pole MS-3-58	-0.110	-0.054	17.1	89.8	
Pole MS-3-55	4.160	99.652	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-90	0.068	0.033	10.6	90.0	
								Pole MS-3-71	0.244	0.119	37.8	89.8	
								Pole MS-3-79	-0.312	-0.153	48.4	89.8	
Pole MS-3-57	4.160	99.239	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-54	-0.003	-0.001	0.4	90.0	
Pole MS-3-58	4.160	99.302	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-59	0.005	0.003	0.8	90.0	
								Pole MS-3-61	-0.115	-0.056	17.9	89.8	
								Pole MS-3-54	0.110	0.054	17.1	89.8	
Pole MS-3-59	4.160	99.301	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-58	-0.005	-0.003	0.8	90.0	
								Pole MS-3-60	0.003	0.001	0.4	90.0	
Pole MS-3-60	4.160	99.299	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-59	-0.003	-0.001	0.4	90.0	
Pole MS-3-61	4.160	99.371	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-58	0.115	0.056	17.9	89.8	
								Pole MS-3-64	-0.120	-0.059	18.7	89.8	
								Pole MS-3-62	0.005	0.003	0.8	90.0	
Pole MS-3-62	4.160	99.370	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-61	-0.005	-0.003	0.8	90.0	
								Pole MS-3-63	0.003	0.001	0.4	90.0	
Pole MS-3-63	4.160	99.369	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-62	-0.003	-0.001	0.4	90.0	
Pole MS-3-64	4.160	99.403	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-61	0.121	0.059	18.7	89.8	
								Pole MS-3-70	-0.139	-0.068	21.6	89.8	
								Pole MS-3-65	0.016	0.008	2.5	90.0	
Pole MS-3-65	4.160	99.398	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-64	-0.016	-0.008	2.5	90.0	
								Pole MS-3-66	0.013	0.006	2.1	90.0	
Pole MS-3-66	4.160	99.396	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-65	-0.013	-0.006	2.1	90.0	
								Pole MS-3-67	0.005	0.003	0.8	90.0	
								Pole MS-3-69	0.005	0.003	0.8	90.0	
Pole MS-3-67	4.160	99.393	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-66	-0.005	-0.003	0.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-68	0.003	0.001	0.4	90.0	
Pole MS-3-68	4.160	99.393	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-67	-0.003	-0.001	0.4	90.0	
Pole MS-3-69	4.160	99.395	-1.8	0.000	0.000	0.005	0.003	Pole MS-3-66	-0.005	-0.003	0.8	90.0	
Pole MS-3-70	4.160	99.493	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-64	0.139	0.068	21.6	89.8	
								Pole MS-3-71	-0.139	-0.068	21.6	89.8	
								L-SUB-FDR-EQ#16-177~	0.000	0.000	0.0	0.0	
Pole MS-3-71	4.160	99.591	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-55	-0.244	-0.119	37.8	89.8	
								Pole MS-3-70	0.139	0.068	21.6	89.8	
								Pole MS-3-72	0.104	0.051	16.2	89.8	
Pole MS-3-72	4.160	99.577	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-71	-0.104	-0.051	16.2	89.8	
								Pole MS-3-73	0.102	0.050	15.8	89.8	
Pole MS-3-73	4.160	99.568	-1.8	0.000	0.000	0.000	0.000	PRI_PM_7	0.091	0.045	14.1	89.7	
								Pole MS-3-72	-0.102	-0.050	15.8	89.8	
								Pole MS-3-74	0.011	0.005	1.7	90.0	
Pole MS-3-74	4.160	99.566	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-73	-0.011	-0.005	1.7	90.0	
								Pole MS-3-75	0.008	0.004	1.2	90.0	
Pole MS-3-75	4.160	99.562	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-74	-0.008	-0.004	1.2	90.0	
								Pole MS-3-76	0.005	0.003	0.8	90.0	
Pole MS-3-76	4.160	99.559	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-75	-0.005	-0.003	0.8	90.0	
								Pole MS-3-77	0.003	0.001	0.4	90.0	
Pole MS-3-77	4.160	99.559	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-76	-0.003	-0.001	0.4	90.0	
Pole MS-3-79	4.160	99.729	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-55	0.312	0.153	48.4	89.8	
								Pole MS-3-82	0.022	0.011	3.4	90.0	
								Pole MS-3-87	-0.334	-0.163	51.8	89.9	
Pole MS-3-80	4.160	99.714	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-81	-0.017	-0.008	2.6	90.0	
								Pole MS-3-83	0.014	0.007	2.1	90.0	
Pole MS-3-81	4.160	99.720	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-80	0.017	0.008	2.6	90.0	
								Pole MS-3-82	-0.019	-0.009	3.0	90.0	
Pole MS-3-82	4.160	99.725	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-81	0.019	0.009	3.0	90.0	
								Pole MS-3-79	-0.022	-0.011	3.4	90.0	
Pole MS-3-83	4.160	99.712	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-80	-0.014	-0.007	2.1	90.0	
								Pole MS-3-84	0.011	0.005	1.7	90.0	
Pole MS-3-84	4.160	99.709	-1.8	0.000	0.000	0.003	0.001	Pole MS-3-83	-0.011	-0.005	1.7	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-85	0.008	0.004	1.3	89.9	
Pole MS-3-85	4.160	99.706	-1.8	0.000	0.000	0.004	0.002	Pole MS-3-84	-0.008	-0.004	1.3	89.9	
								Pole MS-3-86	0.004	0.002	0.7	89.9	
Pole MS-3-86	4.160	99.705	-1.8	0.000	0.000	0.004	0.002	Pole MS-3-85	-0.004	-0.002	0.7	89.9	
Pole MS-3-87	4.160	99.913	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-79	0.335	0.164	51.8	89.9	
								Pole MS-3-88	0.122	0.059	18.8	90.0	
								BUS_5KV_LLP_02	-0.457	-0.223	70.6	89.9	
Pole MS-3-88	4.160	99.846	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-87	-0.122	-0.059	18.8	90.0	
								Pole MS-3-1	0.122	0.059	18.8	90.0	
Pole MS-3-90	4.160	99.635	-1.8	0.000	0.000	0.008	0.004	Pole MS-3-55	-0.068	-0.033	10.6	90.0	
								Pole MS-3-92	0.060	0.029	9.2	90.0	
Pole MS-3-92	4.160	99.591	-1.8	0.000	0.000	0.008	0.004	Pole MS-3-95	0.051	0.025	7.9	90.0	
								Pole MS-3-90	-0.060	-0.029	9.2	90.0	
Pole MS-3-95	4.160	99.574	-1.8	0.000	0.000	0.004	0.002	Pole MS-3-96	0.004	0.002	0.7	90.0	
								Pole MS-4-36	0.043	0.021	6.6	90.0	
								Pole MS-3-92	-0.051	-0.025	7.9	90.0	
Pole MS-3-96	4.160	99.572	-1.8	0.000	0.000	0.004	0.002	Pole MS-3-95	-0.004	-0.002	0.7	89.9	
Pole MS-3-97	4.160	99.498	-1.8	0.000	0.000	0.004	0.002	Pole MS-3-98	0.028	0.014	4.4	90.0	
								Pole MS-4-36	-0.033	-0.016	5.1	90.0	
Pole MS-3-98	4.160	99.490	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-99	0.028	0.014	4.4	90.0	
								Pole MS-3-97	-0.028	-0.014	4.4	90.0	
Pole MS-3-99	4.160	99.482	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-100	0.010	0.005	1.6	90.0	
								Pole MS-3-101	0.018	0.009	2.9	90.0	
								Pole MS-3-98	-0.028	-0.014	4.4	90.0	
Pole MS-3-100	4.160	99.477	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-99	-0.010	-0.005	1.6	89.9	
								SEC_MS-3-49	0.010	0.005	1.6	89.9	
Pole MS-3-101	4.160	99.470	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-102	0.010	0.005	1.6	89.9	
								Pole MS-3-103	0.008	0.004	1.3	89.9	
								Pole MS-3-99	-0.018	-0.009	2.9	89.9	
Pole MS-3-102	4.160	99.468	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-101	-0.010	-0.005	1.6	89.9	
								SEC_MS-3-65	0.010	0.005	1.6	89.9	
Pole MS-3-103	4.160	99.467	-1.8	0.000	0.000	0.008	0.004	Pole MS-3-101	-0.008	-0.004	1.3	89.9	
Pole MS-4-1	4.160	99.967	-1.8	0.000	0.000	0.003	0.001	BUS_5KV-LLP_01	-0.144	-0.069	22.2	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-2	0.022	0.011	3.4	90.0	
								Pole MS-4-7	0.119	0.057	18.3	90.1	
Pole MS-4-2	4.160	99.961	-1.8	0.000	0.000	0.003	0.001	Pole MS-4-1	-0.022	-0.011	3.4	90.0	
								Pole MS-4-3	0.019	0.009	3.0	90.0	
Pole MS-4-3	4.160	99.960	-1.8	0.000	0.000	0.000	0.000	Pole MS-4-2	-0.019	-0.009	3.0	90.0	
								Pole MS-4-5	0.013	0.006	2.0	90.0	
								SEC_MS-3-73	0.006	0.003	1.0	90.0	
Pole MS-4-5	4.160	99.958	-1.8	0.000	0.000	0.007	0.003	Pole MS-4-3	-0.013	-0.006	2.0	90.0	
								Pole MS-4-6	0.006	0.003	1.0	90.0	
Pole MS-4-6	4.160	99.956	-1.8	0.000	0.000	0.000	0.000	Pole MS-4-5	-0.006	-0.003	1.0	90.0	
								SEC_MS-3-74	0.006	0.003	1.0	90.0	
Pole MS-4-7	4.160	99.900	-1.8	0.000	0.000	0.000	0.000	Pole MS-4-1	-0.119	-0.057	18.3	90.1	
								Pole MS-4-8	0.119	0.057	18.3	90.1	
Pole MS-4-8	4.160	99.769	-1.8	0.000	0.000	0.003	0.001	Pole MS-4-7	-0.119	-0.057	18.3	90.1	
								Pole MS-4-9	0.032	0.015	4.9	90.0	
								Pole MS-4-16	0.084	0.040	13.0	90.2	
Pole MS-4-9	4.160	99.761	-1.8	0.000	0.000	0.004	0.002	Pole MS-4-8	-0.032	-0.015	4.9	90.0	
								Pole MS-4-10	0.028	0.013	4.3	90.0	
Pole MS-4-10	4.160	99.754	-1.8	0.000	0.000	0.000	0.000	Pole MS-4-9	-0.028	-0.014	4.3	90.0	
								Pole MS-4-11	0.021	0.010	3.3	90.0	
								SEC_MS-3-75	0.006	0.003	1.0	90.0	
Pole MS-4-11	4.160	99.743	-1.8	0.000	0.000	0.008	0.004	Pole MS-4-10	-0.021	-0.010	3.3	90.0	
								Pole MS-4-12	0.013	0.007	2.1	90.0	
Pole MS-4-12	4.160	99.740	-1.8	0.000	0.000	0.003	0.001	Pole MS-4-11	-0.013	-0.007	2.1	90.0	
								Pole MS-4-13	0.011	0.005	1.7	90.0	
Pole MS-4-13	4.160	99.735	-1.8	0.000	0.000	0.004	0.002	Pole MS-4-12	-0.011	-0.005	1.7	89.9	
								Pole MS-4-14	0.007	0.003	1.0	90.0	
Pole MS-4-14	4.160	99.734	-1.8	0.000	0.000	0.004	0.002	Pole MS-4-13	-0.007	-0.003	1.0	89.9	
								Pole MS-4-15	0.003	0.001	0.4	90.0	
Pole MS-4-15	4.160	99.733	-1.8	0.000	0.000	0.003	0.001	Pole MS-4-14	-0.003	-0.001	0.4	90.0	
Pole MS-4-16	4.160	99.676	-1.8	0.000	0.000	0.004	0.002	Pole MS-4-17	0.080	0.038	12.4	90.2	
								Pole MS-4-8	-0.084	-0.040	13.0	90.2	
Pole MS-4-17	4.160	99.634	-1.8	0.000	0.000	0.000	0.000	Pole MS-4-16	-0.080	-0.038	12.4	90.2	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-18	0.070	0.033	10.8	90.2	
								SEC_MS-3-66	0.010	0.005	1.6	89.9	
Pole MS-4-18	4.160	99.592	-1.8	0.000	0.000	0.008	0.004	Pole MS-4-17	-0.070	-0.033	10.8	90.2	
								Pole MS-4-20	0.062	0.030	9.6	90.3	
Pole MS-4-20	4.160	99.568	-1.8	0.000	0.000	0.000	0.000	Pole MS-4-18	-0.062	-0.030	9.6	90.3	
								Pole MS-4-21	0.052	0.025	8.0	90.3	
								SEC_MS-3-76	0.010	0.005	1.6	89.9	
Pole MS-4-21	4.160	99.443	-1.8	0.000	0.000	0.004	0.002	Pole MS-4-20	-0.052	-0.025	8.0	90.3	
								Pole MS-4-22	0.048	0.023	7.4	90.3	
Pole MS-4-22	4.160	99.400	-1.8	0.000	0.000	0.004	0.002	Pole MS-4-21	-0.048	-0.023	7.4	90.3	
								Pole MS-4-23	0.044	0.021	6.8	90.4	
Pole MS-4-23	4.160	99.359	-1.8	0.000	0.000	0.004	0.002	Pole MS-4-22	-0.044	-0.021	6.8	90.4	
								Pole MS-4-25	0.040	0.019	6.2	90.4	
Pole MS-4-24	4.160	98.968	-1.8	0.000	0.000	0.000	0.000	Pole MS-4-25	-0.036	-0.017	5.5	90.3	
								Pole MS-4-39	0.004	0.002	0.6	90.0	
								Pole MS-4-41	0.032	0.015	4.9	90.4	
Pole MS-4-25	4.160	99.263	-1.8	0.000	0.000	0.004	0.002	Pole MS-4-23	-0.040	-0.019	6.2	90.4	
								Pole MS-4-24	0.036	0.017	5.5	90.4	
Pole MS-4-31	4.160	99.959	-1.8	0.000	0.000	0.000	0.000	Pole MS-5-1	0.374	0.184	57.8	89.7	
								BUS_5KV-LLP_01	-0.374	-0.184	57.8	89.7	
Pole MS-4-36	4.160	99.538	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-97	0.033	0.016	5.1	90.0	
								Pole MS-3-95	-0.043	-0.021	6.6	90.0	
								SEC_MS-3-45	0.010	0.005	1.6	89.9	
Pole MS-4-39	4.160	98.966	-1.8	0.000	0.000	0.004	0.002	Pole MS-4-24	-0.004	-0.002	0.6	89.9	
Pole MS-4-40	4.160	98.945	-1.8	0.000	0.000	0.004	0.002	Pole MS-4-41	-0.012	-0.006	1.9	90.0	
								Pole MS-4-42	0.008	0.004	1.2	90.1	
Pole MS-4-41	4.160	98.952	-1.8	0.000	0.000	0.000	0.000	Pole MS-4-24	-0.032	-0.015	4.9	90.4	
								Pole MS-4-40	0.012	0.006	1.9	90.0	
								Pole MS-4-44	0.020	0.009	3.1	90.6	
Pole MS-4-42	4.160	98.937	-1.8	0.000	0.000	0.004	0.002	Pole MS-4-40	-0.008	-0.004	1.2	90.0	
								Pole MS-4-43	0.004	0.002	0.6	90.1	
Pole MS-4-43	4.160	98.930	-1.8	0.000	0.000	0.004	0.002	Pole MS-4-42	-0.004	-0.002	0.6	89.9	
Pole MS-4-44	4.160	98.593	-1.8	0.000	0.000	0.000	0.000	Pole MS-4-41	-0.020	-0.009	3.1	90.2	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-45	0.004	0.002	0.6	90.0	
								Pole MS-4-46	0.016	0.008	2.5	90.3	
Pole MS-4-45	4.160	98.590	-1.8	0.000	0.000	0.004	0.002	Pole MS-4-44	-0.004	-0.002	0.6	89.9	
Pole MS-4-46	4.160	98.575	-1.8	0.000	0.000	0.000	0.000	Pole MS-4-44	-0.016	-0.008	2.5	90.2	
								Pole MS-4-47	0.004	0.002	0.6	89.9	
								Pole MS-4-48	0.004	0.002	0.6	90.0	
								Pole MS-4-50	0.008	0.004	1.2	90.5	
Pole MS-4-47	4.160	98.574	-1.8	0.000	0.000	0.004	0.002	Pole MS-4-46	-0.004	-0.002	0.6	89.9	
Pole MS-4-48	4.160	98.574	-1.8	0.000	0.000	0.004	0.002	Pole MS-4-46	-0.004	-0.002	0.6	89.9	
Pole MS-4-49	4.160	98.550	-1.8	0.000	0.000	0.004	0.002	Pole MS-4-50	-0.004	-0.002	0.6	89.9	
Pole MS-4-50	4.160	98.551	-1.8	0.000	0.000	0.000	0.000	Pole MS-4-46	-0.008	-0.004	1.2	90.4	
								Pole MS-4-49	0.004	0.002	0.6	89.9	
								Pole MS-4-52	0.004	0.002	0.6	90.8	
Pole MS-4-51	4.160	98.537	-1.8	0.000	0.000	0.004	0.002	Pole MS-4-52	-0.004	-0.002	0.6	89.9	
Pole MS-4-52	4.160	98.546	-1.8	0.000	0.000	0.000	0.000	Pole MS-4-50	-0.004	-0.002	0.6	90.6	
								Pole MS-4-51	0.004	0.002	0.6	90.1	
								LINE MS-4-53~	0.000	0.000	0.0	0.0	
Pole MS-5-1	4.160	99.177	-2.0	0.000	0.000	0.004	0.002	Pole MS-4-31	-0.371	-0.181	57.8	89.9	
								Pole MS-5-2	0.367	0.179	57.2	89.9	
Pole MS-5-2	4.160	99.083	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-1	-0.367	-0.179	57.2	89.9	
								Pole MS-5-3	0.017	0.008	2.6	90.0	
								Pole MS-5-7	0.346	0.169	53.9	89.9	
Pole MS-5-3	4.160	99.078	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-2	-0.017	-0.008	2.6	89.9	
								Pole MS-5-4	0.013	0.006	2.0	90.0	
Pole MS-5-4	4.160	99.071	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-3	-0.013	-0.006	2.0	89.9	
								Pole MS-5-5	0.008	0.004	1.3	89.9	
Pole MS-5-5	4.160	99.069	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-4	-0.008	-0.004	1.3	89.9	
								Pole MS-5-6	0.004	0.002	0.7	89.9	
Pole MS-5-6	4.160	99.068	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-5	-0.004	-0.002	0.7	89.9	
Pole MS-5-7	4.160	98.927	-2.0	0.000	0.000	0.000	0.000	Pole MS-5-2	-0.346	-0.168	53.9	89.9	
								Pole MS-5-11	0.057	0.028	9.0	90.0	
								Pole MS-5-24	0.288	0.140	45.0	89.9	
Pole MS-5-8	4.160	98.881	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-9	-0.045	-0.022	7.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-14	0.041	0.020	6.4	90.0	
Pole MS-5-9	4.160	98.892	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-8	0.045	0.022	7.0	90.0	
								Pole MS-5-10	-0.049	-0.024	7.7	90.0	
Pole MS-5-10	4.160	98.906	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-9	0.049	0.024	7.7	90.0	
								Pole MS-5-11	-0.053	-0.026	8.3	90.0	
Pole MS-5-11	4.160	98.920	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-7	-0.057	-0.028	9.0	90.0	
								Pole MS-5-10	0.053	0.026	8.3	90.0	
Pole MS-5-12	4.160	98.844	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-13	-0.033	-0.016	5.1	89.9	
								Pole MS-5-16	0.029	0.014	4.5	90.0	
Pole MS-5-13	4.160	98.866	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-12	0.033	0.016	5.1	90.0	
								Pole MS-5-14	-0.037	-0.018	5.8	90.0	
Pole MS-5-14	4.160	98.873	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-8	-0.041	-0.020	6.4	90.0	
								Pole MS-5-13	0.037	0.018	5.8	90.0	
Pole MS-5-15	4.160	98.835	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-16	-0.023	-0.011	3.5	89.9	
								Pole MS-5-17	0.019	0.009	2.9	89.9	
Pole MS-5-16	4.160	98.838	-2.0	0.000	0.000	0.000	0.000	Pole MS-5-15	0.023	0.011	3.5	89.9	
								Pole MS-5-12	-0.029	-0.014	4.5	89.9	
								SEC_MS-5-15	0.006	0.003	1.0	90.0	
Pole MS-5-17	4.160	98.832	-2.0	0.000	0.000	0.000	0.000	Pole MS-5-15	-0.019	-0.009	2.9	89.9	
								Pole MS-5-18	0.009	0.005	1.5	89.9	
								SEC_MS-5-16	0.009	0.005	1.5	89.9	
Pole MS-5-18	4.160	98.832	-2.0	0.000	0.000	0.000	0.000	Pole MS-5-17	-0.009	-0.005	1.5	89.9	
								Pole MS-5-19	0.000	0.000	0.0	0.0	
								SEC_MS-5-17	0.009	0.005	1.5	89.9	
Pole MS-5-19	4.160	98.832	-2.0	0.000	0.000	0.000	0.000	Pole MS-5-18	0.000	0.000	0.0	0.0	
Pole MS-5-24	4.160	98.797	-2.1	0.000	0.000	0.000	0.000	Pole MS-5-7	-0.288	-0.140	45.0	89.9	
								Pole MS-5-25	0.015	0.007	2.4	90.0	
								Pole MS-5-29	0.048	0.023	7.6	90.0	
								Pole MS-5-41	0.224	0.109	35.0	89.9	
Pole MS-5-25	4.160	98.794	-2.1	0.000	0.000	0.003	0.001	Pole MS-5-24	-0.015	-0.007	2.4	90.0	
								Pole MS-5-26	0.013	0.006	2.0	90.0	
Pole MS-5-26	4.160	98.791	-2.1	0.000	0.000	0.000	0.000	Pole MS-5-25	-0.013	-0.006	2.0	90.0	
								Pole MS-5-28	0.006	0.003	1.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_MS-5-23	0.006	0.003	1.0	90.0	
Pole MS-5-27	4.160	98.735	-2.1	0.000	0.000	0.003	0.001	Pole MS-5-41	-0.220	-0.107	34.4	89.9	
								Pole MS-5-151	0.218	0.106	34.0	89.9	
Pole MS-5-28	4.160	98.788	-2.1	0.000	0.000	0.000	0.000	Pole MS-5-26	-0.006	-0.003	1.0	90.0	
								SEC_MS-5-25	0.006	0.003	1.0	90.0	
Pole MS-5-29	4.160	98.787	-2.1	0.000	0.000	0.000	0.000	Pole MS-5-24	-0.048	-0.023	7.6	90.0	
								Pole MS-5-30	0.039	0.019	6.1	90.0	
								SEC_MS-5-26	0.009	0.005	1.5	89.9	
Pole MS-5-30	4.160	98.768	-2.1	0.000	0.000	0.003	0.001	Pole MS-5-29	-0.039	-0.019	6.1	90.0	
								Pole MS-5-31	0.036	0.018	5.7	90.0	
Pole MS-5-31	4.160	98.755	-2.1	0.000	0.000	0.004	0.002	Pole MS-5-30	-0.036	-0.018	5.7	90.0	
								Pole MS-5-32	0.032	0.016	5.1	90.0	
Pole MS-5-32	4.160	98.746	-2.1	0.000	0.000	0.000	0.000	Pole MS-5-31	-0.032	-0.016	5.1	90.0	
								Pole MS-5-33	0.026	0.013	4.1	90.0	
								SEC_MS-5-29	0.006	0.003	1.0	90.0	
Pole MS-5-33	4.160	98.740	-2.1	0.000	0.000	0.000	0.000	Pole MS-5-32	-0.026	-0.013	4.1	90.0	
								Pole MS-5-34	0.017	0.008	2.6	90.0	
								SEC_MS-5-30	0.009	0.005	1.5	89.9	
Pole MS-5-34	4.160	98.737	-2.1	0.000	0.000	0.003	0.001	Pole MS-5-33	-0.017	-0.008	2.6	90.0	
								Pole MS-5-35	0.014	0.007	2.2	90.0	
Pole MS-5-35	4.160	98.733	-2.1	0.000	0.000	0.000	0.000	Pole MS-5-34	-0.014	-0.007	2.2	90.0	
								Pole MS-5-36	0.008	0.004	1.2	90.0	
								SEC_MS-5-32	0.006	0.003	1.0	90.0	
Pole MS-5-36	4.160	98.729	-2.1	0.000	0.000	0.000	0.000	Pole MS-5-35	-0.008	-0.004	1.2	90.0	
								Pole MS-5-37	0.008	0.004	1.2	90.0	
Pole MS-5-37	4.160	98.728	-2.1	0.000	0.000	0.004	0.002	Pole MS-5-36	-0.008	-0.004	1.2	89.9	
								Pole MS-5-38	0.004	0.002	0.6	90.0	
Pole MS-5-38	4.160	98.726	-2.1	0.000	0.000	0.004	0.002	Pole MS-5-37	-0.004	-0.002	0.6	89.9	
								Pole MS-5-39	0.000	0.000	0.0	0.0	
Pole MS-5-39	4.160	98.726	-2.1	0.000	0.000	0.000	0.000	Pole MS-5-38	0.000	0.000	0.0	0.0	
Pole MS-5-40	4.160	98.590	-2.1	0.000	0.000	0.004	0.002	Pole MS-5-151	-0.217	-0.106	34.0	89.9	
								Pole MS-5-42	0.003	0.001	0.4	90.0	
								Pole MS-5-44	0.041	0.020	6.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-55	0.169	0.082	26.5	89.9	
Pole MS-5-41	4.160	98.748	-2.1	0.000	0.000	0.004	0.002	Pole MS-5-27	0.220	0.107	34.4	89.9	
								Pole MS-5-24	-0.224	-0.109	35.0	89.9	
Pole MS-5-42	4.160	98.589	-2.1	0.000	0.000	0.003	0.001	Pole MS-5-40	-0.003	-0.001	0.4	89.9	
Pole MS-5-43	4.160	98.575	-2.1	0.000	0.000	0.004	0.002	Pole MS-5-44	-0.037	-0.018	5.9	90.0	
								Pole MS-5-45	0.033	0.016	5.2	90.0	
Pole MS-5-44	4.160	98.582	-2.1	0.000	0.000	0.004	0.002	Pole MS-5-40	-0.041	-0.020	6.5	90.0	
								Pole MS-5-43	0.037	0.018	5.9	90.0	
Pole MS-5-45	4.160	98.570	-2.1	0.000	0.000	0.000	0.000	Pole MS-5-43	-0.033	-0.016	5.2	90.0	
								Pole MS-5-46	0.027	0.013	4.3	90.0	
								SEC_MS-5-40	0.006	0.003	1.0	90.0	
Pole MS-5-46	4.160	98.563	-2.1	0.000	0.000	0.003	0.001	Pole MS-5-45	-0.027	-0.013	4.3	90.0	
								Pole MS-5-47	0.025	0.012	3.9	90.0	
Pole MS-5-47	4.160	98.558	-2.1	0.000	0.000	0.004	0.002	Pole MS-5-46	-0.025	-0.012	3.9	90.0	
								Pole MS-5-48	0.021	0.010	3.2	90.0	
Pole MS-5-48	4.160	98.551	-2.1	0.000	0.000	0.004	0.002	Pole MS-5-47	-0.021	-0.010	3.2	90.0	
								Pole MS-5-49	0.017	0.008	2.6	90.0	
Pole MS-5-49	4.160	98.546	-2.1	0.000	0.000	0.004	0.002	Pole MS-5-48	-0.017	-0.008	2.6	90.0	
								Pole MS-5-50	0.013	0.006	2.0	90.0	
Pole MS-5-50	4.160	98.540	-2.1	0.000	0.000	0.000	0.000	Pole MS-5-49	-0.013	-0.006	2.0	90.0	
								Pole MS-5-51	0.007	0.003	1.0	90.0	
								SEC_MS-5-45	0.006	0.003	1.0	90.0	
Pole MS-5-51	4.160	98.539	-2.1	0.000	0.000	0.003	0.001	Pole MS-5-50	-0.007	-0.003	1.0	90.0	
								Pole MS-5-52	0.004	0.002	0.6	90.0	
Pole MS-5-52	4.160	98.537	-2.1	0.000	0.000	0.004	0.002	Pole MS-5-51	-0.004	-0.002	0.6	90.0	
								Pole MS-5-149	0.000	0.000	0.0	0.0	
Pole MS-5-55	4.160	98.548	-2.1	0.000	0.000	0.004	0.002	Pole MS-5-40	-0.169	-0.082	26.5	89.9	
								Pole MS-5-68	0.165	0.080	25.9	89.9	
Pole MS-5-56	4.160	98.435	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-68	-0.161	-0.078	25.3	90.0	
								Pole MS-5-57	0.031	0.015	4.9	89.9	
								Pole MS-5-64	0.012	0.006	1.8	90.0	
								Pole MS-5-67	0.114	0.055	17.9	90.0	
Pole MS-5-57	4.160	98.427	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-56	-0.031	-0.015	4.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-58	0.028	0.013	4.3	89.9	
Pole MS-5-58	4.160	98.419	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-57	-0.028	-0.013	4.3	89.9	
								Pole MS-5-59	0.024	0.011	3.7	89.9	
Pole MS-5-59	4.160	98.414	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-58	-0.024	-0.011	3.7	89.9	
								Pole MS-5-60	0.020	0.010	3.1	89.9	
Pole MS-5-60	4.160	98.408	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-59	-0.020	-0.010	3.1	89.9	
								Pole MS-5-61	0.016	0.008	2.5	89.9	
Pole MS-5-61	4.160	98.406	-2.2	0.000	0.000	0.008	0.004	Pole MS-5-60	-0.016	-0.008	2.5	89.9	
								Pole MS-5-62	0.008	0.004	1.2	89.9	
Pole MS-5-62	4.160	98.405	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-61	-0.008	-0.004	1.2	89.9	
								Pole MS-5-63	0.004	0.002	0.6	89.9	
Pole MS-5-63	4.160	98.404	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-62	-0.004	-0.002	0.6	89.9	
Pole MS-5-64	4.160	98.433	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-56	-0.012	-0.006	1.8	90.0	
								Pole MS-5-65	0.008	0.004	1.2	90.0	
Pole MS-5-65	4.160	98.432	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-64	-0.008	-0.004	1.2	90.0	
								Pole MS-5-66	0.004	0.002	0.6	90.0	
Pole MS-5-66	4.160	98.427	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-65	-0.004	-0.002	0.6	89.9	
Pole MS-5-67	4.160	98.384	-2.2	0.000	0.000	0.000	0.000	Pole MS-5-56	-0.114	-0.055	17.9	90.0	
								Pole MS-5-69	0.029	0.014	4.5	90.0	
								Pole MS-5-78	0.026	0.013	4.1	90.0	
								Pole MS-5-86	0.059	0.029	9.2	90.0	
Pole MS-5-68	4.160	98.475	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-56	0.161	0.078	25.3	89.9	
								Pole MS-5-55	-0.165	-0.080	25.9	89.9	
Pole MS-5-69	4.160	98.378	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-67	-0.029	-0.014	4.5	90.0	
								Pole MS-5-70	0.025	0.012	3.9	90.0	
Pole MS-5-70	4.160	98.366	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-69	-0.025	-0.012	3.9	90.0	
								Pole MS-5-71	0.021	0.010	3.3	90.0	
Pole MS-5-71	4.160	98.364	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-70	-0.021	-0.010	3.3	90.0	
								Pole MS-5-72	0.017	0.008	2.7	90.0	
Pole MS-5-72	4.160	98.363	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-71	-0.017	-0.008	2.7	90.0	
								Pole MS-5-73	0.013	0.006	2.1	90.0	
Pole MS-5-73	4.160	98.360	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-72	-0.013	-0.006	2.1	90.0	
								Pole MS-5-74	0.009	0.004	1.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-74	4.160	98.358	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-73	-0.009	-0.004	1.4	90.0	
								Pole MS-5-75	0.005	0.003	0.8	90.0	
Pole MS-5-75	4.160	98.356	-2.2	0.000	0.000	0.003	0.001	Pole MS-5-74	-0.005	-0.003	0.8	90.0	
								Pole MS-5-76	0.003	0.001	0.4	90.0	
Pole MS-5-76	4.160	98.356	-2.2	0.000	0.000	0.003	0.001	Pole MS-5-75	-0.003	-0.001	0.4	90.0	
								Line MS-5-79~	0.000	0.000	0.0	0.0	
Pole MS-5-77	4.160	98.372	-2.2	0.000	0.000	0.003	0.001	Pole MS-5-78	-0.024	-0.011	3.7	90.0	
								Pole MS-5-79	0.021	0.010	3.3	90.0	
Pole MS-5-78	4.160	98.377	-2.2	0.000	0.000	0.003	0.001	Pole MS-5-67	-0.026	-0.013	4.1	90.0	
								Pole MS-5-77	0.024	0.011	3.7	90.0	
Pole MS-5-79	4.160	98.371	-2.2	0.000	0.000	0.003	0.001	Pole MS-5-77	-0.021	-0.010	3.3	90.0	
								Pole MS-5-80	0.018	0.009	2.9	90.0	
Pole MS-5-80	4.160	98.363	-2.2	0.000	0.000	0.003	0.001	Pole MS-5-79	-0.018	-0.009	2.9	90.0	
								Pole MS-5-81	0.016	0.008	2.5	90.0	
Pole MS-5-81	4.160	98.358	-2.2	0.000	0.000	0.003	0.001	Pole MS-5-80	-0.016	-0.008	2.5	90.0	
								Pole MS-5-82	0.013	0.006	2.1	90.0	
Pole MS-5-82	4.160	98.357	-2.2	0.000	0.000	0.003	0.001	Pole MS-5-81	-0.013	-0.006	2.1	90.0	
								Pole MS-5-83	0.010	0.005	1.6	90.0	
Pole MS-5-83	4.160	98.357	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-82	-0.010	-0.005	1.6	90.0	
								Pole MS-5-84	0.007	0.003	1.0	90.0	
Pole MS-5-84	4.160	98.355	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-83	-0.007	-0.003	1.0	90.0	
								Pole MS-5-85	0.003	0.001	0.4	90.2	
Pole MS-5-85	4.160	98.352	-2.2	0.000	0.000	0.003	0.001	Pole MS-5-84	-0.003	-0.001	0.4	89.9	
Pole MS-5-86	4.160	98.356	-2.2	0.000	0.000	0.000	0.000	Pole MS-5-67	-0.059	-0.029	9.2	90.0	
								Pole MS-5-89	0.008	0.004	1.2	90.0	
								Pole MS-5-90	0.018	0.009	2.9	90.0	
								Pole MS-5-96	0.033	0.016	5.1	89.9	
Pole MS-5-87	4.160	98.353	-2.2	0.000	0.000	0.003	0.001	Pole MS-5-88	-0.003	-0.001	0.4	89.9	
Pole MS-5-88	4.160	98.353	-2.2	0.000	0.000	0.003	0.001	Pole MS-5-87	0.003	0.001	0.4	90.0	
								Pole MS-5-89	-0.005	-0.003	0.8	90.0	
Pole MS-5-89	4.160	98.354	-2.2	0.000	0.000	0.003	0.001	Pole MS-5-86	-0.008	-0.004	1.2	90.0	
								Pole MS-5-88	0.005	0.003	0.8	90.0	
Pole MS-5-90	4.160	98.351	-2.2	0.000	0.000	0.003	0.001	Pole MS-5-86	-0.018	-0.009	2.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-91	0.016	0.008	2.5	90.0	
Pole MS-5-91	4.160	98.347	-2.2	0.000	0.000	0.003	0.001	Pole MS-5-90	-0.016	-0.008	2.5	90.0	
								Pole MS-5-92	0.013	0.006	2.1	90.0	
Pole MS-5-92	4.160	98.343	-2.2	0.000	0.000	0.003	0.001	Pole MS-5-91	-0.013	-0.006	2.1	90.0	
								Pole MS-5-93	0.010	0.005	1.6	90.0	
Pole MS-5-93	4.160	98.340	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-92	-0.010	-0.005	1.6	89.9	
								Pole MS-5-94	0.007	0.003	1.0	90.0	
Pole MS-5-94	4.160	98.339	-2.2	0.000	0.000	0.004	0.002	Pole MS-5-93	-0.007	-0.003	1.0	89.9	
								Pole MS-5-95	0.003	0.001	0.4	90.0	
Pole MS-5-95	4.160	98.338	-2.2	0.000	0.000	0.003	0.001	Pole MS-5-94	-0.003	-0.001	0.4	89.9	
Pole MS-5-96	4.160	98.343	-2.2	0.000	0.000	0.000	0.000	Pole MS-5-86	-0.033	-0.016	5.1	89.9	
								Pole MS-5-111	0.033	0.016	5.1	89.9	
Pole MS-5-106	4.160	100.081	-2.0	0.000	0.000	0.030	0.014	Pole MS-5-108	-0.113	-0.055	17.4	90.0	
								Pole MS-5-122	0.084	0.041	12.9	90.0	
Pole MS-5-107	4.160	100.149	-2.0	0.000	0.000	0.003	0.001	Pole MS-5-108	-0.012	-0.006	1.8	90.0	
								Pole MS-5-109	0.009	0.004	1.4	90.0	
Pole MS-5-108	4.160	100.151	-2.0	0.000	0.000	0.000	0.000	Pole MS-5-107	0.012	0.006	1.8	90.0	
								Pole MS-5-106	0.113	0.055	17.4	90.0	
								SF-2-30	-0.125	-0.061	19.3	90.0	
Pole MS-5-109	4.160	100.146	-2.0	0.000	0.000	0.003	0.001	Pole MS-5-107	-0.009	-0.004	1.4	90.0	
								Pole MS-5-110	0.006	0.003	1.0	90.0	
Pole MS-5-110	4.160	100.145	-2.0	0.000	0.000	0.000	0.000	Pole MS-5-109	-0.006	-0.003	1.0	90.0	
								SEC_MS-5-99	0.006	0.003	1.0	90.0	
Pole MS-5-111	4.160	98.330	-2.2	0.000	0.000	0.000	0.000	Pole MS-5-96	-0.033	-0.016	5.1	89.9	
								Pole MS-5-124	0.033	0.016	5.1	89.9	
Pole MS-5-122	4.160	100.024	-2.0	0.000	0.000	0.038	0.018	Pole MS-5-106	-0.083	-0.041	12.9	90.0	
								Pole MS-5-123	0.046	0.022	7.1	90.0	
Pole MS-5-123	4.160	99.994	-2.0	0.000	0.000	0.000	0.000	Pole MS-5-122	-0.046	-0.022	7.1	90.0	
								Pole MS-5-134	0.038	0.018	5.8	90.0	
								Pole MS-5-135	0.008	0.004	1.2	90.0	
Pole MS-5-124	4.160	98.317	-2.2	0.000	0.000	0.000	0.000	Pole MS-5-111	-0.033	-0.016	5.1	89.9	
								Pole MS-5-139	0.033	0.016	5.1	89.9	
Pole MS-5-125	4.160	99.924	-2.0	0.000	0.000	0.003	0.001	Pole MS-5-126	-0.003	-0.001	0.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Line MS-5-129~	0.000	0.000	0.0	0.0	
Pole MS-5-126	4.160	99.925	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-125	0.003	0.001	0.4	90.0	
								Pole MS-5-127	-0.007	-0.003	1.0	90.0	
Pole MS-5-127	4.160	99.926	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-126	0.007	0.003	1.0	90.0	
								Pole MS-5-128	-0.011	-0.005	1.7	90.0	
Pole MS-5-128	4.160	99.928	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-127	0.011	0.005	1.7	90.0	
								Pole MS-5-129	-0.015	-0.007	2.3	90.0	
Pole MS-5-129	4.160	99.935	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-128	0.015	0.007	2.3	90.0	
								Pole MS-5-130	-0.019	-0.009	2.9	90.0	
Pole MS-5-130	4.160	99.939	-2.0	0.000	0.000	0.003	0.001	Pole MS-5-129	0.019	0.009	2.9	90.0	
								Pole MS-5-131	-0.022	-0.010	3.3	90.0	
Pole MS-5-131	4.160	99.948	-2.0	0.000	0.000	0.003	0.001	Pole MS-5-130	0.022	0.010	3.3	90.0	
								Pole MS-5-132	-0.024	-0.012	3.7	90.0	
Pole MS-5-132	4.160	99.954	-2.0	0.000	0.000	0.003	0.001	Pole MS-5-131	0.024	0.012	3.7	90.0	
								Pole MS-5-137	-0.027	-0.013	4.2	90.0	
Pole MS-5-133	4.160	99.980	-2.0	0.000	0.000	0.003	0.001	Pole MS-5-137	0.031	0.015	4.8	90.0	
								Pole MS-5-134	-0.034	-0.016	5.2	90.0	
Pole MS-5-134	4.160	99.987	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-133	0.034	0.016	5.2	90.0	
								Pole MS-5-123	-0.038	-0.018	5.8	90.0	
Pole MS-5-135	4.160	99.987	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-123	-0.008	-0.004	1.2	90.0	
								Pole MS-5-136	0.004	0.002	0.6	90.0	
Pole MS-5-136	4.160	99.983	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-135	-0.004	-0.002	0.6	89.9	
Pole MS-5-137	4.160	99.966	-2.0	0.000	0.000	0.004	0.002	Pole MS-5-133	-0.031	-0.015	4.8	90.0	
								Pole MS-5-132	0.027	0.013	4.2	90.0	
Pole MS-5-139	4.160	98.311	-2.2	0.000	0.000	0.033	0.016	Pole MS-5-124	-0.033	-0.016	5.1	89.9	
Pole MS-5-149	4.160	98.537	-2.1	0.000	0.000	0.000	0.000	Pole MS-5-52	0.000	0.000	0.0	0.0	
Pole MS-5-151	4.160	98.689	-2.1	0.000	0.000	0.000	0.000	Pole MS-5-40	0.217	0.106	34.0	89.9	
								Pole MS-5-27	-0.217	-0.106	34.0	89.9	
Pole MS-7-16	24.940	99.778	0.2	0.000	0.000	0.000	0.000	Pole MS-7-18	-0.016	-0.008	0.4	90.0	
								SEC_MS-7-9	0.016	0.008	0.4	90.0	
Pole MS-7-17	24.940	99.780	0.2	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	-0.044	-0.019	1.1	91.9	
								Pole MS-7-18	0.044	0.019	1.1	91.9	
Pole MS-7-18	24.940	99.778	0.2	0.000	0.000	0.000	0.000	Pole MS-7-19	0.027	0.012	0.7	91.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-7-16	0.016	0.008	0.4	90.2	
								Pole MS-7-17	-0.044	-0.020	1.1	91.1	
Pole MS-7-19	24.940	99.777	0.2	0.000	0.000	0.027	0.014	Pole MS-7-18	-0.027	-0.014	0.7	89.3	
Pole MS-8-1	4.160	99.938	-1.8	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	-0.134	-0.065	20.6	89.8	
								Pole MS-8-2	0.134	0.065	20.6	89.8	
Pole MS-8-2	4.160	99.849	-1.8	0.000	0.000	0.003	0.001	Pole MS-8-1	-0.133	-0.065	20.6	89.9	
								Pole MS-8-3	0.131	0.064	20.2	89.9	
Pole MS-8-3	4.160	99.819	-1.8	0.000	0.000	0.003	0.001	Pole MS-8-2	-0.131	-0.064	20.2	89.9	
								Pole MS-8-4	0.128	0.063	19.8	89.9	
Pole MS-8-4	4.160	99.805	-1.8	0.000	0.000	0.000	0.000	Pole MS-8-3	-0.128	-0.063	19.8	89.9	
								Pole MS-8-5	0.115	0.056	17.8	89.8	
								SEC_MS-8-3	0.013	0.006	2.0	89.9	
Pole MS-8-5	4.160	99.789	-1.8	0.000	0.000	0.003	0.001	Pole MS-8-4	-0.115	-0.056	17.8	89.8	
								Pole MS-8-6	0.113	0.055	17.4	89.8	
Pole MS-8-6	4.160	99.764	-1.8	0.000	0.000	0.003	0.001	Pole MS-8-5	-0.113	-0.055	17.4	89.9	
								Pole MS-8-7	0.110	0.054	17.0	89.8	
Pole MS-8-7	4.160	99.751	-1.8	0.000	0.000	0.005	0.003	Pole MS-8-6	-0.110	-0.054	17.0	89.9	
								Pole MS-8-8	0.105	0.051	16.2	89.8	
Pole MS-8-8	4.160	99.739	-1.9	0.000	0.000	0.000	0.000	Pole MS-8-7	-0.105	-0.051	16.2	89.8	
								Pole MS-8-9	0.019	0.009	2.9	89.9	
								Pole MS-8-10	0.086	0.042	13.2	89.8	
Pole MS-8-9	4.160	99.735	-1.9	0.000	0.000	0.000	0.000	Pole MS-8-8	-0.019	-0.009	2.9	89.9	
								SEC_MS-8-8	0.019	0.009	2.9	89.9	
Pole MS-8-10	4.160	99.717	-1.9	0.000	0.000	0.003	0.001	Pole MS-8-8	-0.085	-0.042	13.2	89.8	
								Pole MS-8-11	0.083	0.041	12.8	89.8	
Pole MS-8-11	4.160	99.695	-1.9	0.000	0.000	0.004	0.002	Pole MS-8-10	-0.083	-0.040	12.8	89.8	
								Pole MS-8-12	0.079	0.039	12.2	89.8	
Pole MS-8-12	4.160	99.676	-1.9	0.000	0.000	0.004	0.002	Pole MS-8-11	-0.079	-0.039	12.2	89.8	
								Pole MS-8-13	0.075	0.037	11.6	89.8	
Pole MS-8-13	4.160	99.672	-1.9	0.000	0.000	0.004	0.002	Pole MS-8-12	-0.075	-0.037	11.6	89.8	
								Pole MS-8-14	0.071	0.035	11.0	89.8	
Pole MS-8-14	4.160	99.661	-1.9	0.000	0.000	0.004	0.002	Pole MS-8-15	0.067	0.033	10.3	89.8	
								Pole MS-8-13	-0.071	-0.035	11.0	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-8-15	4.160	99.651	-1.9	0.000	0.000	0.000	0.000	PRI_PM_9	0.067	0.033	10.3	89.8	
								Pole MS-8-14	-0.067	-0.033	10.3	89.8	
Pole MS-9-1	4.160	99.958	-1.8	0.000	0.000	0.004	0.002	BUS_5KV-LLP_01	-0.285	-0.139	44.0	89.8	
								Pole MS-9-2	0.280	0.137	43.3	89.8	
Pole MS-9-2	4.160	99.898	-1.8	0.000	0.000	0.000	0.000	Pole MS-9-1	-0.280	-0.137	43.3	89.9	
								Pole MS-9-12	0.280	0.137	43.3	89.9	
Pole MS-9-12	4.160	99.784	-1.8	0.000	0.000	0.000	0.000	Pole MS-9-2	-0.280	-0.137	43.3	89.9	
								Pole MS-9-13	0.280	0.137	43.3	89.9	
Pole MS-9-13	4.160	99.765	-1.8	0.000	0.000	0.000	0.000	Pole MS-9-12	-0.280	-0.137	43.3	89.9	
								Pole MS-9-14	0.280	0.137	43.3	89.9	
Pole MS-9-14	4.160	99.730	-1.9	0.000	0.000	0.003	0.001	Pole MS-9-13	-0.280	-0.137	43.3	89.9	
								Pole MS-9-15	0.277	0.135	42.9	89.9	
Pole MS-9-15	4.160	99.680	-1.9	0.000	0.000	0.000	0.000	Pole MS-9-14	-0.277	-0.135	42.9	89.9	
								Pole MS-9-16	0.264	0.129	41.0	89.9	
								SEC_MS-9-12	0.013	0.006	2.0	89.9	
Pole MS-9-16	4.160	99.624	-1.9	0.000	0.000	0.003	0.001	Pole MS-9-15	-0.264	-0.129	41.0	89.9	
								Pole MS-9-17	0.262	0.127	40.6	89.9	
Pole MS-9-17	4.160	99.590	-1.9	0.000	0.000	0.000	0.000	Pole MS-9-16	-0.262	-0.127	40.6	89.9	
								Pole MS-9-18	0.075	0.037	11.7	89.9	
								Pole MS-9-33	0.186	0.091	28.9	89.9	
Pole MS-9-18	4.160	99.586	-1.9	0.000	0.000	0.000	0.000	Pole MS-9-17	-0.075	-0.037	11.7	89.9	
								Pole MS-9-19	0.063	0.030	9.7	89.9	
								SEC_MS-9-14	0.013	0.006	2.0	89.9	
Pole MS-9-19	4.160	99.575	-1.9	0.000	0.000	0.003	0.001	Pole MS-9-18	-0.063	-0.030	9.7	89.9	
								Pole MS-9-20	0.060	0.029	9.3	89.9	
Pole MS-9-20	4.160	99.558	-1.9	0.000	0.000	0.004	0.002	Pole MS-9-19	-0.060	-0.029	9.3	89.9	
								Pole MS-9-21	0.056	0.027	8.7	89.9	
Pole MS-9-21	4.160	99.544	-1.9	0.000	0.000	0.000	0.000	Pole MS-9-20	-0.056	-0.027	8.7	89.9	
								Pole MS-9-23	0.043	0.021	6.7	90.0	
								SEC_MS-9-17	0.013	0.006	2.0	89.9	
Pole MS-9-22	4.160	99.371	-1.9	0.000	0.000	0.000	0.000	Pole MS-9-42	-0.132	-0.064	20.4	89.9	
								Pole MS-9-43	0.019	0.009	3.0	90.0	
								Pole MS-9-47	0.112	0.055	17.5	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-9-23	4.160	99.541	-1.9	0.000	0.000	0.004	0.002	Pole MS-9-21	-0.043	-0.021	6.7	90.0	
								Pole MS-9-24	0.039	0.019	6.1	90.0	
Pole MS-9-24	4.160	99.536	-1.9	0.000	0.000	0.008	0.004	Pole MS-9-23	-0.039	-0.019	6.1	90.0	
								Pole MS-9-25	0.031	0.015	4.9	90.0	
Pole MS-9-25	4.160	99.534	-1.9	0.000	0.000	0.000	0.000	Pole MS-9-24	-0.031	-0.015	4.9	90.0	
								Pole MS-9-26	0.013	0.006	2.0	90.0	
								Pole MS-9-28	0.019	0.009	2.9	90.0	
Pole MS-9-26	4.160	99.529	-1.9	0.000	0.000	0.000	0.000	Pole MS-9-27	0.000	0.000	0.0	0.0	
								Pole MS-9-25	-0.013	-0.006	2.0	89.9	
								SEC_MS-9-22	0.013	0.006	2.0	89.9	
Pole MS-9-27	4.160	99.529	-1.9	0.000	0.000	0.000	0.000	Pole MS-9-26	0.000	0.000	0.0	0.0	
Pole MS-9-28	4.160	99.530	-1.9	0.000	0.000	0.003	0.001	Pole MS-9-25	-0.019	-0.009	2.9	89.9	
								Pole MS-9-29	0.016	0.008	2.5	89.9	
Pole MS-9-29	4.160	99.528	-1.9	0.000	0.000	0.004	0.002	Pole MS-9-28	-0.016	-0.008	2.5	89.9	
								Pole MS-9-30	0.012	0.006	1.9	89.9	
Pole MS-9-30	4.160	99.526	-1.9	0.000	0.000	0.004	0.002	Pole MS-9-29	-0.012	-0.006	1.9	89.9	
								Pole MS-9-31	0.008	0.004	1.2	89.9	
Pole MS-9-31	4.160	99.525	-1.9	0.000	0.000	0.004	0.002	Pole MS-9-30	-0.008	-0.004	1.2	89.9	
								Pole MS-9-32	0.004	0.002	0.6	89.9	
Pole MS-9-32	4.160	99.524	-1.9	0.000	0.000	0.004	0.002	Pole MS-9-31	-0.004	-0.002	0.6	89.9	
Pole MS-9-33	4.160	99.554	-1.9	0.000	0.000	0.004	0.002	Pole MS-9-17	-0.186	-0.091	28.9	89.9	
								Pole MS-9-34	0.182	0.089	28.2	89.9	
Pole MS-9-34	4.160	99.526	-1.9	0.000	0.000	0.004	0.002	Pole MS-9-33	-0.182	-0.089	28.2	89.9	
								Pole MS-9-35	0.178	0.087	27.6	89.9	
Pole MS-9-35	4.160	99.505	-1.9	0.000	0.000	0.000	0.000	Pole MS-9-34	-0.178	-0.087	27.6	89.9	
								Pole MS-9-36	0.004	0.002	0.6	89.9	
								Pole MS-9-37	0.174	0.085	27.0	89.9	
Pole MS-9-36	4.160	99.504	-1.9	0.000	0.000	0.004	0.002	Pole MS-9-35	-0.004	-0.002	0.6	89.9	
Pole MS-9-37	4.160	99.496	-1.9	0.000	0.000	0.000	0.000	Pole MS-9-35	-0.174	-0.085	27.0	89.9	
								Pole MS-9-38	0.161	0.079	25.0	89.9	
								SEC_MS-9-31	0.013	0.006	2.0	89.9	
Pole MS-9-38	4.160	99.475	-1.9	0.000	0.000	0.000	0.000	Pole MS-9-37	-0.161	-0.079	25.0	89.9	
								Pole MS-9-39	0.142	0.069	22.1	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_MS-9-32	0.019	0.009	2.9	89.9	
Pole MS-9-39	4.160	99.436	-1.9	0.000	0.000	0.000	0.000	Pole MS-9-38	-0.142	-0.069	22.1	89.9	
								Pole MS-9-40	0.003	0.001	0.4	90.0	
								Pole MS-9-41	0.140	0.068	21.7	89.9	
Pole MS-9-40	4.160	99.436	-1.9	0.000	0.000	0.003	0.001	Pole MS-9-39	-0.003	-0.001	0.4	90.0	
Pole MS-9-41	4.160	99.417	-1.9	0.000	0.000	0.004	0.002	Pole MS-9-39	-0.140	-0.068	21.7	89.9	
								Pole MS-9-42	0.136	0.066	21.1	89.9	
Pole MS-9-42	4.160	99.385	-1.9	0.000	0.000	0.004	0.002	Pole MS-9-22	0.132	0.064	20.4	89.9	
								Pole MS-9-41	-0.136	-0.066	21.1	89.9	
Pole MS-9-43	4.160	99.370	-1.9	0.000	0.000	0.003	0.001	Pole MS-9-22	-0.019	-0.009	3.0	90.0	
								Pole MS-9-44	0.017	0.008	2.6	90.0	
Pole MS-9-44	4.160	99.367	-1.9	0.000	0.000	0.000	0.000	Pole MS-9-43	-0.017	-0.008	2.6	89.9	
								Pole MS-9-45	0.004	0.002	0.6	89.9	
								Pole MS-9-46	0.013	0.006	2.0	89.9	
Pole MS-9-45	4.160	99.366	-1.9	0.000	0.000	0.004	0.002	Pole MS-9-44	-0.004	-0.002	0.6	89.9	
Pole MS-9-46	4.160	99.363	-1.9	0.000	0.000	0.000	0.000	Pole MS-9-44	-0.013	-0.006	2.0	89.9	
								SEC_MS-9-37	0.013	0.006	2.0	89.9	
Pole MS-9-47	4.160	99.357	-1.9	0.000	0.000	0.000	0.000	Pole MS-9-22	-0.112	-0.055	17.5	89.9	
								Pole MS-9-48	0.100	0.049	15.5	89.9	
								SEC_MS-9-38	0.013	0.006	2.0	89.9	
Pole MS-9-48	4.160	99.343	-1.9	0.000	0.000	0.000	0.000	Pole MS-9-47	-0.100	-0.049	15.5	89.9	
								Pole MS-9-49	0.081	0.039	12.6	89.9	
								SEC_MS-9-39	0.019	0.009	2.9	89.9	
Pole MS-9-49	4.160	99.321	-2.0	0.000	0.000	0.000	0.000	Pole MS-9-48	-0.081	-0.039	12.6	89.9	
								Pole MS-9-50	0.062	0.030	9.6	89.9	
								SEC_MS-9-40	0.019	0.009	2.9	89.9	
Pole MS-9-50	4.160	99.312	-2.0	0.000	0.000	0.000	0.000	Pole MS-9-49	-0.062	-0.030	9.6	89.9	
								Pole MS-9-51	0.045	0.022	7.0	89.9	
								SEC_MS-9-41	0.017	0.008	2.6	89.9	
Pole MS-9-51	4.160	99.305	-2.0	0.000	0.000	0.000	0.000	Pole MS-9-50	-0.045	-0.022	7.0	89.9	
								Pole MS-9-52	0.028	0.014	4.4	89.9	
								SEC_MS-9-42	0.017	0.008	2.6	89.9	
Pole MS-9-52	4.160	99.298	-2.0	0.000	0.000	0.000	0.000	Pole MS-9-51	-0.028	-0.014	4.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-9-53	0.012	0.006	1.8	90.0	
								SEC_MS-9-43	0.017	0.008	2.6	89.9	
Pole MS-9-53	4.160	99.297	-2.0	0.000	0.000	0.000	0.000	Pole MS-9-52	-0.012	-0.006	1.8	89.9	
								Pole MS-9-54	0.000	0.000	0.0	0.0	
								SEC_MS-9-44	0.012	0.006	1.8	89.9	
Pole MS-9-54	4.160	99.297	-2.0	0.000	0.000	0.000	0.000	Pole MS-9-53	0.000	0.000	0.0	0.0	
PRI_PM_1	4.160	99.067	-2.4	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-0.030	-0.015	4.6	89.8	
								SEC_PM_1	0.030	0.015	4.6	89.8	
PRI_PM_1-1	4.160	97.202	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.029	-0.014	4.6	89.8	
								SEC_PM_1-1	0.029	0.014	4.6	89.8	
PRI_PM_2	4.160	98.721	-2.4	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-0.030	-0.015	4.6	89.8	
								SEC_PM_2	0.030	0.015	4.6	89.8	
PRI_PM_3	4.160	98.432	-2.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-3	-0.029	-0.014	4.6	89.8	
								SEC_PM_3	0.029	0.014	4.6	89.8	
PRI_PM_4	4.160	97.579	-2.4	0.000	0.000	0.000	0.000	SF-1-60	-0.125	-0.062	19.8	89.6	
								SEC_PM_4	0.125	0.062	19.8	89.6	
PRI_PM_5	4.160	98.183	-2.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-5	-0.029	-0.014	4.6	89.8	
								SEC_PM_5	0.029	0.014	4.6	89.8	
PRI_PM_6	4.160	97.949	-2.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.029	-0.014	4.6	89.8	
								SEC_PM_6	0.029	0.014	4.6	89.8	
PRI_PM_7	4.160	99.555	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-73	-0.091	-0.045	14.1	89.7	
								SEC_PM_7	0.091	0.045	14.1	89.7	
PRI_PM_8	4.160	99.687	-1.9	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.074	-0.036	11.4	89.8	
								SEC_PM_8	0.074	0.036	11.4	89.8	
PRI_PM_9	4.160	99.642	-1.9	0.000	0.000	0.000	0.000	Pole MS-8-15	-0.067	-0.033	10.3	89.8	
								SEC_PM_9	0.067	0.033	10.3	89.8	
PRI_PM_10	4.160	98.851	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-86	-0.132	-0.065	20.6	89.8	
								PRI_PM_28	0.066	0.032	10.3	89.8	
								SEC_PM_10	0.066	0.032	10.3	89.8	
PRI_PM_11	4.160	99.211	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-11	-0.070	-0.034	10.9	89.8	
								SEC_PM_11	0.070	0.034	10.9	89.8	
PRI_PM_12	4.160	97.647	-2.4	0.000	0.000	0.000	0.000	SF-1-59	-0.125	-0.062	19.9	89.6	
								SEC_PM_12	0.125	0.062	19.9	89.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
PRI_PM_13	4.160	97.035	-2.3	0.000	0.000	0.000	0.000	SF-1-40	-0.235	-0.116	37.5	89.6	
								SEC_PM_13	0.235	0.116	37.5	89.6	
PRI_PM_14	4.160	97.469	-2.3	0.000	0.000	0.000	0.000	SF-1-17	-0.176	-0.087	27.9	89.7	
								SEC_PM_14	0.176	0.087	27.9	89.7	
PRI_PM_15	4.160	98.767	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-16	-0.159	-0.078	24.9	89.7	
								SEC_PM_15	0.159	0.078	24.9	89.7	
PRI_PM_16	4.160	99.194	-2.5	0.000	0.000	0.000	0.000	Pole CS-1-2	-0.070	-0.034	10.9	89.8	
								SEC_PM_16	0.070	0.034	10.9	89.8	
PRI_PM_17	4.160	98.579	-2.6	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.059	-0.029	9.2	89.8	
								SEC_PM_17	0.059	0.029	9.2	89.8	
PRI_PM_18	4.160	99.228	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-54	-0.091	-0.045	14.1	89.7	
								SEC_PM_18	0.091	0.045	14.1	89.7	
PRI_PM_19	4.160	97.046	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-37	-0.067	-0.033	10.7	89.8	
								SEC_PM_19	0.067	0.033	10.7	89.8	
PRI_PM_20	4.160	97.342	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-21	-0.068	-0.033	10.7	89.8	
								SEC_PM_20	0.068	0.033	10.7	89.8	
PRI_PM_21	4.160	97.486	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-20	-0.071	-0.035	11.3	89.8	
								SEC_PM_21	0.071	0.035	11.3	89.8	
PRI_PM_22	4.160	98.795	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-6	-0.080	-0.039	12.5	89.7	
								SEC_PM_22	0.080	0.039	12.5	89.7	
PRI_PM_23	4.160	97.273	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-20	-0.078	-0.038	12.3	89.7	
								SEC_PM_23	0.078	0.038	12.3	89.7	
PRI_PM_24	4.160	97.190	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-22	-0.078	-0.038	12.3	89.7	
								SEC_PM_24	0.078	0.038	12.3	89.7	
PRI_PM_25	4.160	99.160	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-22	-0.040	-0.020	6.2	89.7	
								SEC_PM_25	0.040	0.020	6.2	89.7	
PRI_PM_26	4.160	98.825	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-31	-0.040	-0.020	6.2	89.7	
								SEC_PM_26	0.040	0.020	6.2	89.7	
PRI_PM_28	4.160	98.842	-2.2	0.000	0.000	0.000	0.000	PRI_PM_10	-0.066	-0.032	10.3	89.8	
								SEC_PM_28	0.066	0.032	10.3	89.8	
PV-PMS-Pri	24.900	100.190	1.4	0.000	0.000	0.000	0.000	P_526_2	0.000	0.000	0.0	0.0	
P_526_2	24.900	100.190	1.4	0.000	0.000	0.000	0.000	PV-PMS-Pri	0.000	-0.001	0.0	0.0	
								BUS_WTG6	0.000	0.001	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_6M-1-1	0.208	99.447	-1.4	0.000	0.000	0.008	0.004	Pole 6M-1-1	-0.008	-0.004	26.2	90.0	
SEC_6M-1-2	0.208	99.347	-1.4	0.000	0.000	0.008	0.004	Pole 6M-1-3	-0.008	-0.004	26.2	90.0	
SEC_6M-1-12	0.208	98.927	-1.4	0.000	0.000	0.008	0.004	Pole 6M-1-19	-0.008	-0.004	26.1	90.0	
SEC_6M-E-1	0.208	96.839	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-5	-0.013	-0.006	41.8	90.0	
SEC_6M-E-2	0.208	97.470	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-2	-0.013	-0.006	42.0	90.0	
SEC_6M-E-3	0.208	97.057	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-3	-0.013	-0.006	41.9	90.0	
SEC_6M-E-4	0.208	96.622	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-6	-0.013	-0.006	41.8	90.0	
SEC_6M-E-5	0.208	96.278	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-8	-0.013	-0.006	41.7	90.0	
SEC_6M-E-6	0.208	95.654	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-10	-0.013	-0.006	41.5	90.0	
SEC_6M-E-7	0.208	95.608	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-11	-0.013	-0.006	41.5	90.0	
SEC_6M-E-8	0.208	95.549	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-14	-0.013	-0.006	41.5	90.0	
SEC_6M-E-10	0.208	95.482	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-19	-0.013	-0.006	41.5	90.0	
SEC_6M-E-11	0.208	95.466	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-20	-0.013	-0.006	41.5	90.0	
SEC_6M-E-13	0.208	97.297	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-29	-0.013	-0.006	42.0	90.0	
SEC_CS-1-1	0.208	113.664	-2.6	0.000	0.000	0.012	0.006	Pole CS-1-4	-0.012	-0.006	32.1	90.0	
SEC_CS-1-2	0.208	113.666	-2.6	0.000	0.000	0.012	0.006	Pole CS-1-5	-0.012	-0.006	32.1	90.0	
SEC_CS-1-7	0.208	113.058	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-13	-0.012	-0.006	32.0	90.0	
SEC_CS-1-9	0.208	112.949	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-15	-0.012	-0.006	32.0	90.0	
SEC_CS-1-10	0.208	112.969	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-18	-0.012	-0.006	32.0	90.0	
SEC_CS-1-11	0.208	112.966	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-19	-0.012	-0.006	32.0	90.0	
SEC_CS-1-12	0.208	112.971	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-20	-0.012	-0.006	32.0	90.0	
SEC_CS-1-15	0.208	112.855	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-23	-0.012	-0.006	32.0	90.0	
SEC_CS-1-16	0.208	112.804	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-24	-0.012	-0.006	32.0	90.0	
SEC_CS-1-29	0.208	112.509	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-40	-0.012	-0.006	31.9	90.0	
SEC_CS-1-32	0.208	112.521	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-43	-0.012	-0.006	31.9	90.0	
SEC_CS-1-46	0.208	112.614	-2.9	0.000	0.000	0.012	0.006	Pole CS-1-59	-0.012	-0.006	31.9	90.0	
SEC_CS-1-53	0.208	112.514	-2.9	0.000	0.000	0.012	0.006	Pole CS-1-68	-0.012	-0.006	31.9	90.0	
SEC_CS-2-5	0.208	112.201	-2.3	0.000	0.000	0.012	0.006	Pole CS-2-8	-0.012	-0.006	31.9	90.0	
SEC_CS-2-7	0.208	112.192	-2.3	0.000	0.000	0.012	0.006	Pole CS-2-10	-0.012	-0.006	31.9	90.0	
SEC_CS-2-8	0.208	112.188	-2.3	0.000	0.000	0.012	0.006	Pole CS-2-11	-0.012	-0.006	31.8	90.0	
SEC_CS-2-10	0.208	112.081	-2.4	0.000	0.000	0.012	0.006	Pole CS-2-15	-0.012	-0.006	31.8	90.0	
SEC_CS-2-46	0.208	114.137	-2.5	0.000	0.000	0.012	0.006	Pole CS-2-66	-0.012	-0.006	32.2	90.0	
SEC_CS-2-47	0.208	113.666	-2.5	0.000	0.000	0.012	0.006	Pole CS-3-29	-0.012	-0.006	32.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_CS-2-48	0.208	113.400	-2.5	0.000	0.000	0.012	0.006	Pole CS-3-33	-0.012	-0.006	32.1	90.0	
SEC_CS-2-49	0.208	113.115	-2.5	0.000	0.000	0.012	0.006	Pole CS-2-73	-0.012	-0.006	32.0	90.0	
SEC_CS-4-8	0.208	113.316	-2.5	0.000	0.000	0.012	0.006	Pole CS-4-12	-0.012	-0.006	32.1	90.0	
SEC_CS-5-10	0.240	97.378	-1.5	0.000	0.000	0.023	0.011	UG-JUNC-CS-5-8	-0.023	-0.011	63.8	90.0	
SEC_CS-5-12	0.240	97.759	-1.3	0.000	0.000	0.023	0.011	UG-JUNC-CS-5-9	-0.023	-0.011	63.9	90.0	
SEC_HS-2-4	0.208	114.563	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-4	-0.012	-0.006	32.3	90.0	
SEC_HS-2-5	0.208	114.410	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-5	-0.012	-0.006	32.3	90.0	
SEC_HS-2-6	0.208	114.279	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-6	-0.012	-0.006	32.3	90.0	
SEC_HS-2-7	0.208	114.137	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-7	-0.012	-0.006	32.2	90.0	
SEC_HS-2-10	0.208	113.728	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-11	-0.012	-0.006	32.2	90.0	
SEC_HS-2-23	0.208	113.470	-2.3	0.000	0.000	0.012	0.006	Pole HS-2-26	-0.012	-0.006	32.1	90.0	
SEC_HS-2-25	0.208	113.344	-2.3	0.000	0.000	0.012	0.006	Pole HS-2-30	-0.012	-0.006	32.1	90.0	
SEC_HS-2-36	0.208	113.296	-2.3	0.000	0.000	0.012	0.006	Pole HS-2-43	-0.012	-0.006	32.1	90.0	
SEC_HS-2-67	0.208	113.727	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-77	-0.012	-0.006	32.2	90.0	
SEC_HS-3-55	0.208	113.381	-2.3	0.000	0.000	0.012	0.006	Pole HS-3-59	-0.012	-0.006	32.1	90.0	
SEC_HS-3-57	0.208	113.350	-2.3	0.000	0.000	0.012	0.006	Pole HS-3-61	-0.012	-0.006	32.1	90.0	
SEC_HS-3-59	0.208	113.335	-2.3	0.000	0.000	0.012	0.006	Pole HS-3-63	-0.012	-0.006	32.1	90.0	
SEC_HS-4-7	0.208	114.573	-2.5	0.000	0.000	0.013	0.006	Pole HS-4-10	-0.013	-0.006	34.1	90.0	
SEC_HS-4-13	0.208	114.306	-2.5	0.000	0.000	0.013	0.006	Pole HS-4-17	-0.013	-0.006	34.1	90.0	
SEC_HS-4-21	0.208	113.925	-2.4	0.000	0.000	0.013	0.006	Pole HS-4-26	-0.013	-0.006	34.0	90.0	
SEC_HS-4-32	0.208	114.594	-2.5	0.000	0.000	0.013	0.006	Pole HS-4-39	-0.013	-0.006	34.1	90.0	
SEC_HS-4-44	0.208	114.596	-2.5	0.000	0.000	0.013	0.006	Pole HS-4-48	-0.013	-0.006	34.1	90.0	
SEC_MS-1-17	0.208	100.039	-2.0	0.000	0.000	0.002	0.001	Pole MS-1-10	-0.002	-0.001	6.6	90.0	
SEC_MS-2-8	0.208	99.456	-1.9	0.000	0.000	0.006	0.003	Pole MS-2-1	-0.006	-0.003	19.6	90.0	
SEC_MS-2-36	0.208	99.550	-1.9	0.000	0.000	0.006	0.003	Pole MS-2-90	-0.006	-0.003	19.6	90.0	
SEC_MS-2-37	0.208	99.451	-1.9	0.000	0.000	0.006	0.003	Pole MS-2-2	-0.006	-0.003	19.6	90.0	
SEC_MS-2-38	0.208	99.445	-1.9	0.000	0.000	0.006	0.003	Pole MS-2-3	-0.006	-0.003	19.6	90.0	
SEC_MS-2-39	0.208	99.456	-1.9	0.000	0.000	0.006	0.003	Pole MS-2-92	-0.006	-0.003	19.6	90.0	
SEC_MS-2-40	0.208	99.421	-1.9	0.000	0.000	0.006	0.003	Pole MS-2-94	-0.006	-0.003	19.6	90.0	
SEC_MS-2-41	0.208	99.326	-1.9	0.000	0.000	0.006	0.003	Pole MS-2-100	-0.006	-0.003	19.6	90.0	
SEC_MS-3-1	0.208	99.606	-1.8	0.000	0.000	0.006	0.003	Pole MS-3-2	-0.006	-0.003	19.6	90.0	
SEC_MS-3-2	0.208	99.502	-1.8	0.000	0.000	0.006	0.003	Pole MS-3-6	-0.006	-0.003	19.6	90.0	
SEC_MS-3-3	0.208	99.443	-1.8	0.000	0.000	0.006	0.003	Pole MS-3-8	-0.006	-0.003	19.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_MS-3-22	0.208	99.220	-1.8	0.000	0.000	0.006	0.003	Pole MS-3-25	-0.006	-0.003	19.6	90.0	
SEC_MS-3-45	0.208	99.197	-1.9	0.000	0.000	0.010	0.005	Pole MS-4-36	-0.010	-0.005	31.0	90.0	
SEC_MS-3-49	0.208	99.137	-1.9	0.000	0.000	0.010	0.005	Pole MS-3-100	-0.010	-0.005	31.0	90.0	
SEC_MS-3-65	0.208	99.128	-1.9	0.000	0.000	0.010	0.005	Pole MS-3-102	-0.010	-0.005	31.0	90.0	
SEC_MS-3-66	0.208	99.293	-1.9	0.000	0.000	0.010	0.005	Pole MS-4-17	-0.010	-0.005	31.0	90.0	
SEC_MS-3-73	0.208	99.745	-1.8	0.000	0.000	0.006	0.003	Pole MS-4-3	-0.006	-0.003	19.7	90.0	
SEC_MS-3-74	0.208	99.741	-1.8	0.000	0.000	0.006	0.003	Pole MS-4-6	-0.006	-0.003	19.7	90.0	
SEC_MS-3-75	0.208	99.538	-1.8	0.000	0.000	0.006	0.003	Pole MS-4-10	-0.006	-0.003	19.6	90.0	
SEC_MS-3-76	0.208	99.227	-1.9	0.000	0.000	0.010	0.005	Pole MS-4-20	-0.010	-0.005	31.0	90.0	
SEC_MS-5-15	0.208	98.624	-2.1	0.000	0.000	0.006	0.003	Pole MS-5-16	-0.006	-0.003	19.5	90.0	
SEC_MS-5-16	0.208	98.511	-2.1	0.000	0.000	0.009	0.005	Pole MS-5-17	-0.009	-0.005	29.3	90.0	
SEC_MS-5-17	0.208	98.511	-2.1	0.000	0.000	0.009	0.005	Pole MS-5-18	-0.009	-0.005	29.3	90.0	
SEC_MS-5-23	0.208	98.577	-2.1	0.000	0.000	0.006	0.003	Pole MS-5-26	-0.006	-0.003	19.5	90.0	
SEC_MS-5-25	0.208	98.574	-2.1	0.000	0.000	0.006	0.003	Pole MS-5-28	-0.006	-0.003	19.5	90.0	
SEC_MS-5-26	0.208	98.466	-2.2	0.000	0.000	0.009	0.005	Pole MS-5-29	-0.009	-0.005	29.3	90.0	
SEC_MS-5-29	0.208	98.532	-2.1	0.000	0.000	0.006	0.003	Pole MS-5-32	-0.006	-0.003	19.5	90.0	
SEC_MS-5-30	0.208	98.419	-2.2	0.000	0.000	0.009	0.005	Pole MS-5-33	-0.009	-0.005	29.3	90.0	
SEC_MS-5-32	0.208	98.519	-2.1	0.000	0.000	0.006	0.003	Pole MS-5-35	-0.006	-0.003	19.5	90.0	
SEC_MS-5-40	0.208	98.357	-2.2	0.000	0.000	0.006	0.003	Pole MS-5-45	-0.006	-0.003	19.5	90.0	
SEC_MS-5-45	0.208	98.327	-2.2	0.000	0.000	0.006	0.003	Pole MS-5-50	-0.006	-0.003	19.5	90.0	
SEC_MS-5-99	0.208	99.929	-2.0	0.000	0.000	0.006	0.003	Pole MS-5-110	-0.006	-0.003	19.7	90.0	
SEC_MS-7-9	0.208	99.728	0.2	0.000	0.000	0.016	0.008	Pole MS-7-16	-0.016	-0.008	50.8	90.0	
SEC_MS-8-3	0.208	99.585	-1.9	0.000	0.000	0.013	0.006	Pole MS-8-4	-0.013	-0.006	39.3	90.0	
SEC_MS-8-8	0.208	99.406	-2.0	0.000	0.000	0.019	0.009	Pole MS-8-9	-0.019	-0.009	58.9	90.0	
SEC_MS-9-12	0.208	99.461	-1.9	0.000	0.000	0.013	0.006	Pole MS-9-15	-0.013	-0.006	39.3	90.0	
SEC_MS-9-14	0.208	99.366	-2.0	0.000	0.000	0.013	0.006	Pole MS-9-18	-0.013	-0.006	39.2	90.0	
SEC_MS-9-17	0.208	99.325	-2.0	0.000	0.000	0.013	0.006	Pole MS-9-21	-0.013	-0.006	39.2	90.0	
SEC_MS-9-22	0.208	99.309	-2.0	0.000	0.000	0.013	0.006	Pole MS-9-26	-0.013	-0.006	39.2	90.0	
SEC_MS-9-31	0.208	99.276	-2.0	0.000	0.000	0.013	0.006	Pole MS-9-37	-0.013	-0.006	39.2	90.0	
SEC_MS-9-32	0.208	99.147	-2.0	0.000	0.000	0.019	0.009	Pole MS-9-38	-0.019	-0.009	58.8	90.0	
SEC_MS-9-37	0.208	99.144	-2.0	0.000	0.000	0.013	0.006	Pole MS-9-46	-0.013	-0.006	39.2	90.0	
SEC_MS-9-38	0.208	99.138	-2.0	0.000	0.000	0.013	0.006	Pole MS-9-47	-0.013	-0.006	39.2	90.0	
SEC_MS-9-39	0.208	99.015	-2.1	0.000	0.000	0.019	0.009	Pole MS-9-48	-0.019	-0.009	58.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_MS-9-40	0.208	98.993	-2.1	0.000	0.000	0.019	0.009	Pole MS-9-49	-0.019	-0.009	58.7	90.0	
SEC_MS-9-41	0.208	99.021	-2.1	0.000	0.000	0.017	0.008	Pole MS-9-50	-0.017	-0.008	52.2	90.0	
SEC_MS-9-42	0.208	99.013	-2.1	0.000	0.000	0.017	0.008	Pole MS-9-51	-0.017	-0.008	52.2	90.0	
SEC_MS-9-43	0.208	99.006	-2.1	0.000	0.000	0.017	0.008	Pole MS-9-52	-0.017	-0.008	52.2	90.0	
SEC_MS-9-44	0.208	99.096	-2.0	0.000	0.000	0.012	0.006	Pole MS-9-53	-0.012	-0.006	35.9	90.0	
SEC_PM_1	0.208	98.710	-2.7	0.000	0.000	0.030	0.014	PRI_PM_1	-0.030	-0.014	92.8	90.0	
SEC_PM_1-1	0.208	96.849	-2.6	0.000	0.000	0.029	0.014	PRI_PM_1-1	-0.029	-0.014	91.8	90.0	
SEC_PM_2	0.208	98.365	-2.6	0.000	0.000	0.030	0.014	PRI_PM_2	-0.030	-0.014	92.6	90.0	
SEC_PM_3	0.208	98.076	-2.6	0.000	0.000	0.029	0.014	PRI_PM_3	-0.029	-0.014	92.5	90.0	
SEC_PM_4	0.208	96.752	-2.9	0.000	0.000	0.124	0.060	PRI_PM_4	-0.124	-0.060	396.8	90.0	
SEC_PM_5	0.208	97.828	-2.6	0.000	0.000	0.029	0.014	PRI_PM_5	-0.029	-0.014	92.3	90.0	
SEC_PM_6	0.208	97.594	-2.5	0.000	0.000	0.029	0.014	PRI_PM_6	-0.029	-0.014	92.2	90.0	
SEC_PM_7	0.208	98.967	-2.2	0.000	0.000	0.091	0.044	PRI_PM_7	-0.091	-0.044	282.7	90.0	
SEC_PM_8	0.208	99.212	-2.2	0.000	0.000	0.074	0.036	PRI_PM_8	-0.074	-0.036	228.7	90.0	
SEC_PM_9	0.208	99.212	-2.1	0.000	0.000	0.067	0.032	PRI_PM_9	-0.067	-0.032	206.9	90.0	
SEC_PM_10	0.208	98.423	-2.5	0.000	0.000	0.066	0.032	PRI_PM_10	-0.066	-0.032	205.9	90.0	
SEC_PM_11	0.208	98.833	-2.7	0.000	0.000	0.070	0.034	PRI_PM_11	-0.070	-0.034	217.3	90.0	
SEC_PM_12	0.208	96.892	-2.9	0.000	0.000	0.125	0.060	PRI_PM_12	-0.125	-0.060	397.2	90.0	
SEC_PM_13	0.208	96.327	-2.8	0.000	0.000	0.234	0.113	PRI_PM_13	-0.234	-0.113	748.8	90.0	
SEC_PM_14	0.208	96.960	-2.7	0.000	0.000	0.176	0.085	PRI_PM_14	-0.176	-0.085	558.4	90.0	
SEC_PM_15	0.208	98.322	-2.7	0.000	0.000	0.159	0.077	PRI_PM_15	-0.159	-0.077	498.2	90.0	
SEC_PM_16	0.208	98.816	-2.8	0.000	0.000	0.070	0.034	PRI_PM_16	-0.070	-0.034	217.3	90.0	
SEC_PM_17	0.208	98.269	-2.9	0.000	0.000	0.059	0.028	PRI_PM_17	-0.059	-0.028	184.0	90.0	
SEC_PM_18	0.208	98.715	-2.2	0.000	0.000	0.090	0.044	PRI_PM_18	-0.090	-0.044	282.2	90.0	
SEC_PM_19	0.208	96.672	-2.6	0.000	0.000	0.067	0.033	PRI_PM_19	-0.067	-0.033	214.4	90.0	
SEC_PM_20	0.208	96.967	-2.6	0.000	0.000	0.068	0.033	PRI_PM_20	-0.068	-0.033	214.8	90.0	
SEC_PM_21	0.208	97.089	-2.6	0.000	0.000	0.071	0.034	PRI_PM_21	-0.071	-0.034	225.7	90.0	
SEC_PM_22	0.208	98.350	-2.7	0.000	0.000	0.079	0.038	PRI_PM_22	-0.079	-0.038	249.1	90.0	
SEC_PM_23	0.208	96.832	-2.7	0.000	0.000	0.077	0.038	PRI_PM_23	-0.077	-0.038	246.8	90.0	
SEC_PM_24	0.208	96.749	-2.7	0.000	0.000	0.077	0.037	PRI_PM_24	-0.077	-0.037	246.7	90.0	
SEC_PM_25	0.208	98.714	-2.7	0.000	0.000	0.040	0.019	PRI_PM_25	-0.040	-0.019	124.8	90.0	
SEC_PM_26	0.208	98.379	-2.7	0.000	0.000	0.040	0.019	PRI_PM_26	-0.040	-0.019	124.6	90.0	
SEC_PM_28	0.208	98.414	-2.5	0.000	0.000	0.066	0.032	PRI_PM_28	-0.066	-0.032	205.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_SF-1-26	0.208	97.788	-2.5	0.000	0.000	0.016	0.008	SF-1-11	-0.016	-0.008	50.2	90.0	
SEC_SF-1-47	0.208	97.464	-2.5	0.000	0.000	0.016	0.008	SF-1-14	-0.016	-0.008	50.1	90.0	
SEC_SF-1-49	0.208	97.981	-2.6	0.000	0.000	0.016	0.008	SF-1-28	-0.016	-0.008	50.3	90.0	
SEC_SF-1-51	0.208	97.828	-2.6	0.000	0.000	0.016	0.008	SF-1-29	-0.016	-0.008	50.2	90.0	
SEC_SF-1-55	0.208	97.514	-2.6	0.000	0.000	0.016	0.008	SF-1-31	-0.016	-0.008	50.1	90.0	
SEC_SF-1-57	0.208	97.388	-2.6	0.000	0.000	0.016	0.008	SF-1-32	-0.016	-0.008	50.1	90.0	
SEC_SF-1-59	0.208	97.114	-2.6	0.000	0.000	0.016	0.008	SF-1-18	-0.016	-0.008	50.0	90.0	
SEC_SF-1-61	0.208	96.944	-2.6	0.000	0.000	0.016	0.008	SF-1-27	-0.016	-0.008	49.9	90.0	
SEC_SF-1-63	0.208	96.616	-2.6	0.000	0.000	0.016	0.008	SF-1-39	-0.016	-0.008	49.8	90.0	
SEC_SF-1-65	0.208	97.008	-2.6	0.000	0.000	0.016	0.008	SF-1-62	-0.016	-0.008	49.9	90.0	
SEC_SF-1-67	0.208	96.431	-2.6	0.000	0.000	0.016	0.008	SF-1-50	-0.016	-0.008	49.8	90.0	
SEC_SF-1-69	0.208	97.222	-2.6	0.000	0.000	0.016	0.008	SF-1-58	-0.016	-0.008	50.0	90.0	
SEC_SF-1-71	0.208	97.505	-2.6	0.000	0.000	0.016	0.008	SF-1-56	-0.016	-0.008	50.1	90.0	
SEC_SF-1-73	0.208	97.672	-2.6	0.000	0.000	0.016	0.008	SF-1-54	-0.016	-0.008	50.2	90.0	
SEC_SF-1-75	0.208	97.799	-2.6	0.000	0.000	0.016	0.008	SF-1-55	-0.016	-0.008	50.2	90.0	
SEC_SF-2-7	0.208	99.144	-2.2	0.000	0.000	0.014	0.007	SF-2-12	-0.014	-0.007	44.1	90.0	
SEC_SF-2-11	0.208	99.121	-2.2	0.000	0.000	0.014	0.007	SF-2-25	-0.014	-0.007	44.1	90.0	
SEC_SF-2-15	0.208	99.068	-2.2	0.000	0.000	0.014	0.007	SF-2-17	-0.014	-0.007	44.1	90.0	
SEC_SF-2-18	0.208	99.060	-2.2	0.000	0.000	0.014	0.007	SF-2-20	-0.014	-0.007	44.1	90.0	
SEC_SF-2-19	0.208	99.151	-2.2	0.000	0.000	0.014	0.007	SF-2-22	-0.014	-0.007	44.1	90.0	
SEC_SF-2-20	0.208	99.147	-2.2	0.000	0.000	0.014	0.007	SF-2-23	-0.014	-0.007	44.1	90.0	
SEC_SF-4-01	0.208	99.486	-2.2	0.000	0.000	0.016	0.008	SF-2-46	-0.016	-0.008	50.7	90.0	
SEC_SF-4-2	0.208	99.793	-2.1	0.000	0.000	0.007	0.004	SF-2-47	-0.007	-0.004	22.9	90.0	
SEC_SF-4-3	0.208	99.791	-2.1	0.000	0.000	0.007	0.004	SF-2-48	-0.007	-0.004	22.9	90.0	
SEC_SUB_FDR_XFMR#25-49	0.208	97.544	-2.5	0.000	0.000	0.010	0.005	SF-1-57	-0.010	-0.005	32.3	90.0	
SF-1-1	4.160	99.693	-2.1	0.000	0.000	0.007	0.003	BUS_SAF_4kV	-1.173	-0.583	182.3	89.5	
								SF-1-2	1.166	0.580	181.2	89.5	
SF-1-2	4.160	99.327	-2.2	0.000	0.000	0.000	0.000	SF-1-4	0.021	0.010	3.2	89.8	
								SF-1-1	-1.162	-0.576	181.2	89.6	
								SF-1-3	1.142	0.566	178.0	89.6	
SF-1-3	4.160	99.158	-2.2	0.000	0.000	0.007	0.003	SF-1-2	-1.140	-0.564	178.0	89.6	
								SF-1-7	1.133	0.561	177.0	89.6	
SF-1-4	4.160	99.317	-2.2	0.000	0.000	0.007	0.003	SF-1-2	-0.021	-0.010	3.2	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-1-5	0.014	0.007	2.1	89.8	
SF-1-5	4.160	99.307	-2.2	0.000	0.000	0.007	0.003	SF-1-4	-0.014	-0.007	2.1	89.8	
								SF-1-6	0.007	0.003	1.1	89.8	
SF-1-6	4.160	99.305	-2.2	0.000	0.000	0.007	0.003	SF-1-5	-0.007	-0.003	1.1	89.8	
SF-1-7	4.160	98.802	-2.3	0.000	0.000	0.000	0.000	SF-1-8	0.298	0.146	46.7	89.8	
								SF-1-3	-1.130	-0.557	177.0	89.7	
								SF-1-26	0.832	0.411	130.3	89.7	
SF-1-8	4.160	98.663	-2.3	0.000	0.000	0.014	0.007	SF-1-7	-0.298	-0.146	46.7	89.8	
								SF-1-9	0.284	0.140	44.6	89.8	
SF-1-9	4.160	98.594	-2.3	0.000	0.000	0.007	0.003	SF-1-8	-0.284	-0.140	44.6	89.8	
								SF-1-10	0.277	0.136	43.5	89.8	
SF-1-10	4.160	98.506	-2.3	0.000	0.000	0.007	0.003	SF-1-9	-0.277	-0.136	43.5	89.8	
								SF-1-11	0.270	0.133	42.4	89.8	
SF-1-11	4.160	98.350	-2.3	0.000	0.000	0.000	0.000	SF-1-10	-0.270	-0.133	42.4	89.8	
								SF-1-12	0.254	0.125	39.9	89.8	
								SEC_SF-1-26	0.016	0.008	2.5	89.8	
SF-1-12	4.160	98.177	-2.3	0.000	0.000	0.007	0.003	SF-1-11	-0.254	-0.125	39.9	89.8	
								SF-1-13	0.247	0.121	38.9	89.8	
SF-1-13	4.160	98.123	-2.3	0.000	0.000	0.007	0.003	SF-1-12	-0.247	-0.121	38.9	89.8	
								SF-1-14	0.240	0.118	37.8	89.8	
SF-1-14	4.160	98.026	-2.3	0.000	0.000	0.000	0.000	SF-1-13	-0.240	-0.118	37.8	89.8	
								SF-1-15	0.224	0.110	35.3	89.7	
								SEC_SF-1-47	0.016	0.008	2.5	89.8	
SF-1-15	4.160	97.883	-2.3	0.000	0.000	0.007	0.003	SF-1-14	-0.224	-0.110	35.3	89.7	
								SF-1-16	0.217	0.107	34.3	89.7	
SF-1-16	4.160	97.651	-2.3	0.000	0.000	0.007	0.003	SF-1-15	-0.216	-0.106	34.3	89.7	
								SF-1-17	0.210	0.103	33.2	89.7	
SF-1-17	4.160	97.494	-2.3	0.000	0.000	0.000	0.000	PRI_PM_14	0.176	0.087	27.9	89.7	
								SF-1-16	-0.209	-0.103	33.2	89.7	
								SF-1-19	0.033	0.016	5.3	89.8	
SF-1-18	4.160	97.674	-2.3	0.000	0.000	0.000	0.000	SF-1-34	-0.353	-0.174	55.8	89.7	
								SF-1-25	0.337	0.166	53.3	89.7	
								SEC_SF-1-59	0.016	0.008	2.5	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-19	4.160	97.478	-2.3	0.000	0.000	0.000	0.000	SF-1-17	-0.033	-0.016	5.3	89.8	
								SF-1-20	0.020	0.010	3.2	89.8	
								SF-1-23	0.013	0.007	2.1	89.8	
SF-1-20	4.160	97.475	-2.3	0.000	0.000	0.007	0.003	SF-1-21	0.013	0.007	2.1	89.8	
								SF-1-19	-0.020	-0.010	3.2	89.8	
SF-1-21	4.160	97.471	-2.3	0.000	0.000	0.007	0.003	SF-1-20	-0.013	-0.007	2.1	89.8	
								SF-1-22	0.007	0.003	1.1	89.8	
SF-1-22	4.160	97.469	-2.3	0.000	0.000	0.007	0.003	SF-1-21	-0.007	-0.003	1.1	89.8	
SF-1-23	4.160	97.459	-2.3	0.000	0.000	0.007	0.003	SF-1-19	-0.013	-0.007	2.1	89.8	
								SF-1-24	0.007	0.003	1.1	89.8	
SF-1-24	4.160	97.458	-2.3	0.000	0.000	0.007	0.003	SF-1-23	-0.007	-0.003	1.1	89.8	
SF-1-25	4.160	97.591	-2.3	0.000	0.000	0.007	0.003	SF-1-18	-0.336	-0.166	53.3	89.7	
								SF-1-27	0.330	0.163	52.3	89.7	
SF-1-26	4.160	98.678	-2.4	0.000	0.000	0.007	0.003	SF-1-28	0.441	0.217	69.1	89.7	
								SF-1-53	0.384	0.189	60.2	89.7	
								SF-1-7	-0.831	-0.410	130.3	89.7	
SF-1-27	4.160	97.504	-2.3	0.000	0.000	0.000	0.000	SF-1-25	-0.329	-0.163	52.3	89.7	
								SF-1-35	0.314	0.155	49.8	89.7	
								SEC_SF-1-61	0.016	0.008	2.5	89.8	
SF-1-28	4.160	98.544	-2.4	0.000	0.000	0.000	0.000	SF-1-26	-0.440	-0.216	69.1	89.7	
								SF-1-29	0.424	0.209	66.5	89.7	
								SEC_SF-1-49	0.016	0.008	2.5	89.8	
SF-1-29	4.160	98.391	-2.4	0.000	0.000	0.000	0.000	SF-1-28	-0.423	-0.208	66.5	89.7	
								SF-1-30	0.407	0.201	64.0	89.7	
								SEC_SF-1-51	0.016	0.008	2.5	89.8	
SF-1-30	4.160	98.289	-2.4	0.000	0.000	0.007	0.003	SF-1-29	-0.407	-0.200	64.0	89.7	
								SF-1-31	0.400	0.197	63.0	89.7	
SF-1-31	4.160	98.076	-2.3	0.000	0.000	0.000	0.000	SF-1-30	-0.399	-0.197	63.0	89.7	
								SF-1-33	0.383	0.189	60.5	89.7	
								SEC_SF-1-55	0.016	0.008	2.5	89.8	
SF-1-32	4.160	97.949	-2.3	0.000	0.000	0.000	0.000	SF-1-33	-0.376	-0.185	59.4	89.7	
								SF-1-34	0.360	0.178	56.9	89.7	
								SEC_SF-1-57	0.016	0.008	2.5	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-33	4.160	97.991	-2.3	0.000	0.000	0.007	0.003	SF-1-32	0.376	0.185	59.4	89.7	
								SF-1-31	-0.383	-0.189	60.5	89.7	
SF-1-34	4.160	97.768	-2.3	0.000	0.000	0.007	0.003	SF-1-18	0.353	0.174	55.8	89.7	
								SF-1-32	-0.360	-0.177	56.9	89.7	
SF-1-35	4.160	97.433	-2.3	0.000	0.000	0.007	0.003	SF-1-27	-0.314	-0.155	49.8	89.7	
								SF-1-36	0.307	0.151	48.7	89.7	
SF-1-36	4.160	97.353	-2.3	0.000	0.000	0.007	0.003	SF-1-35	-0.307	-0.151	48.7	89.7	
								SF-1-37	0.300	0.148	47.7	89.7	
SF-1-37	4.160	97.263	-2.3	0.000	0.000	0.007	0.003	SF-1-36	-0.300	-0.148	47.7	89.7	
								SF-1-38	0.293	0.145	46.6	89.7	
SF-1-38	4.160	97.176	-2.3	0.000	0.000	0.000	0.000	SF-1-37	-0.293	-0.145	46.6	89.7	
								SF-1-39	0.016	0.008	2.5	89.8	
								SF-1-40	0.277	0.137	44.2	89.7	
SF-1-39	4.160	97.174	-2.3	0.000	0.000	0.000	0.000	SF-1-38	-0.016	-0.008	2.5	89.8	
								SEC_SF-1-63	0.016	0.008	2.5	89.8	
SF-1-40	4.160	97.068	-2.3	0.000	0.000	0.000	0.000	PRI_PM_13	0.235	0.116	37.5	89.6	
								SF-1-38	-0.277	-0.137	44.2	89.7	
								SF-1-42	0.042	0.021	6.7	89.8	
SF-1-42	4.160	97.040	-2.3	0.000	0.000	0.000	0.000	SF-1-40	-0.042	-0.021	6.7	89.8	
								SF-1-44	0.042	0.021	6.7	89.8	
SF-1-44	4.160	97.011	-2.3	0.000	0.000	0.007	0.003	SF-1-42	-0.042	-0.021	6.7	89.8	
								SF-1-45	0.035	0.017	5.6	89.8	
SF-1-45	4.160	96.999	-2.3	0.000	0.000	0.000	0.000	SF-1-44	-0.035	-0.017	5.6	89.8	
								SF-1-47	0.035	0.017	5.6	89.8	
								L-SUB-FDR-EQ#16-1-38~	0.000	0.000	0.0	0.0	
SF-1-47	4.160	96.993	-2.3	0.000	0.000	0.007	0.003	SF-1-45	-0.035	-0.017	5.6	89.8	
								SF-1-50	0.029	0.014	4.6	89.8	
SF-1-50	4.160	96.989	-2.3	0.000	0.000	0.000	0.000	SF-1-47	-0.029	-0.014	4.6	89.8	
								SF-1-52	0.013	0.006	2.1	89.8	
								SEC_SF-1-67	0.016	0.008	2.5	89.8	
SF-1-52	4.160	96.985	-2.3	0.000	0.000	0.013	0.006	SF-1-50	-0.013	-0.006	2.1	89.8	
SF-1-53	4.160	98.506	-2.4	0.000	0.000	0.000	0.000	SF-1-55	0.383	0.189	60.2	89.7	
								SF-1-26	-0.383	-0.189	60.2	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-54	4.160	98.234	-2.4	0.000	0.000	0.000	0.000	SF-1-55	-0.366	-0.181	57.7	89.7	
								SF-1-56	0.350	0.173	55.2	89.7	
								SEC_SF-1-73	0.016	0.008	2.5	89.8	
SF-1-55	4.160	98.362	-2.4	0.000	0.000	0.000	0.000	SF-1-53	-0.382	-0.189	60.2	89.7	
								SF-1-54	0.366	0.181	57.7	89.7	
								SEC_SF-1-75	0.016	0.008	2.5	89.8	
SF-1-56	4.160	98.066	-2.4	0.000	0.000	0.000	0.000	SF-1-54	-0.349	-0.173	55.2	89.7	
								SF-1-57	0.334	0.165	52.6	89.7	
								SEC_SF-1-71	0.016	0.008	2.5	89.8	
SF-1-57	4.160	97.906	-2.4	0.000	0.000	0.007	0.003	SF-1-56	-0.333	-0.164	52.6	89.7	
								SF-1-58	0.316	0.156	50.0	89.6	
								SEC_SUB_FDR_XFMR#25-49	0.010	0.005	1.6	89.9	
SF-1-58	4.160	97.782	-2.4	0.000	0.000	0.000	0.000	SF-1-57	-0.316	-0.156	50.0	89.6	
								SF-1-59	0.300	0.148	47.5	89.6	
								SEC_SF-1-69	0.016	0.008	2.5	89.8	
SF-1-59	4.160	97.665	-2.4	0.000	0.000	0.000	0.000	PRI_PM_12	0.125	0.062	19.9	89.6	
								SF-1-58	-0.299	-0.148	47.5	89.6	
								SF-1-60	0.174	0.086	27.6	89.7	
SF-1-60	4.160	97.597	-2.4	0.000	0.000	0.000	0.000	PRI_PM_4	0.125	0.062	19.8	89.6	
								SF-1-59	-0.174	-0.086	27.6	89.7	
								SF-1-61	0.049	0.024	7.8	89.8	
SF-1-61	4.160	97.579	-2.4	0.000	0.000	0.007	0.003	SF-1-60	-0.049	-0.024	7.8	89.8	
								SF-1-62	0.042	0.021	6.7	89.8	
SF-1-62	4.160	97.568	-2.4	0.000	0.000	0.000	0.000	SF-1-61	-0.042	-0.021	6.7	89.8	
								SF-1-63	0.027	0.013	4.2	89.8	
								SEC_SF-1-65	0.016	0.008	2.5	89.8	
SF-1-63	4.160	97.557	-2.4	0.000	0.000	0.007	0.003	SF-1-62	-0.027	-0.013	4.2	89.8	
								SF-1-64	0.020	0.010	3.2	89.8	
SF-1-64	4.160	97.550	-2.4	0.000	0.000	0.007	0.003	SF-1-63	-0.020	-0.010	3.2	89.8	
								SF-1-65	0.013	0.007	2.1	89.8	
SF-1-65	4.160	97.544	-2.4	0.000	0.000	0.007	0.003	SF-1-64	-0.013	-0.007	2.1	89.8	
								SF-1-66	0.007	0.003	1.1	89.8	
SF-1-66	4.160	97.542	-2.4	0.000	0.000	0.007	0.003	SF-1-65	-0.007	-0.003	1.1	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-2-1	4.160	100.122	-2.0	0.000	0.000	0.006	0.003	BUS_SAF_4kV	-0.182	-0.089	28.1	89.9	
								SF-2-2	0.176	0.086	27.2	89.9	
SF-2-2	4.160	100.064	-2.0	0.000	0.000	0.000	0.000	SF-2-1	-0.176	-0.086	27.2	89.9	
								SF-2-3	0.006	0.003	0.9	89.8	
								SF-2-5	0.170	0.083	26.3	89.9	
SF-2-3	4.160	100.062	-2.0	0.000	0.000	0.006	0.003	SF-2-2	-0.006	-0.003	0.9	89.8	
								SF-2-4	0.000	0.000	0.0	0.0	
SF-2-4	4.160	100.062	-2.0	0.000	0.000	0.000	0.000	SF-2-3	0.000	0.000	0.0	0.0	
SF-2-5	4.160	100.035	-2.0	0.000	0.000	0.000	0.000	SF-2-2	-0.170	-0.083	26.3	89.9	
								SF-2-7	0.012	0.006	1.9	89.8	
								SF-2-9	0.006	0.003	0.9	89.8	
								SF-2-10	0.152	0.074	23.5	89.9	
SF-2-7	4.160	100.034	-2.0	0.000	0.000	0.006	0.003	SF-2-5	-0.012	-0.006	1.9	89.8	
								SF-2-8	0.006	0.003	0.9	89.8	
SF-2-8	4.160	100.032	-2.0	0.000	0.000	0.006	0.003	SF-2-7	-0.006	-0.003	0.9	89.8	
SF-2-9	4.160	100.033	-2.0	0.000	0.000	0.006	0.003	SF-2-5	-0.006	-0.003	0.9	89.8	
SF-2-10	4.160	99.839	-2.0	0.000	0.000	0.006	0.003	SF-2-5	-0.152	-0.074	23.5	89.9	
								SF-2-11	0.146	0.071	22.5	89.9	
SF-2-11	4.160	99.652	-2.0	0.000	0.000	0.000	0.000	SF-2-10	-0.145	-0.071	22.5	89.9	
								SF-2-12	0.085	0.041	13.1	89.8	
								SF-2-14	0.032	0.016	5.0	89.9	
								SF-2-22	0.028	0.014	4.4	89.9	
SF-2-12	4.160	99.638	-2.0	0.000	0.000	0.000	0.000	SF-2-11	-0.085	-0.041	13.1	89.8	
								SF-2-13	0.070	0.034	10.9	89.8	
								SEC_SF-2-7	0.014	0.007	2.2	89.9	
SF-2-13	4.160	99.627	-2.0	0.000	0.000	0.012	0.006	SF-2-12	-0.070	-0.034	10.9	89.8	
								SF-2-15	0.058	0.029	9.1	89.9	
SF-2-14	4.160	99.637	-2.0	0.000	0.000	0.006	0.003	SF-2-11	-0.032	-0.016	5.0	89.9	
								SF-2-26	0.026	0.013	4.1	89.9	
SF-2-15	4.160	99.595	-2.0	0.000	0.000	0.012	0.006	SF-2-13	-0.058	-0.029	9.1	89.8	
								SF-2-16	0.046	0.023	7.2	89.9	
SF-2-16	4.160	99.570	-2.0	0.000	0.000	0.006	0.003	SF-2-15	-0.046	-0.023	7.2	89.9	
								SF-2-17	0.040	0.020	6.3	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-2-17	4.160	99.561	-2.0	0.000	0.000	0.000	0.000	SF-2-16	-0.040	-0.020	6.3	89.9	
								SF-2-18	0.026	0.013	4.1	89.9	
								SEC_SF-2-15	0.014	0.007	2.2	89.9	
SF-2-18	4.160	99.560	-2.0	0.000	0.000	0.006	0.003	SF-2-17	-0.026	-0.013	4.1	89.8	
								SF-2-19	0.020	0.010	3.1	89.9	
SF-2-19	4.160	99.557	-2.0	0.000	0.000	0.006	0.003	SF-2-18	-0.020	-0.010	3.1	89.9	
								SF-2-20	0.014	0.007	2.2	89.9	
SF-2-20	4.160	99.553	-2.0	0.000	0.000	0.000	0.000	SF-2-19	-0.014	-0.007	2.2	89.9	
								SF-2-21	0.000	0.000	0.0	0.0	
								SEC_SF-2-18	0.014	0.007	2.2	89.9	
SF-2-21	4.160	99.553	-2.0	0.000	0.000	0.000	0.000	SF-2-20	0.000	0.000	0.0	0.0	
SF-2-22	4.160	99.645	-2.0	0.000	0.000	0.000	0.000	SF-2-11	-0.028	-0.014	4.4	89.9	
								SF-2-23	0.014	0.007	2.2	89.9	
								SEC_SF-2-19	0.014	0.007	2.2	89.9	
SF-2-23	4.160	99.641	-2.0	0.000	0.000	0.000	0.000	SF-2-22	-0.014	-0.007	2.2	89.9	
								SF-2-24	0.000	0.000	0.0	0.0	
								SEC_SF-2-20	0.014	0.007	2.2	89.9	
SF-2-24	4.160	99.641	-2.0	0.000	0.000	0.000	0.000	SF-2-23	0.000	0.000	0.0	0.0	
SF-2-25	4.160	99.615	-2.0	0.000	0.000	0.000	0.000	SF-2-26	-0.026	-0.013	4.1	89.9	
								SF-2-27	0.012	0.006	1.9	89.9	
								SEC_SF-2-11	0.014	0.007	2.2	89.9	
SF-2-26	4.160	99.632	-2.0	0.000	0.000	0.000	0.000	SF-2-25	0.026	0.013	4.1	89.9	
								SF-2-14	-0.026	-0.013	4.1	89.9	
SF-2-27	4.160	99.599	-2.0	0.000	0.000	0.006	0.003	SF-2-25	-0.012	-0.006	1.9	89.8	
								SF-2-28	0.006	0.003	0.9	89.9	
SF-2-28	4.160	99.596	-2.0	0.000	0.000	0.006	0.003	SF-2-27	-0.006	-0.003	0.9	89.8	
								SF-2-29	0.000	0.000	0.0	0.0	
SF-2-29	4.160	99.596	-2.0	0.000	0.000	0.000	0.000	SF-2-28	0.000	0.000	0.0	0.0	
SF-2-30	4.160	100.176	-2.0	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.156	-0.076	24.1	90.0	
								Pole MS-5-108	0.125	0.061	19.3	90.0	
								SF-2-33	0.031	0.015	4.8	90.0	
SF-2-33	4.160	100.120	-2.0	0.000	0.000	0.000	0.000	SF-2-37	0.031	0.015	4.8	89.9	
								SF-2-30	-0.031	-0.015	4.8	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Line SF-2-45~	0.000	0.000	0.0	0.0	
SF-2-37	4.160	100.101	-2.0	0.000	0.000	0.000	0.000	SF-2-33	-0.031	-0.015	4.8	89.9	
								SF-2-42	0.031	0.015	4.8	89.9	
								Line SF-2-37~	0.000	0.000	0.0	0.0	
SF-2-42	4.160	100.079	-2.0	0.000	0.000	0.000	0.000	SF-2-37	-0.031	-0.015	4.8	89.9	
								SF-2-44	0.031	0.015	4.8	89.9	
								Line SF-2-49~	0.000	0.000	0.0	0.0	
SF-2-44	4.160	100.058	-2.0	0.000	0.000	0.000	0.000	SF-2-42	-0.031	-0.015	4.8	89.9	
								SF-2-46	0.031	0.015	4.8	89.9	
								Line SF-2-53~	0.000	0.000	0.0	0.0	
SF-2-46	4.160	100.054	-2.0	0.000	0.000	0.000	0.000	SF-2-44	-0.031	-0.015	4.8	89.9	
								SF-2-47	0.015	0.007	2.3	90.0	
								SEC_SF-4-01	0.016	0.008	2.5	89.8	
SF-2-47	4.160	100.050	-2.0	0.000	0.000	0.000	0.000	SF-2-46	-0.015	-0.007	2.3	90.0	
								SF-2-48	0.007	0.004	1.1	90.0	
								SEC_SF-4-2	0.007	0.004	1.1	89.9	
SF-2-48	4.160	100.048	-2.0	0.000	0.000	0.000	0.000	SF-2-47	-0.007	-0.004	1.1	90.0	
								SF-2-50	0.000	0.000	0.0	0.0	
								SEC_SF-4-3	0.007	0.004	1.1	89.9	
SF-2-50	4.160	100.048	-2.0	0.000	0.000	0.000	0.000	SF-2-48	0.000	0.000	0.0	0.0	
								Line SF-2-61~	0.000	0.000	0.0	0.0	
UG-JUNC-CS-5-8	24.900	97.854	-1.3	0.000	0.000	0.000	0.000	Pole CS-5-20	-0.023	-0.011	0.6	89.8	
								SEC_CS-5-10	0.023	0.011	0.6	89.8	
UG-JUNC-CS-5-9	24.900	97.854	-1.3	0.000	0.000	0.000	0.000	Pole CS-5-19	-0.023	-0.011	0.6	90.0	
								SEC_CS-5-12	0.023	0.011	0.6	90.0	
UG_JUNC-CS-1	4.160	99.071	-2.4	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	0.551	0.267	85.7	90.0	
								Pole CS-2-5	-0.581	-0.281	90.4	90.0	
								PRI_PM_1	0.030	0.015	4.6	89.8	
UG_JUNC-CS-2	4.160	98.726	-2.4	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-0.549	-0.266	85.8	90.0	
								UG_JUNC-CS-3	0.519	0.252	81.1	90.0	
								PRI_PM_2	0.030	0.014	4.6	89.8	
UG_JUNC-CS-3	4.160	98.436	-2.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-0.517	-0.252	81.1	89.9	
								PRI_PM_3	0.029	0.014	4.6	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								UG_JUNC-CS-5	0.488	0.237	76.5	89.9	
UG_JUNC-CS-5	4.160	98.187	-2.3	0.000	0.000	0.000	0.000	PRI_PM_5	0.029	0.014	4.6	89.8	
								UG_JUNC-CS-3	-0.487	-0.237	76.5	89.9	
								UG_JUNC-CS-6	0.457	0.223	71.9	89.9	
UG_JUNC-CS-6	4.160	97.954	-2.2	0.000	0.000	0.000	0.000	PRI_PM_6	0.029	0.014	4.6	89.8	
								UG_JUNC-CS-5	-0.456	-0.223	71.9	89.9	
								Pole CS-2-7	0.427	0.208	67.3	89.9	
UG_JUNC-CS-7	4.160	97.539	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-17	0.000	0.000	0.0	0.0	
								C_SUB-FDR-EQ#7-3-8~	0.000	0.000	0.0	0.0	
C_SUB-FDR-EQ#7-3-8~	4.160	97.539	-2.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
LINE 6M-26~	4.160	99.196	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-23	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-173~	4.160	98.030	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-57	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-84~	4.160	98.457	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-10	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-86~	4.160	97.876	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-54	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-237~	4.160	99.326	-2.4	0.000	0.000	0.000	0.000	Pole CS-2-66	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-246~	4.160	98.007	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-36	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-276~	4.160	98.082	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-74	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-283~	4.160	99.478	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-4	0.000	0.000	0.0	0.0	
LINE MS-4-53~	4.160	98.546	-1.8	0.000	0.000	0.000	0.000	Pole MS-4-52	0.000	0.000	0.0	0.0	
Line MS-5-79~	4.160	98.356	-2.2	0.000	0.000	0.000	0.000	Pole MS-5-76	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-97~	4.160	99.403	-1.8	0.000	0.000	0.000	0.000	Pole MS-2-122	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-173~	4.160	99.660	-1.9	0.000	0.000	0.000	0.000	Pole MS-2-3	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-13~	4.160	99.678	-1.9	0.000	0.000	0.000	0.000	Pole MS-2-180	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-133~	4.160	99.435	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-25	0.000	0.000	0.0	0.0	
LINE MS-3-11~	4.160	99.400	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-43	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-177~	4.160	99.493	-1.8	0.000	0.000	0.000	0.000	Pole MS-3-70	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-1-38~	4.160	96.999	-2.3	0.000	0.000	0.000	0.000	SF-1-45	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-12~	4.160	100.112	-2.0	0.000	0.000	0.000	0.000	Pole MS-1-19	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-9~	4.160	100.166	-2.0	0.000	0.000	0.000	0.000	Pole MS-1-1	0.000	0.000	0.0	0.0	
Line MS-5-129~	4.160	99.924	-2.0	0.000	0.000	0.000	0.000	Pole MS-5-125	0.000	0.000	0.0	0.0	
Line SF-2-37~	4.160	100.101	-2.0	0.000	0.000	0.000	0.000	SF-2-37	0.000	0.000	0.0	0.0	
Line SF-2-45~	4.160	100.120	-2.0	0.000	0.000	0.000	0.000	SF-2-33	0.000	0.000	0.0	0.0	
Line SF-2-49~	4.160	100.079	-2.0	0.000	0.000	0.000	0.000	SF-2-42	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Line SF-2-53~	4.160	100.058	-2.0	0.000	0.000	0.000	0.000	SF-2-44	0.000	0.000	0.0	0.0	
Line SF-2-61~	4.160	100.048	-2.0	0.000	0.000	0.000	0.000	SF-2-50	0.000	0.000	0.0	0.0	
HS-4-33~	4.160	99.746	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-47	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-90~	4.160	98.802	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-67	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-96~	4.160	98.806	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-33	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-278~	4.160	98.600	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-49	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-301~	4.160	98.979	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-66	0.000	0.000	0.0	0.0	
L-25-LAM-L1-02~	24.900	99.793	-0.8	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.000	0.000	0.0	0.0	
L-25-LLP-SW-03~	24.900	99.611	-0.9	0.000	0.000	0.000	0.000	BUS_SAF_25kV	0.000	0.000	0.0	0.0	
L-25-XFMR-03~	24.900	99.822	-0.8	0.000	0.000	0.000	0.000	BUS_25kV_03	0.000	0.000	0.0	0.0	
Line51~	69.000	99.785	0.0	0.000	0.000	0.000	0.000	BUS_LLP_69kV_02	0.000	0.000	0.0	0.0	
L-25-LLP-E-06~	24.900	97.756	-1.2	0.000	0.000	0.000	0.000	BUS_25kV_E-04	0.000	0.000	0.0	0.0	
Line15~	24.900	99.648	-0.8	0.000	0.000	0.000	0.000	BUS_25kV_W-02	0.000	0.000	0.0	0.0	
L-25-LLP-W-03~	24.900	99.238	-0.9	0.000	0.000	0.000	0.000	BUS_25kV_W-03	0.000	0.000	0.0	0.0	

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)

# Indicates a bus with a load mismatch of more than 0.1 MVA

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Bus1	4.160	99.744	-0.5	0.000	0.000	0.000	0.000	BUS_5KV_LLP_2	0.000	0.000	0.0	0.0	
Bus2	4.160	97.563	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.000	0.000	0.0	0.0	
BUS_5KV-LLP_01	4.160	99.765	-0.5	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	-0.499	-0.244	77.3	89.8	
								BUS_5KV_LLP_02	0.043	0.023	6.8	88.3	
								Pole MS-9-1	0.165	0.080	25.6	89.9	
								Pole MS-4-1	0.080	0.038	12.4	90.3	
								Pole MS-4-31	0.210	0.103	32.5	89.9	
BUS_5KV_LLP_01	4.160	99.747	-0.5	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.158	-0.088	25.1	87.4	
								BUS_5KV_LLP_PLTLDCTR	0.085	0.052	13.8	85.2	
								Pole MS-8-1	0.073	0.036	11.3	89.9	
BUS_5KV_LLP_2	4.160	99.744	-0.5	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.104	-0.050	16.1	90.0	
								Bus1	0.000	0.000	0.0	0.0	
								Pole MS-2-182	0.104	0.051	16.1	90.0	
BUS_5KV_LLP_02	4.160	99.759	-0.5	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	0.158	0.087	25.0	87.7	
								BUS_5KV_XFMR_02	-0.585	-0.290	90.9	89.6	
								BUS_5KV-LLP_01	-0.043	-0.023	6.8	87.9	
								BUS_5KV_LLP_2	0.104	0.050	16.1	90.1	
								Pole CS-1-90	0.107	0.052	16.6	90.1	
								Pole MS-3-87	0.259	0.126	40.0	90.0	
BUS_5KV_LLP_PLTLDCTR	4.160	99.734	-0.5	0.000	0.000	0.085	0.052	BUS_5KV_LLP_01	-0.085	-0.052	13.9	85.0	
BUS_5KV_XFMR_02	4.160	99.801	-0.5	0.000	0.000	0.000	0.000	BUS_5KV-LLP_01	0.499	0.243	77.2	89.9	
								BUS_5KV_LLP_02	0.585	0.290	90.8	89.6	
								BUS_25kV_SUB_02	-1.084	-0.533	168.0	89.7	0.625
BUS_5_NEOPLAN	4.160	99.412	-0.5	0.000	0.000	0.107	0.052	Pole CS-1-90	-0.107	-0.052	16.6	90.0	
BUS_6M_5kV	4.160	99.912	-0.7	0.000	0.000	0.000	0.000	BUS_6M_SEC	-0.129	-0.061	19.9	90.3	
								Pole 6M-1-1	0.041	0.019	6.2	90.3	
								Pole 6M-E-1	0.089	0.042	13.7	90.3	
BUS_6M_25kV	24.900	100.195	-0.5	0.000	0.000	0.000	0.000	BUS_L1_01	-0.129	-0.062	3.3	90.3	
								L-25-LAM-L1-02~	0.000	0.000	0.0	0.0	
								BUS_6M_SEC	0.129	0.062	3.3	90.1	
BUS_6M_SEC	4.160	99.976	-0.7	0.000	0.000	0.000	0.000	BUS_6M_5kV	0.129	0.062	19.9	90.3	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_6M_25kV	-0.129	-0.062	19.9	90.3	
BUS-25kV-BEEFCITY	24.900	99.048	0.3	0.000	0.000	0.142	0.088	BUS-25kV-MCCLAVE	-0.142	-0.088	3.9	85.0	
BUS-25kV-BIG-BEND	24.900	99.641	0.2	0.000	0.000	0.144	0.089	BUS_25kV_W-10	-0.144	-0.089	3.9	85.0	
BUS-25KV-E-10	24.900	99.163	-2.9	0.000	0.000	0.671	0.416	BUS_25kV_E-09	-0.671	-0.416	18.5	85.0	
BUS-25kV-HS-01	24.900	99.060	-0.7	0.000	0.000	0.033	0.021	BUS_HIS_25kV	-0.033	-0.021	0.9	85.0	
BUS-25kV-MCCLAVE	24.900	99.077	0.3	0.000	0.000	0.167	0.104	BUS_25kV_W-11	-0.310	-0.189	8.5	85.3	
								BUS-25kV-BEEFCITY	0.142	0.085	3.9	85.7	
BUS-25kV-TS-01	24.900	99.115	-0.7	0.000	0.000	0.033	0.021	BUS_TS_25kV	-0.033	-0.021	0.9	85.0	
BUS-25kV-TS-AREA	24.900	99.117	-0.7	0.000	0.000	0.033	0.021	BUS_TSA_25kV	-0.033	-0.021	0.9	85.0	
BUS-25kV-WILEY	24.900	99.655	0.2	0.000	0.000	0.169	0.105	BUS_25kV_W-10	-0.169	-0.105	4.6	85.0	
BUS_25kV_03	24.900	99.726	0.0	0.000	0.000	0.000	0.000	L-25-XFMR-03~	0.000	-0.001	0.0	0.0	
								BUS_25kV_SUB_01	-3.435	-1.795	90.1	88.6	
								BUS_25kV_SUB_02	3.435	1.796	90.1	88.6	
BUS_25kV_BRISTOL	24.900	99.110	-1.8	0.000	0.000	0.042	0.026	BUS_25kV_E-07	-0.042	-0.026	1.2	85.0	
BUS_25kV_CO-BEEF	24.900	99.614	0.3	0.000	0.000	0.289	0.179	BUS_25kV_W-08	-0.289	-0.179	7.9	85.0	
BUS_25kV_DECHANT	24.900	97.923	-0.4	0.000	0.000	0.062	0.038	BUS_25kV_E-05	-0.062	-0.038	1.7	85.0	
BUS_25kV_E_01	24.900	99.726	0.0	0.000	0.000	0.000	0.000	BUS_25kV_E-02	0.922	0.471	24.1	89.0	
								BUS_25kV_SUB_01	-0.922	-0.471	24.1	89.0	
BUS_25kV_E-02	24.900	99.694	0.0	0.000	0.000	0.000	0.000	BUS_25kV_E_01	-0.921	-0.472	24.1	89.0	
								BUS_25kV_SUTRAK	0.034	0.021	0.9	85.1	
								BUS_25kV_E-03	0.888	0.451	23.2	89.2	
BUS_25kV_E-03	24.900	99.661	0.0	0.000	0.000	0.000	0.000	BUS_25kV_E-02	-0.887	-0.451	23.2	89.1	
								BUS_25kV_SWL	0.042	0.026	1.2	85.3	
								BUS_25kV_E-04	0.845	0.425	22.0	89.3	
BUS_25kV_E-04	24.900	98.697	-0.2	0.000	0.000	0.000	0.000	BUS_25kV_E-03	-0.839	-0.442	22.3	88.4	
								BUS_25kV_E-05	0.839	0.443	22.3	88.4	
								L-25-LLP-E-06~	0.000	-0.001	0.0	0.0	
BUS_25kV_E-05	24.900	97.926	-0.4	0.000	0.000	0.000	0.000	BUS_25kV_E-04	-0.833	-0.456	22.5	87.7	
								BUS_25kV_DECHANT	0.062	0.037	1.7	85.4	
								BUS_25kV_E-06	0.772	0.419	20.8	87.9	
BUS_25kV_E-06	24.900	100.186	-1.6	0.000	0.000	0.000	0.000	BUS_25kV_E-05	-0.770	-0.413	20.2	88.1	
								BUS_25kV_E-07	0.770	0.413	20.2	88.1	
BUS_25kV_E-07	24.900	99.112	-1.8	0.000	0.000	0.000	0.000	BUS_25kV_E-06	-0.763	-0.435	20.5	86.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_BRISTOL	0.042	0.025	1.1	85.9	
								BUS_25kV_E-08	0.721	0.410	19.4	87.0	
BUS_25kV_E-08	24.900	98.553	-1.9	0.000	0.000	0.000	0.000	BUS_25kV_E-07	-0.718	-0.422	19.6	86.2	
								BUS_25kV_HARTMAN	0.041	0.020	1.1	90.2	
								BUS_25kV_E-09	0.677	0.402	18.5	86.0	
BUS_25kV_E-09	24.900	99.941	-2.8	0.000	0.000	0.000	0.000	BUS_25kV_E-08	-0.675	-0.397	18.2	86.2	
								BUS-25KV-E-10	0.675	0.397	18.2	86.2	
BUS_25kV_HARTMAN	24.900	98.541	-1.9	0.000	0.000	0.041	0.026	BUS_25kV_E-08	-0.041	-0.026	1.1	85.0	
BUS_25kV_KMART	24.900	99.646	0.0	0.000	0.000	0.000	0.000	BUS_25kV_W-2	0.000	0.000	0.0	0.0	
BUS_25kV_KORMAN	24.900	98.641	-0.2	0.000	0.000	0.482	0.299	BUS_25kV_W-04	-0.482	-0.299	13.3	85.0	
BUS_25kV_ROAD 13	24.900	97.632	-0.4	0.000	0.000	0.000	0.000	BUS_25kV_W-05	0.000	0.000	0.0	0.0	
BUS_25kV_SUB_01	24.900	99.726	0.0	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	-0.280	-3.514	82.0	8.0	1.875
								BUS_LLP_69kV_01	-0.142	-1.780	41.5	8.0	1.875
								BUS_25kV_E_01	0.922	0.471	24.1	89.0	
								BUS_25_LLP_SE_01	-3.934	3.028	115.4	-79.2	
								BUS_25kV_03	3.435	1.795	90.1	88.6	
BUS_25kV_SUB_02	24.900	99.726	0.0	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	1.085	0.546	28.2	89.3	
								BUS_25kV_SW_01	0.924	0.459	24.0	89.6	
								BUS_25kV_W-01	1.425	0.790	37.9	87.5	
								BUS_25kV_03	-3.435	-1.796	90.1	88.6	
BUS_25kV_SUTRAK	24.900	99.694	0.0	0.000	0.000	0.034	0.021	BUS_25kV_E-02	-0.034	-0.021	0.9	85.0	
BUS_25kV_SWL	24.900	99.660	0.0	0.000	0.000	0.042	0.026	BUS_25kV_E-03	-0.042	-0.026	1.2	85.0	
BUS_25kV_SW_01	24.900	99.726	0.0	0.000	0.000	0.000	0.000	BUS_25kV_W-2	0.924	0.459	24.0	89.6	
								BUS_25kV_SUB_02	-0.924	-0.459	24.0	89.6	
BUS_25kV_W-01	24.900	99.726	0.0	0.000	0.000	0.000	0.000	BUS_25kV_W-02	1.425	0.790	37.9	87.5	
								BUS_25kV_SUB_02	-1.425	-0.790	37.9	87.5	
BUS_25kV_W-2	24.900	99.646	0.0	0.000	0.000	0.000	0.000	BUS_25kV_SW_01	-0.924	-0.460	24.0	89.5	
								BUS_SAF_25kV	0.924	0.461	24.0	89.5	
								BUS_25kV_KMART	0.000	0.000	0.0	0.0	
BUS_25kV_W-02	24.900	99.635	0.0	0.000	0.000	0.000	0.000	BUS_25kV_W-01	-1.424	-0.790	37.9	87.4	
								BUS_25kV_W-03	1.424	0.791	37.9	87.4	
								Line15~	0.000	-0.001	0.0	0.0	
BUS_25kV_W-03	24.900	99.422	-0.1	0.000	0.000	0.000	0.000	BUS_25kV_W-02	-1.422	-0.792	38.0	87.4	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_W-04	1.422	0.792	38.0	87.4	
								L-25-LLP-W-03~	0.000	0.000	0.0	0.0	
BUS_25kV_W-04	24.900	98.679	-0.2	0.000	0.000	0.000	0.000	BUS_25kV_W-03	-1.413	-0.793	38.1	87.2	
								BUS_25kV_KORMAN	0.482	0.297	13.3	85.1	
								BUS_25kV_W-05	0.931	0.496	24.8	88.3	
BUS_25kV_W-05	24.900	97.631	-0.4	0.000	0.000	0.000	0.000	BUS_25kV_W-04	-0.923	-0.509	25.0	87.6	
								BUS_25kV_ROAD 13	0.000	-0.007	0.2	0.0	
								BUS_25kV_W-06	0.923	0.517	25.1	87.3	
BUS_25kV_W-06	24.900	99.872	0.3	0.000	0.000	0.000	0.000	BUS_25kV_W-05	-0.915	-0.518	24.4	87.0	
								BUS_25kV_W-07	0.915	0.518	24.4	87.0	
BUS_25kV_W-07	24.900	99.774	0.2	0.000	0.000	0.000	0.000	BUS_25kV_W-06	-0.914	-0.519	24.4	86.9	
								BUS_25kV_W-08	0.289	0.171	7.8	86.0	
								BUS_25kV_W-09	0.625	0.348	16.6	87.4	
BUS_25kV_W-08	24.900	99.772	0.2	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-0.289	-0.171	7.8	86.0	
								BUS_25kV_CO-BEEF	0.289	0.171	7.8	86.0	
BUS_25kV_W-09	24.900	99.682	0.2	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-0.624	-0.351	16.7	87.2	
								BUS_25kV_W-10	0.313	0.188	8.5	85.7	
								BUS_25kV_W-11	0.312	0.162	8.2	88.7	
BUS_25kV_W-10	24.900	99.675	0.2	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-0.313	-0.189	8.5	85.6	
								BUS-25kV-WILEY	0.169	0.103	4.6	85.4	
								BUS-25kV-BIG-BEND	0.144	0.086	3.9	85.9	
BUS_25kV_W-11	24.900	99.678	0.2	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-0.312	-0.162	8.2	88.7	
								BUS-25kV-MCCLAVE	0.312	0.162	8.2	88.7	
BUS_25_LLP_SE_01	24.900	99.726	0.0	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	-3.934	3.028	115.4	-79.2	
								BUS_25kV_SUB_01	3.934	-3.028	115.4	-79.2	
BUS_25_LLP_SE_02	24.900	99.781	0.5	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_01	3.961	-3.001	115.5	-79.7	
								BUS_25_LLP_SE_03	0.115	0.070	3.1	85.3	
								BUS_25_LLP_SE_04	-4.076	2.930	116.6	-81.2	
BUS_25_LLP_SE_03	24.900	99.777	0.5	0.000	0.000	0.115	0.071	BUS_25_LLP_SE_02	-0.115	-0.071	3.1	85.0	
BUS_25_LLP_SE_04	24.900	99.871	1.0	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	4.106	-2.900	116.7	-81.7	
								Pole MS-7-17	0.024	0.007	0.6	95.6	
								BUS_WTG_SOL	-4.130	2.893	117.1	-81.9	
BUS_ATT	24.900	100.189	-0.5	0.000	0.000	0.017	0.011	BUS_L3_SEC	-0.017	-0.011	0.5	85.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_CLG_4kV	4.160	99.780	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-1	0.331	0.159	51.0	90.1	
								Pole CS-1-1	0.289	0.141	44.8	89.9	
								Pole CS-3-1	0.186	0.090	28.8	90.0	
								Pole CS-4-1	0.180	0.087	27.8	89.9	
								BUS_CLG_SEC	-0.986	-0.478	152.4	90.0	
BUS_CLG_25kV	24.900	99.177	-0.7	0.000	0.000	0.000	0.000	BUS_L2_SEC	-1.876	-0.932	49.0	89.5	
								BUS_HSP_25kV	0.888	0.441	23.2	89.5	
								BUS_CLG_SEC	0.988	0.491	25.8	89.5	
BUS_CLG_SEC	4.160	98.830	-1.0	0.000	0.000	0.000	0.000	BUS_CLG_4kV	0.987	0.483	154.3	89.8	
								BUS_CLG_25kV	-0.987	-0.483	154.3	89.8	
BUS_HIS_25kV	24.900	99.061	-0.7	0.000	0.000	0.000	0.000	BUS_TS_25kV	-0.758	-0.378	19.8	89.5	
								BUS-25kV-HS-01	0.033	0.020	0.9	85.8	
								BUS_HSC_25kV	0.725	0.358	18.9	89.7	
BUS_HSC_4kV	4.160	100.312	-1.2	0.000	0.000	0.000	0.000	Pole HS-1-001	0.020	0.010	3.1	90.0	
								Pole HS-2-1	0.280	0.136	43.1	90.0	
								Pole HS-3-1	0.189	0.091	29.0	90.0	
								Pole HS-4-1	0.234	0.114	36.1	89.9	
								BUS_HSC_SEC	-0.724	-0.351	111.3	90.0	
BUS_HSC_25kV	24.900	99.011	-0.7	0.000	0.000	0.000	0.000	BUS_HIS_25kV	-0.725	-0.359	18.9	89.6	
								BUS_HSC_SEC	0.725	0.359	18.9	89.6	
BUS_HSC_SEC	4.160	98.673	-1.1	0.000	0.000	0.000	0.000	BUS_HSC_4kV	0.724	0.354	113.4	89.9	
								BUS_HSC_25kV	-0.724	-0.354	113.4	89.9	
BUS_HSP_25kV	24.900	99.146	-0.7	0.000	0.000	0.000	0.000	BUS_CLG_25kV	-0.888	-0.442	23.2	89.5	
								Pole CS-5-21	0.062	0.026	1.6	92.4	
								BUS_TSA_25kV	0.826	0.416	21.6	89.3	
BUS_L1_01	24.900	100.199	-0.5	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.129	0.061	3.3	90.5	
								BUS_LAMSO_25kV	-0.129	-0.061	3.3	90.5	
BUS_L2_SEC	24.900	100.199	-0.5	0.000	0.000	0.000	0.000	BUS_CLG_25kV	1.891	0.938	48.8	89.6	
								BUS_LAMSO_25kV	-1.891	-0.938	48.8	89.6	
BUS_L3_SEC	24.900	100.199	-0.5	0.000	0.000	0.000	0.000	BUS_ATT	0.017	-0.022	0.6	-61.5	
								BUS_LAMSO_25kV	-0.017	0.022	0.6	-61.5	
BUS_LAMSO_25kV	24.900	100.199	-0.5	0.000	0.000	0.000	0.000	BUS_LAMSO_115kV	-2.037	-0.977	52.3	90.2	0.625
								BUS_L1_01	0.129	0.061	3.3	90.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_L2_SEC	1.891	0.938	48.8	89.6	
								BUS_L3_SEC	0.017	-0.022	0.6	-61.5	
* BUS_LAMSO_115kV	115.000	100.000	0.0	2.038	0.997	0.000	0.000	BUS_LAMSO_25kV	2.038	0.997	11.4	89.8	
BUS_LLP_69kV_01	69.000	99.851	0.0	0.000	0.000	0.000	0.000	BUS_25kV_SUB_01	0.284	3.584	30.1	7.9	
								BUS_25kV_SUB_01	0.144	1.816	15.3	7.9	
								BUS_LLP_69kV_03	-0.214	-2.700	22.7	7.9	
								BUS_LLP_69kV_04	-0.214	-2.700	22.7	7.9	
BUS_LLP_69kV_02	69.000	99.851	0.0	0.000	0.000	0.000	0.000	Line51~	0.000	-0.511	4.3	0.0	
								BUS_LLP_69kV_03	-0.214	-2.189	18.4	9.7	
								BUS_LLP_69kV_04	0.214	2.700	22.7	7.9	
BUS_LLP_69kV_03	69.000	99.851	0.0	0.000	0.000	0.000	0.000	BUS_WC_69KV_01	-0.428	-4.890	41.1	8.7	
								BUS_LLP_69kV_01	0.214	2.700	22.7	7.9	
								BUS_LLP_69kV_02	0.214	2.189	18.4	9.7	
BUS_LLP_69kV_04	69.000	99.851	0.0	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	0.214	2.700	22.7	7.9	
								BUS_LLP_69kV_02	-0.214	-2.700	22.7	7.9	
BUS_SAF_4kV	4.160	100.145	-0.7	0.000	0.000	0.000	0.000	SF-2-30	0.088	0.043	13.6	90.0	
								Pole MS-1-1	0.064	0.031	9.9	90.0	
								SF-1-1	0.654	0.322	101.1	89.7	
								SF-2-1	0.115	0.056	17.8	89.9	
								BUS_SAF_SEC	-0.922	-0.452	142.3	89.8	
BUS_SAF_25kV	24.900	99.609	0.0	0.000	0.000	0.000	0.000	BUS_25kV_W-2	-0.924	-0.461	24.0	89.5	
								L-25-LLP-SW-03~	0.000	-0.004	0.1	0.0	
								BUS_SAF_SEC	0.924	0.466	24.1	89.3	
BUS_SAF_SEC	4.160	99.174	-0.5	0.000	0.000	0.000	0.000	BUS_SAF_4kV	0.923	0.457	144.1	89.6	
								BUS_SAF_25kV	-0.923	-0.457	144.1	89.6	
BUS_SW_8.5EES23	24.900	100.101	2.1	0.000	0.000	0.000	0.000	BUS_WTG_SOL	0.000	0.000	0.0	0.0	
BUS_TSA_25kV	24.900	99.118	-0.7	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-0.826	-0.417	21.6	89.3	
								BUS-25kV-TS-AREA	0.033	0.020	0.9	85.8	
								BUS_TS_25kV	0.792	0.397	20.7	89.4	
BUS_TS_25kV	24.900	99.116	-0.7	0.000	0.000	0.000	0.000	BUS_TSA_25kV	-0.792	-0.397	20.7	89.4	
								BUS-25kV-TS-01	0.033	0.020	0.9	85.8	
								BUS_HIS_25kV	0.759	0.377	19.8	89.6	
BUS_T_WTG1_SEC	0.690	98.249	11.0	1.500	-0.726	0.000	0.000	BUS_WTG1	1.500	-0.726	1419.2	-90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_T_WTG2_SEC	0.690	98.227	11.0	1.500	-0.726	0.000	0.000	BUS_WTG2	1.500	-0.726	1419.7	-90.0	
BUS_T_WTG3_SEC	0.690	101.255	6.2	0.000	0.000	0.000	0.000	BUS_WTG3	0.000	0.000	0.0	0.0	
BUS_T_WTG4_SEC	0.690	98.153	10.9	1.500	-0.726	0.000	0.000	BUS_WTG5	1.500	-0.726	1420.8	-90.0	
* BUS_WC_69KV_01	69.000	100.000	0.0	0.432	4.833	0.000	0.000	BUS_LLP_69kV_03	0.432	4.833	40.6	8.9	
BUS_WTG1	24.900	101.309	6.2	0.000	0.000	0.000	0.000	BUS_WTG2	1.479	-0.875	39.3	-86.1	
								BUS_T_WTG1_SEC	-1.479	0.875	39.3	-86.1	
BUS_WTG2	24.900	101.291	6.2	0.000	0.000	0.000	0.000	BUS_WTG1	-1.479	0.863	39.2	-86.4	
								BUS_WTG3	2.958	-1.738	78.5	-86.2	
								BUS_T_WTG2_SEC	-1.479	0.875	39.3	-86.1	
BUS_WTG3	24.900	101.255	6.2	0.000	0.000	0.000	0.000	BUS_WTG2	-2.956	1.726	78.4	-86.3	
								BUS_WTG5	2.956	-1.726	78.4	-86.3	
								BUS_T_WTG3_SEC	0.000	0.000	0.0	0.0	
BUS_WTG5	24.900	101.219	6.1	0.000	0.000	0.000	0.000	BUS_WTG3	-2.954	1.715	78.2	-86.5	
								BUS_WTG6	4.433	-2.590	117.6	-86.3	
								BUS_T_WTG4_SEC	-1.479	0.876	39.4	-86.1	
BUS_WTG6	24.900	100.119	2.2	0.000	0.000	0.000	0.000	BUS_WTG_SOL	4.200	-2.823	117.2	-83.0	
								BUS_WTG5	-4.200	2.824	117.2	-83.0	
								P_526_2	0.000	-0.002	0.0	0.0	
BUS_WTG_SOL	24.900	100.101	2.1	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	4.195	-2.827	117.2	-82.9	
								BUS_SW_8.5EES23	0.000	-0.001	0.0	0.0	
								BUS_WTG6	-4.195	2.827	117.2	-82.9	
Pole 6M-1-1	4.160	99.822	-0.7	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.040	-0.019	6.2	90.3	
								Pole 6M-1-2	0.036	0.017	5.5	90.3	
								SEC_6M-1-1	0.005	0.002	0.7	90.0	
Pole 6M-1-2	4.160	99.767	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-1	-0.036	-0.017	5.5	90.3	
								Pole 6M-1-3	0.005	0.002	0.7	90.0	
								Pole 6M-1-4	0.031	0.015	4.8	90.3	
Pole 6M-1-3	4.160	99.766	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.005	-0.002	0.7	90.0	
								SEC_6M-1-2	0.005	0.002	0.7	90.0	
Pole 6M-1-4	4.160	99.686	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.031	-0.015	4.8	90.3	
								Pole 6M-1-5	0.002	0.001	0.3	90.1	
								Pole 6M-1-6	0.029	0.014	4.5	90.3	
Pole 6M-1-5	4.160	99.685	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-4	-0.002	-0.001	0.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-1-6	4.160	99.662	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-4	-0.029	-0.014	4.5	90.3	
								Pole 6M-1-7	0.004	0.002	0.6	90.2	
								Pole 6M-1-9	0.025	0.012	3.8	90.3	
Pole 6M-1-7	4.160	99.654	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-6	-0.004	-0.002	0.6	90.0	
								Pole 6M-1-8	0.002	0.001	0.3	90.1	
Pole 6M-1-8	4.160	99.653	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-7	-0.002	-0.001	0.3	90.0	
Pole 6M-1-9	4.160	99.632	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-6	-0.025	-0.012	3.8	90.3	
								Pole 6M-1-10	0.023	0.011	3.5	90.3	
Pole 6M-1-10	4.160	99.624	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-9	-0.023	-0.011	3.5	90.3	
								Pole 6M-1-11	0.023	0.011	3.5	90.3	
Pole 6M-1-11	4.160	99.616	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-10	-0.023	-0.011	3.5	90.3	
								Pole 6M-1-12	0.021	0.010	3.2	90.3	
Pole 6M-1-12	4.160	99.603	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-11	-0.021	-0.010	3.2	90.3	
								Pole 6M-1-13	0.002	0.001	0.3	91.0	
								Pole 6M-1-14	0.019	0.009	2.9	90.2	
Pole 6M-1-13	4.160	99.592	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-12	-0.002	-0.001	0.3	90.0	
Pole 6M-1-14	4.160	99.573	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-12	-0.019	-0.009	2.9	90.2	
								Pole 6M-1-15	0.017	0.008	2.6	90.2	
Pole 6M-1-15	4.160	99.565	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-14	-0.017	-0.008	2.6	90.2	
								Pole 6M-1-16	0.015	0.007	2.3	90.3	
Pole 6M-1-16	4.160	99.538	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-15	-0.015	-0.007	2.3	90.2	
								Pole 6M-1-17	0.007	0.003	1.0	90.1	
								Pole 6M-1-20	0.008	0.004	1.2	90.3	
Pole 6M-1-17	4.160	99.537	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-16	-0.007	-0.003	1.0	90.1	
								Pole 6M-1-18	0.005	0.002	0.7	90.1	
Pole 6M-1-18	4.160	99.532	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-17	-0.005	-0.002	0.7	90.0	
								Pole 6M-1-19	0.005	0.002	0.7	90.0	
Pole 6M-1-19	4.160	99.529	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-18	-0.005	-0.002	0.7	90.0	
								SEC_6M-1-12	0.005	0.002	0.7	90.0	
Pole 6M-1-20	4.160	99.522	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-16	-0.008	-0.004	1.2	90.2	
								Pole 6M-1-21	0.004	0.002	0.6	90.3	
								Pole 6M-1-23	0.004	0.002	0.6	90.2	
Pole 6M-1-21	4.160	99.521	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-20	-0.004	-0.002	0.6	90.2	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole 6M-1-22	0.002	0.001	0.3	90.5	
Pole 6M-1-22	4.160	99.515	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-21	-0.002	-0.001	0.3	90.0	
Pole 6M-1-23	4.160	99.520	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-20	-0.004	-0.002	0.6	90.1	
								Pole 6M-1-24	0.004	0.002	0.6	90.0	
								LINE 6M-26~	0.000	0.000	0.0	0.0	
Pole 6M-1-24	4.160	99.519	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-23	-0.004	-0.002	0.6	90.0	
								Pole 6M-1-25	0.002	0.001	0.3	90.1	
Pole 6M-1-25	4.160	99.518	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-24	-0.002	-0.001	0.3	90.0	
Pole 6M-E-1	4.160	98.727	-0.7	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.088	-0.042	13.7	90.3	
								Pole 6M-E-2	0.007	0.004	1.1	90.1	
								Pole 6M-E-30	0.080	0.038	12.5	90.3	
Pole 6M-E-2	4.160	98.716	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-1	-0.007	-0.004	1.1	90.0	
								SEC_6M-E-2	0.007	0.004	1.1	90.0	
Pole 6M-E-3	4.160	98.491	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.007	-0.004	1.1	90.0	
								SEC_6M-E-3	0.007	0.004	1.1	90.0	
Pole 6M-E-4	4.160	98.493	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.073	-0.035	11.4	90.3	
								Pole 6M-E-3	0.007	0.004	1.1	90.0	
								Pole 6M-E-5	0.066	0.031	10.3	90.3	
Pole 6M-E-5	4.160	98.371	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.066	-0.031	10.3	90.3	
								Pole 6M-E-6	0.058	0.028	9.1	90.4	
								SEC_6M-E-1	0.007	0.004	1.1	90.0	
Pole 6M-E-6	4.160	98.252	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-5	-0.058	-0.028	9.1	90.4	
								Pole 6M-E-7	0.051	0.024	8.0	90.4	
								SEC_6M-E-4	0.007	0.004	1.1	90.0	
Pole 6M-E-7	4.160	98.072	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-6	-0.051	-0.024	8.0	90.4	
								Pole 6M-E-8	0.007	0.003	1.1	90.0	
								Pole 6M-E-9	0.044	0.021	6.9	90.4	
Pole 6M-E-8	4.160	98.064	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.007	-0.003	1.1	90.0	
								SEC_6M-E-5	0.007	0.003	1.1	90.0	
Pole 6M-E-9	4.160	97.772	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.044	-0.021	6.9	90.4	
								Pole 6M-E-10	0.014	0.007	2.3	90.2	
								Pole 6M-E-13	0.029	0.014	4.6	90.5	
Pole 6M-E-10	4.160	97.722	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-9	-0.014	-0.007	2.3	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole 6M-E-11	0.007	0.003	1.1	90.2	
								SEC_6M-E-6	0.007	0.003	1.1	90.0	
Pole 6M-E-11	4.160	97.697	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-10	-0.007	-0.003	1.1	90.0	
								SEC_6M-E-7	0.007	0.003	1.1	90.0	
Pole 6M-E-12	4.160	97.720	-0.7	0.000	0.000	0.002	0.001	Pole 6M-E-13	-0.002	-0.001	0.3	90.0	
Pole 6M-E-13	4.160	97.720	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-12	0.002	0.001	0.3	90.0	
								Pole 6M-E-9	-0.029	-0.014	4.6	90.5	
								Pole 6M-E-15	0.027	0.013	4.3	90.5	
Pole 6M-E-14	4.160	97.664	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.007	-0.003	1.1	90.0	
								SEC_6M-E-8	0.007	0.003	1.1	90.0	
Pole 6M-E-15	4.160	97.673	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-14	0.007	0.003	1.1	90.0	
								Pole 6M-E-13	-0.027	-0.013	4.3	90.5	
								Pole 6M-E-18	0.020	0.009	3.2	90.6	
Pole 6M-E-18	4.160	97.631	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.020	-0.009	3.2	90.6	
								Pole 6M-E-19	0.007	0.003	1.1	90.0	
								Pole 6M-E-20	0.013	0.006	2.0	90.9	
Pole 6M-E-19	4.160	97.627	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.007	-0.003	1.1	90.0	
								SEC_6M-E-10	0.007	0.003	1.1	90.0	
Pole 6M-E-20	4.160	97.618	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.013	-0.006	2.0	90.8	
								Pole 6M-E-21	0.006	0.003	0.9	91.9	
								SEC_6M-E-11	0.007	0.003	1.1	90.0	
Pole 6M-E-21	4.160	97.615	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-20	-0.006	-0.003	0.9	91.8	
								Pole 6M-E-22	0.002	0.001	0.3	91.6	
								Pole 6M-E-23	0.004	0.002	0.6	91.9	
Pole 6M-E-22	4.160	97.599	-0.7	0.000	0.000	0.002	0.001	Pole 6M-E-21	-0.002	-0.001	0.3	90.0	
Pole 6M-E-23	4.160	97.571	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.002	0.001	0.3	90.9	
								Pole 6M-E-21	-0.004	-0.002	0.6	90.8	
								Pole 6M-E-24	0.002	0.001	0.3	90.8	
Pole 6M-E-24	4.160	97.562	-0.7	0.000	0.000	0.002	0.001	Pole 6M-E-23	-0.002	-0.001	0.3	90.0	
Pole 6M-E-25	4.160	97.562	-0.7	0.000	0.000	0.002	0.001	Pole 6M-E-26	-0.002	-0.001	0.3	90.0	
Pole 6M-E-26	4.160	97.563	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-23	-0.002	-0.001	0.3	90.1	
								Pole 6M-E-25	0.002	0.001	0.3	90.1	
								Bus2	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-E-29	4.160	98.622	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.007	-0.004	1.1	90.0	
								SEC_6M-E-13	0.007	0.004	1.1	90.0	
Pole 6M-E-30	4.160	98.624	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-4	0.073	0.035	11.4	90.3	
								Pole 6M-E-29	0.007	0.004	1.1	90.0	
								Pole 6M-E-1	-0.080	-0.038	12.5	90.3	
Pole CS-1-1	4.160	99.558	-1.3	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-0.289	-0.141	44.8	89.9	
								Pole CS-1-2	0.289	0.141	44.8	89.9	
Pole CS-1-2	4.160	99.482	-1.3	0.000	0.000	0.000	0.000	PRI_PM_16	0.039	0.019	6.0	89.9	
								Pole CS-1-1	-0.289	-0.141	44.8	89.9	
								Pole CS-1-3	0.245	0.120	38.1	89.9	
								Pole HS-2-85	0.004	0.002	0.7	90.1	
Pole CS-1-3	4.160	99.322	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-4	0.007	0.003	1.0	90.0	
								Pole CS-1-5	0.007	0.003	1.0	90.0	
								Pole HS-3-86	0.002	0.001	0.3	90.0	
								Pole CS-1-2	-0.245	-0.119	38.1	89.9	
								Pole CS-1-6	0.230	0.112	35.7	89.9	
Pole CS-1-4	4.160	99.319	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-1	0.007	0.003	1.0	90.0	
Pole CS-1-5	4.160	99.320	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-2	0.007	0.003	1.0	90.0	
Pole CS-1-6	4.160	99.173	-1.4	0.000	0.000	0.000	0.000	Pole HS-3-88	0.007	0.003	1.0	90.0	
								Pole CS-1-3	-0.229	-0.111	35.7	89.9	
								Pole CS-1-9	0.223	0.108	34.6	89.9	
Pole CS-1-9	4.160	99.134	-1.4	0.000	0.000	0.000	0.000	PRI_PM_17	0.035	0.017	5.4	89.9	
								Pole CS-1-6	-0.223	-0.108	34.6	90.0	
								Pole CS-1-10	0.188	0.091	29.2	90.0	
Pole CS-1-10	4.160	99.062	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.188	-0.091	29.2	90.0	
								Pole CS-1-11	0.188	0.091	29.2	90.0	
								L-SUB-FDR-EQ#20-1-84~	0.000	0.000	0.0	0.0	
Pole CS-1-11	4.160	99.054	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-10	-0.188	-0.091	29.2	90.0	
								Pole CS-1-12	0.188	0.091	29.2	90.0	
Pole CS-1-12	4.160	99.024	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-13	0.007	0.003	1.0	90.0	
								Pole CS-1-11	-0.188	-0.091	29.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-14	0.181	0.088	28.2	90.0	
Pole CS-1-13	4.160	99.023	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-12	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-7	0.007	0.003	1.0	90.0	
Pole CS-1-14	4.160	98.995	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-17	0.020	0.010	3.1	90.0	
								Pole CS-1-12	-0.181	-0.088	28.2	90.0	
								Pole CS-1-16	0.159	0.077	24.7	90.0	
Pole CS-1-15	4.160	98.971	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-16	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-9	0.007	0.003	1.0	90.0	
Pole CS-1-16	4.160	98.971	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-15	0.007	0.003	1.0	90.0	
								Pole CS-1-14	-0.159	-0.077	24.7	90.0	
								Pole CS-1-21	0.152	0.074	23.7	90.0	
Pole CS-1-17	4.160	98.983	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-14	-0.020	-0.010	3.1	90.0	
								Pole CS-1-18	0.013	0.006	2.1	90.0	
								Pole CS-1-20	0.007	0.003	1.0	90.0	
Pole CS-1-18	4.160	98.981	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.013	-0.006	2.1	90.0	
								Pole CS-1-19	0.007	0.003	1.0	90.0	
								SEC_CS-1-10	0.007	0.003	1.0	90.0	
Pole CS-1-19	4.160	98.979	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-18	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-11	0.007	0.003	1.0	90.0	
Pole CS-1-20	4.160	98.982	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-12	0.007	0.003	1.0	90.0	
Pole CS-1-21	4.160	98.949	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-16	-0.152	-0.074	23.7	90.0	
								Pole CS-1-22	0.150	0.073	23.4	90.0	
Pole CS-1-22	4.160	98.928	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-23	0.007	0.003	1.0	90.0	
								Pole CS-1-21	-0.150	-0.073	23.4	90.0	
								Pole CS-1-24	0.141	0.068	22.0	90.0	
Pole CS-1-23	4.160	98.925	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-15	0.007	0.003	1.0	90.0	
Pole CS-1-24	4.160	98.900	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.141	-0.068	22.0	90.0	
								Pole CS-1-25	0.134	0.065	21.0	90.0	
								SEC_CS-1-16	0.007	0.003	1.0	90.0	
Pole CS-1-25	4.160	98.875	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-28	0.064	0.031	10.0	90.0	
								Pole CS-1-55	0.066	0.032	10.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-24	-0.134	-0.065	21.0	90.0	
								Pole CS-1-26	0.004	0.002	0.7	90.0	
Pole CS-1-26	4.160	98.874	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-25	-0.004	-0.002	0.7	90.0	
								Pole CS-1-27	0.002	0.001	0.3	90.0	
Pole CS-1-27	4.160	98.874	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-26	-0.002	-0.001	0.3	90.0	
Pole CS-1-28	4.160	98.870	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-25	-0.064	-0.031	10.0	90.0	
								Pole CS-1-29	0.062	0.030	9.6	90.0	
Pole CS-1-29	4.160	98.854	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-28	-0.062	-0.030	9.6	90.0	
								Pole CS-1-32	0.057	0.028	8.9	90.0	
								Pole CS-1-31	0.004	0.002	0.7	90.0	
Pole CS-1-30	4.160	98.853	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-31	-0.002	-0.001	0.3	90.0	
Pole CS-1-31	4.160	98.853	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-30	0.002	0.001	0.3	90.0	
								Pole CS-1-29	-0.004	-0.002	0.7	90.0	
Pole CS-1-32	4.160	98.838	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-29	-0.057	-0.028	8.9	90.0	
								Pole CS-1-33	0.055	0.027	8.6	90.0	
Pole CS-1-33	4.160	98.815	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-32	-0.055	-0.027	8.6	90.0	
								Pole CS-1-36	0.048	0.023	7.6	90.0	
								Pole CS-1-35	0.004	0.002	0.7	90.0	
Pole CS-1-34	4.160	98.814	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-35	-0.002	-0.001	0.3	90.0	
Pole CS-1-35	4.160	98.814	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-34	0.002	0.001	0.3	90.0	
								Pole CS-1-33	-0.004	-0.002	0.7	90.0	
Pole CS-1-36	4.160	98.794	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-33	-0.048	-0.023	7.6	90.0	
								Pole CS-1-37	0.046	0.022	7.2	90.0	
Pole CS-1-37	4.160	98.785	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-36	-0.046	-0.022	7.2	90.0	
								Pole CS-1-38	0.044	0.021	6.9	90.0	
Pole CS-1-38	4.160	98.774	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-37	-0.044	-0.021	6.9	90.0	
								Pole CS-1-39	0.042	0.020	6.5	90.0	
Pole CS-1-39	4.160	98.766	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-40	0.011	0.005	1.7	90.0	
								Pole CS-1-38	-0.042	-0.020	6.5	90.0	
								Pole CS-1-43	0.031	0.015	4.8	90.0	
Pole CS-1-40	4.160	98.757	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.011	-0.005	1.7	90.0	
								Pole CS-1-41	0.004	0.002	0.7	90.0	
								SEC_CS-1-29	0.007	0.003	1.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-1-41	4.160	98.756	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-40	-0.004	-0.002	0.7	90.0	
								Pole CS-1-42	0.002	0.001	0.3	90.0	
Pole CS-1-42	4.160	98.756	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-41	-0.002	-0.001	0.3	90.0	
Pole CS-1-43	4.160	98.763	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.031	-0.015	4.8	90.0	
								Pole CS-1-44	0.024	0.012	3.8	90.0	
								SEC_CS-1-32	0.007	0.003	1.0	90.0	
Pole CS-1-44	4.160	98.760	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-43	-0.024	-0.012	3.8	90.0	
								Pole CS-1-45	0.022	0.011	3.4	90.0	
Pole CS-1-45	4.160	98.756	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-44	-0.022	-0.011	3.4	90.0	
								Pole CS-1-46	0.020	0.010	3.1	90.0	
Pole CS-1-46	4.160	98.753	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-45	-0.020	-0.010	3.1	90.0	
								Pole CS-1-47	0.018	0.009	2.7	90.0	
Pole CS-1-47	4.160	98.748	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-46	-0.018	-0.009	2.7	90.0	
								Pole CS-1-48	0.015	0.007	2.4	90.0	
Pole CS-1-48	4.160	98.745	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-47	-0.015	-0.007	2.4	90.0	
								Pole CS-1-49	0.013	0.006	2.1	90.0	
Pole CS-1-49	4.160	98.743	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-48	-0.013	-0.006	2.1	90.0	
								Pole CS-1-50	0.011	0.005	1.7	90.0	
Pole CS-1-50	4.160	98.741	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-49	-0.011	-0.005	1.7	90.0	
								Pole CS-1-51	0.009	0.004	1.4	90.0	
Pole CS-1-51	4.160	98.740	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-50	-0.009	-0.004	1.4	90.0	
								Pole CS-1-52	0.007	0.003	1.0	90.0	
Pole CS-1-52	4.160	98.738	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-51	-0.007	-0.003	1.0	90.0	
								Pole CS-1-53	0.004	0.002	0.7	90.0	
Pole CS-1-53	4.160	98.737	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-52	-0.004	-0.002	0.7	90.0	
								Pole CS-1-54	0.002	0.001	0.3	90.0	
Pole CS-1-54	4.160	98.737	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-53	-0.002	-0.001	0.3	90.0	
								L-SUB-FDR-EQ#20-1-86~	0.000	0.000	0.0	0.0	
Pole CS-1-55	4.160	98.851	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-25	-0.066	-0.032	10.3	90.0	
								Pole CS-1-56	0.002	0.001	0.3	90.0	
								Pole CS-1-58	0.064	0.031	10.0	90.0	
Pole CS-1-56	4.160	98.850	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-55	-0.002	-0.001	0.3	90.0	
Pole CS-1-57	4.160	98.823	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-58	-0.062	-0.030	9.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-60	0.062	0.030	9.6	90.0	
								L-SUB-FDR-EQ#18-1-173~	0.000	0.000	0.0	0.0	
Pole CS-1-58	4.160	98.835	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-57	0.062	0.030	9.6	90.0	
								Pole CS-1-55	-0.064	-0.031	10.0	90.0	
Pole CS-1-59	4.160	98.808	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-61	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-46	0.007	0.003	1.0	90.0	
Pole CS-1-60	4.160	98.812	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-57	-0.062	-0.030	9.6	90.0	
								Pole CS-1-61	0.059	0.029	9.3	90.0	
Pole CS-1-61	4.160	98.808	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-59	0.007	0.003	1.0	90.0	
								Pole CS-1-60	-0.059	-0.029	9.3	90.0	
								Pole CS-1-62	0.053	0.026	8.2	90.0	
Pole CS-1-62	4.160	98.801	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-61	-0.053	-0.026	8.2	90.0	
								Pole CS-1-63	0.051	0.024	7.9	90.0	
Pole CS-1-63	4.160	98.793	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-62	-0.051	-0.024	7.9	90.0	
								Pole CS-1-64	0.048	0.023	7.6	90.0	
Pole CS-1-64	4.160	98.786	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-63	-0.048	-0.023	7.6	90.0	
								Pole CS-1-65	0.000	0.000	0.0	0.0	
								Pole CS-1-66	0.048	0.023	7.6	90.0	
Pole CS-1-65	4.160	98.786	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-64	0.000	0.000	0.0	0.0	
Pole CS-1-66	4.160	98.771	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-64	-0.048	-0.023	7.6	90.0	
								Pole CS-1-67	0.046	0.022	7.2	90.0	
Pole CS-1-67	4.160	98.765	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-66	-0.046	-0.022	7.2	90.0	
								Pole CS-1-68	0.044	0.021	6.9	90.0	
Pole CS-1-68	4.160	98.759	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-67	-0.044	-0.021	6.9	90.0	
								Pole CS-1-69	0.037	0.018	5.8	90.0	
								SEC_CS-1-53	0.007	0.003	1.0	90.0	
Pole CS-1-69	4.160	98.754	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-68	-0.037	-0.018	5.8	90.0	
								Pole CS-1-70	0.035	0.017	5.5	90.0	
Pole CS-1-70	4.160	98.747	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-69	-0.035	-0.017	5.5	90.0	
								Pole CS-1-71	0.033	0.016	5.2	90.0	
Pole CS-1-71	4.160	98.742	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-70	-0.033	-0.016	5.2	90.0	
								Pole CS-1-72	0.031	0.015	4.8	90.0	
Pole CS-1-72	4.160	98.737	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-71	-0.031	-0.015	4.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-73	0.029	0.014	4.5	90.0	
Pole CS-1-73	4.160	98.731	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-72	-0.029	-0.014	4.5	90.0	
								Pole CS-1-74	0.002	0.001	0.3	90.0	
								Pole CS-1-75	0.026	0.013	4.1	90.0	
Pole CS-1-74	4.160	98.731	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-73	-0.002	-0.001	0.3	90.0	
Pole CS-1-75	4.160	98.717	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-73	-0.026	-0.013	4.1	90.0	
								Pole CS-1-76	0.011	0.005	1.7	90.0	
								Pole CS-1-86	0.015	0.007	2.4	90.0	
Pole CS-1-76	4.160	98.714	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-75	-0.011	-0.005	1.7	90.0	
								Pole CS-1-77	0.009	0.004	1.4	90.0	
Pole CS-1-77	4.160	98.711	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-76	-0.009	-0.004	1.4	90.0	
								Pole CS-1-78	0.007	0.003	1.0	90.0	
Pole CS-1-78	4.160	98.710	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-77	-0.007	-0.003	1.0	90.0	
								Pole CS-1-79	0.004	0.002	0.7	90.0	
Pole CS-1-79	4.160	98.709	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-78	-0.004	-0.002	0.7	90.0	
								Pole CS-1-80	0.002	0.001	0.3	90.0	
Pole CS-1-80	4.160	98.708	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-79	-0.002	-0.001	0.3	90.0	
Pole CS-1-81	4.160	98.690	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-82	-0.007	-0.003	1.0	90.0	
								Pole CS-1-88	0.004	0.002	0.7	90.0	
Pole CS-1-82	4.160	98.691	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-81	0.007	0.003	1.0	90.0	
								Pole CS-1-83	-0.009	-0.004	1.4	90.0	
Pole CS-1-83	4.160	98.694	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-82	0.009	0.004	1.4	90.0	
								Pole CS-1-84	-0.011	-0.005	1.7	90.0	
Pole CS-1-84	4.160	98.697	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-83	0.011	0.005	1.7	90.0	
								Pole CS-1-85	-0.013	-0.006	2.1	90.0	
Pole CS-1-85	4.160	98.704	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-84	0.013	0.006	2.1	90.0	
								Pole CS-1-86	-0.015	-0.007	2.4	90.0	
Pole CS-1-86	4.160	98.709	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-75	-0.015	-0.007	2.4	90.0	
								Pole CS-1-85	0.015	0.007	2.4	90.0	
Pole CS-1-87	4.160	98.688	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-88	-0.002	-0.001	0.3	90.0	
Pole CS-1-88	4.160	98.688	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-81	-0.004	-0.002	0.7	90.0	
								Pole CS-1-87	0.002	0.001	0.3	90.0	
Pole CS-1-90	4.160	99.695	-0.5	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.107	-0.052	16.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_5_NEOPLAN	0.107	0.052	16.6	90.0	
Pole CS-2-1	4.160	99.711	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-2	0.330	0.159	51.0	90.1	
								BUS_CLG_4kV	-0.330	-0.159	51.0	90.1	
Pole CS-2-2	4.160	99.642	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-1	-0.330	-0.159	51.0	90.1	
								Pole CS-2-3	0.007	0.003	1.0	90.0	
								Pole CS-2-5	0.321	0.154	49.6	90.1	
Pole CS-2-3	4.160	99.639	-1.3	0.000	0.000	0.004	0.002	Pole CS-2-2	-0.007	-0.003	1.0	90.0	
								Pole CS-2-4	0.002	0.001	0.3	90.0	
Pole CS-2-4	4.160	99.638	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-3	-0.002	-0.001	0.3	90.0	
Pole CS-2-5	4.160	99.574	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	0.321	0.154	49.6	90.2	
								Pole CS-2-2	-0.321	-0.154	49.6	90.2	
Pole CS-2-7	4.160	98.688	-1.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.232	-0.112	36.2	90.0	
								Pole CS-2-8	0.232	0.112	36.2	90.0	
Pole CS-2-8	4.160	98.639	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-7	-0.232	-0.112	36.2	90.0	
								Pole CS-2-9	0.015	0.007	2.4	90.0	
								Pole CS-2-12	0.210	0.102	32.8	90.0	
								SEC_CS-2-5	0.007	0.003	1.0	90.0	
Pole CS-2-9	4.160	98.636	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-8	-0.015	-0.007	2.4	90.0	
								Pole CS-2-10	0.013	0.006	2.1	90.0	
Pole CS-2-10	4.160	98.634	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-9	-0.013	-0.006	2.1	90.0	
								Pole CS-2-11	0.007	0.003	1.0	90.0	
								SEC_CS-2-7	0.007	0.003	1.0	90.0	
Pole CS-2-11	4.160	98.632	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-10	-0.007	-0.003	1.0	90.0	
								SEC_CS-2-8	0.007	0.003	1.0	90.0	
Pole CS-2-12	4.160	98.614	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-8	-0.210	-0.102	32.8	90.0	
								Pole CS-2-13	0.208	0.101	32.5	90.0	
Pole CS-2-13	4.160	98.585	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-12	-0.208	-0.101	32.5	90.0	
								Pole CS-2-14	0.009	0.004	1.4	90.6	
								Pole CS-2-20	0.199	0.096	31.1	90.0	
Pole CS-2-14	4.160	98.584	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-13	-0.009	-0.004	1.4	90.6	
								Pole CS-2-15	0.007	0.003	1.0	90.0	
								Pole CS-2-16	0.002	0.001	0.3	92.4	
Pole CS-2-15	4.160	98.583	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.007	-0.003	1.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_CS-2-10	0.007	0.003	1.0	90.0	
Pole CS-2-16	4.160	98.583	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.002	-0.001	0.3	92.4	
								Pole CS-2-17	0.002	0.001	0.3	92.4	
Pole CS-2-17	4.160	98.583	-1.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
								Pole CS-2-16	-0.002	-0.001	0.3	92.3	
								Pole CS-2-18	0.002	0.001	0.3	90.0	
Pole CS-2-18	4.160	98.582	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-17	-0.002	-0.001	0.3	90.0	
Pole CS-2-20	4.160	98.560	-1.2	0.000	0.000	0.000	0.000	PRI_PM_21	0.035	0.017	5.4	89.9	
								Pole CS-2-13	-0.199	-0.096	31.1	90.0	
								Pole CS-2-21	0.164	0.080	25.7	90.0	
Pole CS-2-21	4.160	98.480	-1.3	0.000	0.000	0.000	0.000	PRI_PM_20	0.035	0.017	5.4	89.9	
								Pole CS-2-20	-0.164	-0.079	25.7	90.0	
								Pole CS-2-22	0.129	0.063	20.3	90.0	
Pole CS-2-22	4.160	98.448	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-21	-0.129	-0.063	20.3	90.0	
								Pole CS-2-23	0.127	0.062	19.9	90.0	
Pole CS-2-23	4.160	98.435	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-22	-0.127	-0.062	19.9	90.0	
								Pole CS-2-24	0.037	0.018	5.8	90.1	
								Pole CS-2-35	0.090	0.044	14.2	90.0	
Pole CS-2-24	4.160	98.420	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-23	-0.037	-0.018	5.8	90.1	
								Pole CS-2-25	0.035	0.017	5.4	90.1	
Pole CS-2-25	4.160	98.416	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-24	-0.035	-0.017	5.4	90.1	
								Pole CS-2-26	0.032	0.016	5.1	90.1	
Pole CS-2-26	4.160	98.408	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-25	-0.032	-0.016	5.1	90.1	
								Pole CS-2-27	0.030	0.015	4.7	90.1	
Pole CS-2-27	4.160	98.399	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-28	0.013	0.006	2.0	90.3	
								Pole CS-2-26	-0.030	-0.015	4.7	90.1	
								PRI_PM_1-1	0.017	0.008	2.7	89.9	
Pole CS-2-28	4.160	98.393	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.013	-0.006	2.1	90.0	
								Pole CS-2-29	0.013	0.006	2.1	90.0	
Pole CS-2-29	4.160	98.391	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-28	-0.013	-0.006	2.1	90.0	
								Pole CS-2-30	0.011	0.005	1.7	90.0	
Pole CS-2-30	4.160	98.389	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-29	-0.011	-0.005	1.7	90.0	
								Pole CS-2-31	0.009	0.004	1.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-31	4.160	98.387	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-30	-0.009	-0.004	1.4	90.0	
								Pole CS-2-32	0.007	0.003	1.0	90.0	
Pole CS-2-32	4.160	98.386	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-31	-0.007	-0.003	1.0	90.0	
								Pole CS-2-33	0.004	0.002	0.7	90.0	
Pole CS-2-33	4.160	98.385	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-32	-0.004	-0.002	0.7	90.0	
								Pole CS-2-34	0.002	0.001	0.3	90.0	
Pole CS-2-34	4.160	98.385	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-33	-0.002	-0.001	0.3	90.0	
Pole CS-2-35	4.160	98.408	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-23	-0.090	-0.044	14.2	90.0	
								Pole CS-2-36	0.090	0.044	14.2	90.0	
Pole CS-2-36	4.160	98.348	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-35	-0.090	-0.044	14.2	90.0	
								Pole CS-2-37	0.090	0.044	14.2	90.0	
Pole CS-2-37	4.160	98.315	-1.3	0.000	0.000	0.000	0.000	PRI_PM_19	0.038	0.018	6.0	89.9	
								Pole CS-2-36	-0.090	-0.044	14.2	90.0	
								Pole CS-2-38	0.007	0.003	1.0	90.0	
								Pole CS-2-41	0.046	0.022	7.2	90.0	
Pole CS-2-38	4.160	98.314	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-37	-0.007	-0.003	1.0	90.0	
								Pole CS-2-39	0.004	0.002	0.7	90.1	
Pole CS-2-39	4.160	98.311	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-38	-0.004	-0.002	0.7	90.0	
								Pole CS-2-40	0.002	0.001	0.3	90.0	
Pole CS-2-40	4.160	98.310	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-39	-0.002	-0.001	0.3	90.0	
Pole CS-2-41	4.160	98.304	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-37	-0.046	-0.022	7.2	90.0	
								Pole CS-2-42	0.044	0.021	6.9	90.0	
Pole CS-2-42	4.160	98.287	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-41	-0.044	-0.021	6.9	90.0	
								Pole CS-2-43	0.002	0.001	0.3	90.0	
								Pole CS-2-44	0.041	0.020	6.5	90.0	
Pole CS-2-43	4.160	98.287	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-42	-0.002	-0.001	0.3	90.0	
Pole CS-2-44	4.160	98.275	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-42	-0.041	-0.020	6.5	90.0	
								Pole CS-2-45	0.011	0.005	1.7	90.0	
								Pole CS-2-50	0.004	0.002	0.7	90.0	
								Pole CS-2-52	0.026	0.013	4.1	90.0	
Pole CS-2-45	4.160	98.273	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-44	-0.011	-0.005	1.7	90.0	
								Pole CS-2-46	0.009	0.004	1.4	90.0	
Pole CS-2-46	4.160	98.271	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-45	-0.009	-0.004	1.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-2-47	0.007	0.003	1.0	90.0	
Pole CS-2-47	4.160	98.270	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-46	-0.007	-0.003	1.0	90.0	
								Pole CS-2-48	0.004	0.002	0.7	90.0	
Pole CS-2-48	4.160	98.268	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-47	-0.004	-0.002	0.7	90.0	
								Pole CS-2-49	0.002	0.001	0.3	90.0	
Pole CS-2-49	4.160	98.268	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-48	-0.002	-0.001	0.3	90.0	
Pole CS-2-50	4.160	98.274	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-44	-0.004	-0.002	0.7	90.0	
								Pole CS-2-51	0.002	0.001	0.3	90.0	
Pole CS-2-51	4.160	98.273	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-50	-0.002	-0.001	0.3	90.0	
Pole CS-2-52	4.160	98.266	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-44	-0.026	-0.013	4.1	90.0	
								Pole CS-2-56	0.009	0.004	1.4	90.0	
								Pole CS-2-58	0.004	0.002	0.7	90.0	
								Pole CS-2-61	0.013	0.006	2.1	90.0	
Pole CS-2-53	4.160	98.261	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-54	-0.002	-0.001	0.3	90.0	
Pole CS-2-54	4.160	98.261	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-53	0.002	0.001	0.3	90.0	
								Pole CS-2-55	-0.004	-0.002	0.7	90.0	
Pole CS-2-55	4.160	98.262	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-54	0.004	0.002	0.7	90.0	
								Pole CS-2-56	-0.007	-0.003	1.0	90.0	
Pole CS-2-56	4.160	98.264	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-52	-0.009	-0.004	1.4	90.0	
								Pole CS-2-55	0.007	0.003	1.0	90.0	
Pole CS-2-57	4.160	98.263	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-58	-0.002	-0.001	0.3	90.0	
Pole CS-2-58	4.160	98.264	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-57	0.002	0.001	0.3	90.0	
								Pole CS-2-52	-0.004	-0.002	0.7	90.0	
Pole CS-2-60	4.160	98.259	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-61	-0.011	-0.005	1.7	90.0	
								Pole CS-2-62	0.009	0.004	1.4	90.0	
Pole CS-2-61	4.160	98.263	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-52	-0.013	-0.006	2.1	90.0	
								Pole CS-2-60	0.011	0.005	1.7	90.0	
Pole CS-2-62	4.160	98.255	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-60	-0.009	-0.004	1.4	90.0	
								Pole CS-2-63	0.007	0.003	1.0	90.0	
Pole CS-2-63	4.160	98.252	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-62	-0.007	-0.003	1.0	90.0	
								Pole CS-2-64	0.004	0.002	0.7	90.0	
Pole CS-2-64	4.160	98.251	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-63	-0.004	-0.002	0.7	90.0	
								Pole CS-2-65	0.002	0.001	0.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-65	4.160	98.251	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-64	-0.002	-0.001	0.3	90.0	
Pole CS-2-66	4.160	99.558	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-10	-0.007	-0.003	1.0	90.0	
								L-SUB-FDR-EQ#18-1-237~	0.000	0.000	0.0	0.0	
								SEC_CS-2-46	0.007	0.003	1.0	90.0	
Pole CS-2-73	4.160	99.075	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-27	-0.007	-0.003	1.0	90.0	
								SEC_CS-2-49	0.007	0.003	1.0	90.0	
Pole CS-3-1	4.160	99.622	-1.3	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-0.186	-0.090	28.8	90.0	
								Pole CS-3-2	0.047	0.023	7.3	90.1	
								Pole CS-3-21	0.139	0.067	21.5	90.0	
Pole CS-3-2	4.160	99.609	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-3	0.018	0.009	2.8	90.1	
								Pole CS-3-1	-0.047	-0.023	7.3	90.1	
								Pole CS-3-11	0.027	0.013	4.1	90.0	
Pole CS-3-3	4.160	99.605	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-2	-0.018	-0.009	2.8	90.1	
								Pole CS-3-4	0.016	0.008	2.4	90.1	
Pole CS-3-4	4.160	99.596	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-3	-0.016	-0.008	2.4	90.1	
								Pole CS-3-5	0.013	0.006	2.1	90.1	
Pole CS-3-5	4.160	99.588	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-4	-0.013	-0.006	2.1	90.1	
								Pole CS-3-6	0.013	0.006	2.1	90.1	
Pole CS-3-6	4.160	99.580	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-5	-0.013	-0.006	2.1	90.1	
								Pole CS-3-7	0.011	0.005	1.7	90.1	
Pole CS-3-7	4.160	99.576	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-6	-0.011	-0.005	1.7	90.1	
								Pole CS-3-8	0.011	0.005	1.7	90.1	
Pole CS-3-8	4.160	99.573	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-7	-0.011	-0.005	1.7	90.1	
								Pole CS-3-9	0.009	0.004	1.4	90.1	
Pole CS-3-9	4.160	99.564	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-8	-0.009	-0.004	1.4	90.0	
								Pole CS-3-10	0.009	0.004	1.4	90.0	
Pole CS-3-10	4.160	99.559	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-66	0.007	0.003	1.0	90.0	
								Pole CS-3-9	-0.009	-0.004	1.4	90.0	
Pole CS-3-11	4.160	99.605	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-2	-0.027	-0.013	4.1	90.0	
								Pole CS-3-12	0.025	0.012	3.8	90.0	
Pole CS-3-12	4.160	99.577	-1.3	0.000	0.000	0.004	0.002	Pole CS-3-11	-0.025	-0.012	3.8	90.0	
								Pole CS-3-13	0.020	0.010	3.1	90.0	
Pole CS-3-13	4.160	99.571	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-12	-0.020	-0.010	3.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-14	0.018	0.009	2.8	90.0	
Pole CS-3-14	4.160	99.557	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-13	-0.018	-0.009	2.8	90.0	
								Pole CS-3-15	0.016	0.008	2.4	90.0	
Pole CS-3-15	4.160	99.546	-1.3	0.000	0.000	0.004	0.002	Pole CS-3-14	-0.016	-0.008	2.4	90.0	
								Pole CS-3-16	0.011	0.005	1.7	90.0	
Pole CS-3-16	4.160	99.534	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-15	-0.011	-0.005	1.7	90.0	
								Pole CS-3-17	0.009	0.004	1.4	90.0	
Pole CS-3-17	4.160	99.532	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-16	-0.009	-0.004	1.4	90.0	
								Pole CS-3-18	0.007	0.003	1.0	90.0	
Pole CS-3-18	4.160	99.529	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-17	-0.007	-0.003	1.0	90.0	
								Pole CS-3-19	0.004	0.002	0.7	90.0	
Pole CS-3-19	4.160	99.527	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-18	-0.004	-0.002	0.7	90.0	
								Pole CS-3-20	0.002	0.001	0.3	90.0	
Pole CS-3-20	4.160	99.526	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-19	-0.002	-0.001	0.3	90.0	
Pole CS-3-21	4.160	99.591	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-1	-0.139	-0.067	21.5	90.0	
								Pole CS-3-22	0.137	0.066	21.2	90.0	
Pole CS-3-22	4.160	99.477	-1.3	0.000	0.000	0.000	0.000	PRI_PM_25	0.018	0.009	2.7	90.0	
								Pole CS-3-21	-0.137	-0.066	21.2	90.0	
								Pole CS-3-23	0.119	0.058	18.5	90.0	
Pole CS-3-23	4.160	99.406	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-29	0.117	0.057	18.1	90.0	
								Pole CS-3-22	-0.119	-0.058	18.5	90.0	
Pole CS-3-24	4.160	99.237	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-32	-0.009	-0.004	1.4	90.0	
								Pole CS-3-25	0.007	0.003	1.0	90.0	
Pole CS-3-25	4.160	99.235	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-24	-0.007	-0.003	1.0	90.0	
								Pole CS-3-26	0.004	0.002	0.7	90.0	
Pole CS-3-26	4.160	99.234	-1.3	0.000	0.000	0.004	0.002	Pole CS-3-25	-0.004	-0.002	0.7	90.0	
Pole CS-3-27	4.160	99.078	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-73	0.007	0.003	1.0	90.0	
								Pole CS-3-34	-0.009	-0.004	1.4	90.0	
Pole CS-3-28	4.160	99.013	-1.3	0.000	0.000	0.004	0.002	Pole CS-3-35	-0.004	-0.002	0.7	90.0	
Pole CS-3-29	4.160	99.342	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-23	-0.117	-0.056	18.1	90.0	
								Pole CS-3-30	0.110	0.053	17.1	90.0	
								SEC_CS-2-47	0.007	0.003	1.0	90.0	
Pole CS-3-30	4.160	99.296	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-29	-0.110	-0.053	17.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-31	0.019	0.009	3.0	90.0	
								Pole CS-3-32	0.091	0.044	14.1	90.0	
Pole CS-3-31	4.160	99.295	-1.3	0.000	0.000	0.000	0.000	PRI_PM_26	0.019	0.009	3.0	90.0	
								Pole CS-3-30	-0.019	-0.009	3.0	90.0	
Pole CS-3-32	4.160	99.240	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-30	-0.091	-0.044	14.1	90.0	
								Pole CS-3-33	0.082	0.040	12.7	90.0	
								Pole CS-3-24	0.009	0.004	1.4	90.0	
Pole CS-3-33	4.160	99.214	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-32	-0.082	-0.040	12.7	90.0	
								Pole CS-3-34	0.075	0.036	11.7	90.1	
								SEC_CS-2-48	0.007	0.003	1.0	90.0	
Pole CS-3-34	4.160	99.081	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-33	-0.075	-0.036	11.7	90.0	
								Pole CS-3-35	0.066	0.032	10.3	90.0	
								Pole CS-3-27	0.009	0.004	1.4	90.0	
Pole CS-3-35	4.160	99.014	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-34	-0.066	-0.032	10.3	90.0	
								Pole CS-3-52	0.062	0.030	9.6	90.0	
								Pole CS-3-28	0.004	0.002	0.7	90.0	
Pole CS-3-36	4.160	98.835	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-37	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-246~	0.000	0.000	0.0	0.0	
Pole CS-3-37	4.160	98.835	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-36	0.000	0.000	0.0	0.0	
								Pole CS-3-38	-0.002	-0.001	0.3	90.2	
Pole CS-3-38	4.160	98.835	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-37	0.002	0.001	0.3	90.2	
								Pole CS-3-39	-0.004	-0.002	0.7	90.1	
Pole CS-3-39	4.160	98.837	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-38	0.004	0.002	0.7	90.1	
								Pole CS-3-40	-0.007	-0.003	1.0	90.1	
Pole CS-3-40	4.160	98.839	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-39	0.007	0.003	1.0	90.1	
								Pole CS-3-41	-0.009	-0.004	1.4	90.0	
Pole CS-3-41	4.160	98.844	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-40	0.009	0.004	1.4	90.1	
								Pole CS-3-42	-0.011	-0.005	1.7	90.0	
Pole CS-3-42	4.160	98.847	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-41	0.011	0.005	1.7	90.1	
								Pole CS-3-43	-0.013	-0.006	2.1	90.0	
Pole CS-3-43	4.160	98.854	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-42	0.013	0.006	2.1	90.1	
								Pole CS-3-45	-0.018	-0.009	2.8	90.0	
								Pole CS-3-44	0.002	0.001	0.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-3-44	4.160	98.853	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-43	-0.002	-0.001	0.3	90.0	
Pole CS-3-45	4.160	98.863	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-43	0.018	0.009	2.7	90.0	
								Pole CS-3-50	-0.022	-0.011	3.4	90.0	
								Pole CS-3-46	0.002	0.001	0.3	90.0	
								Pole CS-3-47	0.002	0.001	0.3	90.0	
Pole CS-3-46	4.160	98.862	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-45	-0.002	-0.001	0.3	90.0	
Pole CS-3-47	4.160	98.862	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-45	-0.002	-0.001	0.3	90.0	
Pole CS-3-48	4.160	98.874	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-50	-0.002	-0.001	0.3	90.0	
Pole CS-3-49	4.160	98.874	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-50	-0.002	-0.001	0.3	90.0	
Pole CS-3-50	4.160	98.874	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-45	0.022	0.011	3.4	90.0	
								Pole CS-3-51	-0.026	-0.013	4.1	90.0	
								Pole CS-3-48	0.002	0.001	0.3	90.0	
								Pole CS-3-49	0.002	0.001	0.3	90.0	
Pole CS-3-51	4.160	98.876	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-50	0.026	0.013	4.1	90.0	
								Pole CS-3-63	-0.044	-0.021	6.9	90.0	
								Pole CS-3-66	0.018	0.009	2.8	90.0	
								Pole CS-3-74	0.000	0.000	0.0	0.0	
Pole CS-3-52	4.160	98.980	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-35	-0.062	-0.030	9.6	90.0	
								Pole CS-3-59	0.055	0.027	8.6	90.0	
								Pole CS-3-53	0.007	0.003	1.0	90.0	
Pole CS-3-53	4.160	98.977	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-52	-0.007	-0.003	1.0	90.0	
								Pole CS-3-54	0.004	0.002	0.7	90.0	
Pole CS-3-54	4.160	98.976	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-53	-0.004	-0.002	0.7	90.0	
								Pole CS-3-55	0.002	0.001	0.3	90.0	
Pole CS-3-55	4.160	98.976	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-54	-0.002	-0.001	0.3	90.0	
Pole CS-3-56	4.160	98.950	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-57	-0.002	-0.001	0.3	90.0	
Pole CS-3-57	4.160	98.951	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-56	0.002	0.001	0.3	90.1	
								Pole CS-3-58	-0.004	-0.002	0.7	90.0	
Pole CS-3-58	4.160	98.953	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-57	0.004	0.002	0.7	90.1	
								Pole CS-3-59	-0.007	-0.003	1.0	90.0	
Pole CS-3-59	4.160	98.955	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-52	-0.055	-0.027	8.6	90.0	
								Pole CS-3-60	0.049	0.023	7.6	90.0	
								Pole CS-3-58	0.007	0.003	1.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-3-60	4.160	98.933	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-59	-0.049	-0.023	7.6	90.0	
								Pole CS-3-62	0.049	0.023	7.6	90.0	
Pole CS-3-61	4.160	98.911	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-62	-0.046	-0.022	7.2	90.0	
								Pole CS-3-63	0.044	0.021	6.9	90.0	
Pole CS-3-62	4.160	98.922	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-61	0.046	0.022	7.2	90.0	
								Pole CS-3-60	-0.049	-0.023	7.6	90.0	
Pole CS-3-63	4.160	98.894	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-61	-0.044	-0.021	6.9	90.0	
								Pole CS-3-51	0.044	0.021	6.9	90.0	
								Pole CS-3-75	0.000	0.000	0.0	0.0	
Pole CS-3-66	4.160	98.873	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-51	-0.018	-0.009	2.8	90.0	
								Pole CS-3-67	0.015	0.007	2.4	90.0	
Pole CS-3-67	4.160	98.869	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-66	-0.015	-0.007	2.4	90.0	
								Pole CS-3-68	0.013	0.006	2.1	90.0	
Pole CS-3-68	4.160	98.865	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-67	-0.013	-0.006	2.1	90.0	
								Pole CS-3-69	0.011	0.005	1.7	90.0	
Pole CS-3-69	4.160	98.862	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-68	-0.011	-0.005	1.7	90.0	
								Pole CS-3-70	0.009	0.004	1.4	90.0	
Pole CS-3-70	4.160	98.859	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-69	-0.009	-0.004	1.4	90.0	
								Pole CS-3-71	0.007	0.003	1.0	90.0	
Pole CS-3-71	4.160	98.857	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-70	-0.007	-0.003	1.0	90.0	
								Pole CS-3-72	0.004	0.002	0.7	90.0	
Pole CS-3-72	4.160	98.856	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-71	-0.004	-0.002	0.7	90.0	
								Pole CS-3-73	0.002	0.001	0.3	90.0	
Pole CS-3-73	4.160	98.855	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-72	-0.002	-0.001	0.3	90.0	
Pole CS-3-74	4.160	98.876	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-51	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-276~	0.000	0.000	0.0	0.0	
Pole CS-3-75	4.160	98.894	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-63	0.000	0.000	0.0	0.0	
Pole CS-4-1	4.160	99.654	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-11	0.173	0.084	26.8	90.0	
								Pole CS-4-3	0.004	0.002	0.7	90.1	
								BUS_CLG_4kV	-0.180	-0.087	27.8	90.0	
Pole CS-4-2	4.160	99.422	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-11	-0.138	-0.067	21.3	90.0	
								Pole CS-4-6	0.135	0.066	21.0	90.0	
Pole CS-4-3	4.160	99.654	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-1	-0.004	-0.002	0.7	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-4-4	0.002	0.001	0.3	90.2	
Pole CS-4-4	4.160	99.652	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-3	-0.002	-0.001	0.3	90.0	
								Pole CS-4-5	0.002	0.001	0.3	90.0	
								L-SUB-FDR-EQ#18-1-283~	0.000	0.000	0.0	0.0	
Pole CS-4-5	4.160	99.651	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-4	-0.002	-0.001	0.3	90.0	
Pole CS-4-6	4.160	99.321	-1.3	0.000	0.000	0.000	0.000	PRI_PM_22	0.039	0.019	6.0	89.9	
								Pole CS-4-2	-0.135	-0.066	21.0	90.0	
								Pole CS-4-7	0.097	0.047	15.0	90.0	
Pole CS-4-7	4.160	99.287	-1.3	0.000	0.000	0.004	0.002	Pole CS-4-6	-0.097	-0.047	15.0	90.0	
								Pole CS-4-8	0.092	0.045	14.3	90.0	
Pole CS-4-8	4.160	99.253	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-7	-0.092	-0.045	14.3	90.0	
								Pole CS-4-9	0.090	0.044	14.0	90.0	
Pole CS-4-9	4.160	99.226	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-8	-0.090	-0.044	14.0	90.0	
								Pole CS-4-12	0.007	0.003	1.0	90.0	
								Pole CS-4-13	0.083	0.040	12.9	90.0	
Pole CS-4-11	4.160	99.525	-1.3	0.000	0.000	0.000	0.000	PRI_PM_11	0.035	0.017	5.5	89.9	
								Pole CS-4-1	-0.173	-0.084	26.8	90.0	
								Pole CS-4-2	0.138	0.067	21.3	90.0	
Pole CS-4-12	4.160	99.225	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.007	-0.003	1.0	90.0	
								SEC_CS-4-8	0.007	0.003	1.0	90.0	
Pole CS-4-13	4.160	99.196	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.083	-0.040	12.9	90.0	
								Pole CS-4-14	0.083	0.040	12.9	90.0	
Pole CS-4-14	4.160	99.164	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-13	-0.083	-0.040	12.9	90.0	
								Pole CS-4-15	0.083	0.040	12.9	90.0	
Pole CS-4-15	4.160	98.951	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-14	-0.083	-0.040	12.9	90.0	
								Pole CS-4-16	0.083	0.040	12.9	90.0	
Pole CS-4-16	4.160	98.618	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-15	-0.083	-0.040	12.9	89.9	
								Pole CS-4-18	0.004	0.002	0.7	90.1	
								Pole CS-4-20	0.078	0.038	12.3	89.9	
Pole CS-4-17	4.160	98.616	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-18	-0.002	-0.001	0.3	90.0	
Pole CS-4-18	4.160	98.617	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-17	0.002	0.001	0.3	90.0	
								Pole CS-4-16	-0.004	-0.002	0.7	90.1	
								Pole CS-4-19	0.002	0.001	0.3	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-4-19	4.160	98.615	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-18	-0.002	-0.001	0.3	90.0	
Pole CS-4-20	4.160	98.576	-1.3	0.000	0.000	0.000	0.000	PRI_PM_23	0.038	0.019	6.0	89.9	
								Pole CS-4-16	-0.078	-0.038	12.3	89.9	
								Pole CS-4-21	0.040	0.020	6.3	89.9	
Pole CS-4-21	4.160	98.552	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-20	-0.040	-0.020	6.3	89.9	
								Pole CS-4-22	0.038	0.019	6.0	89.9	
Pole CS-4-22	4.160	98.536	-1.3	0.000	0.000	0.000	0.000	PRI_PM_24	0.038	0.019	6.0	89.9	
								Pole CS-4-21	-0.038	-0.019	6.0	89.9	
Pole CS-5-18	24.940	98.982	-0.7	0.000	0.000	0.009	0.004	Pole CS-5-19	-0.009	-0.004	0.2	89.8	
Pole CS-5-19	24.940	98.982	-0.7	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-9	0.027	0.011	0.7	91.8	
								Pole CS-5-18	0.009	0.004	0.2	90.2	
								Pole CS-5-20	-0.035	-0.016	0.9	91.4	
Pole CS-5-20	24.940	98.982	-0.7	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-8	0.026	0.012	0.7	91.0	
								Pole CS-5-19	0.035	0.016	0.9	91.5	
								Pole CS-5-21	-0.062	-0.028	1.6	91.3	
Pole CS-5-21	24.940	98.985	-0.7	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-0.062	-0.026	1.6	91.9	
								Pole CS-5-20	0.062	0.026	1.6	91.9	
Pole HS-1-001	4.160	100.300	-1.2	0.000	0.000	0.003	0.001	BUS_HSC_4kV	-0.020	-0.010	3.1	90.0	
								Pole HS-1-4	0.018	0.009	2.7	90.0	
Pole HS-1-4	4.160	100.296	-1.2	0.000	0.000	0.004	0.002	Pole HS-1-001	-0.018	-0.009	2.7	90.0	
								Pole HS-1-16	0.014	0.007	2.1	90.0	
Pole HS-1-16	4.160	100.293	-1.2	0.000	0.000	0.008	0.004	Pole HS-1-17	0.005	0.003	0.8	90.0	
								Pole HS-1-4	-0.014	-0.007	2.1	90.0	
Pole HS-1-17	4.160	100.292	-1.2	0.000	0.000	0.001	0.001	Pole HS-1-16	-0.005	-0.003	0.8	90.0	
								Pole HS-1-19	0.004	0.002	0.6	90.0	
Pole HS-1-19	4.160	100.291	-1.2	0.000	0.000	0.004	0.002	Pole HS-1-17	-0.004	-0.002	0.6	90.0	
Pole HS-2-1	4.160	100.242	-1.2	0.000	0.000	0.002	0.001	BUS_HSC_4kV	-0.280	-0.136	43.1	90.0	
								Pole HS-2-2	0.278	0.135	42.7	90.0	
Pole HS-2-2	4.160	100.161	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-1	-0.278	-0.134	42.7	90.0	
								Pole HS-2-3	0.275	0.133	42.4	90.0	
Pole HS-2-3	4.160	100.090	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-2	-0.275	-0.133	42.4	90.0	
								Pole HS-2-4	0.273	0.132	42.0	90.0	
Pole HS-2-4	4.160	100.020	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-3	-0.273	-0.132	42.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-5	0.266	0.129	41.0	90.0	
								SEC_HS-2-4	0.007	0.003	1.0	90.0	
Pole HS-2-5	4.160	99.945	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-4	-0.266	-0.129	41.0	90.0	
								Pole HS-2-6	0.259	0.125	40.0	90.0	
								SEC_HS-2-5	0.007	0.003	1.0	90.0	
Pole HS-2-6	4.160	99.880	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-5	-0.259	-0.125	40.0	90.0	
								Pole HS-2-7	0.252	0.122	38.9	90.0	
								SEC_HS-2-6	0.007	0.003	1.0	90.0	
Pole HS-2-7	4.160	99.810	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-6	-0.252	-0.122	38.9	90.0	
								Pole HS-2-8	0.245	0.119	37.9	90.0	
								SEC_HS-2-7	0.007	0.003	1.0	90.0	
Pole HS-2-8	4.160	99.742	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-7	-0.245	-0.119	37.9	90.0	
								Pole HS-2-9	0.173	0.084	26.8	90.0	
								Pole HS-2-50	0.072	0.035	11.1	90.0	
Pole HS-2-9	4.160	99.697	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-8	-0.173	-0.084	26.8	90.0	
								Pole HS-2-10	0.171	0.083	26.5	90.0	
Pole HS-2-10	4.160	99.654	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-9	-0.171	-0.083	26.5	90.0	
								Pole HS-2-11	0.169	0.082	26.1	90.0	
Pole HS-2-11	4.160	99.609	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-10	-0.169	-0.082	26.1	90.0	
								Pole HS-2-12	0.162	0.079	25.1	90.0	
								SEC_HS-2-10	0.007	0.003	1.0	90.0	
Pole HS-2-12	4.160	99.580	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-11	-0.162	-0.079	25.1	90.0	
								Pole HS-2-86	0.160	0.078	24.7	90.0	
Pole HS-2-13	4.160	99.536	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-14	0.022	0.011	3.5	90.0	
								Pole HS-2-24	0.060	0.029	9.3	90.0	
								Pole HS-2-86	-0.082	-0.040	12.8	90.0	
Pole HS-2-14	4.160	99.529	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-13	-0.022	-0.011	3.5	90.0	
								Pole HS-2-15	0.020	0.010	3.1	90.0	
Pole HS-2-15	4.160	99.521	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-14	-0.020	-0.010	3.1	90.0	
								Pole HS-2-16	0.018	0.009	2.8	90.0	
Pole HS-2-16	4.160	99.514	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-15	-0.018	-0.009	2.8	90.0	
								Pole HS-2-17	0.016	0.008	2.4	90.0	
Pole HS-2-17	4.160	99.509	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-16	-0.016	-0.008	2.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-18	0.013	0.006	2.1	90.0	
Pole HS-2-18	4.160	99.506	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-17	-0.013	-0.006	2.1	90.0	
								Pole HS-2-19	0.011	0.005	1.7	90.0	
Pole HS-2-19	4.160	99.503	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-18	-0.011	-0.005	1.7	90.0	
								Pole HS-2-20	0.009	0.004	1.4	90.0	
Pole HS-2-20	4.160	99.498	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-19	-0.009	-0.004	1.4	90.0	
								Pole HS-2-21	0.007	0.003	1.0	90.0	
Pole HS-2-21	4.160	99.497	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-20	-0.007	-0.003	1.0	90.0	
								Pole HS-2-22	0.004	0.002	0.7	90.0	
Pole HS-2-22	4.160	99.495	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-21	-0.004	-0.002	0.7	90.0	
								Pole HS-2-23	0.002	0.001	0.3	90.0	
Pole HS-2-23	4.160	99.495	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-22	-0.002	-0.001	0.3	90.0	
Pole HS-2-24	4.160	99.487	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-13	-0.060	-0.029	9.3	90.0	
								Pole HS-2-25	0.051	0.025	7.9	90.0	
								Pole HS-2-26	0.007	0.003	1.0	90.0	
Pole HS-2-25	4.160	99.471	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.051	-0.025	7.9	90.0	
								Pole HS-2-27	0.051	0.025	7.9	90.0	
Pole HS-2-26	4.160	99.482	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.007	-0.003	1.0	90.0	
								SEC_HS-2-23	0.007	0.003	1.0	90.0	
Pole HS-2-27	4.160	99.455	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-25	-0.051	-0.025	7.9	90.0	
								Pole HS-2-28	0.051	0.025	7.9	90.0	
Pole HS-2-28	4.160	99.428	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-27	-0.051	-0.025	7.9	90.0	
								Pole HS-2-29	0.018	0.009	2.8	90.0	
								Pole HS-2-35	0.033	0.016	5.2	90.0	
Pole HS-2-29	4.160	99.423	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-28	-0.018	-0.009	2.8	90.0	
								Pole HS-2-30	0.016	0.008	2.4	90.0	
Pole HS-2-30	4.160	99.421	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-31	0.009	0.004	1.4	90.0	
								Pole HS-2-29	-0.016	-0.008	2.4	90.0	
								SEC_HS-2-25	0.007	0.003	1.0	90.0	
Pole HS-2-31	4.160	99.420	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-30	-0.009	-0.004	1.4	90.0	
								Pole HS-2-32	0.007	0.003	1.0	90.0	
Pole HS-2-32	4.160	99.418	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-31	-0.007	-0.003	1.0	90.0	
								Pole HS-2-33	0.004	0.002	0.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-2-33	4.160	99.417	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-32	-0.004	-0.002	0.7	90.0	
								Pole HS-2-34	0.002	0.001	0.3	90.0	
Pole HS-2-34	4.160	99.416	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-33	-0.002	-0.001	0.3	90.0	
Pole HS-2-35	4.160	99.411	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-28	-0.033	-0.016	5.2	90.0	
								Pole HS-2-36	0.013	0.006	2.1	90.0	
								Pole HS-2-42	0.018	0.009	2.8	90.0	
								Pole HS-2-48	0.002	0.001	0.3	90.0	
Pole HS-2-36	4.160	99.406	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-35	-0.013	-0.006	2.1	90.0	
								Pole HS-2-37	0.011	0.005	1.7	90.0	
Pole HS-2-37	4.160	99.403	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-36	-0.011	-0.005	1.7	90.0	
								Pole HS-2-38	0.009	0.004	1.4	90.0	
Pole HS-2-38	4.160	99.401	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-37	-0.009	-0.004	1.4	90.0	
								Pole HS-2-39	0.007	0.003	1.0	90.0	
Pole HS-2-39	4.160	99.399	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-38	-0.007	-0.003	1.0	90.0	
								Pole HS-2-40	0.004	0.002	0.7	90.0	
Pole HS-2-40	4.160	99.398	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-39	-0.004	-0.002	0.7	90.0	
								Pole HS-2-41	0.002	0.001	0.3	90.0	
Pole HS-2-41	4.160	99.398	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-40	-0.002	-0.001	0.3	90.0	
Pole HS-2-42	4.160	99.402	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-35	-0.018	-0.009	2.8	90.0	
								Pole HS-2-43	0.016	0.008	2.4	90.0	
								Pole HS-2-49	0.002	0.001	0.3	90.1	
Pole HS-2-43	4.160	99.398	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-42	-0.016	-0.008	2.4	90.0	
								Pole HS-2-44	0.009	0.004	1.4	90.0	
								SEC_HS-2-36	0.007	0.003	1.0	90.0	
Pole HS-2-44	4.160	99.395	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-43	-0.009	-0.004	1.4	90.0	
								Pole HS-2-45	0.007	0.003	1.0	90.0	
Pole HS-2-45	4.160	99.393	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-44	-0.007	-0.003	1.0	90.0	
								Pole HS-2-46	0.004	0.002	0.7	90.0	
Pole HS-2-46	4.160	99.393	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-45	-0.004	-0.002	0.7	90.0	
								Pole HS-2-47	0.002	0.001	0.3	90.0	
Pole HS-2-47	4.160	99.392	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-46	-0.002	-0.001	0.3	90.0	
Pole HS-2-48	4.160	99.410	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-35	-0.002	-0.001	0.3	90.0	
Pole HS-2-49	4.160	99.400	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-42	-0.002	-0.001	0.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								L-SUB-FDR-EQ#18-1-278~	0.000	0.000	0.0	0.0	
Pole HS-2-50	4.160	99.705	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-8	-0.072	-0.035	11.1	90.0	
								Pole HS-2-51	0.069	0.034	10.7	90.0	
Pole HS-2-51	4.160	99.669	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-50	-0.069	-0.034	10.7	90.0	
								Pole HS-2-52	0.011	0.005	1.7	90.0	
								Pole HS-2-57	0.058	0.028	9.0	90.0	
Pole HS-2-52	4.160	99.668	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-51	-0.011	-0.005	1.7	90.0	
								Pole HS-2-53	0.009	0.004	1.4	90.0	
Pole HS-2-53	4.160	99.666	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-52	-0.009	-0.004	1.4	90.0	
								Pole HS-2-54	0.007	0.003	1.0	90.0	
Pole HS-2-54	4.160	99.665	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-53	-0.007	-0.003	1.0	90.0	
								Pole HS-2-55	0.004	0.002	0.7	90.0	
Pole HS-2-55	4.160	99.665	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-54	-0.004	-0.002	0.7	90.0	
								Pole HS-2-56	0.002	0.001	0.3	90.0	
Pole HS-2-56	4.160	99.664	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-55	-0.002	-0.001	0.3	90.0	
Pole HS-2-57	4.160	99.639	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-51	-0.058	-0.028	9.0	90.0	
								Pole HS-2-58	0.022	0.011	3.5	90.0	
								Pole HS-2-76	0.036	0.017	5.5	90.0	
Pole HS-2-58	4.160	99.636	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-57	-0.022	-0.011	3.5	90.0	
								Pole HS-2-67	0.020	0.010	3.1	90.0	
Pole HS-2-59	4.160	99.628	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-67	-0.018	-0.009	2.8	90.0	
								Pole HS-2-60	0.016	0.008	2.4	90.0	
Pole HS-2-60	4.160	99.625	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-59	-0.016	-0.008	2.4	90.0	
								Pole HS-2-61	0.013	0.006	2.1	90.0	
Pole HS-2-61	4.160	99.623	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-60	-0.013	-0.006	2.1	90.0	
								Pole HS-2-62	0.011	0.005	1.7	90.0	
Pole HS-2-62	4.160	99.619	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-61	-0.011	-0.005	1.7	90.0	
								Pole HS-2-63	0.009	0.004	1.4	90.0	
Pole HS-2-63	4.160	99.618	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-62	-0.009	-0.004	1.4	90.0	
								Pole HS-2-64	0.007	0.003	1.0	90.0	
Pole HS-2-64	4.160	99.617	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-63	-0.007	-0.003	1.0	90.0	
								Pole HS-2-65	0.004	0.002	0.7	90.0	
Pole HS-2-65	4.160	99.616	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-64	-0.004	-0.002	0.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-66	0.002	0.001	0.3	90.0	
Pole HS-2-66	4.160	99.615	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-65	-0.002	-0.001	0.3	90.0	
								L-SUB-FDR-EQ#18-1-301~	0.000	0.000	0.0	0.0	
Pole HS-2-67	4.160	99.631	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-59	0.018	0.009	2.8	90.0	
								Pole HS-2-58	-0.020	-0.010	3.1	90.0	
Pole HS-2-68	4.160	99.605	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-69	-0.002	-0.001	0.3	90.0	
Pole HS-2-69	4.160	99.605	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-68	0.002	0.001	0.3	90.0	
								Pole HS-2-70	-0.004	-0.002	0.7	90.0	
Pole HS-2-70	4.160	99.606	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-69	0.004	0.002	0.7	90.0	
								Pole HS-2-71	-0.007	-0.003	1.0	90.0	
Pole HS-2-71	4.160	99.608	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-70	0.007	0.003	1.0	90.0	
								Pole HS-2-72	-0.009	-0.004	1.4	90.0	
Pole HS-2-72	4.160	99.610	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-71	0.009	0.004	1.4	90.0	
								Pole HS-2-73	-0.011	-0.005	1.7	90.0	
Pole HS-2-73	4.160	99.612	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-72	0.011	0.005	1.7	90.0	
								Pole HS-2-74	-0.013	-0.006	2.1	90.0	
Pole HS-2-74	4.160	99.614	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-73	0.013	0.006	2.1	90.0	
								Pole HS-2-75	-0.016	-0.008	2.4	90.0	
Pole HS-2-75	4.160	99.618	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-74	0.016	0.008	2.4	90.0	
								Pole HS-2-76	-0.018	-0.009	2.8	90.0	
Pole HS-2-76	4.160	99.620	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-75	0.018	0.009	2.8	90.0	
								Pole HS-2-57	-0.036	-0.017	5.5	90.0	
								Pole HS-2-77	0.018	0.009	2.8	90.1	
Pole HS-2-77	4.160	99.610	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-76	-0.018	-0.009	2.8	90.0	
								Pole HS-2-78	0.011	0.005	1.7	90.1	
								SEC_HS-2-67	0.007	0.003	1.0	90.0	
Pole HS-2-78	4.160	99.603	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-77	-0.011	-0.005	1.7	90.1	
								Pole HS-2-79	0.002	0.001	0.3	90.1	
								Pole HS-2-80	0.009	0.004	1.4	90.1	
Pole HS-2-79	4.160	99.602	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-78	-0.002	-0.001	0.3	90.0	
Pole HS-2-80	4.160	99.598	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-78	-0.009	-0.004	1.4	90.1	
								Pole HS-2-81	0.007	0.003	1.0	90.1	
Pole HS-2-81	4.160	99.595	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-80	-0.007	-0.003	1.0	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-82	0.004	0.002	0.7	90.1	
Pole HS-2-82	4.160	99.590	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-81	-0.004	-0.002	0.7	90.0	
								Pole HS-2-83	0.002	0.001	0.3	90.1	
Pole HS-2-83	4.160	99.589	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-82	-0.002	-0.001	0.3	90.0	
Pole HS-2-84	4.160	99.479	-1.3	0.000	0.000	0.002	0.001	Pole HS-2-85	-0.002	-0.001	0.3	90.0	
Pole HS-2-85	4.160	99.480	-1.3	0.000	0.000	0.002	0.001	Pole HS-2-84	0.002	0.001	0.3	90.1	
								Pole CS-1-2	-0.004	-0.002	0.7	90.0	
Pole HS-2-86	4.160	99.551	-1.2	0.000	0.000	0.000	0.000	PRI_PM_10	0.077	0.038	12.0	89.9	
								Pole HS-2-12	-0.160	-0.077	24.7	90.0	
								Pole HS-2-13	0.082	0.040	12.8	90.0	
Pole HS-3-1	4.160	100.291	-1.2	0.000	0.000	0.002	0.001	BUS_HSC_4kV	-0.189	-0.091	29.0	90.0	
								Pole HS-3-2	0.187	0.090	28.7	90.0	
Pole HS-3-2	4.160	100.231	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-1	-0.186	-0.090	28.7	90.0	
								Pole HS-3-3	0.184	0.089	28.3	90.0	
Pole HS-3-3	4.160	100.142	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-2	-0.184	-0.089	28.3	90.0	
								Pole HS-3-4	0.182	0.088	28.0	90.0	
Pole HS-3-4	4.160	100.082	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-3	-0.182	-0.088	28.0	90.0	
								Pole HS-3-5	0.179	0.087	27.6	90.0	
Pole HS-3-5	4.160	100.023	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-4	-0.179	-0.087	27.6	90.0	
								Pole HS-3-6	0.177	0.086	27.3	90.0	
Pole HS-3-6	4.160	99.982	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-5	-0.177	-0.086	27.3	90.0	
								Pole HS-3-7	0.175	0.085	26.9	90.0	
Pole HS-3-7	4.160	99.933	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-6	-0.175	-0.084	26.9	90.0	
								Pole HS-3-8	0.172	0.083	26.6	90.0	
Pole HS-3-8	4.160	99.898	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-7	-0.172	-0.083	26.6	90.0	
								Pole HS-3-9	0.170	0.082	26.2	90.0	
Pole HS-3-9	4.160	99.852	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-8	-0.170	-0.082	26.2	90.0	
								Pole HS-3-10	0.168	0.081	25.9	90.0	
Pole HS-3-10	4.160	99.807	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-9	-0.168	-0.081	25.9	90.0	
								Pole HS-3-11	0.165	0.080	25.6	90.0	
Pole HS-3-11	4.160	99.775	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-10	-0.165	-0.080	25.6	90.0	
								Pole HS-3-12	0.163	0.079	25.2	90.0	
Pole HS-3-12	4.160	99.746	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-11	-0.163	-0.079	25.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-3-13	0.161	0.078	24.9	90.0	
Pole HS-3-13	4.160	99.703	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-12	-0.161	-0.078	24.9	90.0	
								Pole HS-3-14	0.159	0.077	24.5	90.0	
Pole HS-3-14	4.160	99.672	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-13	-0.158	-0.077	24.5	90.0	
								Pole HS-3-15	0.156	0.076	24.2	90.0	
Pole HS-3-15	4.160	99.636	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-14	-0.156	-0.076	24.2	90.0	
								Pole HS-3-16	0.154	0.075	23.8	90.0	
Pole HS-3-16	4.160	99.601	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-15	-0.154	-0.074	23.8	90.0	
								Pole HS-3-17	0.152	0.073	23.5	90.0	
Pole HS-3-17	4.160	99.570	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-16	-0.152	-0.073	23.5	90.0	
								Pole HS-3-18	0.098	0.047	15.2	90.0	
								Pole HS-3-23	0.054	0.026	8.3	90.0	
Pole HS-3-18	4.160	99.505	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-17	-0.098	-0.047	15.2	90.0	
								Pole HS-3-28	0.011	0.005	1.7	90.0	
								Pole HS-3-29	0.058	0.028	9.0	90.0	
								Pole HS-3-46	0.029	0.014	4.5	90.0	
Pole HS-3-19	4.160	99.511	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-20	-0.045	-0.022	6.9	90.0	
								Pole HS-3-30	0.042	0.020	6.6	90.0	
Pole HS-3-20	4.160	99.522	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-19	0.045	0.022	6.9	90.0	
								Pole HS-3-21	-0.047	-0.023	7.3	90.0	
Pole HS-3-21	4.160	99.541	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-20	0.047	0.023	7.3	90.0	
								Pole HS-3-22	-0.049	-0.024	7.6	90.0	
Pole HS-3-22	4.160	99.551	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-21	0.049	0.024	7.6	90.0	
								Pole HS-3-23	-0.051	-0.025	7.9	90.0	
Pole HS-3-23	4.160	99.560	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-17	-0.054	-0.026	8.3	90.0	
								Pole HS-3-22	0.051	0.025	7.9	90.0	
Pole HS-3-24	4.160	99.498	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-25	-0.002	-0.001	0.3	90.0	
Pole HS-3-25	4.160	99.499	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-24	0.002	0.001	0.3	90.0	
								Pole HS-3-26	-0.004	-0.002	0.7	90.0	
Pole HS-3-26	4.160	99.500	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-25	0.004	0.002	0.7	90.0	
								Pole HS-3-27	-0.007	-0.003	1.0	90.0	
Pole HS-3-27	4.160	99.502	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-26	0.007	0.003	1.0	90.0	
								Pole HS-3-28	-0.009	-0.004	1.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-28	4.160	99.504	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-27	0.009	0.004	1.4	90.0	
								Pole HS-3-18	-0.011	-0.005	1.7	90.0	
Pole HS-3-29	4.160	99.467	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-18	-0.058	-0.028	9.0	90.0	
								Pole HS-3-34	0.009	0.004	1.4	90.0	
								Pole HS-3-35	0.022	0.011	3.5	90.0	
								Pole HS-3-59	0.027	0.013	4.1	90.0	
Pole HS-3-30	4.160	99.502	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-19	-0.042	-0.020	6.6	90.0	
								Pole HS-3-85	0.040	0.019	6.2	90.0	
Pole HS-3-31	4.160	99.461	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-32	-0.002	-0.001	0.3	90.0	
Pole HS-3-32	4.160	99.462	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-31	0.002	0.001	0.3	90.0	
								Pole HS-3-33	-0.004	-0.002	0.7	90.0	
Pole HS-3-33	4.160	99.463	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-32	0.004	0.002	0.7	90.0	
								Pole HS-3-34	-0.007	-0.003	1.0	90.0	
Pole HS-3-34	4.160	99.464	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-29	-0.009	-0.004	1.4	90.0	
								Pole HS-3-33	0.007	0.003	1.0	90.0	
Pole HS-3-35	4.160	99.453	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.022	-0.011	3.5	90.0	
								Pole HS-3-37	0.004	0.002	0.7	90.0	
								Pole HS-3-38	0.018	0.009	2.8	90.0	
Pole HS-3-36	4.160	99.451	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-37	-0.002	-0.001	0.3	90.0	
Pole HS-3-37	4.160	99.451	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-35	-0.004	-0.002	0.7	90.0	
								Pole HS-3-36	0.002	0.001	0.3	90.0	
Pole HS-3-38	4.160	99.441	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-35	-0.018	-0.009	2.8	90.0	
								Pole HS-3-43	0.016	0.008	2.4	90.0	
Pole HS-3-39	4.160	99.426	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-44	0.004	0.002	0.7	90.1	
								Pole HS-3-40	-0.007	-0.003	1.0	90.0	
Pole HS-3-40	4.160	99.427	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-39	0.007	0.003	1.0	90.1	
								Pole HS-3-41	-0.009	-0.004	1.4	90.0	
Pole HS-3-41	4.160	99.429	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-40	0.009	0.004	1.4	90.0	
								Pole HS-3-42	-0.011	-0.005	1.7	90.0	
Pole HS-3-42	4.160	99.431	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-41	0.011	0.005	1.7	90.0	
								Pole HS-3-43	-0.013	-0.006	2.1	90.0	
Pole HS-3-43	4.160	99.434	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-42	0.013	0.006	2.1	90.0	
								Pole HS-3-38	-0.016	-0.008	2.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-44	4.160	99.421	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-39	-0.004	-0.002	0.7	90.0	
								Pole HS-3-45	0.002	0.001	0.3	90.0	
Pole HS-3-45	4.160	99.420	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-44	-0.002	-0.001	0.3	90.0	
Pole HS-3-46	4.160	99.502	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-18	-0.029	-0.014	4.5	90.0	
								Pole HS-3-47	0.027	0.013	4.1	90.0	
Pole HS-3-47	4.160	99.498	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-46	-0.027	-0.013	4.1	90.0	
								Pole HS-3-48	0.025	0.012	3.8	90.0	
Pole HS-3-48	4.160	99.491	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-47	-0.025	-0.012	3.8	90.0	
								Pole HS-3-49	0.022	0.011	3.5	90.0	
Pole HS-3-49	4.160	99.485	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-50	0.020	0.010	3.1	90.0	
								Pole HS-3-48	-0.022	-0.011	3.5	90.0	
Pole HS-3-50	4.160	99.482	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-49	-0.020	-0.010	3.1	90.0	
								Pole HS-3-51	0.018	0.009	2.8	90.0	
Pole HS-3-51	4.160	99.478	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-50	-0.018	-0.009	2.8	90.0	
								Pole HS-3-52	0.016	0.008	2.4	90.0	
Pole HS-3-52	4.160	99.473	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-51	-0.016	-0.008	2.4	90.0	
								Pole HS-3-53	0.013	0.006	2.1	90.0	
Pole HS-3-53	4.160	99.472	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-58	0.011	0.005	1.7	90.0	
								Pole HS-3-52	-0.013	-0.006	2.1	90.0	
Pole HS-3-54	4.160	99.463	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-55	-0.002	-0.001	0.3	90.0	
Pole HS-3-55	4.160	99.464	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-54	0.002	0.001	0.3	90.0	
								Pole HS-3-56	-0.004	-0.002	0.7	90.0	
Pole HS-3-56	4.160	99.464	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-55	0.004	0.002	0.7	90.0	
								Pole HS-3-57	-0.007	-0.003	1.0	90.0	
Pole HS-3-57	4.160	99.466	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-56	0.007	0.003	1.0	90.0	
								Pole HS-3-58	-0.009	-0.004	1.4	90.0	
Pole HS-3-58	4.160	99.471	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-53	-0.011	-0.005	1.7	90.0	
								Pole HS-3-57	0.009	0.004	1.4	90.0	
Pole HS-3-59	4.160	99.449	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.027	-0.013	4.1	90.0	
								Pole HS-3-60	0.020	0.010	3.1	90.0	
								SEC_HS-3-55	0.007	0.003	1.0	90.0	
Pole HS-3-60	4.160	99.441	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-59	-0.020	-0.010	3.1	90.0	
								Pole HS-3-61	0.018	0.009	2.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-61	4.160	99.434	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-60	-0.018	-0.009	2.8	90.0	
								Pole HS-3-62	0.011	0.005	1.7	90.0	
								SEC_HS-3-57	0.007	0.003	1.0	90.0	
Pole HS-3-62	4.160	99.430	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-61	-0.011	-0.005	1.7	90.0	
								Pole HS-3-63	0.009	0.004	1.4	90.0	
Pole HS-3-63	4.160	99.427	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-62	-0.009	-0.004	1.4	90.0	
								Pole HS-3-64	0.002	0.001	0.3	90.0	
								SEC_HS-3-59	0.007	0.003	1.0	90.0	
Pole HS-3-64	4.160	99.426	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-63	-0.002	-0.001	0.3	90.0	
Pole HS-3-65	4.160	99.449	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-66	-0.002	-0.001	0.3	90.0	
Pole HS-3-66	4.160	99.450	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-65	0.002	0.001	0.3	90.0	
								Pole HS-3-67	-0.004	-0.002	0.7	90.0	
Pole HS-3-67	4.160	99.453	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-66	0.004	0.002	0.7	90.0	
								Pole HS-3-68	-0.007	-0.003	1.0	90.0	
Pole HS-3-68	4.160	99.455	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-67	0.007	0.003	1.0	90.0	
								Pole HS-3-69	-0.009	-0.004	1.4	90.0	
Pole HS-3-69	4.160	99.457	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-68	0.009	0.004	1.4	90.0	
								Pole HS-3-70	-0.011	-0.005	1.7	90.0	
Pole HS-3-70	4.160	99.464	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-69	0.011	0.005	1.7	90.0	
								Pole HS-3-71	-0.013	-0.006	2.1	90.0	
Pole HS-3-71	4.160	99.472	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-70	0.013	0.006	2.1	90.0	
								Pole MS-1-81	-0.016	-0.008	2.4	90.0	
Pole HS-3-74	4.160	99.457	-1.2	0.000	0.000	0.004	0.002	Pole HS-3-75	-0.004	-0.002	0.7	90.0	
Pole HS-3-75	4.160	99.458	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-74	0.004	0.002	0.7	90.0	
								Pole HS-3-76	-0.007	-0.003	1.0	90.0	
Pole HS-3-76	4.160	99.461	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-75	0.007	0.003	1.0	90.0	
								Pole HS-3-77	-0.009	-0.004	1.4	90.0	
Pole HS-3-77	4.160	99.464	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-76	0.009	0.004	1.4	90.0	
								Pole HS-3-78	-0.011	-0.005	1.7	90.0	
Pole HS-3-78	4.160	99.468	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-77	0.011	0.005	1.7	90.0	
								Pole HS-3-79	-0.013	-0.006	2.1	90.0	
Pole HS-3-79	4.160	99.480	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-78	0.013	0.006	2.1	90.0	
								Pole MS-1-81	-0.016	-0.008	2.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-80	4.160	99.483	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-81	0.007	0.003	1.0	90.0	
								Pole HS-3-85	-0.009	-0.004	1.4	90.0	
Pole HS-3-81	4.160	99.477	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-82	0.004	0.002	0.7	90.0	
								Pole HS-3-80	-0.007	-0.003	1.0	90.0	
Pole HS-3-82	4.160	99.474	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-83	0.002	0.001	0.3	90.0	
								Pole HS-3-81	-0.004	-0.002	0.7	90.0	
Pole HS-3-83	4.160	99.473	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-82	-0.002	-0.001	0.3	90.0	
Pole HS-3-85	4.160	99.488	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-80	0.009	0.004	1.4	90.0	
								Pole MS-1-81	0.031	0.015	4.8	90.0	
								Pole HS-3-30	-0.040	-0.019	6.2	90.0	
Pole HS-3-86	4.160	99.322	-1.4	0.000	0.000	0.002	0.001	Pole CS-1-3	-0.002	-0.001	0.3	90.0	
Pole HS-3-88	4.160	99.170	-1.4	0.000	0.000	0.002	0.001	Pole CS-1-6	-0.007	-0.003	1.0	90.0	
								Pole HS-3-89	0.004	0.002	0.7	90.0	
Pole HS-3-89	4.160	99.169	-1.4	0.000	0.000	0.002	0.001	Pole HS-3-88	-0.004	-0.002	0.7	90.0	
								Pole HS-3-90	0.002	0.001	0.3	90.0	
Pole HS-3-90	4.160	99.169	-1.4	0.000	0.000	0.002	0.001	Pole HS-3-89	-0.002	-0.001	0.3	90.0	
Pole HS-4-1	4.160	100.161	-1.3	0.000	0.000	0.002	0.001	BUS_HSC_4kV	-0.234	-0.114	36.1	90.0	
								Pole HS-4-2	0.232	0.112	35.7	90.0	
Pole HS-4-2	4.160	100.133	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-12	0.130	0.063	20.0	90.0	
								Pole HS-4-1	-0.232	-0.112	35.7	90.0	
								Pole HS-4-3	0.102	0.049	15.6	90.0	
Pole HS-4-3	4.160	100.085	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-44	0.035	0.017	5.3	90.0	
								Pole HS-4-53	0.022	0.011	3.4	90.0	
								Pole HS-4-2	-0.101	-0.049	15.6	90.0	
								Pole HS-4-4	0.045	0.022	6.9	90.0	
Pole HS-4-4	4.160	100.075	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-58	0.015	0.007	2.3	90.0	
								Pole HS-4-3	-0.045	-0.022	6.9	90.0	
								Pole HS-4-5	0.030	0.014	4.6	90.0	
Pole HS-4-5	4.160	100.065	-1.3	0.000	0.000	0.005	0.002	Pole HS-4-55	0.005	0.002	0.8	90.0	
								Pole HS-4-4	-0.030	-0.014	4.6	90.0	
								Pole HS-4-6	0.020	0.010	3.0	90.0	
Pole HS-4-6	4.160	100.059	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-56	0.005	0.002	0.8	90.0	
								Pole HS-4-5	-0.020	-0.010	3.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-7	0.012	0.006	1.9	90.0	
Pole HS-4-7	4.160	100.055	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-6	-0.012	-0.006	1.9	90.0	
								Pole HS-4-8	0.012	0.006	1.9	90.0	
Pole HS-4-8	4.160	100.051	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-7	-0.012	-0.006	1.9	90.0	
								Pole HS-4-9	0.010	0.005	1.5	90.0	
Pole HS-4-9	4.160	100.049	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-8	-0.010	-0.005	1.5	90.0	
								Pole HS-4-10	0.007	0.004	1.1	90.0	
Pole HS-4-10	4.160	100.048	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-9	-0.007	-0.004	1.1	90.0	
								Pole HS-4-11	0.000	0.000	0.0	0.0	
								SEC_HS-4-7	0.007	0.004	1.1	90.0	
Pole HS-4-11	4.160	100.048	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-10	0.000	0.000	0.0	0.0	
Pole HS-4-12	4.160	100.091	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-2	-0.130	-0.063	20.0	90.0	
								Pole HS-4-13	0.128	0.062	19.7	90.0	
Pole HS-4-13	4.160	100.067	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-12	-0.128	-0.062	19.7	90.0	
								Pole HS-4-14	0.125	0.061	19.3	90.0	
Pole HS-4-14	4.160	100.033	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-13	-0.125	-0.061	19.3	90.0	
								Pole HS-4-15	0.123	0.060	18.9	90.0	
Pole HS-4-15	4.160	99.998	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-14	-0.123	-0.060	18.9	90.0	
								Pole HS-4-19	0.120	0.058	18.5	90.0	
Pole HS-4-16	4.160	99.619	-1.3	0.000	0.000	0.000	0.000	PRI_PM_15	0.070	0.034	10.9	89.9	
								Pole HS-4-33	-0.070	-0.034	10.9	89.9	
Pole HS-4-17	4.160	99.947	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-19	-0.118	-0.057	18.1	90.0	
								Pole HS-4-18	0.110	0.053	17.0	90.0	
								SEC_HS-4-13	0.007	0.004	1.1	90.0	
Pole HS-4-18	4.160	99.927	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-17	-0.110	-0.053	17.0	90.0	
								Pole HS-4-20	0.108	0.052	16.6	90.0	
Pole HS-4-19	4.160	99.980	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-15	-0.120	-0.058	18.5	90.0	
								Pole HS-4-17	0.118	0.057	18.1	90.0	
Pole HS-4-20	4.160	99.901	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-18	-0.108	-0.052	16.6	89.9	
								Pole HS-4-21	0.105	0.051	16.2	89.9	
Pole HS-4-21	4.160	99.878	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-20	-0.105	-0.051	16.2	89.9	
								Pole HS-4-22	0.103	0.050	15.9	89.9	
Pole HS-4-22	4.160	99.836	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-21	-0.103	-0.050	15.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-23	0.100	0.049	15.5	89.9	
Pole HS-4-23	4.160	99.810	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-22	-0.100	-0.049	15.5	89.9	
								Pole HS-4-24	0.098	0.047	15.1	89.9	
Pole HS-4-24	4.160	99.792	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-23	-0.098	-0.047	15.1	89.9	
								Pole HS-4-26	0.007	0.004	1.1	90.0	
								Pole HS-4-27	0.090	0.044	14.0	89.9	
Pole HS-4-26	4.160	99.790	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-24	-0.007	-0.004	1.1	90.0	
								SEC_HS-4-21	0.007	0.004	1.1	90.0	
Pole HS-4-27	4.160	99.773	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-24	-0.090	-0.044	14.0	89.9	
								Pole HS-4-28	0.088	0.043	13.6	89.9	
Pole HS-4-28	4.160	99.754	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-27	-0.088	-0.043	13.6	89.9	
								Pole HS-4-29	0.085	0.041	13.2	89.9	
Pole HS-4-29	4.160	99.697	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-28	-0.085	-0.041	13.2	89.9	
								Pole HS-4-31	0.083	0.040	12.8	89.9	
Pole HS-4-30	4.160	99.648	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-31	-0.083	-0.040	12.8	89.9	
								Pole HS-4-32	0.080	0.039	12.4	89.9	
Pole HS-4-31	4.160	99.678	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-29	-0.083	-0.040	12.8	89.9	
								Pole HS-4-30	0.083	0.040	12.8	89.9	
Pole HS-4-32	4.160	99.634	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-30	-0.080	-0.039	12.4	89.9	
								Pole HS-4-33	0.078	0.038	12.1	89.9	
Pole HS-4-33	4.160	99.626	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-32	-0.078	-0.038	12.1	89.9	
								Pole HS-4-16	0.070	0.034	10.9	89.9	
								Pole HS-4-64	0.007	0.004	1.1	90.0	
								L-SUB-FDR-EQ#20-1-96~	0.000	0.000	0.0	0.0	
Pole HS-4-34	4.160	100.043	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-35	-0.005	-0.002	0.8	90.0	
								Pole HS-4-45	0.002	0.001	0.4	90.0	
Pole HS-4-35	4.160	100.045	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-36	-0.007	-0.004	1.1	90.0	
								Pole HS-4-34	0.005	0.002	0.8	90.0	
Pole HS-4-36	4.160	100.050	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-37	-0.010	-0.005	1.5	90.0	
								Pole HS-4-35	0.007	0.004	1.1	90.0	
Pole HS-4-37	4.160	100.055	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-38	-0.012	-0.006	1.9	90.0	
								Pole HS-4-36	0.010	0.005	1.5	90.0	
Pole HS-4-38	4.160	100.057	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-39	-0.015	-0.007	2.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-37	0.012	0.006	1.9	90.0	
Pole HS-4-39	4.160	100.058	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-40	-0.022	-0.011	3.4	90.0	
								Pole HS-4-38	0.015	0.007	2.3	90.0	
								SEC_HS-4-32	0.007	0.004	1.1	90.0	
Pole HS-4-40	4.160	100.062	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-41	-0.025	-0.012	3.8	90.0	
								Pole HS-4-39	0.022	0.011	3.4	90.0	
Pole HS-4-41	4.160	100.067	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-42	-0.027	-0.013	4.2	90.0	
								Pole HS-4-40	0.025	0.012	3.8	90.0	
Pole HS-4-42	4.160	100.074	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-43	-0.030	-0.014	4.6	90.0	
								Pole HS-4-41	0.027	0.013	4.2	90.0	
Pole HS-4-43	4.160	100.078	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-44	-0.032	-0.016	5.0	90.0	
								Pole HS-4-42	0.030	0.014	4.6	90.0	
Pole HS-4-44	4.160	100.082	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-3	-0.035	-0.017	5.3	90.0	
								Pole HS-4-43	0.032	0.016	5.0	90.0	
Pole HS-4-45	4.160	100.042	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-34	-0.002	-0.001	0.4	90.0	
Pole HS-4-47	4.160	100.058	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-48	-0.002	-0.001	0.4	90.1	
								HS-4-33~	0.000	0.000	0.0	0.0	
Pole HS-4-48	4.160	100.059	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-47	0.002	0.001	0.4	90.2	
								Pole HS-4-49	-0.010	-0.005	1.5	90.0	
								SEC_HS-4-44	0.007	0.004	1.1	90.0	
Pole HS-4-49	4.160	100.061	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-48	0.010	0.005	1.5	90.0	
								Pole HS-4-50	-0.012	-0.006	1.9	90.0	
Pole HS-4-50	4.160	100.064	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-49	0.012	0.006	1.9	90.0	
								Pole HS-4-51	-0.015	-0.007	2.3	90.0	
Pole HS-4-51	4.160	100.071	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-50	0.015	0.007	2.3	90.0	
								Pole HS-4-52	-0.017	-0.008	2.7	90.0	
Pole HS-4-52	4.160	100.075	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-51	0.017	0.008	2.7	90.0	
								Pole HS-4-53	-0.020	-0.010	3.0	90.0	
Pole HS-4-53	4.160	100.080	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-52	0.020	0.010	3.0	90.0	
								Pole HS-4-3	-0.022	-0.011	3.4	90.0	
Pole HS-4-54	4.160	100.062	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-55	-0.002	-0.001	0.4	90.0	
Pole HS-4-55	4.160	100.063	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-54	0.002	0.001	0.4	90.0	
								Pole HS-4-5	-0.005	-0.002	0.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-4-56	4.160	100.058	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-6	-0.005	-0.002	0.8	90.0	
								Pole HS-4-57	0.002	0.001	0.4	90.0	
Pole HS-4-57	4.160	100.057	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-56	-0.002	-0.001	0.4	90.0	
Pole HS-4-58	4.160	100.062	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-4	-0.015	-0.007	2.3	90.0	
								Pole HS-4-59	0.012	0.006	1.9	90.0	
Pole HS-4-59	4.160	100.056	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-58	-0.012	-0.006	1.9	90.0	
								Pole HS-4-60	0.002	0.001	0.4	90.0	
								Pole HS-4-61	0.007	0.004	1.1	90.0	
Pole HS-4-60	4.160	100.056	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-59	-0.002	-0.001	0.4	90.0	
Pole HS-4-61	4.160	100.052	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-59	-0.007	-0.004	1.1	90.0	
								Pole HS-4-62	0.005	0.002	0.8	90.0	
Pole HS-4-62	4.160	100.050	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-61	-0.005	-0.002	0.8	90.0	
								Pole HS-4-63	0.002	0.001	0.4	90.0	
Pole HS-4-63	4.160	100.049	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-62	-0.002	-0.001	0.4	90.0	
Pole HS-4-64	4.160	99.624	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-65	0.002	0.001	0.4	90.0	
								Pole HS-4-33	-0.007	-0.004	1.1	90.0	
								Pole HS-4-66	0.005	0.002	0.8	90.0	
Pole HS-4-65	4.160	99.624	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-64	-0.002	-0.001	0.4	90.0	
Pole HS-4-66	4.160	99.624	-1.3	0.000	0.000	0.005	0.002	Pole HS-4-64	-0.005	-0.002	0.8	90.0	
								Pole HS-4-67	0.000	0.000	0.0	0.0	
Pole HS-4-67	4.160	99.624	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-66	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#20-1-90~	0.000	0.000	0.0	0.0	
Pole MS-1-1	4.160	100.131	-0.7	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.064	-0.031	9.9	90.0	
								Pole MS-1-2	0.049	0.023	7.5	90.0	
								Pole MS-1-76	0.016	0.008	2.4	90.0	
								L-SUB-FDR-EQ#12-9~	0.000	0.000	0.0	0.0	
Pole MS-1-2	4.160	100.121	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-1	-0.049	-0.023	7.5	90.0	
								Pole MS-1-3	0.047	0.023	7.2	90.0	
Pole MS-1-3	4.160	100.113	-0.7	0.000	0.000	0.000	0.000	Pole MS-1-2	-0.047	-0.023	7.2	90.0	
								Pole MS-1-17	0.035	0.017	5.3	90.0	
								Pole MS-1-5	0.012	0.006	1.9	90.0	
Pole MS-1-5	4.160	100.108	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-3	-0.012	-0.006	1.9	90.0	
								Pole MS-1-7	0.011	0.005	1.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-7	4.160	100.106	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-5	-0.011	-0.005	1.6	90.0	
								Pole MS-1-9	0.009	0.004	1.4	90.0	
Pole MS-1-8	4.160	100.101	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-9	-0.008	-0.004	1.2	90.0	
								Pole MS-1-10	0.006	0.003	0.9	90.0	
Pole MS-1-9	4.160	100.103	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-8	0.008	0.004	1.2	90.0	
								Pole MS-1-7	-0.009	-0.004	1.4	90.0	
Pole MS-1-10	4.160	100.100	-0.7	0.000	0.000	0.000	0.000	Pole MS-1-8	-0.006	-0.003	0.9	90.0	
								Pole MS-1-11	0.005	0.002	0.7	90.0	
								SEC_MS-1-17	0.001	0.001	0.2	90.0	
Pole MS-1-11	4.160	100.098	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-10	-0.005	-0.002	0.7	90.0	
								Pole MS-1-13	0.003	0.002	0.5	90.0	
Pole MS-1-13	4.160	100.097	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-11	-0.003	-0.002	0.5	90.0	
								Pole MS-1-15	0.002	0.001	0.2	90.1	
Pole MS-1-15	4.160	100.096	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-13	-0.002	-0.001	0.2	90.0	
Pole MS-1-17	4.160	100.106	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-3	-0.035	-0.017	5.3	90.0	
								Pole MS-1-19	0.033	0.016	5.1	90.0	
Pole MS-1-18	4.160	100.096	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-19	-0.033	-0.016	5.1	90.0	
								Pole MS-1-28	0.032	0.015	4.9	90.0	
Pole MS-1-19	4.160	100.100	-0.7	0.000	0.000	0.000	0.000	Pole MS-1-18	0.033	0.016	5.1	90.0	
								Pole MS-1-17	-0.033	-0.016	5.1	90.0	
								L-SUB-FDR-EQ#16-12~	0.000	0.000	0.0	0.0	
Pole MS-1-28	4.160	100.088	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-18	-0.032	-0.015	4.9	90.0	
								Pole MS-1-50	0.017	0.008	2.7	90.0	
								Pole MS-1-30	0.013	0.006	1.9	90.0	
Pole MS-1-30	4.160	100.084	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-28	-0.013	-0.006	1.9	90.0	
								Pole MS-1-32	0.011	0.005	1.7	90.0	
Pole MS-1-32	4.160	100.081	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-30	-0.011	-0.005	1.7	90.0	
								Pole MS-1-34	0.009	0.005	1.5	90.0	
Pole MS-1-34	4.160	100.077	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-32	-0.009	-0.005	1.5	90.0	
								Pole MS-1-36	0.008	0.004	1.2	90.0	
Pole MS-1-36	4.160	100.074	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-34	-0.008	-0.004	1.2	90.0	
								Pole MS-1-38	0.006	0.003	1.0	90.0	
Pole MS-1-38	4.160	100.071	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-36	-0.006	-0.003	1.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-1-40	0.005	0.002	0.7	90.0	
Pole MS-1-40	4.160	100.070	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-38	-0.005	-0.002	0.7	90.0	
								Pole MS-1-42	0.003	0.002	0.5	90.0	
Pole MS-1-42	4.160	100.068	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-40	-0.003	-0.002	0.5	90.0	
								Pole MS-1-46	0.002	0.001	0.2	90.0	
Pole MS-1-46	4.160	100.068	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-42	-0.002	-0.001	0.2	90.0	
Pole MS-1-50	4.160	100.081	-0.7	0.000	0.000	0.000	0.000	Pole MS-1-28	-0.017	-0.008	2.7	90.0	
								Pole MS-1-70	0.005	0.002	0.7	90.0	
								Pole MS-1-52	0.013	0.006	1.9	90.0	
Pole MS-1-52	4.160	100.077	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-50	-0.013	-0.006	1.9	90.0	
								Pole MS-1-54	0.011	0.005	1.7	90.0	
Pole MS-1-54	4.160	100.074	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-52	-0.011	-0.005	1.7	90.0	
								Pole MS-1-56	0.009	0.005	1.5	90.0	
Pole MS-1-56	4.160	100.071	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-54	-0.009	-0.005	1.5	90.0	
								Pole MS-1-58	0.008	0.004	1.2	90.0	
Pole MS-1-58	4.160	100.068	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-56	-0.008	-0.004	1.2	90.0	
								Pole MS-1-60	0.006	0.003	1.0	90.0	
Pole MS-1-60	4.160	100.067	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-58	-0.006	-0.003	1.0	90.0	
								Pole MS-1-62	0.005	0.002	0.7	90.0	
Pole MS-1-62	4.160	100.065	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-60	-0.005	-0.002	0.7	90.0	
								Pole MS-1-64	0.003	0.002	0.5	90.0	
Pole MS-1-64	4.160	100.065	-0.7	0.000	0.000	0.000	0.000	Pole MS-1-62	-0.003	-0.002	0.5	90.0	
								Pole MS-1-66	0.002	0.001	0.2	90.0	
								Pole MS-1-68	0.002	0.001	0.2	90.1	
Pole MS-1-66	4.160	100.064	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-64	-0.002	-0.001	0.2	90.0	
Pole MS-1-68	4.160	100.063	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-64	-0.002	-0.001	0.2	90.0	
Pole MS-1-70	4.160	100.080	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-50	-0.005	-0.002	0.7	90.0	
								Pole MS-1-72	0.003	0.002	0.5	90.0	
Pole MS-1-72	4.160	100.080	-0.7	0.000	0.000	0.003	0.002	Pole MS-1-70	-0.003	-0.002	0.5	90.0	
Pole MS-1-73	4.160	100.109	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-74	-0.011	-0.005	1.7	90.0	
								Pole MS-1-79	0.009	0.005	1.5	90.0	
Pole MS-1-74	4.160	100.112	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-73	0.011	0.005	1.7	90.0	
								Pole MS-1-75	-0.013	-0.006	1.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-75	4.160	100.122	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-74	0.013	0.006	1.9	90.1	
								Pole MS-1-76	-0.014	-0.007	2.2	90.0	
Pole MS-1-76	4.160	100.126	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-75	0.014	0.007	2.2	90.0	
								Pole MS-1-1	-0.016	-0.008	2.4	90.0	
Pole MS-1-79	4.160	100.105	-0.7	0.000	0.000	0.000	0.000	Pole MS-1-73	-0.009	-0.005	1.5	90.0	
								Pole MS-1-80	0.003	0.002	0.5	90.0	
								Pole MS-1-84	0.006	0.003	1.0	90.0	
Pole MS-1-80	4.160	100.104	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-79	-0.003	-0.002	0.5	90.0	
								Pole MS-1-82	0.002	0.001	0.2	90.0	
Pole MS-1-81	4.160	99.482	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-71	0.016	0.008	2.4	90.0	
								Pole HS-3-79	0.016	0.008	2.4	90.0	
								Pole HS-3-85	-0.031	-0.015	4.8	90.0	
Pole MS-1-82	4.160	100.103	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-80	-0.002	-0.001	0.2	90.0	
Pole MS-1-84	4.160	100.102	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-79	-0.006	-0.003	1.0	90.0	
								Pole MS-1-86	0.005	0.002	0.7	90.0	
Pole MS-1-86	4.160	100.100	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-84	-0.005	-0.002	0.7	90.0	
								Pole MS-1-87	0.003	0.002	0.5	90.0	
Pole MS-1-87	4.160	100.098	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-86	-0.003	-0.002	0.5	90.0	
								Pole MS-1-88	0.002	0.001	0.2	90.0	
Pole MS-1-88	4.160	100.097	-0.7	0.000	0.000	0.002	0.001	Pole MS-1-87	-0.002	-0.001	0.2	90.0	
Pole MS-2-1	4.160	99.574	-0.6	0.000	0.000	0.000	0.000	Pole MS-2-180	-0.011	-0.005	1.7	90.0	
								Pole MS-2-2	0.007	0.004	1.1	90.1	
								SEC_MS-2-8	0.004	0.002	0.6	90.0	
Pole MS-2-2	4.160	99.571	-0.6	0.000	0.000	0.000	0.000	Pole MS-2-1	-0.007	-0.004	1.1	90.1	
								Pole MS-2-3	0.004	0.002	0.6	90.1	
								SEC_MS-2-37	0.004	0.002	0.6	90.0	
Pole MS-2-3	4.160	99.568	-0.6	0.000	0.000	0.000	0.000	Pole MS-2-2	-0.004	-0.002	0.6	90.1	
								L-SUB-FDR-EQ#16-173~	0.000	0.000	0.0	0.0	
								SEC_MS-2-38	0.004	0.002	0.6	90.0	
Pole MS-2-4	4.160	99.589	-0.6	0.000	0.000	0.000	0.000	PRI_PM_8	0.042	0.021	6.5	89.9	
								Pole MS-2-180	0.011	0.005	1.7	90.1	
								Pole MS-2-182	-0.053	-0.026	8.2	89.9	
Pole MS-2-90	4.160	99.628	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-182	-0.051	-0.025	7.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-2-91	0.045	0.022	7.0	90.0	
								SEC_MS-2-36	0.004	0.002	0.6	90.0	
Pole MS-2-91	4.160	99.585	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-90	-0.045	-0.022	7.0	90.0	
								Pole MS-2-92	0.044	0.021	6.8	90.0	
Pole MS-2-92	4.160	99.573	-0.6	0.000	0.000	0.000	0.000	Pole MS-2-91	-0.044	-0.021	6.8	90.0	
								Pole MS-2-93	0.040	0.019	6.2	90.0	
								SEC_MS-2-39	0.004	0.002	0.6	90.0	
Pole MS-2-93	4.160	99.561	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-92	-0.040	-0.019	6.2	90.0	
								Pole MS-2-94	0.039	0.019	6.0	90.0	
Pole MS-2-94	4.160	99.553	-0.6	0.000	0.000	0.000	0.000	Pole MS-2-93	-0.039	-0.019	6.0	90.0	
								Pole MS-2-95	0.035	0.017	5.4	90.0	
								SEC_MS-2-40	0.004	0.002	0.6	90.0	
Pole MS-2-95	4.160	99.527	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-94	-0.035	-0.017	5.4	90.0	
								Pole MS-2-96	0.033	0.016	5.2	90.0	
Pole MS-2-96	4.160	99.508	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-95	-0.033	-0.016	5.2	90.0	
								Pole MS-2-98	0.032	0.015	4.9	90.0	
Pole MS-2-98	4.160	99.501	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-96	-0.032	-0.015	4.9	90.0	
								Pole MS-2-100	0.030	0.015	4.7	90.0	
Pole MS-2-100	4.160	99.497	-0.6	0.000	0.000	0.000	0.000	Pole MS-2-98	-0.030	-0.015	4.7	90.0	
								Pole MS-2-102	0.027	0.013	4.1	90.0	
								SEC_MS-2-41	0.004	0.002	0.6	90.0	
Pole MS-2-102	4.160	99.493	-0.6	0.000	0.000	0.000	0.000	Pole MS-2-100	-0.027	-0.013	4.1	90.0	
								Pole MS-2-103	0.027	0.013	4.1	90.0	
Pole MS-2-103	4.160	99.488	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-102	-0.027	-0.013	4.1	90.0	
								Pole MS-2-107	0.025	0.012	3.9	90.0	
Pole MS-2-107	4.160	99.475	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-103	-0.025	-0.012	3.9	90.0	
								Pole MS-2-108	0.023	0.011	3.6	90.0	
Pole MS-2-108	4.160	99.470	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-107	-0.023	-0.011	3.6	90.0	
								Pole MS-2-109	0.022	0.011	3.4	90.0	
Pole MS-2-109	4.160	99.464	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-108	-0.022	-0.011	3.4	90.0	
								Pole MS-2-110	0.020	0.010	3.1	90.0	
Pole MS-2-110	4.160	99.458	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-109	-0.020	-0.010	3.1	90.0	
								Pole MS-2-111	0.019	0.009	2.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-2-111	4.160	99.452	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-110	-0.019	-0.009	2.9	90.0	
								Pole MS-2-112	0.017	0.008	2.7	90.0	
Pole MS-2-112	4.160	99.449	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-111	-0.017	-0.008	2.7	90.0	
								Pole MS-2-113	0.016	0.008	2.4	90.0	
Pole MS-2-113	4.160	99.446	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-112	-0.016	-0.008	2.4	90.0	
								Pole MS-2-115	0.014	0.007	2.2	90.0	
Pole MS-2-115	4.160	99.441	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-113	-0.014	-0.007	2.2	90.0	
								Pole MS-2-116	0.012	0.006	1.9	90.0	
Pole MS-2-116	4.160	99.436	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-115	-0.012	-0.006	1.9	90.0	
								Pole MS-2-117	0.011	0.005	1.7	90.0	
Pole MS-2-117	4.160	99.430	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-116	-0.011	-0.005	1.7	90.0	
								Pole MS-2-118	0.009	0.005	1.5	90.0	
Pole MS-2-118	4.160	99.424	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-117	-0.009	-0.005	1.5	90.0	
								Pole MS-2-120	0.008	0.004	1.2	90.0	
Pole MS-2-120	4.160	99.422	-0.6	0.000	0.000	0.002	0.001	Pole MS-2-118	-0.008	-0.004	1.2	90.0	
								Pole MS-2-121	0.006	0.003	1.0	90.0	
Pole MS-2-121	4.160	99.418	-0.6	0.000	0.000	0.003	0.002	Pole MS-2-120	-0.006	-0.003	1.0	90.0	
								Pole MS-2-122	0.003	0.002	0.5	90.0	
Pole MS-2-122	4.160	99.417	-0.6	0.000	0.000	0.003	0.002	Pole MS-2-121	-0.003	-0.002	0.5	90.0	
								L-SUB-FDR-EQ#16-97~	0.000	0.000	0.0	0.0	
Pole MS-2-180	4.160	99.578	-0.6	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.011	-0.005	1.7	90.1	
								Pole MS-2-1	0.011	0.005	1.7	90.0	
								L-SUB-FDR-EQ#12-13~	0.000	0.000	0.0	0.0	
Pole MS-2-182	4.160	99.642	-0.6	0.000	0.000	0.000	0.000	Pole MS-2-4	0.053	0.026	8.2	90.0	
								BUS_5KV_LLP_2	-0.104	-0.050	16.1	90.0	
								Pole MS-2-90	0.051	0.025	7.9	90.0	
Pole MS-3-1	4.160	99.661	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-2	0.004	0.002	0.6	90.0	
								Pole MS-3-88	-0.071	-0.034	11.0	90.0	
								Pole MS-3-3	0.067	0.033	10.4	90.0	
Pole MS-3-2	4.160	99.661	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-1	-0.004	-0.002	0.6	90.0	
								SEC_MS-3-1	0.004	0.002	0.6	90.0	
Pole MS-3-3	4.160	99.624	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-4	0.067	0.033	10.4	90.0	
								Pole MS-3-1	-0.067	-0.033	10.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-4	4.160	99.616	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-3	-0.067	-0.033	10.4	90.0	
								Pole MS-3-5	0.066	0.032	10.2	90.0	
Pole MS-3-5	4.160	99.609	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-4	-0.066	-0.032	10.2	90.0	
								Pole MS-3-6	0.064	0.031	9.9	90.0	
Pole MS-3-6	4.160	99.600	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-5	-0.064	-0.031	9.9	90.0	
								Pole MS-3-7	0.061	0.029	9.4	90.0	
								SEC_MS-3-2	0.004	0.002	0.6	90.0	
Pole MS-3-7	4.160	99.576	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-6	-0.060	-0.029	9.4	90.0	
								Pole MS-3-8	0.059	0.028	9.1	90.0	
Pole MS-3-8	4.160	99.565	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-7	-0.059	-0.028	9.1	90.0	
								Pole MS-3-9	0.055	0.027	8.5	90.1	
								SEC_MS-3-3	0.004	0.002	0.6	90.0	
Pole MS-3-9	4.160	99.556	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-8	-0.055	-0.027	8.6	90.0	
								Pole MS-3-10	0.054	0.026	8.3	90.1	
Pole MS-3-10	4.160	99.537	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-9	-0.054	-0.026	8.3	90.0	
								Pole MS-3-11	0.052	0.025	8.1	90.1	
Pole MS-3-11	4.160	99.531	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-10	-0.052	-0.025	8.1	90.0	
								Pole MS-3-12	0.051	0.024	7.8	90.1	
Pole MS-3-12	4.160	99.525	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-11	-0.051	-0.024	7.8	90.1	
								Pole MS-3-13	0.049	0.024	7.6	90.1	
Pole MS-3-13	4.160	99.503	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-12	-0.049	-0.024	7.6	90.0	
								Pole MS-3-14	0.047	0.023	7.3	90.1	
Pole MS-3-14	4.160	99.495	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-13	-0.047	-0.023	7.3	90.1	
								Pole MS-3-15	0.046	0.022	7.1	90.1	
Pole MS-3-15	4.160	99.475	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-14	-0.046	-0.022	7.1	90.0	
								Pole MS-3-16	0.044	0.021	6.9	90.1	
Pole MS-3-16	4.160	99.470	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-15	-0.044	-0.021	6.9	90.1	
								Pole MS-3-17	0.043	0.021	6.6	90.1	
Pole MS-3-17	4.160	99.461	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-16	-0.043	-0.021	6.6	90.1	
								Pole MS-3-18	0.041	0.020	6.4	90.1	
Pole MS-3-18	4.160	99.453	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-17	-0.041	-0.020	6.4	90.1	
								Pole MS-3-19	0.015	0.007	2.3	90.0	
								Pole MS-3-26	0.027	0.013	4.1	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-19	4.160	99.450	-0.5	0.000	0.000	0.003	0.002	Pole MS-3-18	-0.015	-0.007	2.3	90.0	
								Pole MS-3-20	0.011	0.006	1.8	90.1	
Pole MS-3-20	4.160	99.448	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-19	-0.011	-0.006	1.8	90.0	
								Pole MS-3-21	0.010	0.005	1.5	90.1	
Pole MS-3-21	4.160	99.443	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-20	-0.010	-0.005	1.5	90.0	
								Pole MS-3-22	0.008	0.004	1.3	90.1	
Pole MS-3-22	4.160	99.441	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-21	-0.008	-0.004	1.3	90.0	
								Pole MS-3-23	0.007	0.003	1.1	90.1	
Pole MS-3-23	4.160	99.438	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-22	-0.007	-0.003	1.1	90.0	
								Pole MS-3-24	0.005	0.003	0.8	90.1	
Pole MS-3-24	4.160	99.437	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-23	-0.005	-0.003	0.8	90.0	
								Pole MS-3-25	0.004	0.002	0.6	90.0	
Pole MS-3-25	4.160	99.435	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-24	-0.004	-0.002	0.6	90.0	
								L-SUB-FDR-EQ#16-133~	0.000	0.000	0.0	0.0	
								SEC_MS-3-22	0.004	0.002	0.6	90.0	
Pole MS-3-26	4.160	99.443	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-27	0.006	0.003	1.0	90.1	
								Pole MS-3-18	-0.027	-0.013	4.1	90.1	
								Pole MS-3-31	0.019	0.009	2.9	90.1	
Pole MS-3-27	4.160	99.440	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-26	-0.006	-0.003	1.0	90.0	
								Pole MS-3-28	0.005	0.002	0.7	90.1	
Pole MS-3-28	4.160	99.440	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-27	-0.005	-0.002	0.7	90.0	
								Pole MS-3-29	0.003	0.002	0.5	90.1	
Pole MS-3-29	4.160	99.438	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-28	-0.003	-0.002	0.5	90.0	
								Pole MS-3-30	0.002	0.001	0.2	90.0	
Pole MS-3-30	4.160	99.437	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-29	-0.002	-0.001	0.2	90.0	
Pole MS-3-31	4.160	99.434	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-26	-0.019	-0.009	2.9	90.0	
								Pole MS-3-32	0.017	0.008	2.7	90.1	
Pole MS-3-32	4.160	99.431	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-31	-0.017	-0.008	2.7	90.0	
								Pole MS-3-33	0.016	0.008	2.4	90.1	
Pole MS-3-33	4.160	99.428	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-32	-0.016	-0.008	2.4	90.1	
								Pole MS-3-34	0.014	0.007	2.2	90.1	
Pole MS-3-34	4.160	99.426	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-36	0.011	0.005	1.7	90.1	
								Pole MS-3-33	-0.014	-0.007	2.2	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-35	0.002	0.001	0.2	90.0	
Pole MS-3-35	4.160	99.425	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-34	-0.002	-0.001	0.2	90.0	
Pole MS-3-36	4.160	99.421	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-34	-0.011	-0.005	1.7	90.1	
								Pole MS-3-37	0.009	0.005	1.4	90.1	
Pole MS-3-37	4.160	99.417	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-36	-0.009	-0.005	1.5	90.1	
								Pole MS-3-39	0.006	0.003	1.0	90.0	
								Pole MS-3-38	0.003	0.002	0.5	90.1	
Pole MS-3-38	4.160	99.416	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-37	-0.003	-0.002	0.5	90.1	
								Pole MS-3-43	0.002	0.001	0.2	90.2	
Pole MS-3-39	4.160	99.415	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-37	-0.006	-0.003	1.0	90.0	
								Pole MS-3-40	0.005	0.002	0.7	90.0	
Pole MS-3-40	4.160	99.414	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-39	-0.005	-0.002	0.7	90.0	
								Pole MS-3-41	0.003	0.002	0.5	90.0	
Pole MS-3-41	4.160	99.413	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-40	-0.003	-0.002	0.5	90.0	
								Pole MS-3-42	0.002	0.001	0.2	90.0	
Pole MS-3-42	4.160	99.413	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-41	-0.002	-0.001	0.2	90.0	
Pole MS-3-43	4.160	99.415	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-38	-0.002	-0.001	0.2	90.0	
								LINE MS-3-11~	0.000	0.000	0.0	0.0	
Pole MS-3-44	4.160	99.327	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-46	0.009	0.004	1.4	90.1	
								Pole MS-3-45	0.000	0.000	0.0	0.0	
								Pole MS-3-54	-0.009	-0.004	1.4	90.1	
Pole MS-3-45	4.160	99.327	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-44	0.000	0.000	0.0	0.0	
Pole MS-3-46	4.160	99.326	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-44	-0.009	-0.004	1.4	90.1	
								Pole MS-3-47	0.009	0.004	1.4	90.1	
Pole MS-3-47	4.160	99.324	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-46	-0.009	-0.004	1.4	90.1	
								Pole MS-3-48	0.007	0.003	1.1	90.1	
Pole MS-3-48	4.160	99.320	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-47	-0.007	-0.003	1.1	90.1	
								Pole MS-3-51	0.003	0.001	0.5	90.1	
								Pole MS-3-50	0.004	0.002	0.6	90.0	
Pole MS-3-49	4.160	99.319	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-50	-0.002	-0.001	0.2	90.0	
Pole MS-3-50	4.160	99.320	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-48	-0.004	-0.002	0.6	90.0	
								Pole MS-3-49	0.002	0.001	0.2	90.0	
Pole MS-3-51	4.160	99.319	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-48	-0.003	-0.002	0.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-53	0.002	0.001	0.2	90.0	
								Pole MS-3-52	0.002	0.001	0.2	90.1	
Pole MS-3-52	4.160	99.318	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-51	-0.002	-0.001	0.2	90.0	
Pole MS-3-53	4.160	99.319	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-51	-0.002	-0.001	0.2	90.0	
Pole MS-3-54	4.160	99.332	-0.5	0.000	0.000	0.000	0.000	PRI_PM_18	0.052	0.026	8.2	89.9	
								Pole MS-3-57	0.002	0.001	0.2	90.1	
								Pole MS-3-44	0.009	0.004	1.4	90.1	
								Pole MS-3-58	-0.063	-0.031	9.8	89.9	
Pole MS-3-55	4.160	99.568	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-90	0.036	0.017	5.6	90.0	
								Pole MS-3-71	0.139	0.068	21.6	89.9	
								Pole MS-3-79	-0.175	-0.085	27.1	90.0	
Pole MS-3-57	4.160	99.331	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-54	-0.002	-0.001	0.2	90.0	
Pole MS-3-58	4.160	99.367	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-59	0.003	0.002	0.5	90.1	
								Pole MS-3-61	-0.066	-0.032	10.3	89.9	
								Pole MS-3-54	0.063	0.031	9.8	89.9	
Pole MS-3-59	4.160	99.366	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-58	-0.003	-0.002	0.5	90.1	
								Pole MS-3-60	0.002	0.001	0.2	90.1	
Pole MS-3-60	4.160	99.365	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-59	-0.002	-0.001	0.2	90.0	
Pole MS-3-61	4.160	99.406	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-58	0.066	0.032	10.3	89.9	
								Pole MS-3-64	-0.069	-0.034	10.8	89.9	
								Pole MS-3-62	0.003	0.002	0.5	90.0	
Pole MS-3-62	4.160	99.406	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-61	-0.003	-0.002	0.5	90.0	
								Pole MS-3-63	0.002	0.001	0.2	90.1	
Pole MS-3-63	4.160	99.405	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-62	-0.002	-0.001	0.2	90.0	
Pole MS-3-64	4.160	99.425	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-61	0.069	0.034	10.8	89.9	
								Pole MS-3-70	-0.080	-0.039	12.5	89.9	
								Pole MS-3-65	0.009	0.005	1.5	90.0	
Pole MS-3-65	4.160	99.422	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-64	-0.009	-0.005	1.5	90.0	
								Pole MS-3-66	0.008	0.004	1.2	90.0	
Pole MS-3-66	4.160	99.421	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-65	-0.008	-0.004	1.2	90.0	
								Pole MS-3-67	0.003	0.002	0.5	90.1	
								Pole MS-3-69	0.003	0.002	0.5	90.0	
Pole MS-3-67	4.160	99.419	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-66	-0.003	-0.002	0.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-68	0.002	0.001	0.2	90.0	
Pole MS-3-68	4.160	99.419	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-67	-0.002	-0.001	0.2	90.0	
Pole MS-3-69	4.160	99.420	-0.5	0.000	0.000	0.003	0.002	Pole MS-3-66	-0.003	-0.002	0.5	90.0	
Pole MS-3-70	4.160	99.477	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-64	0.080	0.039	12.5	89.9	
								Pole MS-3-71	-0.080	-0.039	12.5	89.9	
								L-SUB-FDR-EQ#16-177~	0.000	0.000	0.0	0.0	
Pole MS-3-71	4.160	99.533	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-55	-0.139	-0.068	21.6	89.9	
								Pole MS-3-70	0.080	0.039	12.5	90.0	
								Pole MS-3-72	0.059	0.029	9.1	89.9	
Pole MS-3-72	4.160	99.526	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-71	-0.059	-0.029	9.1	89.9	
								Pole MS-3-73	0.057	0.028	8.9	89.9	
Pole MS-3-73	4.160	99.520	-0.5	0.000	0.000	0.000	0.000	PRI_PM_7	0.051	0.025	7.9	89.9	
								Pole MS-3-72	-0.057	-0.028	8.9	89.9	
								Pole MS-3-74	0.006	0.003	1.0	90.1	
Pole MS-3-74	4.160	99.519	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-73	-0.006	-0.003	1.0	90.1	
								Pole MS-3-75	0.005	0.002	0.7	90.1	
Pole MS-3-75	4.160	99.517	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-74	-0.005	-0.002	0.7	90.0	
								Pole MS-3-76	0.003	0.002	0.5	90.1	
Pole MS-3-76	4.160	99.515	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-75	-0.003	-0.002	0.5	90.0	
								Pole MS-3-77	0.002	0.001	0.2	90.1	
Pole MS-3-77	4.160	99.515	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-76	-0.002	-0.001	0.2	90.0	
Pole MS-3-79	4.160	99.611	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-55	0.175	0.085	27.1	90.0	
								Pole MS-3-82	0.012	0.006	1.9	90.0	
								Pole MS-3-87	-0.187	-0.091	29.0	90.0	
Pole MS-3-80	4.160	99.603	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-81	-0.009	-0.004	1.4	90.0	
								Pole MS-3-83	0.008	0.004	1.2	90.0	
Pole MS-3-81	4.160	99.606	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-80	0.009	0.004	1.4	90.0	
								Pole MS-3-82	-0.011	-0.005	1.7	90.0	
Pole MS-3-82	4.160	99.609	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-81	0.011	0.005	1.7	90.0	
								Pole MS-3-79	-0.012	-0.006	1.9	90.0	
Pole MS-3-83	4.160	99.602	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-80	-0.008	-0.004	1.2	90.0	
								Pole MS-3-84	0.006	0.003	0.9	90.0	
Pole MS-3-84	4.160	99.600	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-83	-0.006	-0.003	0.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-85	0.004	0.002	0.7	90.0	
Pole MS-3-85	4.160	99.599	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-84	-0.004	-0.002	0.7	90.0	
								Pole MS-3-86	0.002	0.001	0.3	90.0	
Pole MS-3-86	4.160	99.598	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-85	-0.002	-0.001	0.3	90.0	
Pole MS-3-87	4.160	99.715	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-79	0.188	0.091	29.0	90.0	
								Pole MS-3-88	0.071	0.034	11.0	90.0	
								BUS_5KV_LLP_02	-0.259	-0.125	40.0	90.0	
Pole MS-3-88	4.160	99.675	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-87	-0.071	-0.034	11.0	90.0	
								Pole MS-3-1	0.071	0.034	11.0	90.0	
Pole MS-3-90	4.160	99.559	-0.5	0.000	0.000	0.004	0.002	Pole MS-3-55	-0.036	-0.017	5.6	90.0	
								Pole MS-3-92	0.031	0.015	4.9	90.0	
Pole MS-3-92	4.160	99.536	-0.5	0.000	0.000	0.004	0.002	Pole MS-3-95	0.027	0.013	4.2	90.0	
								Pole MS-3-90	-0.031	-0.015	4.9	90.0	
Pole MS-3-95	4.160	99.527	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-96	0.002	0.001	0.3	90.1	
								Pole MS-4-36	0.023	0.011	3.5	90.0	
								Pole MS-3-92	-0.027	-0.013	4.2	90.0	
Pole MS-3-96	4.160	99.526	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-95	-0.002	-0.001	0.3	90.0	
Pole MS-3-97	4.160	99.487	-0.5	0.000	0.000	0.002	0.001	Pole MS-3-98	0.015	0.007	2.3	90.0	
								Pole MS-4-36	-0.017	-0.008	2.7	90.0	
Pole MS-3-98	4.160	99.483	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-99	0.015	0.007	2.3	90.0	
								Pole MS-3-97	-0.015	-0.007	2.3	90.0	
Pole MS-3-99	4.160	99.479	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-100	0.005	0.003	0.8	90.0	
								Pole MS-3-101	0.010	0.005	1.5	90.0	
								Pole MS-3-98	-0.015	-0.007	2.3	90.0	
Pole MS-3-100	4.160	99.476	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-99	-0.005	-0.003	0.8	90.0	
								SEC_MS-3-49	0.005	0.003	0.8	90.0	
Pole MS-3-101	4.160	99.472	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-102	0.005	0.003	0.8	90.0	
								Pole MS-3-103	0.004	0.002	0.7	90.0	
								Pole MS-3-99	-0.010	-0.005	1.5	90.0	
Pole MS-3-102	4.160	99.471	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-101	-0.005	-0.003	0.8	90.0	
								SEC_MS-3-65	0.005	0.003	0.8	90.0	
Pole MS-3-103	4.160	99.471	-0.5	0.000	0.000	0.004	0.002	Pole MS-3-101	-0.004	-0.002	0.7	90.0	
Pole MS-4-1	4.160	99.745	-0.5	0.000	0.000	0.002	0.001	BUS_5KV-LLP_01	-0.080	-0.038	12.4	90.3	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-2	0.013	0.006	2.0	90.0	
								Pole MS-4-7	0.066	0.031	10.1	90.3	
Pole MS-4-2	4.160	99.742	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-1	-0.013	-0.006	2.0	90.0	
								Pole MS-4-3	0.011	0.005	1.7	90.0	
Pole MS-4-3	4.160	99.741	-0.5	0.000	0.000	0.000	0.000	Pole MS-4-2	-0.011	-0.005	1.7	90.0	
								Pole MS-4-5	0.008	0.004	1.2	90.0	
								SEC_MS-3-73	0.004	0.002	0.6	90.0	
Pole MS-4-5	4.160	99.739	-0.5	0.000	0.000	0.004	0.002	Pole MS-4-3	-0.008	-0.004	1.2	90.0	
								Pole MS-4-6	0.004	0.002	0.6	90.0	
Pole MS-4-6	4.160	99.739	-0.5	0.000	0.000	0.000	0.000	Pole MS-4-5	-0.004	-0.002	0.6	90.0	
								SEC_MS-3-74	0.004	0.002	0.6	90.0	
Pole MS-4-7	4.160	99.708	-0.5	0.000	0.000	0.000	0.000	Pole MS-4-1	-0.066	-0.031	10.1	90.3	
								Pole MS-4-8	0.066	0.031	10.1	90.3	
Pole MS-4-8	4.160	99.635	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-7	-0.066	-0.031	10.1	90.3	
								Pole MS-4-9	0.018	0.009	2.8	90.0	
								Pole MS-4-16	0.046	0.022	7.1	90.4	
Pole MS-4-9	4.160	99.631	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-8	-0.018	-0.009	2.8	90.0	
								Pole MS-4-10	0.016	0.008	2.4	90.0	
Pole MS-4-10	4.160	99.627	-0.5	0.000	0.000	0.000	0.000	Pole MS-4-9	-0.016	-0.008	2.4	90.0	
								Pole MS-4-11	0.012	0.006	1.9	90.0	
								SEC_MS-3-75	0.004	0.002	0.6	90.0	
Pole MS-4-11	4.160	99.621	-0.5	0.000	0.000	0.004	0.002	Pole MS-4-10	-0.012	-0.006	1.9	90.0	
								Pole MS-4-12	0.008	0.004	1.2	90.0	
Pole MS-4-12	4.160	99.619	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-11	-0.008	-0.004	1.2	90.0	
								Pole MS-4-13	0.006	0.003	0.9	90.0	
Pole MS-4-13	4.160	99.616	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-12	-0.006	-0.003	0.9	90.0	
								Pole MS-4-14	0.004	0.002	0.6	90.0	
Pole MS-4-14	4.160	99.615	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-13	-0.004	-0.002	0.6	90.0	
								Pole MS-4-15	0.002	0.001	0.2	90.0	
Pole MS-4-15	4.160	99.615	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-14	-0.002	-0.001	0.2	90.0	
Pole MS-4-16	4.160	99.584	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-17	0.044	0.021	6.8	90.4	
								Pole MS-4-8	-0.046	-0.022	7.1	90.4	
Pole MS-4-17	4.160	99.561	-0.5	0.000	0.000	0.000	0.000	Pole MS-4-16	-0.044	-0.021	6.8	90.4	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-18	0.039	0.018	6.0	90.5	
								SEC_MS-3-66	0.005	0.003	0.8	90.0	
Pole MS-4-18	4.160	99.538	-0.5	0.000	0.000	0.004	0.002	Pole MS-4-17	-0.039	-0.018	6.0	90.5	
								Pole MS-4-20	0.034	0.016	5.3	90.6	
Pole MS-4-20	4.160	99.525	-0.5	0.000	0.000	0.000	0.000	Pole MS-4-18	-0.034	-0.016	5.3	90.6	
								Pole MS-4-21	0.029	0.013	4.4	90.7	
								SEC_MS-3-76	0.005	0.003	0.8	90.0	
Pole MS-4-21	4.160	99.455	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-20	-0.029	-0.013	4.4	90.6	
								Pole MS-4-22	0.027	0.012	4.1	90.7	
Pole MS-4-22	4.160	99.432	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-21	-0.027	-0.012	4.1	90.7	
								Pole MS-4-23	0.024	0.011	3.8	90.7	
Pole MS-4-23	4.160	99.409	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-22	-0.024	-0.011	3.8	90.7	
								Pole MS-4-25	0.022	0.010	3.4	90.8	
Pole MS-4-24	4.160	99.191	-0.5	0.000	0.000	0.000	0.000	Pole MS-4-25	-0.020	-0.009	3.1	90.7	
								Pole MS-4-39	0.002	0.001	0.3	90.0	
								Pole MS-4-41	0.018	0.008	2.7	90.8	
Pole MS-4-25	4.160	99.355	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-23	-0.022	-0.010	3.4	90.8	
								Pole MS-4-24	0.020	0.009	3.1	90.9	
Pole MS-4-31	4.160	99.740	-0.5	0.000	0.000	0.000	0.000	Pole MS-5-1	0.210	0.102	32.5	89.9	
								BUS_5KV-LLP_01	-0.210	-0.102	32.5	89.9	
Pole MS-4-36	4.160	99.508	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-97	0.017	0.008	2.7	90.0	
								Pole MS-3-95	-0.023	-0.011	3.5	90.0	
								SEC_MS-3-45	0.005	0.003	0.8	90.0	
Pole MS-4-39	4.160	99.190	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-24	-0.002	-0.001	0.3	90.0	
Pole MS-4-40	4.160	99.179	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-41	-0.007	-0.003	1.0	90.1	
								Pole MS-4-42	0.004	0.002	0.7	90.2	
Pole MS-4-41	4.160	99.183	-0.5	0.000	0.000	0.000	0.000	Pole MS-4-24	-0.018	-0.008	2.7	90.8	
								Pole MS-4-40	0.007	0.003	1.0	90.2	
								Pole MS-4-44	0.011	0.005	1.7	91.1	
Pole MS-4-42	4.160	99.174	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-40	-0.004	-0.002	0.7	90.1	
								Pole MS-4-43	0.002	0.001	0.3	90.3	
Pole MS-4-43	4.160	99.170	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-42	-0.002	-0.001	0.3	90.0	
Pole MS-4-44	4.160	98.983	-0.5	0.000	0.000	0.000	0.000	Pole MS-4-41	-0.011	-0.005	1.7	90.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-45	0.002	0.001	0.3	90.1	
								Pole MS-4-46	0.009	0.004	1.4	90.6	
Pole MS-4-45	4.160	98.981	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-44	-0.002	-0.001	0.3	90.0	
Pole MS-4-46	4.160	98.973	-0.5	0.000	0.000	0.000	0.000	Pole MS-4-44	-0.009	-0.004	1.4	90.5	
								Pole MS-4-47	0.002	0.001	0.3	90.0	
								Pole MS-4-48	0.002	0.001	0.3	90.0	
								Pole MS-4-50	0.004	0.002	0.7	91.0	
Pole MS-4-47	4.160	98.973	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-46	-0.002	-0.001	0.3	90.0	
Pole MS-4-48	4.160	98.973	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-46	-0.002	-0.001	0.3	90.0	
Pole MS-4-49	4.160	98.959	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-50	-0.002	-0.001	0.3	90.0	
Pole MS-4-50	4.160	98.960	-0.5	0.000	0.000	0.000	0.000	Pole MS-4-46	-0.004	-0.002	0.7	90.7	
								Pole MS-4-49	0.002	0.001	0.3	90.0	
								Pole MS-4-52	0.002	0.001	0.3	91.5	
Pole MS-4-51	4.160	98.952	-0.5	0.000	0.000	0.002	0.001	Pole MS-4-52	-0.002	-0.001	0.3	90.0	
Pole MS-4-52	4.160	98.957	-0.5	0.000	0.000	0.000	0.000	Pole MS-4-50	-0.002	-0.001	0.3	91.2	
								Pole MS-4-51	0.002	0.001	0.3	90.3	
								LINE MS-4-53~	0.000	0.000	0.0	0.0	
Pole MS-5-1	4.160	99.301	-0.7	0.000	0.000	0.002	0.001	Pole MS-4-31	-0.209	-0.102	32.5	90.0	
								Pole MS-5-2	0.207	0.101	32.2	90.0	
Pole MS-5-2	4.160	99.248	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-1	-0.207	-0.101	32.2	90.0	
								Pole MS-5-3	0.009	0.004	1.4	90.0	
								Pole MS-5-7	0.196	0.095	30.5	90.0	
Pole MS-5-3	4.160	99.245	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-2	-0.009	-0.004	1.4	90.0	
								Pole MS-5-4	0.007	0.003	1.0	90.0	
Pole MS-5-4	4.160	99.242	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-3	-0.007	-0.003	1.0	90.0	
								Pole MS-5-5	0.004	0.002	0.7	90.0	
Pole MS-5-5	4.160	99.240	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-4	-0.004	-0.002	0.7	90.0	
								Pole MS-5-6	0.002	0.001	0.3	90.0	
Pole MS-5-6	4.160	99.240	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-5	-0.002	-0.001	0.3	90.0	
Pole MS-5-7	4.160	99.160	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-2	-0.196	-0.095	30.5	90.0	
								Pole MS-5-11	0.032	0.015	5.0	90.0	
								Pole MS-5-24	0.164	0.080	25.5	90.0	
Pole MS-5-8	4.160	99.134	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-9	-0.025	-0.012	3.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-14	0.023	0.011	3.6	90.0	
Pole MS-5-9	4.160	99.140	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-8	0.025	0.012	3.9	90.0	
								Pole MS-5-10	-0.027	-0.013	4.3	90.0	
Pole MS-5-10	4.160	99.148	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-9	0.027	0.013	4.3	90.0	
								Pole MS-5-11	-0.030	-0.014	4.6	90.0	
Pole MS-5-11	4.160	99.156	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-7	-0.032	-0.015	5.0	90.0	
								Pole MS-5-10	0.030	0.014	4.6	90.0	
Pole MS-5-12	4.160	99.114	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-13	-0.019	-0.009	2.9	90.0	
								Pole MS-5-16	0.016	0.008	2.5	90.0	
Pole MS-5-13	4.160	99.126	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-12	0.019	0.009	2.9	90.0	
								Pole MS-5-14	-0.021	-0.010	3.2	90.0	
Pole MS-5-14	4.160	99.129	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-8	-0.023	-0.011	3.6	90.0	
								Pole MS-5-13	0.021	0.010	3.2	90.0	
Pole MS-5-15	4.160	99.109	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-16	-0.013	-0.006	2.0	90.0	
								Pole MS-5-17	0.010	0.005	1.6	90.0	
Pole MS-5-16	4.160	99.110	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-15	0.013	0.006	2.0	90.0	
								Pole MS-5-12	-0.016	-0.008	2.5	90.0	
								SEC_MS-5-15	0.004	0.002	0.6	90.0	
Pole MS-5-17	4.160	99.107	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-15	-0.010	-0.005	1.6	90.0	
								Pole MS-5-18	0.005	0.003	0.8	90.0	
								SEC_MS-5-16	0.005	0.003	0.8	90.0	
Pole MS-5-18	4.160	99.107	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-17	-0.005	-0.003	0.8	90.0	
								Pole MS-5-19	0.000	0.000	0.0	0.0	
								SEC_MS-5-17	0.005	0.003	0.8	90.0	
Pole MS-5-19	4.160	99.107	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-18	0.000	0.000	0.0	0.0	
Pole MS-5-24	4.160	99.086	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-7	-0.164	-0.079	25.5	90.0	
								Pole MS-5-25	0.009	0.004	1.4	90.0	
								Pole MS-5-29	0.028	0.013	4.3	90.0	
								Pole MS-5-41	0.128	0.062	19.8	90.0	
Pole MS-5-25	4.160	99.084	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-24	-0.009	-0.004	1.4	90.0	
								Pole MS-5-26	0.007	0.004	1.1	90.0	
Pole MS-5-26	4.160	99.083	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-25	-0.007	-0.004	1.1	90.0	
								Pole MS-5-28	0.004	0.002	0.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_MS-5-23	0.004	0.002	0.6	90.0	
Pole MS-5-27	4.160	99.051	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-41	-0.125	-0.061	19.5	90.0	
								Pole MS-5-151	0.124	0.060	19.3	90.0	
Pole MS-5-28	4.160	99.081	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-26	-0.004	-0.002	0.6	90.0	
								SEC_MS-5-25	0.004	0.002	0.6	90.0	
Pole MS-5-29	4.160	99.080	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-24	-0.028	-0.013	4.3	90.0	
								Pole MS-5-30	0.022	0.011	3.5	90.0	
								SEC_MS-5-26	0.005	0.003	0.8	90.0	
Pole MS-5-30	4.160	99.070	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-29	-0.022	-0.011	3.5	90.0	
								Pole MS-5-31	0.021	0.010	3.2	90.0	
Pole MS-5-31	4.160	99.062	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-30	-0.021	-0.010	3.2	90.0	
								Pole MS-5-32	0.019	0.009	2.9	90.0	
Pole MS-5-32	4.160	99.057	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-31	-0.019	-0.009	2.9	90.0	
								Pole MS-5-33	0.015	0.007	2.3	90.0	
								SEC_MS-5-29	0.004	0.002	0.6	90.0	
Pole MS-5-33	4.160	99.054	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-32	-0.015	-0.007	2.3	90.0	
								Pole MS-5-34	0.010	0.005	1.5	90.0	
								SEC_MS-5-30	0.005	0.003	0.8	90.0	
Pole MS-5-34	4.160	99.052	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-33	-0.010	-0.005	1.5	90.0	
								Pole MS-5-35	0.008	0.004	1.3	90.0	
Pole MS-5-35	4.160	99.050	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-34	-0.008	-0.004	1.3	90.0	
								Pole MS-5-36	0.004	0.002	0.7	90.1	
								SEC_MS-5-32	0.004	0.002	0.6	90.0	
Pole MS-5-36	4.160	99.048	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-35	-0.004	-0.002	0.7	90.0	
								Pole MS-5-37	0.004	0.002	0.7	90.0	
Pole MS-5-37	4.160	99.047	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-36	-0.004	-0.002	0.7	90.0	
								Pole MS-5-38	0.002	0.001	0.3	90.0	
Pole MS-5-38	4.160	99.046	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-37	-0.002	-0.001	0.3	90.0	
								Pole MS-5-39	0.000	0.000	0.0	0.0	
Pole MS-5-39	4.160	99.046	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-38	0.000	0.000	0.0	0.0	
Pole MS-5-40	4.160	98.969	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-151	-0.124	-0.060	19.3	90.0	
								Pole MS-5-42	0.002	0.001	0.2	90.0	
								Pole MS-5-44	0.024	0.011	3.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-55	0.096	0.047	15.0	90.0	
Pole MS-5-41	4.160	99.058	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-27	0.125	0.061	19.5	90.0	
								Pole MS-5-24	-0.127	-0.062	19.8	90.0	
Pole MS-5-42	4.160	98.968	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-40	-0.002	-0.001	0.2	90.0	
Pole MS-5-43	4.160	98.961	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-44	-0.021	-0.010	3.3	90.0	
								Pole MS-5-45	0.019	0.009	3.0	90.0	
Pole MS-5-44	4.160	98.964	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-40	-0.024	-0.011	3.7	90.0	
								Pole MS-5-43	0.021	0.010	3.3	90.0	
Pole MS-5-45	4.160	98.958	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-43	-0.019	-0.009	3.0	90.0	
								Pole MS-5-46	0.016	0.008	2.4	90.0	
								SEC_MS-5-40	0.004	0.002	0.6	90.0	
Pole MS-5-46	4.160	98.953	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-45	-0.016	-0.008	2.4	90.0	
								Pole MS-5-47	0.014	0.007	2.2	90.0	
Pole MS-5-47	4.160	98.951	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-46	-0.014	-0.007	2.2	90.0	
								Pole MS-5-48	0.012	0.006	1.8	90.0	
Pole MS-5-48	4.160	98.947	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-47	-0.012	-0.006	1.8	90.0	
								Pole MS-5-49	0.010	0.005	1.5	90.0	
Pole MS-5-49	4.160	98.944	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-48	-0.010	-0.005	1.5	90.0	
								Pole MS-5-50	0.007	0.004	1.2	90.0	
Pole MS-5-50	4.160	98.941	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-49	-0.007	-0.004	1.2	90.0	
								Pole MS-5-51	0.004	0.002	0.6	90.1	
								SEC_MS-5-45	0.004	0.002	0.6	90.0	
Pole MS-5-51	4.160	98.940	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-50	-0.004	-0.002	0.6	90.1	
								Pole MS-5-52	0.002	0.001	0.3	90.1	
Pole MS-5-52	4.160	98.939	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-51	-0.002	-0.001	0.3	90.0	
								Pole MS-5-149	0.000	0.000	0.0	0.0	
Pole MS-5-55	4.160	98.945	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-40	-0.096	-0.047	15.0	90.0	
								Pole MS-5-68	0.094	0.046	14.6	90.0	
Pole MS-5-56	4.160	98.881	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-68	-0.092	-0.044	14.3	90.0	
								Pole MS-5-57	0.018	0.009	2.8	90.0	
								Pole MS-5-64	0.007	0.003	1.0	90.1	
								Pole MS-5-67	0.065	0.032	10.2	90.0	
Pole MS-5-57	4.160	98.877	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-56	-0.018	-0.009	2.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-58	0.015	0.007	2.4	90.0	
Pole MS-5-58	4.160	98.872	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-57	-0.015	-0.007	2.4	90.0	
								Pole MS-5-59	0.013	0.006	2.1	90.0	
Pole MS-5-59	4.160	98.870	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-58	-0.013	-0.006	2.1	90.0	
								Pole MS-5-60	0.011	0.005	1.7	90.0	
Pole MS-5-60	4.160	98.866	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-59	-0.011	-0.005	1.7	90.0	
								Pole MS-5-61	0.009	0.004	1.4	90.0	
Pole MS-5-61	4.160	98.865	-0.8	0.000	0.000	0.004	0.002	Pole MS-5-60	-0.009	-0.004	1.4	90.0	
								Pole MS-5-62	0.004	0.002	0.7	90.0	
Pole MS-5-62	4.160	98.864	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-61	-0.004	-0.002	0.7	90.0	
								Pole MS-5-63	0.002	0.001	0.3	90.0	
Pole MS-5-63	4.160	98.864	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-62	-0.002	-0.001	0.3	90.0	
Pole MS-5-64	4.160	98.880	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-56	-0.007	-0.003	1.0	90.0	
								Pole MS-5-65	0.004	0.002	0.7	90.1	
Pole MS-5-65	4.160	98.879	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-64	-0.004	-0.002	0.7	90.1	
								Pole MS-5-66	0.002	0.001	0.3	90.2	
Pole MS-5-66	4.160	98.877	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-65	-0.002	-0.001	0.3	90.0	
Pole MS-5-67	4.160	98.852	-0.8	0.000	0.000	0.000	0.000	Pole MS-5-56	-0.065	-0.032	10.2	90.0	
								Pole MS-5-69	0.016	0.008	2.5	90.0	
								Pole MS-5-78	0.015	0.007	2.4	90.0	
								Pole MS-5-86	0.034	0.016	5.3	90.0	
Pole MS-5-68	4.160	98.904	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-56	0.092	0.044	14.3	90.0	
								Pole MS-5-55	-0.094	-0.045	14.6	90.0	
Pole MS-5-69	4.160	98.849	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-67	-0.016	-0.008	2.5	90.0	
								Pole MS-5-70	0.014	0.007	2.2	90.0	
Pole MS-5-70	4.160	98.842	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-69	-0.014	-0.007	2.2	90.0	
								Pole MS-5-71	0.012	0.006	1.9	90.0	
Pole MS-5-71	4.160	98.841	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-70	-0.012	-0.006	1.9	90.0	
								Pole MS-5-72	0.010	0.005	1.5	90.0	
Pole MS-5-72	4.160	98.840	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-71	-0.010	-0.005	1.5	90.0	
								Pole MS-5-73	0.007	0.004	1.2	90.0	
Pole MS-5-73	4.160	98.838	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-72	-0.007	-0.004	1.2	90.0	
								Pole MS-5-74	0.005	0.003	0.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-74	4.160	98.837	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-73	-0.005	-0.003	0.8	90.0	
								Pole MS-5-75	0.003	0.001	0.5	90.1	
Pole MS-5-75	4.160	98.837	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-74	-0.003	-0.001	0.5	90.0	
								Pole MS-5-76	0.002	0.001	0.2	90.1	
Pole MS-5-76	4.160	98.836	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-75	-0.002	-0.001	0.2	90.1	
								Line MS-5-79~	0.000	0.000	0.0	0.0	
Pole MS-5-77	4.160	98.845	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-78	-0.014	-0.007	2.1	90.0	
								Pole MS-5-79	0.012	0.006	1.9	90.1	
Pole MS-5-78	4.160	98.848	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-67	-0.015	-0.007	2.4	90.0	
								Pole MS-5-77	0.014	0.007	2.1	90.0	
Pole MS-5-79	4.160	98.845	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-77	-0.012	-0.006	1.9	90.0	
								Pole MS-5-80	0.011	0.005	1.7	90.1	
Pole MS-5-80	4.160	98.840	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-79	-0.011	-0.005	1.7	90.0	
								Pole MS-5-81	0.009	0.004	1.4	90.1	
Pole MS-5-81	4.160	98.838	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-80	-0.009	-0.004	1.4	90.0	
								Pole MS-5-82	0.007	0.004	1.2	90.1	
Pole MS-5-82	4.160	98.837	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-81	-0.007	-0.004	1.2	90.1	
								Pole MS-5-83	0.006	0.003	0.9	90.1	
Pole MS-5-83	4.160	98.836	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-82	-0.006	-0.003	0.9	90.1	
								Pole MS-5-84	0.004	0.002	0.6	90.1	
Pole MS-5-84	4.160	98.836	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-83	-0.004	-0.002	0.6	90.1	
								Pole MS-5-85	0.002	0.001	0.2	90.3	
Pole MS-5-85	4.160	98.834	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-84	-0.002	-0.001	0.2	90.0	
Pole MS-5-86	4.160	98.836	-0.8	0.000	0.000	0.000	0.000	Pole MS-5-67	-0.034	-0.016	5.3	90.0	
								Pole MS-5-89	0.005	0.002	0.7	90.0	
								Pole MS-5-90	0.011	0.005	1.7	90.0	
								Pole MS-5-96	0.019	0.009	2.9	90.0	
Pole MS-5-87	4.160	98.835	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-88	-0.002	-0.001	0.2	90.0	
Pole MS-5-88	4.160	98.835	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-87	0.002	0.001	0.2	90.0	
								Pole MS-5-89	-0.003	-0.001	0.5	90.0	
Pole MS-5-89	4.160	98.835	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-86	-0.005	-0.002	0.7	90.0	
								Pole MS-5-88	0.003	0.001	0.5	90.0	
Pole MS-5-90	4.160	98.834	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-86	-0.011	-0.005	1.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-91	0.009	0.004	1.4	90.0	
Pole MS-5-91	4.160	98.831	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-90	-0.009	-0.004	1.4	90.0	
								Pole MS-5-92	0.007	0.004	1.2	90.0	
Pole MS-5-92	4.160	98.829	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-91	-0.007	-0.004	1.2	90.0	
								Pole MS-5-93	0.006	0.003	0.9	90.0	
Pole MS-5-93	4.160	98.827	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-92	-0.006	-0.003	0.9	90.0	
								Pole MS-5-94	0.004	0.002	0.6	90.0	
Pole MS-5-94	4.160	98.826	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-93	-0.004	-0.002	0.6	90.0	
								Pole MS-5-95	0.002	0.001	0.2	90.0	
Pole MS-5-95	4.160	98.826	-0.8	0.000	0.000	0.002	0.001	Pole MS-5-94	-0.002	-0.001	0.2	90.0	
Pole MS-5-96	4.160	98.829	-0.8	0.000	0.000	0.000	0.000	Pole MS-5-86	-0.019	-0.009	2.9	90.0	
								Pole MS-5-111	0.019	0.009	2.9	90.0	
Pole MS-5-106	4.160	100.083	-0.7	0.000	0.000	0.017	0.008	Pole MS-5-108	-0.064	-0.031	9.8	90.0	
								Pole MS-5-122	0.047	0.023	7.2	90.0	
Pole MS-5-107	4.160	100.121	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-108	-0.007	-0.003	1.1	90.0	
								Pole MS-5-109	0.005	0.003	0.8	90.0	
Pole MS-5-108	4.160	100.123	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-107	0.007	0.003	1.1	90.0	
								Pole MS-5-106	0.064	0.031	9.8	90.0	
								SF-2-30	-0.071	-0.034	10.9	90.0	
Pole MS-5-109	4.160	100.120	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-107	-0.005	-0.003	0.8	90.0	
								Pole MS-5-110	0.004	0.002	0.6	90.0	
Pole MS-5-110	4.160	100.119	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-109	-0.004	-0.002	0.6	90.0	
								SEC_MS-5-99	0.004	0.002	0.6	90.0	
Pole MS-5-111	4.160	98.822	-0.8	0.000	0.000	0.000	0.000	Pole MS-5-96	-0.019	-0.009	2.9	90.0	
								Pole MS-5-124	0.019	0.009	2.9	90.0	
Pole MS-5-122	4.160	100.051	-0.7	0.000	0.000	0.021	0.010	Pole MS-5-106	-0.047	-0.023	7.2	90.0	
								Pole MS-5-123	0.026	0.012	4.0	90.1	
Pole MS-5-123	4.160	100.035	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-122	-0.026	-0.012	4.0	90.0	
								Pole MS-5-134	0.021	0.010	3.3	90.0	
								Pole MS-5-135	0.004	0.002	0.7	90.1	
Pole MS-5-124	4.160	98.815	-0.8	0.000	0.000	0.000	0.000	Pole MS-5-111	-0.019	-0.009	2.9	90.0	
								Pole MS-5-139	0.019	0.009	2.9	90.0	
Pole MS-5-125	4.160	99.995	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-126	-0.002	-0.001	0.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Line MS-5-129~	0.000	0.000	0.0	0.0	
Pole MS-5-126	4.160	99.995	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-125	0.002	0.001	0.2	90.1	
								Pole MS-5-127	-0.004	-0.002	0.6	90.0	
Pole MS-5-127	4.160	99.996	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-126	0.004	0.002	0.6	90.0	
								Pole MS-5-128	-0.006	-0.003	0.9	90.0	
Pole MS-5-128	4.160	99.997	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-127	0.006	0.003	0.9	90.0	
								Pole MS-5-129	-0.008	-0.004	1.3	90.0	
Pole MS-5-129	4.160	100.001	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-128	0.008	0.004	1.3	90.0	
								Pole MS-5-130	-0.011	-0.005	1.6	90.0	
Pole MS-5-130	4.160	100.003	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-129	0.011	0.005	1.6	90.0	
								Pole MS-5-131	-0.012	-0.006	1.9	90.0	
Pole MS-5-131	4.160	100.008	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-130	0.012	0.006	1.9	90.0	
								Pole MS-5-132	-0.014	-0.007	2.1	90.0	
Pole MS-5-132	4.160	100.012	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-131	0.014	0.007	2.1	90.0	
								Pole MS-5-137	-0.015	-0.007	2.4	90.0	
Pole MS-5-133	4.160	100.026	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-137	0.018	0.008	2.7	90.0	
								Pole MS-5-134	-0.019	-0.009	2.9	90.0	
Pole MS-5-134	4.160	100.030	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-133	0.019	0.009	2.9	90.0	
								Pole MS-5-123	-0.021	-0.010	3.3	90.0	
Pole MS-5-135	4.160	100.030	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-123	-0.004	-0.002	0.7	90.0	
								Pole MS-5-136	0.002	0.001	0.3	90.1	
Pole MS-5-136	4.160	100.028	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-135	-0.002	-0.001	0.3	90.0	
Pole MS-5-137	4.160	100.019	-0.7	0.000	0.000	0.002	0.001	Pole MS-5-133	-0.018	-0.008	2.7	90.0	
								Pole MS-5-132	0.015	0.007	2.4	90.0	
Pole MS-5-139	4.160	98.811	-0.8	0.000	0.000	0.018	0.009	Pole MS-5-124	-0.018	-0.009	2.9	90.0	
Pole MS-5-149	4.160	98.939	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-52	0.000	0.000	0.0	0.0	
Pole MS-5-151	4.160	99.025	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-40	0.124	0.060	19.3	90.0	
								Pole MS-5-27	-0.124	-0.060	19.3	90.0	
Pole MS-7-16	24.940	99.709	1.0	0.000	0.000	0.000	0.000	Pole MS-7-18	-0.009	-0.004	0.2	90.0	
								SEC_MS-7-9	0.009	0.004	0.2	90.0	
Pole MS-7-17	24.940	99.710	1.0	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	-0.024	-0.009	0.6	93.7	
								Pole MS-7-18	0.024	0.009	0.6	93.7	
Pole MS-7-18	24.940	99.709	1.0	0.000	0.000	0.000	0.000	Pole MS-7-19	0.015	0.006	0.4	93.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-7-16	0.009	0.004	0.2	90.4	
								Pole MS-7-17	-0.024	-0.010	0.6	92.4	
Pole MS-7-19	24.940	99.709	1.0	0.000	0.000	0.015	0.007	Pole MS-7-18	-0.015	-0.007	0.4	89.6	
Pole MS-8-1	4.160	99.730	-0.6	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	-0.073	-0.035	11.3	89.9	
								Pole MS-8-2	0.073	0.035	11.3	89.9	
Pole MS-8-2	4.160	99.681	-0.6	0.000	0.000	0.002	0.001	Pole MS-8-1	-0.073	-0.035	11.3	90.0	
								Pole MS-8-3	0.071	0.035	11.1	90.0	
Pole MS-8-3	4.160	99.665	-0.6	0.000	0.000	0.002	0.001	Pole MS-8-2	-0.071	-0.035	11.1	90.0	
								Pole MS-8-4	0.070	0.034	10.8	90.0	
Pole MS-8-4	4.160	99.657	-0.6	0.000	0.000	0.000	0.000	Pole MS-8-3	-0.070	-0.034	10.8	90.0	
								Pole MS-8-5	0.062	0.030	9.7	90.0	
								SEC_MS-8-3	0.007	0.004	1.1	90.0	
Pole MS-8-5	4.160	99.649	-0.6	0.000	0.000	0.002	0.001	Pole MS-8-4	-0.062	-0.030	9.7	90.0	
								Pole MS-8-6	0.061	0.030	9.4	90.0	
Pole MS-8-6	4.160	99.635	-0.6	0.000	0.000	0.002	0.001	Pole MS-8-5	-0.061	-0.030	9.4	90.0	
								Pole MS-8-7	0.059	0.029	9.2	89.9	
Pole MS-8-7	4.160	99.628	-0.6	0.000	0.000	0.003	0.002	Pole MS-8-6	-0.059	-0.029	9.2	89.9	
								Pole MS-8-8	0.056	0.027	8.7	89.9	
Pole MS-8-8	4.160	99.621	-0.6	0.000	0.000	0.000	0.000	Pole MS-8-7	-0.056	-0.027	8.7	89.9	
								Pole MS-8-9	0.011	0.005	1.6	90.0	
								Pole MS-8-10	0.046	0.022	7.1	89.9	
Pole MS-8-9	4.160	99.619	-0.6	0.000	0.000	0.000	0.000	Pole MS-8-8	-0.011	-0.005	1.6	89.9	
								SEC_MS-8-8	0.011	0.005	1.6	89.9	
Pole MS-8-10	4.160	99.610	-0.6	0.000	0.000	0.002	0.001	Pole MS-8-8	-0.046	-0.022	7.1	89.9	
								Pole MS-8-11	0.044	0.021	6.8	89.9	
Pole MS-8-11	4.160	99.598	-0.6	0.000	0.000	0.002	0.001	Pole MS-8-10	-0.044	-0.021	6.8	89.9	
								Pole MS-8-12	0.042	0.020	6.5	89.9	
Pole MS-8-12	4.160	99.588	-0.6	0.000	0.000	0.002	0.001	Pole MS-8-11	-0.042	-0.020	6.5	89.9	
								Pole MS-8-13	0.040	0.019	6.1	89.9	
Pole MS-8-13	4.160	99.586	-0.6	0.000	0.000	0.002	0.001	Pole MS-8-12	-0.040	-0.019	6.1	89.9	
								Pole MS-8-14	0.037	0.018	5.8	89.9	
Pole MS-8-14	4.160	99.580	-0.6	0.000	0.000	0.002	0.001	Pole MS-8-15	0.035	0.017	5.4	89.9	
								Pole MS-8-13	-0.037	-0.018	5.8	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-8-15	4.160	99.575	-0.6	0.000	0.000	0.000	0.000	PRI_PM_9	0.035	0.017	5.4	89.9	
								Pole MS-8-14	-0.035	-0.017	5.4	89.9	
Pole MS-9-1	4.160	99.739	-0.5	0.000	0.000	0.002	0.001	BUS_5KV-LLP_01	-0.165	-0.080	25.6	89.9	
								Pole MS-9-2	0.163	0.079	25.2	89.9	
Pole MS-9-2	4.160	99.704	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-1	-0.163	-0.079	25.2	89.9	
								Pole MS-9-12	0.163	0.079	25.2	89.9	
Pole MS-9-12	4.160	99.637	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-2	-0.163	-0.079	25.2	89.9	
								Pole MS-9-13	0.163	0.079	25.2	89.9	
Pole MS-9-13	4.160	99.626	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-12	-0.163	-0.079	25.2	89.9	
								Pole MS-9-14	0.163	0.079	25.2	89.9	
Pole MS-9-14	4.160	99.606	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-13	-0.163	-0.079	25.2	89.9	
								Pole MS-9-15	0.161	0.078	25.0	89.9	
Pole MS-9-15	4.160	99.577	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-14	-0.161	-0.078	25.0	90.0	
								Pole MS-9-16	0.154	0.075	23.8	90.0	
								SEC_MS-9-12	0.007	0.004	1.1	90.0	
Pole MS-9-16	4.160	99.545	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-15	-0.154	-0.075	23.8	90.0	
								Pole MS-9-17	0.152	0.074	23.6	90.0	
Pole MS-9-17	4.160	99.524	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-16	-0.152	-0.074	23.6	90.0	
								Pole MS-9-18	0.043	0.021	6.7	90.0	
								Pole MS-9-33	0.109	0.053	16.9	89.9	
Pole MS-9-18	4.160	99.522	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-17	-0.043	-0.021	6.7	90.0	
								Pole MS-9-19	0.036	0.017	5.5	90.0	
								SEC_MS-9-14	0.007	0.004	1.1	90.0	
Pole MS-9-19	4.160	99.516	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-18	-0.036	-0.017	5.5	90.0	
								Pole MS-9-20	0.034	0.017	5.3	90.0	
Pole MS-9-20	4.160	99.506	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-19	-0.034	-0.017	5.3	90.0	
								Pole MS-9-21	0.032	0.015	4.9	90.0	
Pole MS-9-21	4.160	99.499	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-20	-0.032	-0.015	4.9	90.0	
								Pole MS-9-23	0.025	0.012	3.8	90.0	
								SEC_MS-9-17	0.007	0.004	1.1	90.0	
Pole MS-9-22	4.160	99.396	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-42	-0.078	-0.038	12.2	90.0	
								Pole MS-9-43	0.011	0.005	1.7	90.0	
								Pole MS-9-47	0.067	0.033	10.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-9-23	4.160	99.497	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-21	-0.025	-0.012	3.8	90.0	
								Pole MS-9-24	0.022	0.011	3.5	90.0	
Pole MS-9-24	4.160	99.494	-0.6	0.000	0.000	0.004	0.002	Pole MS-9-23	-0.022	-0.011	3.5	90.0	
								Pole MS-9-25	0.018	0.009	2.8	90.0	
Pole MS-9-25	4.160	99.493	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-24	-0.018	-0.009	2.8	90.0	
								Pole MS-9-26	0.007	0.004	1.1	90.0	
								Pole MS-9-28	0.010	0.005	1.6	90.0	
Pole MS-9-26	4.160	99.490	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-27	0.000	0.000	0.0	0.0	
								Pole MS-9-25	-0.007	-0.004	1.1	90.0	
								SEC_MS-9-22	0.007	0.004	1.1	90.0	
Pole MS-9-27	4.160	99.490	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-26	0.000	0.000	0.0	0.0	
Pole MS-9-28	4.160	99.491	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-25	-0.010	-0.005	1.6	90.0	
								Pole MS-9-29	0.009	0.004	1.4	90.0	
Pole MS-9-29	4.160	99.489	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-28	-0.009	-0.004	1.4	90.0	
								Pole MS-9-30	0.007	0.003	1.0	90.0	
Pole MS-9-30	4.160	99.488	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-29	-0.007	-0.003	1.0	90.0	
								Pole MS-9-31	0.004	0.002	0.7	90.0	
Pole MS-9-31	4.160	99.488	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-30	-0.004	-0.002	0.7	90.0	
								Pole MS-9-32	0.002	0.001	0.3	90.0	
Pole MS-9-32	4.160	99.487	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-31	-0.002	-0.001	0.3	90.0	
Pole MS-9-33	4.160	99.504	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-17	-0.109	-0.053	16.9	90.0	
								Pole MS-9-34	0.107	0.052	16.6	90.0	
Pole MS-9-34	4.160	99.487	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-33	-0.107	-0.052	16.6	90.0	
								Pole MS-9-35	0.105	0.051	16.2	90.0	
Pole MS-9-35	4.160	99.474	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-34	-0.105	-0.051	16.2	90.0	
								Pole MS-9-36	0.002	0.001	0.3	90.0	
								Pole MS-9-37	0.102	0.050	15.9	90.0	
Pole MS-9-36	4.160	99.474	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-35	-0.002	-0.001	0.3	90.0	
Pole MS-9-37	4.160	99.469	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-35	-0.102	-0.050	15.9	90.0	
								Pole MS-9-38	0.095	0.046	14.7	90.0	
								SEC_MS-9-31	0.007	0.004	1.1	90.0	
Pole MS-9-38	4.160	99.457	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-37	-0.095	-0.046	14.7	90.0	
								Pole MS-9-39	0.085	0.041	13.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_MS-9-32	0.011	0.005	1.6	89.9	
Pole MS-9-39	4.160	99.434	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-38	-0.085	-0.041	13.1	90.0	
								Pole MS-9-40	0.002	0.001	0.2	90.0	
								Pole MS-9-41	0.083	0.040	12.9	90.0	
Pole MS-9-40	4.160	99.434	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-39	-0.002	-0.001	0.2	90.0	
Pole MS-9-41	4.160	99.423	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-39	-0.083	-0.040	12.9	90.0	
								Pole MS-9-42	0.081	0.039	12.5	90.0	
Pole MS-9-42	4.160	99.404	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-22	0.078	0.038	12.2	90.0	
								Pole MS-9-41	-0.081	-0.039	12.5	90.0	
Pole MS-9-43	4.160	99.395	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-22	-0.011	-0.005	1.7	90.0	
								Pole MS-9-44	0.010	0.005	1.5	90.0	
Pole MS-9-44	4.160	99.393	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-43	-0.010	-0.005	1.5	90.0	
								Pole MS-9-45	0.002	0.001	0.3	90.0	
								Pole MS-9-46	0.007	0.004	1.1	90.0	
Pole MS-9-45	4.160	99.393	-0.6	0.000	0.000	0.002	0.001	Pole MS-9-44	-0.002	-0.001	0.3	90.0	
Pole MS-9-46	4.160	99.391	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-44	-0.007	-0.004	1.1	90.0	
								SEC_MS-9-37	0.007	0.004	1.1	90.0	
Pole MS-9-47	4.160	99.387	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-22	-0.067	-0.033	10.5	90.0	
								Pole MS-9-48	0.060	0.029	9.3	90.0	
								SEC_MS-9-38	0.007	0.004	1.1	90.0	
Pole MS-9-48	4.160	99.378	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-47	-0.060	-0.029	9.3	90.0	
								Pole MS-9-49	0.049	0.024	7.7	90.0	
								SEC_MS-9-39	0.011	0.005	1.6	89.9	
Pole MS-9-49	4.160	99.365	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-48	-0.049	-0.024	7.7	90.0	
								Pole MS-9-50	0.039	0.019	6.0	90.0	
								SEC_MS-9-40	0.011	0.005	1.6	89.9	
Pole MS-9-50	4.160	99.360	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-49	-0.039	-0.019	6.0	90.0	
								Pole MS-9-51	0.028	0.014	4.4	90.0	
								SEC_MS-9-41	0.011	0.005	1.6	89.9	
Pole MS-9-51	4.160	99.355	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-50	-0.028	-0.014	4.4	90.0	
								Pole MS-9-52	0.018	0.009	2.8	90.0	
								SEC_MS-9-42	0.011	0.005	1.6	89.9	
Pole MS-9-52	4.160	99.351	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-51	-0.018	-0.009	2.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-9-53	0.007	0.004	1.1	90.0	
								SEC_MS-9-43	0.011	0.005	1.6	89.9	
Pole MS-9-53	4.160	99.350	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-52	-0.007	-0.004	1.1	90.0	
								Pole MS-9-54	0.000	0.000	0.0	0.0	
								SEC_MS-9-44	0.007	0.004	1.1	90.0	
Pole MS-9-54	4.160	99.350	-0.6	0.000	0.000	0.000	0.000	Pole MS-9-53	0.000	0.000	0.0	0.0	
PRI_PM_1	4.160	99.413	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-0.017	-0.008	2.7	89.9	
								SEC_PM_1	0.017	0.008	2.7	89.9	
PRI_PM_1-1	4.160	98.396	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.017	-0.008	2.7	89.9	
								SEC_PM_1-1	0.017	0.008	2.7	89.9	
PRI_PM_2	4.160	99.223	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-0.017	-0.008	2.7	89.9	
								SEC_PM_2	0.017	0.008	2.7	89.9	
PRI_PM_3	4.160	99.065	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-3	-0.017	-0.008	2.7	89.9	
								SEC_PM_3	0.017	0.008	2.7	89.9	
PRI_PM_4	4.160	98.708	-0.9	0.000	0.000	0.000	0.000	SF-1-60	-0.069	-0.034	10.8	89.8	
								SEC_PM_4	0.069	0.034	10.8	89.8	
PRI_PM_5	4.160	98.930	-1.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-5	-0.017	-0.008	2.7	89.9	
								SEC_PM_5	0.017	0.008	2.7	89.9	
PRI_PM_6	4.160	98.803	-1.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.017	-0.008	2.7	89.9	
								SEC_PM_6	0.017	0.008	2.7	89.9	
PRI_PM_7	4.160	99.513	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-73	-0.051	-0.025	7.9	89.8	
								SEC_PM_7	0.051	0.025	7.9	89.8	
PRI_PM_8	4.160	99.584	-0.6	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.042	-0.021	6.5	89.9	
								SEC_PM_8	0.042	0.021	6.5	89.9	
PRI_PM_9	4.160	99.570	-0.6	0.000	0.000	0.000	0.000	Pole MS-8-15	-0.035	-0.017	5.4	89.9	
								SEC_PM_9	0.035	0.017	5.4	89.9	
PRI_PM_10	4.160	99.540	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-86	-0.077	-0.038	12.0	89.9	
								PRI_PM_28	0.039	0.019	6.0	89.9	
								SEC_PM_10	0.039	0.019	6.0	89.9	
PRI_PM_11	4.160	99.520	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-11	-0.035	-0.017	5.5	89.9	
								SEC_PM_11	0.035	0.017	5.5	89.9	
PRI_PM_12	4.160	98.746	-0.9	0.000	0.000	0.000	0.000	SF-1-59	-0.069	-0.034	10.8	89.8	
								SEC_PM_12	0.069	0.034	10.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
PRI_PM_13	4.160	98.405	-0.9	0.000	0.000	0.000	0.000	SF-1-40	-0.131	-0.064	20.6	89.8	
								SEC_PM_13	0.131	0.064	20.6	89.8	
PRI_PM_14	4.160	98.612	-0.8	0.000	0.000	0.000	0.000	SF-1-17	-0.104	-0.051	16.3	89.8	
								SEC_PM_14	0.104	0.051	16.3	89.8	
PRI_PM_15	4.160	99.609	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-16	-0.070	-0.034	10.9	89.9	
								SEC_PM_15	0.070	0.034	10.9	89.9	
PRI_PM_16	4.160	99.476	-1.3	0.000	0.000	0.000	0.000	Pole CS-1-2	-0.039	-0.019	6.0	89.9	
								SEC_PM_16	0.039	0.019	6.0	89.9	
PRI_PM_17	4.160	99.130	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.035	-0.017	5.4	89.9	
								SEC_PM_17	0.035	0.017	5.4	89.9	
PRI_PM_18	4.160	99.324	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-54	-0.052	-0.026	8.2	89.8	
								SEC_PM_18	0.052	0.026	8.2	89.8	
PRI_PM_19	4.160	98.310	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-37	-0.038	-0.018	6.0	89.9	
								SEC_PM_19	0.038	0.018	6.0	89.9	
PRI_PM_20	4.160	98.475	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-21	-0.035	-0.017	5.4	89.9	
								SEC_PM_20	0.035	0.017	5.4	89.9	
PRI_PM_21	4.160	98.555	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-20	-0.035	-0.017	5.4	89.9	
								SEC_PM_21	0.035	0.017	5.4	89.9	
PRI_PM_22	4.160	99.315	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-6	-0.039	-0.019	6.0	89.9	
								SEC_PM_22	0.039	0.019	6.0	89.9	
PRI_PM_23	4.160	98.571	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-20	-0.038	-0.019	6.0	89.9	
								SEC_PM_23	0.038	0.019	6.0	89.9	
PRI_PM_24	4.160	98.531	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-22	-0.038	-0.019	6.0	89.9	
								SEC_PM_24	0.038	0.019	6.0	89.9	
PRI_PM_25	4.160	99.474	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-22	-0.018	-0.009	2.7	89.9	
								SEC_PM_25	0.018	0.009	2.7	89.9	
PRI_PM_26	4.160	99.292	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-31	-0.019	-0.009	3.0	89.9	
								SEC_PM_26	0.019	0.009	3.0	89.9	
PRI_PM_28	4.160	99.535	-1.2	0.000	0.000	0.000	0.000	PRI_PM_10	-0.039	-0.019	6.0	89.9	
								SEC_PM_28	0.039	0.019	6.0	89.9	
PV-PMS-Pri	24.900	100.119	2.2	0.000	0.000	0.000	0.000	P_526_2	0.000	0.000	0.0	0.0	
P_526_2	24.900	100.119	2.2	0.000	0.000	0.000	0.000	PV-PMS-Pri	0.000	-0.001	0.0	0.0	
								BUS_WTG6	0.000	0.001	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_6M-1-1	0.208	99.661	-0.8	0.000	0.000	0.005	0.002	Pole 6M-1-1	-0.005	-0.002	14.7	90.0	
SEC_6M-1-2	0.208	99.604	-0.8	0.000	0.000	0.005	0.002	Pole 6M-1-3	-0.005	-0.002	14.7	90.0	
SEC_6M-1-12	0.208	99.368	-0.8	0.000	0.000	0.005	0.002	Pole 6M-1-19	-0.005	-0.002	14.7	90.0	
SEC_6M-E-1	0.208	98.246	-0.7	0.000	0.000	0.007	0.004	Pole 6M-E-5	-0.007	-0.004	22.7	90.0	
SEC_6M-E-2	0.208	98.591	-0.7	0.000	0.000	0.007	0.004	Pole 6M-E-2	-0.007	-0.004	22.8	90.0	
SEC_6M-E-3	0.208	98.366	-0.7	0.000	0.000	0.007	0.004	Pole 6M-E-3	-0.007	-0.004	22.7	90.0	
SEC_6M-E-4	0.208	98.128	-0.7	0.000	0.000	0.007	0.004	Pole 6M-E-6	-0.007	-0.004	22.7	90.0	
SEC_6M-E-5	0.208	97.940	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-8	-0.007	-0.003	22.7	90.0	
SEC_6M-E-6	0.208	97.598	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-10	-0.007	-0.003	22.6	90.0	
SEC_6M-E-7	0.208	97.573	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-11	-0.007	-0.003	22.6	90.0	
SEC_6M-E-8	0.208	97.540	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-14	-0.007	-0.003	22.6	90.0	
SEC_6M-E-10	0.208	97.503	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-19	-0.007	-0.003	22.6	90.0	
SEC_6M-E-11	0.208	97.494	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-20	-0.007	-0.003	22.6	90.0	
SEC_6M-E-13	0.208	98.497	-0.7	0.000	0.000	0.007	0.004	Pole 6M-E-29	-0.007	-0.004	22.8	90.0	
SEC_CS-1-1	0.208	114.337	-1.4	0.000	0.000	0.007	0.003	Pole CS-1-4	-0.007	-0.003	17.9	90.0	
SEC_CS-1-2	0.208	114.339	-1.4	0.000	0.000	0.007	0.003	Pole CS-1-5	-0.007	-0.003	17.9	90.0	
SEC_CS-1-7	0.208	113.997	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-13	-0.007	-0.003	17.9	90.0	
SEC_CS-1-9	0.208	113.936	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-15	-0.007	-0.003	17.9	90.0	
SEC_CS-1-10	0.208	113.947	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-18	-0.007	-0.003	17.9	90.0	
SEC_CS-1-11	0.208	113.945	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-19	-0.007	-0.003	17.9	90.0	
SEC_CS-1-12	0.208	113.948	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-20	-0.007	-0.003	17.9	90.0	
SEC_CS-1-15	0.208	113.883	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-23	-0.007	-0.003	17.9	90.0	
SEC_CS-1-16	0.208	113.855	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-24	-0.007	-0.003	17.9	90.0	
SEC_CS-1-29	0.208	113.690	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-40	-0.007	-0.003	17.9	90.0	
SEC_CS-1-32	0.208	113.697	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-43	-0.007	-0.003	17.9	90.0	
SEC_CS-1-46	0.208	113.749	-1.6	0.000	0.000	0.007	0.003	Pole CS-1-59	-0.007	-0.003	17.9	90.0	
SEC_CS-1-53	0.208	113.693	-1.6	0.000	0.000	0.007	0.003	Pole CS-1-68	-0.007	-0.003	17.9	90.0	
SEC_CS-2-5	0.208	113.553	-1.3	0.000	0.000	0.007	0.003	Pole CS-2-8	-0.007	-0.003	17.8	90.0	
SEC_CS-2-7	0.208	113.549	-1.3	0.000	0.000	0.007	0.003	Pole CS-2-10	-0.007	-0.003	17.8	90.0	
SEC_CS-2-8	0.208	113.546	-1.3	0.000	0.000	0.007	0.003	Pole CS-2-11	-0.007	-0.003	17.8	90.0	
SEC_CS-2-10	0.208	113.489	-1.3	0.000	0.000	0.007	0.003	Pole CS-2-15	-0.007	-0.003	17.8	90.0	
SEC_CS-2-46	0.208	114.613	-1.4	0.000	0.000	0.007	0.003	Pole CS-2-66	-0.007	-0.003	18.0	90.0	
SEC_CS-2-47	0.208	114.364	-1.4	0.000	0.000	0.007	0.003	Pole CS-3-29	-0.007	-0.003	17.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_CS-2-48	0.208	114.216	-1.4	0.000	0.000	0.007	0.003	Pole CS-3-33	-0.007	-0.003	17.9	90.0	
SEC_CS-2-49	0.208	114.057	-1.4	0.000	0.000	0.007	0.003	Pole CS-2-73	-0.007	-0.003	17.9	90.0	
SEC_CS-4-8	0.208	114.228	-1.3	0.000	0.000	0.007	0.003	Pole CS-4-12	-0.007	-0.003	17.9	90.0	
SEC_CS-5-10	0.240	98.607	-1.0	0.000	0.000	0.026	0.013	UG-JUNC-CS-5-8	-0.026	-0.013	71.5	90.0	
SEC_CS-5-12	0.240	99.034	-0.8	0.000	0.000	0.027	0.013	UG-JUNC-CS-5-9	-0.027	-0.013	71.7	90.0	
SEC_HS-2-4	0.208	115.145	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-4	-0.007	-0.003	18.0	90.0	
SEC_HS-2-5	0.208	115.058	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-5	-0.007	-0.003	18.0	90.0	
SEC_HS-2-6	0.208	114.984	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-6	-0.007	-0.003	18.0	90.0	
SEC_HS-2-7	0.208	114.903	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-7	-0.007	-0.003	18.0	90.0	
SEC_HS-2-10	0.208	114.671	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-11	-0.007	-0.003	18.0	90.0	
SEC_HS-2-23	0.208	114.525	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-26	-0.007	-0.003	17.9	90.0	
SEC_HS-2-25	0.208	114.455	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-30	-0.007	-0.003	17.9	90.0	
SEC_HS-2-36	0.208	114.428	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-43	-0.007	-0.003	17.9	90.0	
SEC_HS-2-67	0.208	114.673	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-77	-0.007	-0.003	18.0	90.0	
SEC_HS-3-55	0.208	114.487	-1.3	0.000	0.000	0.007	0.003	Pole HS-3-59	-0.007	-0.003	17.9	90.0	
SEC_HS-3-57	0.208	114.470	-1.3	0.000	0.000	0.007	0.003	Pole HS-3-61	-0.007	-0.003	17.9	90.0	
SEC_HS-3-59	0.208	114.461	-1.3	0.000	0.000	0.007	0.003	Pole HS-3-63	-0.007	-0.003	17.9	90.0	
SEC_HS-4-7	0.208	115.151	-1.4	0.000	0.000	0.007	0.004	Pole HS-4-10	-0.007	-0.004	19.8	90.0	
SEC_HS-4-13	0.208	115.035	-1.3	0.000	0.000	0.007	0.004	Pole HS-4-17	-0.007	-0.004	19.8	90.0	
SEC_HS-4-21	0.208	114.853	-1.3	0.000	0.000	0.007	0.004	Pole HS-4-26	-0.007	-0.004	19.8	90.0	
SEC_HS-4-32	0.208	115.163	-1.4	0.000	0.000	0.007	0.004	Pole HS-4-39	-0.007	-0.004	19.8	90.0	
SEC_HS-4-44	0.208	115.164	-1.4	0.000	0.000	0.007	0.004	Pole HS-4-48	-0.007	-0.004	19.8	90.0	
SEC_MS-1-17	0.208	100.058	-0.7	0.000	0.000	0.001	0.001	Pole MS-1-10	-0.001	-0.001	3.8	90.0	
SEC_MS-2-8	0.208	99.449	-0.6	0.000	0.000	0.004	0.002	Pole MS-2-1	-0.004	-0.002	11.5	90.0	
SEC_MS-2-36	0.208	99.503	-0.6	0.000	0.000	0.004	0.002	Pole MS-2-90	-0.004	-0.002	11.5	90.0	
SEC_MS-2-37	0.208	99.446	-0.6	0.000	0.000	0.004	0.002	Pole MS-2-2	-0.004	-0.002	11.5	90.0	
SEC_MS-2-38	0.208	99.442	-0.6	0.000	0.000	0.004	0.002	Pole MS-2-3	-0.004	-0.002	11.4	90.0	
SEC_MS-2-39	0.208	99.447	-0.6	0.000	0.000	0.004	0.002	Pole MS-2-92	-0.004	-0.002	11.5	90.0	
SEC_MS-2-40	0.208	99.427	-0.6	0.000	0.000	0.004	0.002	Pole MS-2-94	-0.004	-0.002	11.4	90.0	
SEC_MS-2-41	0.208	99.372	-0.6	0.000	0.000	0.004	0.002	Pole MS-2-100	-0.004	-0.002	11.4	90.0	
SEC_MS-3-1	0.208	99.535	-0.6	0.000	0.000	0.004	0.002	Pole MS-3-2	-0.004	-0.002	11.5	90.0	
SEC_MS-3-2	0.208	99.474	-0.6	0.000	0.000	0.004	0.002	Pole MS-3-6	-0.004	-0.002	11.5	90.0	
SEC_MS-3-3	0.208	99.440	-0.6	0.000	0.000	0.004	0.002	Pole MS-3-8	-0.004	-0.002	11.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_MS-3-22	0.208	99.310	-0.6	0.000	0.000	0.004	0.002	Pole MS-3-25	-0.004	-0.002	11.4	90.0	
SEC_MS-3-45	0.208	99.329	-0.6	0.000	0.000	0.005	0.003	Pole MS-4-36	-0.005	-0.003	16.3	90.0	
SEC_MS-3-49	0.208	99.297	-0.6	0.000	0.000	0.005	0.003	Pole MS-3-100	-0.005	-0.003	16.3	90.0	
SEC_MS-3-65	0.208	99.292	-0.6	0.000	0.000	0.005	0.003	Pole MS-3-102	-0.005	-0.003	16.3	90.0	
SEC_MS-3-66	0.208	99.382	-0.6	0.000	0.000	0.005	0.003	Pole MS-4-17	-0.005	-0.003	16.4	90.0	
SEC_MS-3-73	0.208	99.615	-0.6	0.000	0.000	0.004	0.002	Pole MS-4-3	-0.004	-0.002	11.5	90.0	
SEC_MS-3-74	0.208	99.613	-0.6	0.000	0.000	0.004	0.002	Pole MS-4-6	-0.004	-0.002	11.5	90.0	
SEC_MS-3-75	0.208	99.501	-0.6	0.000	0.000	0.004	0.002	Pole MS-4-10	-0.004	-0.002	11.5	90.0	
SEC_MS-3-76	0.208	99.345	-0.6	0.000	0.000	0.005	0.003	Pole MS-4-20	-0.005	-0.003	16.3	90.0	
SEC_MS-5-15	0.208	98.985	-0.7	0.000	0.000	0.004	0.002	Pole MS-5-16	-0.004	-0.002	11.4	90.0	
SEC_MS-5-16	0.208	98.928	-0.7	0.000	0.000	0.005	0.003	Pole MS-5-17	-0.005	-0.003	16.3	90.0	
SEC_MS-5-17	0.208	98.928	-0.7	0.000	0.000	0.005	0.003	Pole MS-5-18	-0.005	-0.003	16.3	90.0	
SEC_MS-5-23	0.208	98.958	-0.7	0.000	0.000	0.004	0.002	Pole MS-5-26	-0.004	-0.002	11.4	90.0	
SEC_MS-5-25	0.208	98.955	-0.7	0.000	0.000	0.004	0.002	Pole MS-5-28	-0.004	-0.002	11.4	90.0	
SEC_MS-5-26	0.208	98.902	-0.7	0.000	0.000	0.005	0.003	Pole MS-5-29	-0.005	-0.003	16.3	90.0	
SEC_MS-5-29	0.208	98.932	-0.7	0.000	0.000	0.004	0.002	Pole MS-5-32	-0.004	-0.002	11.4	90.0	
SEC_MS-5-30	0.208	98.875	-0.7	0.000	0.000	0.005	0.003	Pole MS-5-33	-0.005	-0.003	16.3	90.0	
SEC_MS-5-32	0.208	98.925	-0.7	0.000	0.000	0.004	0.002	Pole MS-5-35	-0.004	-0.002	11.4	90.0	
SEC_MS-5-40	0.208	98.833	-0.8	0.000	0.000	0.004	0.002	Pole MS-5-45	-0.004	-0.002	11.4	90.0	
SEC_MS-5-45	0.208	98.816	-0.8	0.000	0.000	0.004	0.002	Pole MS-5-50	-0.004	-0.002	11.4	90.0	
SEC_MS-5-99	0.208	99.993	-0.7	0.000	0.000	0.004	0.002	Pole MS-5-110	-0.004	-0.002	11.5	90.0	
SEC_MS-7-9	0.208	99.678	1.0	0.000	0.000	0.009	0.004	Pole MS-7-16	-0.009	-0.004	27.8	90.0	
SEC_MS-8-3	0.208	99.529	-0.6	0.000	0.000	0.007	0.004	Pole MS-8-4	-0.007	-0.004	22.9	90.0	
SEC_MS-8-8	0.208	99.436	-0.6	0.000	0.000	0.011	0.005	Pole MS-8-9	-0.011	-0.005	32.7	90.0	
SEC_MS-9-12	0.208	99.449	-0.6	0.000	0.000	0.007	0.004	Pole MS-9-15	-0.007	-0.004	22.9	90.0	
SEC_MS-9-14	0.208	99.394	-0.6	0.000	0.000	0.007	0.004	Pole MS-9-18	-0.007	-0.004	22.9	90.0	
SEC_MS-9-17	0.208	99.371	-0.7	0.000	0.000	0.007	0.004	Pole MS-9-21	-0.007	-0.004	22.9	90.0	
SEC_MS-9-22	0.208	99.362	-0.7	0.000	0.000	0.007	0.004	Pole MS-9-26	-0.007	-0.004	22.9	90.0	
SEC_MS-9-31	0.208	99.341	-0.7	0.000	0.000	0.007	0.004	Pole MS-9-37	-0.007	-0.004	22.9	90.0	
SEC_MS-9-32	0.208	99.275	-0.7	0.000	0.000	0.011	0.005	Pole MS-9-38	-0.011	-0.005	32.7	90.0	
SEC_MS-9-37	0.208	99.263	-0.7	0.000	0.000	0.007	0.004	Pole MS-9-46	-0.007	-0.004	22.9	90.0	
SEC_MS-9-38	0.208	99.259	-0.7	0.000	0.000	0.007	0.004	Pole MS-9-47	-0.007	-0.004	22.9	90.0	
SEC_MS-9-39	0.208	99.196	-0.7	0.000	0.000	0.011	0.005	Pole MS-9-48	-0.011	-0.005	32.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_MS-9-40	0.208	99.183	-0.7	0.000	0.000	0.011	0.005	Pole MS-9-49	-0.011	-0.005	32.7	90.0	
SEC_MS-9-41	0.208	99.177	-0.7	0.000	0.000	0.011	0.005	Pole MS-9-50	-0.011	-0.005	32.7	90.0	
SEC_MS-9-42	0.208	99.173	-0.7	0.000	0.000	0.011	0.005	Pole MS-9-51	-0.011	-0.005	32.7	90.0	
SEC_MS-9-43	0.208	99.168	-0.7	0.000	0.000	0.011	0.005	Pole MS-9-52	-0.011	-0.005	32.7	90.0	
SEC_MS-9-44	0.208	99.222	-0.7	0.000	0.000	0.007	0.004	Pole MS-9-53	-0.007	-0.004	22.9	90.0	
SEC_PM_1	0.208	99.236	-1.5	0.000	0.000	0.017	0.008	PRI_PM_1	-0.017	-0.008	53.9	90.0	
SEC_PM_1-1	0.208	98.220	-1.4	0.000	0.000	0.017	0.008	PRI_PM_1-1	-0.017	-0.008	53.6	90.0	
SEC_PM_2	0.208	99.046	-1.4	0.000	0.000	0.017	0.008	PRI_PM_2	-0.017	-0.008	53.8	90.0	
SEC_PM_3	0.208	98.888	-1.4	0.000	0.000	0.017	0.008	PRI_PM_3	-0.017	-0.008	53.8	90.0	
SEC_PM_4	0.208	98.258	-1.2	0.000	0.000	0.069	0.033	PRI_PM_4	-0.069	-0.033	216.5	90.0	
SEC_PM_5	0.208	98.753	-1.4	0.000	0.000	0.017	0.008	PRI_PM_5	-0.017	-0.008	53.7	90.0	
SEC_PM_6	0.208	98.627	-1.4	0.000	0.000	0.017	0.008	PRI_PM_6	-0.017	-0.008	53.7	90.0	
SEC_PM_7	0.208	99.185	-0.7	0.000	0.000	0.051	0.025	PRI_PM_7	-0.051	-0.025	157.9	90.0	
SEC_PM_8	0.208	99.312	-0.8	0.000	0.000	0.042	0.020	PRI_PM_8	-0.042	-0.020	130.8	90.0	
SEC_PM_9	0.208	99.344	-0.7	0.000	0.000	0.035	0.017	PRI_PM_9	-0.035	-0.017	109.0	90.0	
SEC_PM_10	0.208	99.291	-1.4	0.000	0.000	0.039	0.019	PRI_PM_10	-0.039	-0.019	119.8	90.0	
SEC_PM_11	0.208	99.367	-1.4	0.000	0.000	0.035	0.017	PRI_PM_11	-0.035	-0.017	109.0	90.0	
SEC_PM_12	0.208	98.368	-1.2	0.000	0.000	0.069	0.033	PRI_PM_12	-0.069	-0.033	216.6	90.0	
SEC_PM_13	0.208	98.051	-1.1	0.000	0.000	0.131	0.063	PRI_PM_13	-0.131	-0.063	410.8	90.0	
SEC_PM_14	0.208	98.347	-1.1	0.000	0.000	0.104	0.050	PRI_PM_14	-0.104	-0.050	324.9	90.0	
SEC_PM_15	0.208	99.457	-1.4	0.000	0.000	0.070	0.034	PRI_PM_15	-0.070	-0.034	218.1	90.0	
SEC_PM_16	0.208	99.301	-1.5	0.000	0.000	0.039	0.019	PRI_PM_16	-0.039	-0.019	119.8	90.0	
SEC_PM_17	0.208	98.977	-1.6	0.000	0.000	0.035	0.017	PRI_PM_17	-0.035	-0.017	108.7	90.0	
SEC_PM_18	0.208	99.059	-0.8	0.000	0.000	0.052	0.025	PRI_PM_18	-0.052	-0.025	163.2	90.0	
SEC_PM_19	0.208	98.135	-1.4	0.000	0.000	0.038	0.018	PRI_PM_19	-0.038	-0.018	119.0	90.0	
SEC_PM_20	0.208	98.324	-1.4	0.000	0.000	0.035	0.017	PRI_PM_20	-0.035	-0.017	108.3	90.0	
SEC_PM_21	0.208	98.403	-1.4	0.000	0.000	0.035	0.017	PRI_PM_21	-0.035	-0.017	108.3	90.0	
SEC_PM_22	0.208	99.140	-1.5	0.000	0.000	0.038	0.019	PRI_PM_22	-0.038	-0.019	119.7	90.0	
SEC_PM_23	0.208	98.397	-1.4	0.000	0.000	0.038	0.018	PRI_PM_23	-0.038	-0.018	119.2	90.0	
SEC_PM_24	0.208	98.357	-1.4	0.000	0.000	0.038	0.018	PRI_PM_24	-0.038	-0.018	119.1	90.0	
SEC_PM_25	0.208	99.322	-1.4	0.000	0.000	0.018	0.008	PRI_PM_25	-0.018	-0.008	54.5	90.0	
SEC_PM_26	0.208	99.117	-1.5	0.000	0.000	0.019	0.009	PRI_PM_26	-0.019	-0.009	59.9	90.0	
SEC_PM_28	0.208	99.286	-1.4	0.000	0.000	0.039	0.019	PRI_PM_28	-0.039	-0.019	119.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_SF-1-26	0.208	98.809	-1.0	0.000	0.000	0.009	0.004	SF-1-11	-0.009	-0.004	27.7	90.0	
SEC_SF-1-47	0.208	98.623	-1.0	0.000	0.000	0.009	0.004	SF-1-14	-0.009	-0.004	27.7	90.0	
SEC_SF-1-49	0.208	98.925	-1.0	0.000	0.000	0.009	0.004	SF-1-28	-0.009	-0.004	27.7	90.0	
SEC_SF-1-51	0.208	98.840	-1.0	0.000	0.000	0.009	0.004	SF-1-29	-0.009	-0.004	27.7	90.0	
SEC_SF-1-55	0.208	98.667	-1.0	0.000	0.000	0.009	0.004	SF-1-31	-0.009	-0.004	27.7	90.0	
SEC_SF-1-57	0.208	98.598	-1.0	0.000	0.000	0.009	0.004	SF-1-32	-0.009	-0.004	27.7	90.0	
SEC_SF-1-59	0.208	98.447	-1.0	0.000	0.000	0.009	0.004	SF-1-18	-0.009	-0.004	27.6	90.0	
SEC_SF-1-61	0.208	98.353	-1.0	0.000	0.000	0.009	0.004	SF-1-27	-0.009	-0.004	27.6	90.0	
SEC_SF-1-63	0.208	98.172	-1.0	0.000	0.000	0.009	0.004	SF-1-39	-0.009	-0.004	27.6	90.0	
SEC_SF-1-65	0.208	98.393	-1.0	0.000	0.000	0.009	0.004	SF-1-62	-0.009	-0.004	27.6	90.0	
SEC_SF-1-67	0.208	98.070	-1.0	0.000	0.000	0.009	0.004	SF-1-50	-0.009	-0.004	27.6	90.0	
SEC_SF-1-69	0.208	98.510	-1.0	0.000	0.000	0.009	0.004	SF-1-58	-0.009	-0.004	27.6	90.0	
SEC_SF-1-71	0.208	98.665	-1.0	0.000	0.000	0.009	0.004	SF-1-56	-0.009	-0.004	27.7	90.0	
SEC_SF-1-73	0.208	98.756	-1.0	0.000	0.000	0.009	0.004	SF-1-54	-0.009	-0.004	27.7	90.0	
SEC_SF-1-75	0.208	98.826	-1.0	0.000	0.000	0.009	0.004	SF-1-55	-0.009	-0.004	27.7	90.0	
SEC_SF-2-7	0.208	99.485	-0.8	0.000	0.000	0.009	0.004	SF-2-12	-0.009	-0.004	27.8	90.0	
SEC_SF-2-11	0.208	99.470	-0.8	0.000	0.000	0.009	0.004	SF-2-25	-0.009	-0.004	27.8	90.0	
SEC_SF-2-15	0.208	99.437	-0.8	0.000	0.000	0.009	0.004	SF-2-17	-0.009	-0.004	27.8	90.0	
SEC_SF-2-18	0.208	99.432	-0.8	0.000	0.000	0.009	0.004	SF-2-20	-0.009	-0.004	27.8	90.0	
SEC_SF-2-19	0.208	99.489	-0.8	0.000	0.000	0.009	0.004	SF-2-22	-0.009	-0.004	27.8	90.0	
SEC_SF-2-20	0.208	99.487	-0.8	0.000	0.000	0.009	0.004	SF-2-23	-0.009	-0.004	27.8	90.0	
SEC_SF-4-01	0.208	99.757	-0.8	0.000	0.000	0.009	0.004	SF-2-46	-0.009	-0.004	27.9	90.0	
SEC_SF-4-2	0.208	99.919	-0.7	0.000	0.000	0.004	0.002	SF-2-47	-0.004	-0.002	13.1	90.0	
SEC_SF-4-3	0.208	99.919	-0.7	0.000	0.000	0.004	0.002	SF-2-48	-0.004	-0.002	13.1	90.0	
SEC_SUB_FDR_XFMR#25-49	0.208	98.705	-1.0	0.000	0.000	0.005	0.003	SF-1-57	-0.005	-0.003	16.3	90.0	
SF-1-1	4.160	99.870	-0.7	0.000	0.000	0.004	0.002	BUS_SAF_4kV	-0.653	-0.321	101.1	89.8	
								SF-1-2	0.649	0.319	100.5	89.8	
SF-1-2	4.160	99.668	-0.8	0.000	0.000	0.000	0.000	SF-1-4	0.011	0.006	1.8	89.9	
								SF-1-1	-0.648	-0.318	100.5	89.8	
								SF-1-3	0.637	0.312	98.7	89.8	
SF-1-3	4.160	99.574	-0.8	0.000	0.000	0.004	0.002	SF-1-2	-0.636	-0.311	98.7	89.8	
								SF-1-7	0.632	0.310	98.1	89.8	
SF-1-4	4.160	99.662	-0.8	0.000	0.000	0.004	0.002	SF-1-2	-0.011	-0.006	1.8	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-1-5	0.008	0.004	1.2	89.9	
SF-1-5	4.160	99.657	-0.8	0.000	0.000	0.004	0.002	SF-1-4	-0.008	-0.004	1.2	89.9	
								SF-1-6	0.004	0.002	0.6	89.9	
SF-1-6	4.160	99.655	-0.8	0.000	0.000	0.004	0.002	SF-1-5	-0.004	-0.002	0.6	89.9	
SF-1-7	4.160	99.377	-0.8	0.000	0.000	0.000	0.000	SF-1-8	0.171	0.084	26.6	89.9	
								SF-1-3	-0.631	-0.308	98.1	89.8	
								SF-1-26	0.460	0.225	71.5	89.8	
SF-1-8	4.160	99.298	-0.8	0.000	0.000	0.008	0.004	SF-1-7	-0.171	-0.083	26.6	89.9	
								SF-1-9	0.164	0.080	25.4	89.9	
SF-1-9	4.160	99.258	-0.8	0.000	0.000	0.004	0.002	SF-1-8	-0.164	-0.080	25.4	89.9	
								SF-1-10	0.160	0.078	24.9	89.9	
SF-1-10	4.160	99.208	-0.8	0.000	0.000	0.004	0.002	SF-1-9	-0.160	-0.078	24.9	89.9	
								SF-1-11	0.156	0.076	24.3	89.9	
SF-1-11	4.160	99.119	-0.8	0.000	0.000	0.000	0.000	SF-1-10	-0.156	-0.076	24.3	89.9	
								SF-1-12	0.147	0.072	22.9	89.9	
								SEC_SF-1-26	0.009	0.004	1.4	89.9	
SF-1-12	4.160	99.019	-0.8	0.000	0.000	0.004	0.002	SF-1-11	-0.147	-0.072	22.9	89.9	
								SF-1-13	0.143	0.070	22.3	89.9	
SF-1-13	4.160	98.988	-0.8	0.000	0.000	0.004	0.002	SF-1-12	-0.143	-0.070	22.3	89.9	
								SF-1-14	0.139	0.068	21.7	89.9	
SF-1-14	4.160	98.933	-0.8	0.000	0.000	0.000	0.000	SF-1-13	-0.139	-0.068	21.7	89.9	
								SF-1-15	0.130	0.064	20.3	89.9	
								SEC_SF-1-47	0.009	0.004	1.4	89.9	
SF-1-15	4.160	98.850	-0.8	0.000	0.000	0.004	0.002	SF-1-14	-0.130	-0.064	20.3	89.9	
								SF-1-16	0.126	0.062	19.8	89.9	
SF-1-16	4.160	98.717	-0.8	0.000	0.000	0.004	0.002	SF-1-15	-0.126	-0.062	19.8	89.9	
								SF-1-17	0.123	0.060	19.2	89.9	
SF-1-17	4.160	98.626	-0.8	0.000	0.000	0.000	0.000	PRI_PM_14	0.104	0.051	16.3	89.8	
								SF-1-16	-0.122	-0.060	19.2	89.9	
								SF-1-19	0.019	0.009	2.9	89.9	
SF-1-18	4.160	98.756	-0.9	0.000	0.000	0.000	0.000	SF-1-34	-0.196	-0.096	30.7	89.8	
								SF-1-25	0.188	0.092	29.4	89.8	
								SEC_SF-1-59	0.009	0.004	1.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-19	4.160	98.617	-0.8	0.000	0.000	0.000	0.000	SF-1-17	-0.019	-0.009	2.9	89.9	
								SF-1-20	0.011	0.005	1.7	89.9	
								SF-1-23	0.007	0.004	1.2	89.9	
SF-1-20	4.160	98.615	-0.8	0.000	0.000	0.004	0.002	SF-1-21	0.007	0.004	1.2	89.9	
								SF-1-19	-0.011	-0.005	1.7	89.9	
SF-1-21	4.160	98.613	-0.8	0.000	0.000	0.004	0.002	SF-1-20	-0.007	-0.004	1.2	89.9	
								SF-1-22	0.004	0.002	0.6	89.9	
SF-1-22	4.160	98.612	-0.8	0.000	0.000	0.004	0.002	SF-1-21	-0.004	-0.002	0.6	89.9	
SF-1-23	4.160	98.607	-0.8	0.000	0.000	0.004	0.002	SF-1-19	-0.007	-0.004	1.2	89.9	
								SF-1-24	0.004	0.002	0.6	89.9	
SF-1-24	4.160	98.606	-0.8	0.000	0.000	0.004	0.002	SF-1-23	-0.004	-0.002	0.6	89.9	
SF-1-25	4.160	98.711	-0.9	0.000	0.000	0.004	0.002	SF-1-18	-0.188	-0.092	29.4	89.8	
								SF-1-27	0.184	0.090	28.8	89.8	
SF-1-26	4.160	99.309	-0.9	0.000	0.000	0.004	0.002	SF-1-28	0.245	0.119	38.0	89.9	
								SF-1-53	0.211	0.103	32.9	89.8	
								SF-1-7	-0.460	-0.225	71.5	89.8	
SF-1-27	4.160	98.662	-0.9	0.000	0.000	0.000	0.000	SF-1-25	-0.184	-0.090	28.8	89.8	
								SF-1-35	0.175	0.086	27.4	89.8	
								SEC_SF-1-61	0.009	0.004	1.4	89.9	
SF-1-28	4.160	99.235	-0.9	0.000	0.000	0.000	0.000	SF-1-26	-0.244	-0.119	38.0	89.9	
								SF-1-29	0.235	0.115	36.6	89.9	
								SEC_SF-1-49	0.009	0.004	1.4	89.9	
SF-1-29	4.160	99.151	-0.9	0.000	0.000	0.000	0.000	SF-1-28	-0.235	-0.115	36.6	89.9	
								SF-1-30	0.226	0.111	35.3	89.9	
								SEC_SF-1-51	0.009	0.004	1.4	89.9	
SF-1-30	4.160	99.095	-0.9	0.000	0.000	0.004	0.002	SF-1-29	-0.226	-0.110	35.3	89.9	
								SF-1-31	0.222	0.109	34.7	89.9	
SF-1-31	4.160	98.977	-0.9	0.000	0.000	0.000	0.000	SF-1-30	-0.222	-0.109	34.7	89.9	
								SF-1-33	0.213	0.104	33.3	89.8	
								SEC_SF-1-55	0.009	0.004	1.4	89.9	
SF-1-32	4.160	98.908	-0.9	0.000	0.000	0.000	0.000	SF-1-33	-0.209	-0.102	32.7	89.8	
								SF-1-34	0.201	0.098	31.3	89.8	
								SEC_SF-1-57	0.009	0.004	1.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-33	4.160	98.931	-0.9	0.000	0.000	0.004	0.002	SF-1-32	0.209	0.102	32.7	89.8	
								SF-1-31	-0.213	-0.104	33.3	89.8	
SF-1-34	4.160	98.808	-0.9	0.000	0.000	0.004	0.002	SF-1-18	0.197	0.096	30.7	89.8	
								SF-1-32	-0.200	-0.098	31.3	89.8	
SF-1-35	4.160	98.624	-0.9	0.000	0.000	0.004	0.002	SF-1-27	-0.175	-0.086	27.4	89.8	
								SF-1-36	0.171	0.084	26.8	89.8	
SF-1-36	4.160	98.580	-0.9	0.000	0.000	0.004	0.002	SF-1-35	-0.171	-0.084	26.8	89.8	
								SF-1-37	0.167	0.082	26.2	89.8	
SF-1-37	4.160	98.530	-0.9	0.000	0.000	0.004	0.002	SF-1-36	-0.167	-0.082	26.2	89.8	
								SF-1-38	0.164	0.080	25.6	89.8	
SF-1-38	4.160	98.482	-0.9	0.000	0.000	0.000	0.000	SF-1-37	-0.163	-0.080	25.6	89.8	
								SF-1-39	0.009	0.004	1.4	89.9	
								SF-1-40	0.155	0.076	24.3	89.8	
SF-1-39	4.160	98.481	-0.9	0.000	0.000	0.000	0.000	SF-1-38	-0.009	-0.004	1.4	89.9	
								SEC_SF-1-63	0.009	0.004	1.4	89.9	
SF-1-40	4.160	98.423	-0.9	0.000	0.000	0.000	0.000	PRI_PM_13	0.131	0.064	20.6	89.8	
								SF-1-38	-0.155	-0.076	24.3	89.8	
								SF-1-42	0.024	0.011	3.7	89.9	
SF-1-42	4.160	98.407	-0.9	0.000	0.000	0.000	0.000	SF-1-40	-0.024	-0.012	3.7	89.9	
								SF-1-44	0.024	0.012	3.7	89.9	
SF-1-44	4.160	98.391	-0.9	0.000	0.000	0.004	0.002	SF-1-42	-0.024	-0.012	3.7	89.9	
								SF-1-45	0.020	0.010	3.1	89.9	
SF-1-45	4.160	98.384	-0.9	0.000	0.000	0.000	0.000	SF-1-44	-0.020	-0.010	3.1	89.9	
								SF-1-47	0.020	0.010	3.1	89.9	
								L-SUB-FDR-EQ#16-1-38~	0.000	0.000	0.0	0.0	
SF-1-47	4.160	98.381	-0.9	0.000	0.000	0.004	0.002	SF-1-45	-0.020	-0.010	3.1	89.9	
								SF-1-50	0.016	0.008	2.5	89.9	
SF-1-50	4.160	98.379	-0.9	0.000	0.000	0.000	0.000	SF-1-47	-0.016	-0.008	2.5	89.9	
								SF-1-52	0.007	0.004	1.2	89.9	
								SEC_SF-1-67	0.009	0.004	1.4	89.9	
SF-1-52	4.160	98.377	-0.9	0.000	0.000	0.007	0.004	SF-1-50	-0.007	-0.004	1.2	89.9	
SF-1-53	4.160	99.215	-0.9	0.000	0.000	0.000	0.000	SF-1-55	0.211	0.103	32.9	89.8	
								SF-1-26	-0.211	-0.103	32.9	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-54	4.160	99.066	-0.9	0.000	0.000	0.000	0.000	SF-1-55	-0.202	-0.099	31.5	89.8	
								SF-1-56	0.193	0.094	30.1	89.8	
								SEC_SF-1-73	0.009	0.004	1.4	89.9	
SF-1-55	4.160	99.136	-0.9	0.000	0.000	0.000	0.000	SF-1-53	-0.211	-0.103	32.9	89.8	
								SF-1-54	0.202	0.099	31.5	89.8	
								SEC_SF-1-75	0.009	0.004	1.4	89.9	
SF-1-56	4.160	98.975	-0.9	0.000	0.000	0.000	0.000	SF-1-54	-0.193	-0.094	30.1	89.8	
								SF-1-57	0.184	0.090	28.7	89.8	
								SEC_SF-1-71	0.009	0.004	1.4	89.9	
SF-1-57	4.160	98.887	-0.9	0.000	0.000	0.004	0.002	SF-1-56	-0.184	-0.090	28.7	89.8	
								SF-1-58	0.175	0.086	27.3	89.8	
								SEC_SUB_FDR_XFMR#25-49	0.005	0.003	0.8	89.9	
SF-1-58	4.160	98.819	-0.9	0.000	0.000	0.000	0.000	SF-1-57	-0.175	-0.086	27.3	89.8	
								SF-1-59	0.166	0.081	26.0	89.8	
								SEC_SF-1-69	0.009	0.004	1.4	89.9	
SF-1-59	4.160	98.755	-0.9	0.000	0.000	0.000	0.000	PRI_PM_12	0.069	0.034	10.8	89.8	
								SF-1-58	-0.166	-0.081	26.0	89.8	
								SF-1-60	0.097	0.047	15.1	89.8	
SF-1-60	4.160	98.718	-0.9	0.000	0.000	0.000	0.000	PRI_PM_4	0.069	0.034	10.8	89.8	
								SF-1-59	-0.097	-0.047	15.1	89.8	
								SF-1-61	0.027	0.013	4.3	89.9	
SF-1-61	4.160	98.708	-0.9	0.000	0.000	0.004	0.002	SF-1-60	-0.027	-0.013	4.3	89.9	
								SF-1-62	0.024	0.012	3.7	89.9	
SF-1-62	4.160	98.702	-0.9	0.000	0.000	0.000	0.000	SF-1-61	-0.024	-0.012	3.7	89.9	
								SF-1-63	0.015	0.007	2.3	89.9	
								SEC_SF-1-65	0.009	0.004	1.4	89.9	
SF-1-63	4.160	98.696	-0.9	0.000	0.000	0.004	0.002	SF-1-62	-0.015	-0.007	2.3	89.9	
								SF-1-64	0.011	0.005	1.8	89.9	
SF-1-64	4.160	98.692	-0.9	0.000	0.000	0.004	0.002	SF-1-63	-0.011	-0.005	1.8	89.9	
								SF-1-65	0.007	0.004	1.2	89.9	
SF-1-65	4.160	98.689	-0.9	0.000	0.000	0.004	0.002	SF-1-64	-0.007	-0.004	1.2	89.9	
								SF-1-66	0.004	0.002	0.6	89.9	
SF-1-66	4.160	98.688	-0.9	0.000	0.000	0.004	0.002	SF-1-65	-0.004	-0.002	0.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-2-1	4.160	100.102	-0.7	0.000	0.000	0.004	0.002	BUS_SAF_4kV	-0.115	-0.056	17.8	89.9	
								SF-2-2	0.111	0.054	17.2	89.9	
SF-2-2	4.160	100.065	-0.7	0.000	0.000	0.000	0.000	SF-2-1	-0.111	-0.054	17.2	89.9	
								SF-2-3	0.004	0.002	0.6	89.9	
								SF-2-5	0.107	0.052	16.6	89.9	
SF-2-3	4.160	100.064	-0.7	0.000	0.000	0.004	0.002	SF-2-2	-0.004	-0.002	0.6	89.9	
								SF-2-4	0.000	0.000	0.0	0.0	
SF-2-4	4.160	100.064	-0.7	0.000	0.000	0.000	0.000	SF-2-3	0.000	0.000	0.0	0.0	
SF-2-5	4.160	100.047	-0.7	0.000	0.000	0.000	0.000	SF-2-2	-0.107	-0.052	16.6	89.9	
								SF-2-7	0.008	0.004	1.2	89.9	
								SF-2-9	0.004	0.002	0.6	89.9	
								SF-2-10	0.096	0.047	14.8	89.9	
SF-2-7	4.160	100.046	-0.7	0.000	0.000	0.004	0.002	SF-2-5	-0.008	-0.004	1.2	89.9	
								SF-2-8	0.004	0.002	0.6	89.9	
SF-2-8	4.160	100.045	-0.7	0.000	0.000	0.004	0.002	SF-2-7	-0.004	-0.002	0.6	89.9	
SF-2-9	4.160	100.046	-0.7	0.000	0.000	0.004	0.002	SF-2-5	-0.004	-0.002	0.6	89.9	
SF-2-10	4.160	99.923	-0.7	0.000	0.000	0.004	0.002	SF-2-5	-0.096	-0.047	14.8	89.9	
								SF-2-11	0.092	0.045	14.2	89.9	
SF-2-11	4.160	99.806	-0.7	0.000	0.000	0.000	0.000	SF-2-10	-0.092	-0.045	14.2	89.9	
								SF-2-12	0.054	0.026	8.3	89.9	
								SF-2-14	0.020	0.010	3.2	90.0	
								SF-2-22	0.018	0.009	2.8	89.9	
SF-2-12	4.160	99.796	-0.7	0.000	0.000	0.000	0.000	SF-2-11	-0.054	-0.026	8.3	89.9	
								SF-2-13	0.045	0.022	6.9	89.9	
								SEC_SF-2-7	0.009	0.004	1.4	89.9	
SF-2-13	4.160	99.789	-0.7	0.000	0.000	0.008	0.004	SF-2-12	-0.045	-0.022	6.9	89.9	
								SF-2-15	0.037	0.018	5.7	89.9	
SF-2-14	4.160	99.796	-0.7	0.000	0.000	0.004	0.002	SF-2-11	-0.020	-0.010	3.2	90.0	
								SF-2-26	0.017	0.008	2.6	90.0	
SF-2-15	4.160	99.770	-0.7	0.000	0.000	0.008	0.004	SF-2-13	-0.037	-0.018	5.7	89.9	
								SF-2-16	0.029	0.014	4.5	89.9	
SF-2-16	4.160	99.754	-0.7	0.000	0.000	0.004	0.002	SF-2-15	-0.029	-0.014	4.5	89.9	
								SF-2-17	0.026	0.012	4.0	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-2-17	4.160	99.748	-0.7	0.000	0.000	0.000	0.000	SF-2-16	-0.026	-0.012	4.0	89.9	
								SF-2-18	0.017	0.008	2.6	89.9	
								SEC_SF-2-15	0.009	0.004	1.4	89.9	
SF-2-18	4.160	99.747	-0.7	0.000	0.000	0.004	0.002	SF-2-17	-0.017	-0.008	2.6	89.9	
								SF-2-19	0.013	0.006	2.0	89.9	
SF-2-19	4.160	99.746	-0.7	0.000	0.000	0.004	0.002	SF-2-18	-0.013	-0.006	2.0	89.9	
								SF-2-20	0.009	0.004	1.4	89.9	
SF-2-20	4.160	99.743	-0.7	0.000	0.000	0.000	0.000	SF-2-19	-0.009	-0.004	1.4	89.9	
								SF-2-21	0.000	0.000	0.0	0.0	
								SEC_SF-2-18	0.009	0.004	1.4	89.9	
SF-2-21	4.160	99.743	-0.7	0.000	0.000	0.000	0.000	SF-2-20	0.000	0.000	0.0	0.0	
SF-2-22	4.160	99.801	-0.7	0.000	0.000	0.000	0.000	SF-2-11	-0.018	-0.009	2.8	89.9	
								SF-2-23	0.009	0.004	1.4	89.9	
								SEC_SF-2-19	0.009	0.004	1.4	89.9	
SF-2-23	4.160	99.799	-0.7	0.000	0.000	0.000	0.000	SF-2-22	-0.009	-0.004	1.4	89.9	
								SF-2-24	0.000	0.000	0.0	0.0	
								SEC_SF-2-20	0.009	0.004	1.4	89.9	
SF-2-24	4.160	99.799	-0.7	0.000	0.000	0.000	0.000	SF-2-23	0.000	0.000	0.0	0.0	
SF-2-25	4.160	99.782	-0.7	0.000	0.000	0.000	0.000	SF-2-26	-0.017	-0.008	2.6	89.9	
								SF-2-27	0.008	0.004	1.2	90.0	
								SEC_SF-2-11	0.009	0.004	1.4	89.9	
SF-2-26	4.160	99.793	-0.7	0.000	0.000	0.000	0.000	SF-2-25	0.017	0.008	2.6	90.0	
								SF-2-14	-0.017	-0.008	2.6	90.0	
SF-2-27	4.160	99.772	-0.7	0.000	0.000	0.004	0.002	SF-2-25	-0.008	-0.004	1.2	89.9	
								SF-2-28	0.004	0.002	0.6	90.0	
SF-2-28	4.160	99.770	-0.7	0.000	0.000	0.004	0.002	SF-2-27	-0.004	-0.002	0.6	89.9	
								SF-2-29	0.000	0.000	0.0	0.0	
SF-2-29	4.160	99.770	-0.7	0.000	0.000	0.000	0.000	SF-2-28	0.000	0.000	0.0	0.0	
SF-2-30	4.160	100.137	-0.7	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.088	-0.043	13.6	90.0	
								Pole MS-5-108	0.071	0.034	10.9	90.0	
								SF-2-33	0.018	0.008	2.7	90.1	
SF-2-33	4.160	100.106	-0.7	0.000	0.000	0.000	0.000	SF-2-37	0.018	0.008	2.7	90.0	
								SF-2-30	-0.018	-0.008	2.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Line SF-2-45~	0.000	0.000	0.0	0.0	
SF-2-37	4.160	100.095	-0.7	0.000	0.000	0.000	0.000	SF-2-33	-0.018	-0.008	2.7	90.0	
								SF-2-42	0.018	0.008	2.7	90.0	
								Line SF-2-37~	0.000	0.000	0.0	0.0	
SF-2-42	4.160	100.083	-0.7	0.000	0.000	0.000	0.000	SF-2-37	-0.018	-0.008	2.7	90.0	
								SF-2-44	0.018	0.008	2.7	90.0	
								Line SF-2-49~	0.000	0.000	0.0	0.0	
SF-2-44	4.160	100.071	-0.7	0.000	0.000	0.000	0.000	SF-2-42	-0.018	-0.009	2.7	90.0	
								SF-2-46	0.018	0.009	2.7	90.0	
								Line SF-2-53~	0.000	0.000	0.0	0.0	
SF-2-46	4.160	100.069	-0.7	0.000	0.000	0.000	0.000	SF-2-44	-0.018	-0.009	2.7	90.0	
								SF-2-47	0.009	0.004	1.3	90.1	
								SEC_SF-4-01	0.009	0.004	1.4	89.9	
SF-2-47	4.160	100.066	-0.7	0.000	0.000	0.000	0.000	SF-2-46	-0.009	-0.004	1.3	90.0	
								SF-2-48	0.004	0.002	0.7	90.1	
								SEC_SF-4-2	0.004	0.002	0.7	90.0	
SF-2-48	4.160	100.065	-0.7	0.000	0.000	0.000	0.000	SF-2-47	-0.004	-0.002	0.7	90.1	
								SF-2-50	0.000	0.000	0.0	0.0	
								SEC_SF-4-3	0.004	0.002	0.7	90.0	
SF-2-50	4.160	100.065	-0.7	0.000	0.000	0.000	0.000	SF-2-48	0.000	0.000	0.0	0.0	
								Line SF-2-61~	0.000	0.000	0.0	0.0	
UG-JUNC-CS-5-8	24.900	99.141	-0.7	0.000	0.000	0.000	0.000	Pole CS-5-20	-0.026	-0.013	0.7	89.8	
								SEC_CS-5-10	0.026	0.013	0.7	89.8	
UG-JUNC-CS-5-9	24.900	99.141	-0.7	0.000	0.000	0.000	0.000	Pole CS-5-19	-0.027	-0.013	0.7	90.0	
								SEC_CS-5-12	0.027	0.013	0.7	90.0	
UG_JUNC-CS-1	4.160	99.415	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	0.303	0.146	46.9	90.1	
								Pole CS-2-5	-0.320	-0.154	49.6	90.1	
								PRI_PM_1	0.017	0.008	2.7	90.0	
UG_JUNC-CS-2	4.160	99.226	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-0.302	-0.146	47.0	90.1	
								UG_JUNC-CS-3	0.285	0.137	44.3	90.1	
								PRI_PM_2	0.017	0.008	2.7	90.0	
UG_JUNC-CS-3	4.160	99.068	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-0.285	-0.137	44.3	90.1	
								PRI_PM_3	0.017	0.008	2.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								UG_JUNC-CS-5	0.267	0.129	41.6	90.1	
UG_JUNC-CS-5	4.160	98.932	-1.2	0.000	0.000	0.000	0.000	PRI_PM_5	0.017	0.008	2.7	90.0	
								UG_JUNC-CS-3	-0.267	-0.129	41.6	90.0	
								UG_JUNC-CS-6	0.250	0.121	38.9	90.0	
UG_JUNC-CS-6	4.160	98.806	-1.2	0.000	0.000	0.000	0.000	PRI_PM_6	0.017	0.008	2.7	90.0	
								UG_JUNC-CS-5	-0.249	-0.121	38.9	90.0	
								Pole CS-2-7	0.232	0.112	36.2	90.0	
UG_JUNC-CS-7	4.160	98.583	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-17	0.000	0.000	0.0	0.0	
								C_SUB-FDR-EQ#7-3-8~	0.000	0.000	0.0	0.0	
C_SUB-FDR-EQ#7-3-8~	4.160	98.583	-1.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
LINE 6M-26~	4.160	99.520	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-23	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-173~	4.160	98.823	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-57	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-84~	4.160	99.062	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-10	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-86~	4.160	98.737	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-54	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-237~	4.160	99.558	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-66	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-246~	4.160	98.835	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-36	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-276~	4.160	98.876	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-74	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-283~	4.160	99.652	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-4	0.000	0.000	0.0	0.0	
LINE MS-4-53~	4.160	98.957	-0.5	0.000	0.000	0.000	0.000	Pole MS-4-52	0.000	0.000	0.0	0.0	
Line MS-5-79~	4.160	98.836	-0.8	0.000	0.000	0.000	0.000	Pole MS-5-76	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-97~	4.160	99.417	-0.6	0.000	0.000	0.000	0.000	Pole MS-2-122	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-173~	4.160	99.568	-0.6	0.000	0.000	0.000	0.000	Pole MS-2-3	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-13~	4.160	99.578	-0.6	0.000	0.000	0.000	0.000	Pole MS-2-180	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-133~	4.160	99.435	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-25	0.000	0.000	0.0	0.0	
LINE MS-3-11~	4.160	99.415	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-43	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-177~	4.160	99.477	-0.5	0.000	0.000	0.000	0.000	Pole MS-3-70	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-1-38~	4.160	98.384	-0.9	0.000	0.000	0.000	0.000	SF-1-45	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-12~	4.160	100.100	-0.7	0.000	0.000	0.000	0.000	Pole MS-1-19	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-9~	4.160	100.131	-0.7	0.000	0.000	0.000	0.000	Pole MS-1-1	0.000	0.000	0.0	0.0	
Line MS-5-129~	4.160	99.995	-0.7	0.000	0.000	0.000	0.000	Pole MS-5-125	0.000	0.000	0.0	0.0	
Line SF-2-37~	4.160	100.095	-0.7	0.000	0.000	0.000	0.000	SF-2-37	0.000	0.000	0.0	0.0	
Line SF-2-45~	4.160	100.106	-0.7	0.000	0.000	0.000	0.000	SF-2-33	0.000	0.000	0.0	0.0	
Line SF-2-49~	4.160	100.083	-0.7	0.000	0.000	0.000	0.000	SF-2-42	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Line SF-2-53~	4.160	100.071	-0.7	0.000	0.000	0.000	0.000	SF-2-44	0.000	0.000	0.0	0.0	
Line SF-2-61~	4.160	100.065	-0.7	0.000	0.000	0.000	0.000	SF-2-50	0.000	0.000	0.0	0.0	
HS-4-33~	4.160	100.058	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-47	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-90~	4.160	99.624	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-67	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-96~	4.160	99.626	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-33	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-278~	4.160	99.400	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-49	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-301~	4.160	99.615	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-66	0.000	0.000	0.0	0.0	
L-25-LAM-L1-02~	24.900	100.195	-0.5	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.000	0.000	0.0	0.0	
L-25-LLP-SW-03~	24.900	99.609	0.0	0.000	0.000	0.000	0.000	BUS_SAF_25kV	0.000	0.000	0.0	0.0	
L-25-XFMR-03~	24.900	99.726	0.0	0.000	0.000	0.000	0.000	BUS_25kV_03	0.000	0.000	0.0	0.0	
Line51~	69.000	99.912	0.0	0.000	0.000	0.000	0.000	BUS_LLP_69kV_02	0.000	0.000	0.0	0.0	
L-25-LLP-E-06~	24.900	98.697	-0.2	0.000	0.000	0.000	0.000	BUS_25kV_E-04	0.000	0.000	0.0	0.0	
Line15~	24.900	99.635	0.0	0.000	0.000	0.000	0.000	BUS_25kV_W-02	0.000	0.000	0.0	0.0	
L-25-LLP-W-03~	24.900	99.422	-0.1	0.000	0.000	0.000	0.000	BUS_25kV_W-03	0.000	0.000	0.0	0.0	

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)

# Indicates a bus with a load mismatch of more than 0.1 MVA

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Bus1	4.160	99.833	-3.3	0.000	0.000	0.000	0.000	BUS_5KV_LLP_2	0.000	0.000	0.0	0.0	
Bus2	4.160	88.978	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.000	0.000	0.0	0.0	
BUS_5KV-LLP_01	4.160	99.904	-3.3	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	-1.686	-0.842	261.8	89.5	
								BUS_5KV_LLP_02	0.144	0.078	22.7	88.0	
								Pole MS-9-1	0.559	0.276	86.7	89.7	
								Pole MS-4-1	0.274	0.133	42.4	90.0	
								Pole MS-4-31	0.708	0.355	110.1	89.4	
BUS_5KV_LLP_01	4.160	99.841	-3.3	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.547	-0.307	87.2	87.2	
								BUS_5KV_LLP_PLTLDCTR	0.297	0.183	48.5	85.0	
								Pole MS-8-1	0.250	0.124	38.8	89.7	
BUS_5KV_LLP_2	4.160	99.833	-3.3	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.342	-0.168	52.9	89.7	
								Bus1	0.000	0.000	0.0	0.0	
								Pole MS-2-182	0.342	0.168	52.9	89.7	
BUS_5KV_LLP_02	4.160	99.883	-3.3	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	0.547	0.306	87.1	87.2	
								BUS_5KV_XFMR_02	-1.974	-0.997	307.3	89.3	
								BUS_5KV-LLP_01	-0.144	-0.078	22.7	87.9	
								BUS_5KV_LLP_2	0.342	0.168	52.9	89.7	
								Pole CS-1-90	0.365	0.176	56.4	90.1	
								Pole MS-3-87	0.864	0.424	133.7	89.7	
BUS_5KV_LLP_PLTLDCTR	4.160	99.794	-3.4	0.000	0.000	0.296	0.184	BUS_5KV_LLP_01	-0.296	-0.184	48.5	85.0	
BUS_5KV_XFMR_02	4.160	100.027	-3.3	0.000	0.000	0.000	0.000	BUS_5KV-LLP_01	1.688	0.843	261.8	89.5	
								BUS_5KV_LLP_02	1.976	0.999	307.2	89.2	
								BUS_25kV_SUB_02	-3.664	-1.843	569.0	89.3	1.875
BUS_5_NEOPLAN	4.160	98.704	-3.3	0.000	0.000	0.361	0.175	Pole CS-1-90	-0.361	-0.175	56.4	90.0	
BUS_6M_5kV	4.160	99.841	-3.4	0.000	0.000	0.000	0.000	BUS_6M_SEC	-0.602	-0.291	92.9	90.0	
								Pole 6M-1-1	0.191	0.093	29.5	89.9	
								Pole 6M-E-1	0.411	0.198	63.4	90.1	
BUS_6M_25kV	24.900	99.979	-2.1	0.000	0.000	0.000	0.000	BUS_L1_01	-0.603	-0.308	15.7	89.1	
								L-25-LAM-L1-02~	0.000	0.000	0.0	0.0	
								BUS_6M_SEC	0.603	0.309	15.7	89.0	
BUS_6M_SEC	4.160	98.914	-3.2	0.000	0.000	0.000	0.000	BUS_6M_5kV	0.603	0.294	94.1	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_6M_25kV	-0.603	-0.294	94.1	89.9	
BUS-25kV-BEEFCITY	24.900	96.747	-0.4	0.000	0.000	0.474	0.294	BUS-25kV-MCCLAVE	-0.474	-0.294	13.4	85.0	
BUS-25kV-BIG-BEND	24.900	98.810	-0.5	0.000	0.000	0.491	0.305	BUS_25kV_W-10	-0.491	-0.305	13.6	85.0	
BUS-25KV-E-10	24.900	97.214	-11.3	0.000	0.000	2.194	1.360	BUS_25kV_E-09	-2.194	-1.360	61.6	85.0	
BUS-25kV-HS-01	24.900	94.369	-3.3	0.000	0.000	0.146	0.091	BUS_HIS_25kV	-0.146	-0.091	4.2	85.0	
BUS-25kV-MCCLAVE	24.900	96.846	-0.4	0.000	0.000	0.564	0.349	BUS_25kV_W-11	-1.038	-0.641	29.2	85.1	
								BUS-25kV-BEEFCITY	0.475	0.291	13.3	85.2	
BUS-25kV-TS-01	24.900	94.647	-3.2	0.000	0.000	0.147	0.091	BUS_TS_25kV	-0.147	-0.091	4.2	85.0	
BUS-25kV-TS-AREA	24.900	94.654	-3.2	0.000	0.000	0.147	0.091	BUS_TSA_25kV	-0.147	-0.091	4.2	85.0	
BUS-25kV-WILEY	24.900	98.856	-0.5	0.000	0.000	0.583	0.362	BUS_25kV_W-10	-0.583	-0.362	16.1	85.0	
BUS_25kV_03	24.900	100.117	-1.5	0.000	0.000	0.000	0.000	L-25-XFMR-03~	0.000	-0.001	0.0	0.0	
								BUS_25kV_SUB_01	-11.996	-7.148	323.4	85.9	
								BUS_25kV_SUB_02	11.996	7.148	323.4	85.9	
BUS_25kV_BRISTOL	24.900	96.420	-7.4	0.000	0.000	0.144	0.089	BUS_25kV_E-07	-0.144	-0.089	4.1	85.0	
BUS_25kV_CO-BEEF	24.900	98.717	-0.4	0.000	0.000	0.998	0.618	BUS_25kV_W-08	-0.998	-0.618	27.6	85.0	
BUS_25kV_DECHANT	24.900	92.836	-2.6	0.000	0.000	0.203	0.126	BUS_25kV_E-05	-0.203	-0.126	6.0	85.0	
BUS_25kV_E_01	24.900	100.117	-1.5	0.000	0.000	0.000	0.000	BUS_25kV_E-02	3.367	2.271	94.0	82.9	
								BUS_25kV_SUB_01	-3.367	-2.271	94.0	82.9	
BUS_25kV_E-02	24.900	99.988	-1.5	0.000	0.000	0.000	0.000	BUS_25kV_E_01	-3.363	-2.267	94.1	82.9	
								BUS_25kV_SUTRAK	0.127	0.079	3.5	85.0	
								BUS_25kV_E-03	3.236	2.189	90.6	82.8	
BUS_25kV_E-03	24.900	99.852	-1.5	0.000	0.000	0.000	0.000	BUS_25kV_E-02	-3.232	-2.185	90.6	82.8	
								BUS_25kV_SWL	0.153	0.094	4.2	85.1	
								BUS_25kV_E-04	3.079	2.091	86.4	82.7	
BUS_25kV_E-04	24.900	95.931	-2.1	0.000	0.000	0.000	0.000	BUS_25kV_E-03	-2.980	-2.001	86.7	83.0	
								BUS_25kV_E-05	2.980	2.002	86.8	83.0	
								L-25-LLP-E-06~	0.000	-0.001	0.0	0.0	
BUS_25kV_E-05	24.900	92.844	-2.6	0.000	0.000	0.000	0.000	BUS_25kV_E-04	-2.901	-1.929	87.0	83.3	
								BUS_25kV_DECHANT	0.203	0.125	5.9	85.1	
								BUS_25kV_E-06	2.698	1.804	81.1	83.1	
BUS_25kV_E-06	24.900	100.389	-6.7	0.000	0.000	0.000	0.000	BUS_25kV_E-05	-2.671	-1.720	73.4	84.1	
								BUS_25kV_E-07	2.671	1.720	73.4	84.1	
BUS_25kV_E-07	24.900	96.428	-7.4	0.000	0.000	0.000	0.000	BUS_25kV_E-06	-2.585	-1.650	73.7	84.3	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_BRISTOL	0.144	0.088	4.1	85.3	
								BUS_25kV_E-08	2.441	1.562	69.7	84.2	
BUS_25kV_E-08	24.900	94.400	-7.7	0.000	0.000	0.000	0.000	BUS_25kV_E-07	-2.399	-1.529	69.9	84.3	
								BUS_25kV_HARTMAN	0.139	0.081	3.9	86.4	
								BUS_25kV_E-09	2.260	1.448	65.9	84.2	
BUS_25kV_E-09	24.900	99.831	-10.9	0.000	0.000	0.000	0.000	BUS_25kV_E-08	-2.242	-1.391	61.3	85.0	
								BUS-25KV-E-10	2.242	1.391	61.3	85.0	
BUS_25kV_HARTMAN	24.900	94.357	-7.7	0.000	0.000	0.139	0.086	BUS_25kV_E-08	-0.139	-0.086	4.0	85.0	
BUS_25kV_KMART	24.900	99.836	-1.5	0.000	0.000	0.000	0.000	BUS_25kV_W-2	0.000	0.000	0.0	0.0	
BUS_25kV_KORMAN	24.900	95.929	-2.2	0.000	0.000	1.606	0.995	BUS_25kV_W-04	-1.606	-0.995	45.7	85.0	
BUS_25kV_ROAD 13	24.900	91.803	-2.9	0.000	0.000	0.000	0.000	BUS_25kV_W-05	0.000	0.000	0.0	0.0	
BUS_25kV_SUB_01	24.900	100.117	-1.5	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	-4.883	-8.802	233.1	48.5	6.250
								BUS_LLP_69kV_01	-2.474	-4.460	118.1	48.5	6.250
								BUS_25kV_E_01	3.367	2.271	94.0	82.9	
								BUS_25_LLP_SE_01	-8.006	3.843	205.7	-90.2	
								BUS_25kV_03	11.996	7.148	323.4	85.9	
BUS_25kV_SUB_02	24.900	100.117	-1.5	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	3.674	1.996	96.8	87.9	
								BUS_25kV_SW_01	3.129	1.738	82.9	87.4	
								BUS_25kV_W-01	5.192	3.415	143.9	83.6	
								BUS_25kV_03	-11.996	-7.148	323.4	85.9	
BUS_25kV_SUTRAK	24.900	99.987	-1.5	0.000	0.000	0.127	0.079	BUS_25kV_E-02	-0.127	-0.079	3.5	85.0	
BUS_25kV_SWL	24.900	99.849	-1.5	0.000	0.000	0.153	0.095	BUS_25kV_E-03	-0.153	-0.095	4.2	85.0	
BUS_25kV_SW_01	24.900	100.117	-1.5	0.000	0.000	0.000	0.000	BUS_25kV_W-2	3.129	1.738	82.9	87.4	
								BUS_25kV_SUB_02	-3.129	-1.738	82.9	87.4	
BUS_25kV_W-01	24.900	100.117	-1.5	0.000	0.000	0.000	0.000	BUS_25kV_W-02	5.192	3.415	143.9	83.6	
								BUS_25kV_SUB_02	-5.192	-3.415	143.9	83.6	
BUS_25kV_W-2	24.900	99.836	-1.5	0.000	0.000	0.000	0.000	BUS_25kV_SW_01	-3.122	-1.732	82.9	87.5	
								BUS_SAF_25kV	3.122	1.732	82.9	87.5	
								BUS_25kV_KMART	0.000	0.000	0.0	0.0	
BUS_25kV_W-02	24.900	99.763	-1.5	0.000	0.000	0.000	0.000	BUS_25kV_W-01	-5.177	-3.399	143.9	83.6	
								BUS_25kV_W-03	5.177	3.400	144.0	83.6	
								Line15~	0.000	-0.001	0.0	0.0	
BUS_25kV_W-03	24.900	98.933	-1.7	0.000	0.000	0.000	0.000	BUS_25kV_W-02	-5.142	-3.363	144.0	83.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_W-04	5.142	3.363	144.0	83.7	
								L-25-LLP-W-03~	0.000	0.000	0.0	0.0	
BUS_25kV_W-04	24.900	96.059	-2.1	0.000	0.000	0.000	0.000	BUS_25kV_W-03	-5.020	-3.233	144.1	84.1	
								BUS_25kV_KORMAN	1.608	0.996	45.6	85.0	
								BUS_25kV_W-05	3.412	2.238	98.5	83.6	
BUS_25kV_W-05	24.900	91.802	-2.9	0.000	0.000	0.000	0.000	BUS_25kV_W-04	-3.288	-2.117	98.8	84.1	
								BUS_25kV_ROAD 13	0.000	-0.007	0.2	0.0	
								BUS_25kV_W-06	3.288	2.124	98.9	84.0	
BUS_25kV_W-06	24.900	99.624	-0.4	0.000	0.000	0.000	0.000	BUS_25kV_W-05	-3.157	-1.911	85.9	85.5	
								BUS_25kV_W-07	3.157	1.911	85.9	85.5	
BUS_25kV_W-07	24.900	99.277	-0.5	0.000	0.000	0.000	0.000	BUS_25kV_W-06	-3.148	-1.903	85.9	85.6	
								BUS_25kV_W-08	1.004	0.613	27.5	85.3	
								BUS_25kV_W-09	2.144	1.290	58.4	85.7	
BUS_25kV_W-08	24.900	99.272	-0.5	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-1.004	-0.614	27.5	85.3	
								BUS_25kV_CO-BEEF	1.004	0.614	27.5	85.3	
BUS_25kV_W-09	24.900	98.950	-0.5	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-2.139	-1.286	58.5	85.7	
								BUS_25kV_W-10	1.076	0.662	29.6	85.2	
								BUS_25kV_W-11	1.063	0.625	28.9	86.2	
BUS_25kV_W-10	24.900	98.928	-0.5	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-1.076	-0.662	29.6	85.2	
								BUS-25kV-WILEY	0.584	0.360	16.1	85.1	
								BUS-25kV-BIG-BEND	0.492	0.302	13.5	85.3	
BUS_25kV_W-11	24.900	98.936	-0.5	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-1.062	-0.625	28.9	86.2	
								BUS-25kV-MCCLAVE	1.062	0.625	28.9	86.2	
BUS_25_LLP_SE_01	24.900	100.117	-1.5	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	-8.006	3.843	205.7	-90.2	
								BUS_25kV_SUB_01	8.006	-3.843	205.7	-90.2	
BUS_25_LLP_SE_02	24.900	100.522	-0.7	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_01	8.092	-3.748	205.7	-90.7	
								BUS_25_LLP_SE_03	0.400	0.247	10.9	85.1	
								BUS_25_LLP_SE_04	-8.493	3.501	211.9	-92.5	
BUS_25_LLP_SE_03	24.900	100.507	-0.7	0.000	0.000	0.400	0.248	BUS_25_LLP_SE_02	-0.400	-0.248	10.9	85.0	
BUS_25_LLP_SE_04	24.900	101.065	0.2	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	8.592	-3.391	211.9	-93.0	
								Pole MS-7-17	0.084	0.038	2.1	91.1	
								BUS_WTG_SOL	-8.676	3.353	213.4	-93.3	
BUS_ATT	24.900	99.868	-2.2	0.000	0.000	0.093	0.058	BUS_L3_SEC	-0.093	-0.058	2.5	85.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_CLG_4kV	4.160	99.742	-6.1	0.000	0.000	0.000	0.000	Pole CS-2-1	1.476	0.727	228.9	89.7	
								Pole CS-1-1	1.321	0.674	206.4	89.1	
								Pole CS-3-1	0.872	0.431	135.3	89.6	
								Pole CS-4-1	0.819	0.409	127.3	89.5	
								BUS_CLG_SEC	-4.488	-2.241	698.0	89.5	
BUS_CLG_25kV	24.900	94.948	-3.2	0.000	0.000	0.000	0.000	BUS_L2_SEC	-8.440	-4.739	236.4	87.2	
								BUS_HSP_25kV	3.918	2.186	109.6	87.3	
								BUS_CLG_SEC	4.522	2.553	126.8	87.1	
BUS_CLG_SEC	4.160	93.128	-4.9	0.000	0.000	0.000	0.000	BUS_CLG_4kV	4.510	2.367	759.1	88.5	
								BUS_CLG_25kV	-4.510	-2.367	759.1	88.5	
BUS_HIS_25kV	24.900	94.375	-3.3	0.000	0.000	0.000	0.000	BUS_TS_25kV	-3.497	-1.938	98.2	87.5	
								BUS-25kV-HS-01	0.146	0.090	4.2	85.2	
								BUS_HSC_25kV	3.351	1.848	94.0	87.6	
BUS_HSC_4kV	4.160	99.882	-6.0	0.000	0.000	0.000	0.000	Pole HS-1-001	0.097	0.047	15.0	89.9	
								Pole HS-2-1	1.282	0.630	198.5	89.8	
								Pole HS-3-1	0.876	0.428	135.4	89.9	
								Pole HS-4-1	1.067	0.531	165.6	89.5	
								BUS_HSC_SEC	-3.322	-1.635	514.5	89.7	
BUS_HSC_25kV	24.900	94.123	-3.3	0.000	0.000	0.000	0.000	BUS_HIS_25kV	-3.344	-1.841	94.0	87.6	
								BUS_HSC_SEC	3.344	1.841	94.0	87.6	
BUS_HSC_SEC	4.160	92.354	-5.1	0.000	0.000	0.000	0.000	BUS_HSC_4kV	3.335	1.704	562.8	89.0	
								BUS_HSC_25kV	-3.335	-1.704	562.8	89.0	
BUS_HSP_25kV	24.900	94.802	-3.2	0.000	0.000	0.000	0.000	BUS_CLG_25kV	-3.913	-2.181	109.6	87.3	
								Pole CS-5-21	0.109	0.049	2.9	91.1	
								BUS_TSA_25kV	3.805	2.132	106.7	87.2	
BUS_L1_01	24.900	99.999	-2.1	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.604	0.308	15.7	89.1	
								BUS_LAMSO_25kV	-0.604	-0.308	15.7	89.1	
BUS_L2_SEC	24.900	99.999	-2.1	0.000	0.000	0.000	0.000	BUS_CLG_25kV	8.798	5.137	236.2	86.4	
								BUS_LAMSO_25kV	-8.798	-5.137	236.2	86.4	
BUS_L3_SEC	24.900	99.999	-2.1	0.000	0.000	0.000	0.000	BUS_ATT	0.093	0.026	2.2	96.4	
								BUS_LAMSO_25kV	-0.093	-0.026	2.2	96.4	
BUS_LAMSO_25kV	24.900	99.999	-2.1	0.000	0.000	0.000	0.000	BUS_LAMSO_115kV	-9.495	-5.470	254.1	86.6	2.500
								BUS_L1_01	0.604	0.308	15.7	89.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_L2_SEC	8.798	5.137	236.2	86.4	
								BUS_L3_SEC	0.093	0.026	2.2	96.4	
* BUS_LAMSO_115kV	115.000	100.000	0.0	9.516	5.967	0.000	0.000	BUS_LAMSO_25kV	9.516	5.967	56.4	84.7	
BUS_LLP_69kV_01	69.000	99.492	0.0	0.000	0.000	0.000	0.000	BUS_25kV_SUB_01	4.916	9.422	89.4	46.3	
								BUS_25kV_SUB_01	2.491	4.774	45.3	46.3	
								BUS_LLP_69kV_03	-3.704	-7.098	67.3	46.3	
								BUS_LLP_69kV_04	-3.704	-7.098	67.3	46.3	
BUS_LLP_69kV_02	69.000	99.492	0.0	0.000	0.000	0.000	0.000	Line51~	0.000	-0.507	4.3	0.0	
								BUS_LLP_69kV_03	-3.704	-6.591	63.6	49.0	
								BUS_LLP_69kV_04	3.704	7.098	67.3	46.3	
BUS_LLP_69kV_03	69.000	99.492	0.0	0.000	0.000	0.000	0.000	BUS_WC_69KV_01	-7.407	-13.689	130.9	47.6	
								BUS_LLP_69kV_01	3.704	7.098	67.3	46.3	
								BUS_LLP_69kV_02	3.704	6.591	63.6	49.0	
BUS_LLP_69kV_04	69.000	99.492	0.0	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	3.704	7.098	67.3	46.3	
								BUS_LLP_69kV_02	-3.704	-7.098	67.3	46.3	
BUS_SAF_4kV	4.160	100.229	-3.7	0.000	0.000	0.000	0.000	SF-2-30	0.301	0.147	46.4	89.9	
								Pole MS-1-1	0.219	0.107	33.7	89.9	
								SF-1-1	2.188	1.124	340.6	88.9	
								SF-2-1	0.395	0.195	61.0	89.7	
								BUS_SAF_SEC	-3.103	-1.573	481.7	89.2	
BUS_SAF_25kV	24.900	99.704	-1.6	0.000	0.000	0.000	0.000	BUS_25kV_W-2	-3.119	-1.729	82.9	87.5	
								L-25-LLP-SW-03~	0.000	-0.004	0.1	0.0	
								BUS_SAF_SEC	3.119	1.733	83.0	87.4	
BUS_SAF_SEC	4.160	98.126	-3.0	0.000	0.000	0.000	0.000	BUS_SAF_4kV	3.112	1.627	496.7	88.6	
								BUS_SAF_25kV	-3.112	-1.627	496.7	88.6	
BUS_SW_8.5EES23	24.900	102.350	2.1	0.000	0.000	0.000	0.000	BUS_WTG_SOL	0.000	0.000	0.0	0.0	
BUS_TSA_25kV	24.900	94.660	-3.2	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-3.800	-2.127	106.7	87.3	
								BUS-25kV-TS-AREA	0.147	0.091	4.2	85.2	
								BUS_TS_25kV	3.653	2.037	102.4	87.3	
BUS_TS_25kV	24.900	94.653	-3.2	0.000	0.000	0.000	0.000	BUS_TSA_25kV	-3.653	-2.036	102.4	87.3	
								BUS-25kV-TS-01	0.147	0.091	4.2	85.2	
								BUS_HIS_25kV	3.505	1.946	98.2	87.4	
BUS_T_WTG1_SEC	0.690	100.678	10.6	1.500	-0.726	0.000	0.000	BUS_WTG1	1.500	-0.726	1385.0	-90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_T_WTG2_SEC	0.690	100.657	10.6	1.500	-0.726	0.000	0.000	BUS_WTG2	1.500	-0.726	1385.5	-90.0	
BUS_T_WTG3_SEC	0.690	103.595	6.0	0.000	0.000	0.000	0.000	BUS_WTG3	0.000	0.000	0.0	0.0	
BUS_T_WTG4_SEC	0.690	100.584	10.5	1.500	-0.726	0.000	0.000	BUS_WTG5	1.500	-0.726	1386.5	-90.0	
* BUS_WC_69KV_01	69.000	100.000	0.0	7.442	13.697	0.000	0.000	BUS_LLP_69kV_03	7.442	13.697	130.4	47.7	
BUS_WTG1	24.900	103.648	6.0	0.000	0.000	0.000	0.000	BUS_WTG2	1.480	-0.868	38.4	-86.3	
								BUS_T_WTG1_SEC	-1.480	0.868	38.4	-86.3	
BUS_WTG2	24.900	103.630	6.0	0.000	0.000	0.000	0.000	BUS_WTG1	-1.480	0.855	38.2	-86.6	
								BUS_WTG3	2.960	-1.723	76.6	-86.4	
								BUS_T_WTG2_SEC	-1.480	0.868	38.4	-86.3	
BUS_WTG3	24.900	103.595	6.0	0.000	0.000	0.000	0.000	BUS_WTG2	-2.958	1.711	76.5	-86.6	
								BUS_WTG5	2.958	-1.711	76.5	-86.6	
								BUS_T_WTG3_SEC	0.000	0.000	0.0	0.0	
BUS_WTG5	24.900	103.560	6.0	0.000	0.000	0.000	0.000	BUS_WTG3	-2.956	1.699	76.3	-86.7	
								BUS_WTG6	4.436	-2.567	114.8	-86.6	
								BUS_T_WTG4_SEC	-1.480	0.868	38.4	-86.2	
BUS_WTG6	24.900	102.446	2.2	0.000	0.000	0.000	0.000	BUS_WTG_SOL	8.909	-3.097	213.5	-94.5	
								BUS_WTG5	-4.214	2.787	114.4	-83.4	
								P_526_2	-4.694	0.310	106.5	-99.8	
BUS_WTG_SOL	24.900	102.350	2.1	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	8.893	-3.114	213.5	-94.4	
								BUS_SW_8.5EES23	0.000	-0.001	0.0	0.0	
								BUS_WTG6	-8.893	3.115	213.5	-94.4	
Pole 6M-1-1	4.160	99.416	-3.4	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.190	-0.093	29.5	89.9	
								Pole 6M-1-2	0.167	0.082	26.0	89.9	
								SEC_6M-1-1	0.023	0.011	3.5	89.9	
Pole 6M-1-2	4.160	99.154	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-1	-0.167	-0.081	26.0	89.9	
								Pole 6M-1-3	0.022	0.011	3.5	89.9	
								Pole 6M-1-4	0.145	0.070	22.5	89.9	
Pole 6M-1-3	4.160	99.150	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.022	-0.011	3.5	89.9	
								SEC_6M-1-2	0.022	0.011	3.5	89.9	
Pole 6M-1-4	4.160	98.771	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.144	-0.070	22.5	89.9	
								Pole 6M-1-5	0.009	0.005	1.5	89.8	
								Pole 6M-1-6	0.135	0.066	21.0	89.9	
Pole 6M-1-5	4.160	98.766	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-4	-0.009	-0.005	1.5	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-1-6	4.160	98.660	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-4	-0.134	-0.065	21.0	89.9	
								Pole 6M-1-7	0.019	0.009	2.9	89.9	
								Pole 6M-1-9	0.116	0.056	18.1	89.9	
Pole 6M-1-7	4.160	98.622	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-6	-0.019	-0.009	2.9	89.8	
								Pole 6M-1-8	0.009	0.005	1.5	89.8	
Pole 6M-1-8	4.160	98.617	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-7	-0.009	-0.005	1.5	89.8	
Pole 6M-1-9	4.160	98.517	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-6	-0.116	-0.056	18.1	89.9	
								Pole 6M-1-10	0.106	0.052	16.6	89.9	
Pole 6M-1-10	4.160	98.478	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-9	-0.106	-0.052	16.6	89.9	
								Pole 6M-1-11	0.106	0.052	16.6	89.9	
Pole 6M-1-11	4.160	98.443	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-10	-0.106	-0.052	16.6	89.9	
								Pole 6M-1-12	0.097	0.047	15.2	89.9	
Pole 6M-1-12	4.160	98.380	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-11	-0.097	-0.047	15.2	89.9	
								Pole 6M-1-13	0.009	0.005	1.5	90.0	
								Pole 6M-1-14	0.087	0.043	13.7	89.9	
Pole 6M-1-13	4.160	98.330	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-12	-0.009	-0.005	1.5	89.8	
Pole 6M-1-14	4.160	98.237	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-12	-0.087	-0.043	13.7	89.9	
								Pole 6M-1-15	0.078	0.038	12.2	89.9	
Pole 6M-1-15	4.160	98.199	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-14	-0.078	-0.038	12.2	89.9	
								Pole 6M-1-16	0.069	0.033	10.8	89.9	
Pole 6M-1-16	4.160	98.072	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-15	-0.068	-0.033	10.8	89.9	
								Pole 6M-1-17	0.031	0.015	4.9	89.9	
								Pole 6M-1-20	0.037	0.018	5.8	89.9	
Pole 6M-1-17	4.160	98.070	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-16	-0.031	-0.015	4.9	89.9	
								Pole 6M-1-18	0.022	0.011	3.5	89.9	
Pole 6M-1-18	4.160	98.043	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-17	-0.022	-0.011	3.5	89.9	
								Pole 6M-1-19	0.022	0.011	3.5	89.9	
Pole 6M-1-19	4.160	98.030	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-18	-0.022	-0.011	3.5	89.9	
								SEC_6M-1-12	0.022	0.011	3.5	89.9	
Pole 6M-1-20	4.160	97.999	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-16	-0.037	-0.018	5.8	89.9	
								Pole 6M-1-21	0.019	0.009	2.9	89.9	
								Pole 6M-1-23	0.019	0.009	2.9	89.9	
Pole 6M-1-21	4.160	97.991	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-20	-0.019	-0.009	2.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole 6M-1-22	0.009	0.005	1.5	89.9	
Pole 6M-1-22	4.160	97.967	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-21	-0.009	-0.005	1.5	89.8	
Pole 6M-1-23	4.160	97.987	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-20	-0.019	-0.009	2.9	89.9	
								Pole 6M-1-24	0.019	0.009	2.9	89.8	
								LINE 6M-26~	0.000	0.000	0.0	0.0	
Pole 6M-1-24	4.160	97.985	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-23	-0.019	-0.009	2.9	89.8	
								Pole 6M-1-25	0.009	0.005	1.5	89.8	
Pole 6M-1-25	4.160	97.980	-3.4	0.000	0.000	0.009	0.005	Pole 6M-1-24	-0.009	-0.005	1.5	89.8	
Pole 6M-E-1	4.160	94.340	-3.3	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.388	-0.188	63.4	90.0	
								Pole 6M-E-2	0.033	0.016	5.4	89.9	
								Pole 6M-E-30	0.355	0.172	58.1	90.0	
Pole 6M-E-2	4.160	94.287	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-1	-0.033	-0.016	5.4	89.9	
								SEC_6M-E-2	0.033	0.016	5.4	89.9	
Pole 6M-E-3	4.160	93.244	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.032	-0.016	5.3	89.9	
								SEC_6M-E-3	0.032	0.016	5.3	89.9	
Pole 6M-E-4	4.160	93.252	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.319	-0.155	52.7	90.0	
								Pole 6M-E-3	0.032	0.016	5.3	89.9	
								Pole 6M-E-5	0.287	0.139	47.4	90.0	
Pole 6M-E-5	4.160	92.691	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.285	-0.138	47.4	90.0	
								Pole 6M-E-6	0.253	0.123	42.1	90.0	
								SEC_6M-E-1	0.032	0.016	5.3	89.9	
Pole 6M-E-6	4.160	92.143	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-5	-0.251	-0.122	42.1	90.0	
								Pole 6M-E-7	0.220	0.106	36.8	90.0	
								SEC_6M-E-4	0.032	0.015	5.3	89.9	
Pole 6M-E-7	4.160	91.313	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-6	-0.218	-0.106	36.8	90.0	
								Pole 6M-E-8	0.031	0.015	5.3	89.9	
								Pole 6M-E-9	0.187	0.090	31.5	90.0	
Pole 6M-E-8	4.160	91.276	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.031	-0.015	5.3	89.9	
								SEC_6M-E-5	0.031	0.015	5.3	89.9	
Pole 6M-E-9	4.160	89.931	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.184	-0.089	31.5	90.0	
								Pole 6M-E-10	0.061	0.030	10.4	89.9	
								Pole 6M-E-13	0.123	0.060	21.1	90.0	
Pole 6M-E-10	4.160	89.702	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-9	-0.061	-0.030	10.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole 6M-E-11	0.030	0.015	5.2	89.9	
								SEC_6M-E-6	0.030	0.015	5.2	89.9	
Pole 6M-E-11	4.160	89.586	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-10	-0.030	-0.015	5.2	89.9	
								SEC_6M-E-7	0.030	0.015	5.2	89.9	
Pole 6M-E-12	4.160	89.693	-3.2	0.000	0.000	0.008	0.004	Pole 6M-E-13	-0.008	-0.004	1.4	89.8	
Pole 6M-E-13	4.160	89.697	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-12	0.008	0.004	1.4	89.8	
								Pole 6M-E-9	-0.123	-0.059	21.1	90.0	
								Pole 6M-E-15	0.115	0.056	19.7	90.0	
Pole 6M-E-14	4.160	89.437	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.030	-0.015	5.2	89.9	
								SEC_6M-E-8	0.030	0.015	5.2	89.9	
Pole 6M-E-15	4.160	89.478	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-14	0.030	0.015	5.2	89.9	
								Pole 6M-E-13	-0.114	-0.055	19.7	90.0	
								Pole 6M-E-18	0.084	0.041	14.5	90.0	
Pole 6M-E-18	4.160	89.288	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.084	-0.041	14.5	90.0	
								Pole 6M-E-19	0.030	0.015	5.2	89.9	
								Pole 6M-E-20	0.054	0.026	9.3	90.0	
Pole 6M-E-19	4.160	89.268	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.030	-0.015	5.2	89.9	
								SEC_6M-E-10	0.030	0.015	5.2	89.9	
Pole 6M-E-20	4.160	89.227	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.054	-0.026	9.3	90.0	
								Pole 6M-E-21	0.024	0.011	4.1	90.2	
								SEC_6M-E-11	0.030	0.015	5.2	89.9	
Pole 6M-E-21	4.160	89.215	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-20	-0.024	-0.011	4.1	90.2	
								Pole 6M-E-22	0.008	0.004	1.4	90.2	
								Pole 6M-E-23	0.016	0.008	2.7	90.2	
Pole 6M-E-22	4.160	89.140	-3.2	0.000	0.000	0.008	0.004	Pole 6M-E-21	-0.008	-0.004	1.4	89.8	
Pole 6M-E-23	4.160	89.013	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.008	0.004	1.4	90.0	
								Pole 6M-E-21	-0.016	-0.008	2.7	90.0	
								Pole 6M-E-24	0.008	0.004	1.4	90.0	
Pole 6M-E-24	4.160	88.976	-3.2	0.000	0.000	0.008	0.004	Pole 6M-E-23	-0.008	-0.004	1.4	89.8	
Pole 6M-E-25	4.160	88.974	-3.2	0.000	0.000	0.008	0.004	Pole 6M-E-26	-0.008	-0.004	1.4	89.8	
Pole 6M-E-26	4.160	88.978	-3.2	0.000	0.000	0.000	0.000	Pole 6M-E-23	-0.008	-0.004	1.4	89.9	
								Pole 6M-E-25	0.008	0.004	1.4	89.8	
								Bus2	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-E-29	4.160	93.851	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.033	-0.016	5.4	89.9	
								SEC_6M-E-13	0.033	0.016	5.4	89.9	
Pole 6M-E-30	4.160	93.859	-3.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	0.321	0.156	52.7	90.0	
								Pole 6M-E-29	0.033	0.016	5.4	89.9	
								Pole 6M-E-1	-0.353	-0.171	58.1	90.0	
Pole CS-1-1	4.160	98.714	-6.3	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-1.310	-0.662	206.4	89.3	
								Pole CS-1-2	1.310	0.662	206.4	89.3	
Pole CS-1-2	4.160	98.360	-6.4	0.000	0.000	0.000	0.000	PRI_PM_16	0.171	0.085	26.9	89.5	
								Pole CS-1-1	-1.307	-0.658	206.4	89.3	
								Pole CS-1-3	1.115	0.562	176.2	89.3	
								Pole HS-2-85	0.021	0.010	3.3	89.8	
Pole CS-1-3	4.160	97.619	-6.6	0.000	0.000	0.000	0.000	Pole CS-1-4	0.031	0.015	4.9	89.8	
								Pole CS-1-5	0.031	0.015	4.9	89.8	
								Pole HS-3-86	0.010	0.005	1.6	89.8	
								Pole CS-1-2	-1.108	-0.555	176.2	89.4	
								Pole CS-1-6	1.037	0.519	164.8	89.4	
Pole CS-1-4	4.160	97.605	-6.6	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.031	-0.015	4.9	89.8	
								SEC_CS-1-1	0.031	0.015	4.9	89.8	
Pole CS-1-5	4.160	97.609	-6.6	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.031	-0.015	4.9	89.8	
								SEC_CS-1-2	0.031	0.015	4.9	89.8	
Pole CS-1-6	4.160	96.927	-6.7	0.000	0.000	0.000	0.000	Pole HS-3-88	0.030	0.015	4.9	89.8	
								Pole CS-1-3	-1.031	-0.513	164.8	89.5	
								Pole CS-1-9	1.000	0.498	160.0	89.5	
Pole CS-1-9	4.160	96.748	-6.8	0.000	0.000	0.000	0.000	PRI_PM_17	0.150	0.075	24.0	89.5	
								Pole CS-1-6	-0.999	-0.496	160.0	89.6	
								Pole CS-1-10	0.849	0.422	136.0	89.6	
Pole CS-1-10	4.160	96.409	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.847	-0.419	136.0	89.6	
								Pole CS-1-11	0.847	0.419	136.0	89.6	
								L-SUB-FDR-EQ#20-1-84~	0.000	0.000	0.0	0.0	
Pole CS-1-11	4.160	96.374	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-10	-0.846	-0.419	136.0	89.6	
								Pole CS-1-12	0.846	0.419	136.0	89.6	
Pole CS-1-12	4.160	96.232	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-13	0.030	0.015	4.8	89.8	
								Pole CS-1-11	-0.845	-0.417	136.0	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-14	0.815	0.403	131.2	89.7	
Pole CS-1-13	4.160	96.229	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-12	-0.030	-0.015	4.8	89.8	
								SEC_CS-1-7	0.030	0.015	4.8	89.8	
Pole CS-1-14	4.160	96.095	-6.9	0.000	0.000	0.010	0.005	Pole CS-1-17	0.090	0.044	14.5	89.8	
								Pole CS-1-12	-0.814	-0.402	131.2	89.7	
								Pole CS-1-16	0.714	0.353	115.1	89.7	
Pole CS-1-15	4.160	95.984	-7.0	0.000	0.000	0.000	0.000	Pole CS-1-16	-0.030	-0.015	4.8	89.8	
								SEC_CS-1-9	0.030	0.015	4.8	89.8	
Pole CS-1-16	4.160	95.987	-7.0	0.000	0.000	0.000	0.000	Pole CS-1-15	0.030	0.015	4.8	89.8	
								Pole CS-1-14	-0.714	-0.352	115.1	89.7	
								Pole CS-1-21	0.684	0.337	110.3	89.7	
Pole CS-1-17	4.160	96.038	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-14	-0.090	-0.044	14.5	89.8	
								Pole CS-1-18	0.060	0.029	9.6	89.8	
								Pole CS-1-20	0.030	0.015	4.8	89.8	
Pole CS-1-18	4.160	96.030	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.060	-0.029	9.6	89.8	
								Pole CS-1-19	0.030	0.015	4.8	89.8	
								SEC_CS-1-10	0.030	0.015	4.8	89.8	
Pole CS-1-19	4.160	96.021	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-18	-0.030	-0.015	4.8	89.8	
								SEC_CS-1-11	0.030	0.015	4.8	89.8	
Pole CS-1-20	4.160	96.034	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.030	-0.015	4.8	89.8	
								SEC_CS-1-12	0.030	0.015	4.8	89.8	
Pole CS-1-21	4.160	95.882	-7.0	0.000	0.000	0.010	0.005	Pole CS-1-16	-0.683	-0.337	110.3	89.7	
								Pole CS-1-22	0.673	0.332	108.6	89.7	
Pole CS-1-22	4.160	95.782	-7.0	0.000	0.000	0.010	0.005	Pole CS-1-23	0.030	0.015	4.8	89.8	
								Pole CS-1-21	-0.673	-0.331	108.6	89.7	
								Pole CS-1-24	0.633	0.312	102.2	89.7	
Pole CS-1-23	4.160	95.770	-7.0	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.030	-0.015	4.8	89.8	
								SEC_CS-1-15	0.030	0.015	4.8	89.8	
Pole CS-1-24	4.160	95.656	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.632	-0.311	102.2	89.7	
								Pole CS-1-25	0.603	0.296	97.4	89.7	
								SEC_CS-1-16	0.030	0.015	4.8	89.8	
Pole CS-1-25	4.160	95.536	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-28	0.286	0.140	46.3	89.8	
								Pole CS-1-55	0.296	0.146	47.9	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-24	-0.602	-0.296	97.4	89.8	
								Pole CS-1-26	0.020	0.010	3.2	89.8	
Pole CS-1-26	4.160	95.533	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-25	-0.020	-0.010	3.2	89.8	
								Pole CS-1-27	0.010	0.005	1.6	89.8	
Pole CS-1-27	4.160	95.532	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-26	-0.010	-0.005	1.6	89.8	
Pole CS-1-28	4.160	95.516	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-25	-0.286	-0.140	46.3	89.8	
								Pole CS-1-29	0.276	0.135	44.7	89.8	
Pole CS-1-29	4.160	95.438	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-28	-0.276	-0.135	44.7	89.8	
								Pole CS-1-32	0.256	0.126	41.5	89.8	
								Pole CS-1-31	0.020	0.010	3.2	89.8	
Pole CS-1-30	4.160	95.434	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-31	-0.010	-0.005	1.6	89.8	
Pole CS-1-31	4.160	95.436	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-30	0.010	0.005	1.6	89.8	
								Pole CS-1-29	-0.020	-0.010	3.2	89.8	
Pole CS-1-32	4.160	95.367	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-29	-0.256	-0.126	41.5	89.8	
								Pole CS-1-33	0.246	0.121	39.9	89.8	
Pole CS-1-33	4.160	95.256	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-32	-0.246	-0.121	39.9	89.8	
								Pole CS-1-36	0.216	0.106	35.1	89.8	
								Pole CS-1-35	0.020	0.010	3.2	89.8	
Pole CS-1-34	4.160	95.252	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-35	-0.010	-0.005	1.6	89.8	
Pole CS-1-35	4.160	95.254	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-34	0.010	0.005	1.6	89.8	
								Pole CS-1-33	-0.020	-0.010	3.2	89.8	
Pole CS-1-36	4.160	95.160	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-33	-0.216	-0.106	35.1	89.8	
								Pole CS-1-37	0.206	0.101	33.5	89.8	
Pole CS-1-37	4.160	95.117	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-36	-0.206	-0.101	33.5	89.8	
								Pole CS-1-38	0.196	0.096	31.9	89.8	
Pole CS-1-38	4.160	95.069	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-37	-0.196	-0.096	31.9	89.8	
								Pole CS-1-39	0.187	0.091	30.3	89.8	
Pole CS-1-39	4.160	95.028	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-40	0.049	0.024	8.0	89.8	
								Pole CS-1-38	-0.186	-0.091	30.3	89.8	
								Pole CS-1-43	0.137	0.067	22.3	89.8	
Pole CS-1-40	4.160	94.989	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.049	-0.024	8.0	89.8	
								Pole CS-1-41	0.020	0.010	3.2	89.8	
								SEC_CS-1-29	0.029	0.014	4.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-1-41	4.160	94.985	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-40	-0.020	-0.010	3.2	89.8	
								Pole CS-1-42	0.010	0.005	1.6	89.8	
Pole CS-1-42	4.160	94.982	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-41	-0.010	-0.005	1.6	89.8	
Pole CS-1-43	4.160	95.016	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.137	-0.067	22.3	89.8	
								Pole CS-1-44	0.108	0.053	17.6	89.8	
								SEC_CS-1-32	0.029	0.014	4.8	89.8	
Pole CS-1-44	4.160	95.000	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-43	-0.108	-0.053	17.6	89.8	
								Pole CS-1-45	0.098	0.048	16.0	89.8	
Pole CS-1-45	4.160	94.985	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-44	-0.098	-0.048	16.0	89.8	
								Pole CS-1-46	0.088	0.043	14.4	89.8	
Pole CS-1-46	4.160	94.968	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-45	-0.088	-0.043	14.4	89.8	
								Pole CS-1-47	0.078	0.038	12.8	89.8	
Pole CS-1-47	4.160	94.946	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-46	-0.078	-0.038	12.8	89.8	
								Pole CS-1-48	0.069	0.034	11.2	89.8	
Pole CS-1-48	4.160	94.933	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-47	-0.069	-0.034	11.2	89.8	
								Pole CS-1-49	0.059	0.029	9.6	89.8	
Pole CS-1-49	4.160	94.924	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-48	-0.059	-0.029	9.6	89.8	
								Pole CS-1-50	0.049	0.024	8.0	89.8	
Pole CS-1-50	4.160	94.915	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-49	-0.049	-0.024	8.0	89.8	
								Pole CS-1-51	0.039	0.019	6.4	89.8	
Pole CS-1-51	4.160	94.909	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-50	-0.039	-0.019	6.4	89.8	
								Pole CS-1-52	0.029	0.014	4.8	89.8	
Pole CS-1-52	4.160	94.901	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-51	-0.029	-0.014	4.8	89.8	
								Pole CS-1-53	0.020	0.010	3.2	89.8	
Pole CS-1-53	4.160	94.897	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-52	-0.020	-0.010	3.2	89.8	
								Pole CS-1-54	0.010	0.005	1.6	89.8	
Pole CS-1-54	4.160	94.895	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-53	-0.010	-0.005	1.6	89.8	
								L-SUB-FDR-EQ#20-1-86~	0.000	0.000	0.0	0.0	
Pole CS-1-55	4.160	95.423	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-25	-0.295	-0.145	47.9	89.7	
								Pole CS-1-56	0.010	0.005	1.6	89.8	
								Pole CS-1-58	0.286	0.141	46.3	89.7	
Pole CS-1-56	4.160	95.422	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-55	-0.010	-0.005	1.6	89.8	
Pole CS-1-57	4.160	95.297	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-58	-0.275	-0.135	44.7	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-60	0.275	0.135	44.7	89.7	
								L-SUB-FDR-EQ#18-1-173~	0.000	0.000	0.0	0.0	
Pole CS-1-58	4.160	95.353	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-57	0.275	0.135	44.7	89.7	
								Pole CS-1-55	-0.285	-0.140	46.3	89.7	
Pole CS-1-59	4.160	95.226	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-61	-0.030	-0.014	4.8	89.8	
								SEC_CS-1-46	0.030	0.014	4.8	89.8	
Pole CS-1-60	4.160	95.245	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-57	-0.275	-0.135	44.7	89.8	
								Pole CS-1-61	0.265	0.130	43.1	89.8	
Pole CS-1-61	4.160	95.227	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-59	0.030	0.014	4.8	89.8	
								Pole CS-1-60	-0.265	-0.130	43.1	89.8	
								Pole CS-1-62	0.236	0.116	38.3	89.7	
Pole CS-1-62	4.160	95.192	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-61	-0.236	-0.116	38.3	89.8	
								Pole CS-1-63	0.226	0.111	36.7	89.8	
Pole CS-1-63	4.160	95.157	-7.1	0.000	0.000	0.010	0.005	Pole CS-1-62	-0.226	-0.111	36.7	89.8	
								Pole CS-1-64	0.216	0.106	35.1	89.8	
Pole CS-1-64	4.160	95.124	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-63	-0.216	-0.106	35.1	89.8	
								Pole CS-1-65	0.000	0.000	0.0	0.0	
								Pole CS-1-66	0.216	0.106	35.1	89.8	
Pole CS-1-65	4.160	95.124	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-64	0.000	0.000	0.0	0.0	
Pole CS-1-66	4.160	95.052	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-64	-0.216	-0.106	35.1	89.8	
								Pole CS-1-67	0.206	0.101	33.5	89.8	
Pole CS-1-67	4.160	95.027	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-66	-0.206	-0.101	33.5	89.8	
								Pole CS-1-68	0.196	0.096	31.9	89.8	
Pole CS-1-68	4.160	94.999	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-67	-0.196	-0.096	31.9	89.8	
								Pole CS-1-69	0.167	0.082	27.1	89.8	
								SEC_CS-1-53	0.029	0.014	4.8	89.8	
Pole CS-1-69	4.160	94.973	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-68	-0.167	-0.082	27.1	89.8	
								Pole CS-1-70	0.157	0.077	25.5	89.8	
Pole CS-1-70	4.160	94.940	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-69	-0.157	-0.077	25.5	89.8	
								Pole CS-1-71	0.147	0.072	23.9	89.8	
Pole CS-1-71	4.160	94.918	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-70	-0.147	-0.072	23.9	89.8	
								Pole CS-1-72	0.137	0.067	22.3	89.8	
Pole CS-1-72	4.160	94.893	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-71	-0.137	-0.067	22.3	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-73	0.127	0.062	20.7	89.8	
Pole CS-1-73	4.160	94.869	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-72	-0.127	-0.062	20.7	89.8	
								Pole CS-1-74	0.010	0.005	1.6	89.8	
								Pole CS-1-75	0.117	0.058	19.1	89.8	
Pole CS-1-74	4.160	94.868	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-73	-0.010	-0.005	1.6	89.8	
Pole CS-1-75	4.160	94.800	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-73	-0.117	-0.057	19.1	89.8	
								Pole CS-1-76	0.049	0.024	8.0	89.8	
								Pole CS-1-86	0.068	0.034	11.2	89.8	
Pole CS-1-76	4.160	94.787	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-75	-0.049	-0.024	8.0	89.8	
								Pole CS-1-77	0.039	0.019	6.4	89.8	
Pole CS-1-77	4.160	94.773	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-76	-0.039	-0.019	6.4	89.8	
								Pole CS-1-78	0.029	0.014	4.8	89.8	
Pole CS-1-78	4.160	94.768	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-77	-0.029	-0.014	4.8	89.8	
								Pole CS-1-79	0.020	0.010	3.2	89.8	
Pole CS-1-79	4.160	94.763	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-78	-0.020	-0.010	3.2	89.8	
								Pole CS-1-80	0.010	0.005	1.6	89.8	
Pole CS-1-80	4.160	94.761	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-79	-0.010	-0.005	1.6	89.8	
Pole CS-1-81	4.160	94.676	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-82	-0.029	-0.014	4.8	89.8	
								Pole CS-1-88	0.020	0.010	3.2	89.8	
Pole CS-1-82	4.160	94.683	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-81	0.029	0.014	4.8	89.8	
								Pole CS-1-83	-0.039	-0.019	6.4	89.8	
Pole CS-1-83	4.160	94.697	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-82	0.039	0.019	6.4	89.8	
								Pole CS-1-84	-0.049	-0.024	8.0	89.8	
Pole CS-1-84	4.160	94.709	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-83	0.049	0.024	8.0	89.8	
								Pole CS-1-85	-0.059	-0.029	9.6	89.8	
Pole CS-1-85	4.160	94.740	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-84	0.059	0.029	9.6	89.8	
								Pole CS-1-86	-0.068	-0.033	11.2	89.8	
Pole CS-1-86	4.160	94.766	-7.2	0.000	0.000	0.000	0.000	Pole CS-1-75	-0.068	-0.033	11.2	89.8	
								Pole CS-1-85	0.068	0.033	11.2	89.8	
Pole CS-1-87	4.160	94.666	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-88	-0.010	-0.005	1.6	89.8	
Pole CS-1-88	4.160	94.669	-7.2	0.000	0.000	0.010	0.005	Pole CS-1-81	-0.020	-0.010	3.2	89.8	
								Pole CS-1-87	0.010	0.005	1.6	89.8	
Pole CS-1-90	4.160	99.663	-3.3	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.364	-0.176	56.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_5_NEOPLAN	0.364	0.176	56.4	90.0	
Pole CS-2-1	4.160	99.431	-6.2	0.000	0.000	0.000	0.000	Pole CS-2-2	1.472	0.723	228.9	89.8	
								BUS_CLG_4kV	-1.472	-0.723	228.9	89.8	
Pole CS-2-2	4.160	99.120	-6.2	0.000	0.000	0.011	0.005	Pole CS-2-1	-1.469	-0.718	228.9	89.8	
								Pole CS-2-3	0.032	0.015	4.9	89.8	
								Pole CS-2-5	1.427	0.698	222.4	89.8	
Pole CS-2-3	4.160	99.108	-6.2	0.000	0.000	0.021	0.010	Pole CS-2-2	-0.032	-0.015	4.9	89.8	
								Pole CS-2-4	0.011	0.005	1.6	89.8	
Pole CS-2-4	4.160	99.104	-6.2	0.000	0.000	0.011	0.005	Pole CS-2-3	-0.011	-0.005	1.6	89.8	
Pole CS-2-5	4.160	98.819	-6.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	1.423	0.694	222.4	89.9	
								Pole CS-2-2	-1.423	-0.694	222.4	89.9	
Pole CS-2-7	4.160	94.854	-5.7	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.994	-0.495	162.5	89.5	
								Pole CS-2-8	0.994	0.495	162.5	89.5	
Pole CS-2-8	4.160	94.633	-5.8	0.000	0.000	0.000	0.000	Pole CS-2-7	-0.992	-0.493	162.5	89.5	
								Pole CS-2-9	0.068	0.033	11.1	89.8	
								Pole CS-2-12	0.895	0.446	146.6	89.5	
								SEC_CS-2-5	0.029	0.014	4.8	89.8	
Pole CS-2-9	4.160	94.620	-5.8	0.000	0.000	0.010	0.005	Pole CS-2-8	-0.068	-0.033	11.1	89.8	
								Pole CS-2-10	0.058	0.029	9.5	89.8	
Pole CS-2-10	4.160	94.613	-5.8	0.000	0.000	0.000	0.000	Pole CS-2-9	-0.058	-0.029	9.5	89.8	
								Pole CS-2-11	0.029	0.014	4.8	89.8	
								SEC_CS-2-7	0.029	0.014	4.8	89.8	
Pole CS-2-11	4.160	94.604	-5.8	0.000	0.000	0.000	0.000	Pole CS-2-10	-0.029	-0.014	4.8	89.8	
								SEC_CS-2-8	0.029	0.014	4.8	89.8	
Pole CS-2-12	4.160	94.521	-5.8	0.000	0.000	0.010	0.005	Pole CS-2-8	-0.894	-0.445	146.6	89.5	
								Pole CS-2-13	0.884	0.440	145.0	89.5	
Pole CS-2-13	4.160	94.394	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-12	-0.883	-0.439	145.0	89.6	
								Pole CS-2-14	0.039	0.019	6.3	89.9	
								Pole CS-2-20	0.844	0.420	138.6	89.5	
Pole CS-2-14	4.160	94.387	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-13	-0.039	-0.019	6.3	89.9	
								Pole CS-2-15	0.029	0.014	4.8	89.8	
								Pole CS-2-16	0.010	0.005	1.6	90.3	
Pole CS-2-15	4.160	94.382	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.029	-0.014	4.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_CS-2-10	0.029	0.014	4.8	89.8	
Pole CS-2-16	4.160	94.383	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.010	-0.005	1.6	90.3	
								Pole CS-2-17	0.010	0.005	1.6	90.3	
Pole CS-2-17	4.160	94.381	-5.9	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
								Pole CS-2-16	-0.010	-0.005	1.6	90.3	
								Pole CS-2-18	0.010	0.005	1.6	89.8	
Pole CS-2-18	4.160	94.379	-5.9	0.000	0.000	0.010	0.005	Pole CS-2-17	-0.010	-0.005	1.6	89.8	
Pole CS-2-20	4.160	94.279	-5.9	0.000	0.000	0.000	0.000	PRI_PM_21	0.144	0.072	23.6	89.5	
								Pole CS-2-13	-0.843	-0.419	138.6	89.6	
								Pole CS-2-21	0.700	0.347	115.0	89.6	
Pole CS-2-21	4.160	93.922	-6.0	0.000	0.000	0.000	0.000	PRI_PM_20	0.143	0.071	23.6	89.5	
								Pole CS-2-20	-0.698	-0.345	115.0	89.6	
								Pole CS-2-22	0.555	0.274	91.4	89.7	
Pole CS-2-22	4.160	93.776	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-21	-0.554	-0.273	91.4	89.7	
								Pole CS-2-23	0.544	0.269	89.8	89.7	
Pole CS-2-23	4.160	93.718	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-22	-0.544	-0.268	89.8	89.7	
								Pole CS-2-24	0.157	0.078	26.0	89.7	
								Pole CS-2-35	0.387	0.191	63.8	89.7	
Pole CS-2-24	4.160	93.652	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-23	-0.157	-0.078	26.0	89.7	
								Pole CS-2-25	0.148	0.073	24.4	89.7	
Pole CS-2-25	4.160	93.634	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-24	-0.148	-0.073	24.4	89.7	
								Pole CS-2-26	0.138	0.068	22.8	89.6	
Pole CS-2-26	4.160	93.598	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-25	-0.138	-0.068	22.8	89.6	
								Pole CS-2-27	0.128	0.063	21.2	89.6	
Pole CS-2-27	4.160	93.556	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-28	0.057	0.028	9.5	89.9	
								Pole CS-2-26	-0.128	-0.063	21.2	89.6	
								PRI_PM_1-1	0.071	0.035	11.8	89.4	
Pole CS-2-28	4.160	93.530	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.057	-0.028	9.5	89.8	
								Pole CS-2-29	0.057	0.028	9.5	89.8	
Pole CS-2-29	4.160	93.521	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-28	-0.057	-0.028	9.5	89.8	
								Pole CS-2-30	0.048	0.023	7.9	89.8	
Pole CS-2-30	4.160	93.512	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-29	-0.048	-0.023	7.9	89.8	
								Pole CS-2-31	0.038	0.019	6.3	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-31	4.160	93.502	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-30	-0.038	-0.019	6.3	89.8	
								Pole CS-2-32	0.029	0.014	4.7	89.8	
Pole CS-2-32	4.160	93.495	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-31	-0.029	-0.014	4.7	89.8	
								Pole CS-2-33	0.019	0.009	3.2	89.8	
Pole CS-2-33	4.160	93.492	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-32	-0.019	-0.009	3.2	89.8	
								Pole CS-2-34	0.010	0.005	1.6	89.8	
Pole CS-2-34	4.160	93.490	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-33	-0.010	-0.005	1.6	89.8	
Pole CS-2-35	4.160	93.599	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-23	-0.386	-0.191	63.8	89.7	
								Pole CS-2-36	0.386	0.191	63.8	89.7	
Pole CS-2-36	4.160	93.326	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-35	-0.385	-0.190	63.8	89.7	
								Pole CS-2-37	0.385	0.190	63.8	89.7	
Pole CS-2-37	4.160	93.177	-6.0	0.000	0.000	0.000	0.000	PRI_PM_19	0.157	0.078	26.1	89.4	
								Pole CS-2-36	-0.384	-0.190	63.8	89.7	
								Pole CS-2-38	0.029	0.014	4.7	89.8	
								Pole CS-2-41	0.199	0.098	33.0	89.8	
Pole CS-2-38	4.160	93.173	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-37	-0.029	-0.014	4.7	89.8	
								Pole CS-2-39	0.019	0.009	3.2	89.8	
Pole CS-2-39	4.160	93.158	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-38	-0.019	-0.009	3.2	89.8	
								Pole CS-2-40	0.010	0.005	1.6	89.8	
Pole CS-2-40	4.160	93.155	-6.0	0.000	0.000	0.010	0.005	Pole CS-2-39	-0.010	-0.005	1.6	89.8	
Pole CS-2-41	4.160	93.125	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-37	-0.199	-0.098	33.0	89.8	
								Pole CS-2-42	0.190	0.093	31.5	89.8	
Pole CS-2-42	4.160	93.049	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-41	-0.190	-0.093	31.5	89.8	
								Pole CS-2-43	0.009	0.005	1.6	89.8	
								Pole CS-2-44	0.180	0.088	29.9	89.8	
Pole CS-2-43	4.160	93.047	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-42	-0.009	-0.005	1.6	89.8	
Pole CS-2-44	4.160	92.993	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-42	-0.180	-0.088	29.9	89.8	
								Pole CS-2-45	0.047	0.023	7.9	89.8	
								Pole CS-2-50	0.019	0.009	3.1	89.8	
								Pole CS-2-52	0.114	0.056	18.9	89.8	
Pole CS-2-45	4.160	92.987	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-44	-0.047	-0.023	7.9	89.8	
								Pole CS-2-46	0.038	0.019	6.3	89.8	
Pole CS-2-46	4.160	92.978	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-45	-0.038	-0.019	6.3	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-2-47	0.028	0.014	4.7	89.8	
Pole CS-2-47	4.160	92.971	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-46	-0.028	-0.014	4.7	89.8	
								Pole CS-2-48	0.019	0.009	3.1	89.8	
Pole CS-2-48	4.160	92.963	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-47	-0.019	-0.009	3.1	89.8	
								Pole CS-2-49	0.009	0.005	1.6	89.8	
Pole CS-2-49	4.160	92.961	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-48	-0.009	-0.005	1.6	89.8	
Pole CS-2-50	4.160	92.988	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-44	-0.019	-0.009	3.1	89.8	
								Pole CS-2-51	0.009	0.005	1.6	89.8	
Pole CS-2-51	4.160	92.986	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-50	-0.009	-0.005	1.6	89.8	
Pole CS-2-52	4.160	92.950	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-44	-0.114	-0.056	18.9	89.8	
								Pole CS-2-56	0.038	0.019	6.3	89.8	
								Pole CS-2-58	0.019	0.009	3.1	89.8	
								Pole CS-2-61	0.057	0.028	9.4	89.8	
Pole CS-2-53	4.160	92.930	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-54	-0.009	-0.005	1.6	89.8	
Pole CS-2-54	4.160	92.931	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-53	0.009	0.005	1.6	89.8	
								Pole CS-2-55	-0.019	-0.009	3.1	89.8	
Pole CS-2-55	4.160	92.936	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-54	0.019	0.009	3.1	89.8	
								Pole CS-2-56	-0.028	-0.014	4.7	89.8	
Pole CS-2-56	4.160	92.943	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-52	-0.038	-0.019	6.3	89.8	
								Pole CS-2-55	0.028	0.014	4.7	89.8	
Pole CS-2-57	4.160	92.939	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-58	-0.009	-0.005	1.6	89.8	
Pole CS-2-58	4.160	92.943	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-57	0.009	0.005	1.6	89.8	
								Pole CS-2-52	-0.019	-0.009	3.1	89.8	
Pole CS-2-60	4.160	92.918	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-61	-0.047	-0.023	7.9	89.8	
								Pole CS-2-62	0.038	0.019	6.3	89.8	
Pole CS-2-61	4.160	92.940	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-52	-0.057	-0.028	9.4	89.8	
								Pole CS-2-60	0.047	0.023	7.9	89.8	
Pole CS-2-62	4.160	92.902	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-60	-0.038	-0.019	6.3	89.8	
								Pole CS-2-63	0.028	0.014	4.7	89.8	
Pole CS-2-63	4.160	92.890	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-62	-0.028	-0.014	4.7	89.8	
								Pole CS-2-64	0.019	0.009	3.1	89.8	
Pole CS-2-64	4.160	92.885	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-63	-0.019	-0.009	3.1	89.8	
								Pole CS-2-65	0.009	0.005	1.6	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-65	4.160	92.883	-6.0	0.000	0.000	0.009	0.005	Pole CS-2-64	-0.009	-0.005	1.6	89.8	
Pole CS-2-66	4.160	98.697	-6.3	0.000	0.000	0.000	0.000	Pole CS-3-10	-0.031	-0.015	4.9	89.8	
								L-SUB-FDR-EQ#18-1-237~	0.000	0.000	0.0	0.0	
								SEC_CS-2-46	0.031	0.015	4.9	89.8	
Pole CS-2-73	4.160	96.451	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-27	-0.030	-0.015	4.8	89.8	
								SEC_CS-2-49	0.030	0.015	4.8	89.8	
Pole CS-3-1	4.160	98.999	-6.3	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-0.867	-0.425	135.3	89.8	
								Pole CS-3-2	0.221	0.108	34.4	89.8	
								Pole CS-3-21	0.646	0.317	100.9	89.8	
Pole CS-3-2	4.160	98.936	-6.3	0.000	0.000	0.011	0.005	Pole CS-3-3	0.084	0.041	13.1	89.8	
								Pole CS-3-1	-0.220	-0.108	34.4	89.8	
								Pole CS-3-11	0.126	0.062	19.7	89.8	
Pole CS-3-3	4.160	98.916	-6.3	0.000	0.000	0.011	0.005	Pole CS-3-2	-0.084	-0.041	13.1	89.8	
								Pole CS-3-4	0.073	0.036	11.5	89.8	
Pole CS-3-4	4.160	98.874	-6.3	0.000	0.000	0.011	0.005	Pole CS-3-3	-0.073	-0.036	11.5	89.8	
								Pole CS-3-5	0.063	0.031	9.8	89.8	
Pole CS-3-5	4.160	98.838	-6.3	0.000	0.000	0.000	0.000	Pole CS-3-4	-0.063	-0.031	9.8	89.8	
								Pole CS-3-6	0.063	0.031	9.8	89.8	
Pole CS-3-6	4.160	98.799	-6.3	0.000	0.000	0.010	0.005	Pole CS-3-5	-0.063	-0.031	9.8	89.8	
								Pole CS-3-7	0.052	0.026	8.2	89.8	
Pole CS-3-7	4.160	98.781	-6.3	0.000	0.000	0.000	0.000	Pole CS-3-6	-0.052	-0.026	8.2	89.8	
								Pole CS-3-8	0.052	0.026	8.2	89.8	
Pole CS-3-8	4.160	98.765	-6.3	0.000	0.000	0.010	0.005	Pole CS-3-7	-0.052	-0.026	8.2	89.8	
								Pole CS-3-9	0.042	0.020	6.6	89.8	
Pole CS-3-9	4.160	98.726	-6.3	0.000	0.000	0.000	0.000	Pole CS-3-8	-0.042	-0.020	6.6	89.8	
								Pole CS-3-10	0.042	0.020	6.6	89.8	
Pole CS-3-10	4.160	98.700	-6.3	0.000	0.000	0.010	0.005	Pole CS-2-66	0.031	0.015	4.9	89.8	
								Pole CS-3-9	-0.042	-0.020	6.6	89.8	
Pole CS-3-11	4.160	98.917	-6.3	0.000	0.000	0.011	0.005	Pole CS-3-2	-0.126	-0.062	19.7	89.8	
								Pole CS-3-12	0.115	0.056	18.0	89.8	
Pole CS-3-12	4.160	98.784	-6.3	0.000	0.000	0.021	0.010	Pole CS-3-11	-0.115	-0.056	18.0	89.8	
								Pole CS-3-13	0.094	0.046	14.7	89.8	
Pole CS-3-13	4.160	98.759	-6.3	0.000	0.000	0.010	0.005	Pole CS-3-12	-0.094	-0.046	14.7	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-14	0.084	0.041	13.1	89.8	
Pole CS-3-14	4.160	98.692	-6.3	0.000	0.000	0.010	0.005	Pole CS-3-13	-0.084	-0.041	13.1	89.8	
								Pole CS-3-15	0.073	0.036	11.5	89.8	
Pole CS-3-15	4.160	98.638	-6.2	0.000	0.000	0.021	0.010	Pole CS-3-14	-0.073	-0.036	11.5	89.8	
								Pole CS-3-16	0.052	0.026	8.2	89.8	
Pole CS-3-16	4.160	98.582	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-15	-0.052	-0.026	8.2	89.8	
								Pole CS-3-17	0.042	0.020	6.6	89.8	
Pole CS-3-17	4.160	98.573	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-16	-0.042	-0.020	6.6	89.8	
								Pole CS-3-18	0.031	0.015	4.9	89.8	
Pole CS-3-18	4.160	98.557	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-17	-0.031	-0.015	4.9	89.8	
								Pole CS-3-19	0.021	0.010	3.3	89.8	
Pole CS-3-19	4.160	98.547	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-18	-0.021	-0.010	3.3	89.8	
								Pole CS-3-20	0.010	0.005	1.6	89.8	
Pole CS-3-20	4.160	98.545	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-19	-0.010	-0.005	1.6	89.8	
Pole CS-3-21	4.160	98.853	-6.3	0.000	0.000	0.010	0.005	Pole CS-3-1	-0.645	-0.317	100.9	89.8	
								Pole CS-3-22	0.635	0.312	99.3	89.8	
Pole CS-3-22	4.160	98.320	-6.2	0.000	0.000	0.000	0.000	PRI_PM_25	0.085	0.043	13.5	89.5	
								Pole CS-3-21	-0.631	-0.310	99.3	89.7	
								Pole CS-3-23	0.546	0.268	85.8	89.8	
Pole CS-3-23	4.160	97.991	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-29	0.534	0.262	84.2	89.8	
								Pole CS-3-22	-0.544	-0.267	85.8	89.8	
Pole CS-3-24	4.160	97.205	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-32	-0.041	-0.020	6.5	89.8	
								Pole CS-3-25	0.031	0.015	4.9	89.8	
Pole CS-3-25	4.160	97.196	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-24	-0.031	-0.015	4.9	89.8	
								Pole CS-3-26	0.020	0.010	3.2	89.8	
Pole CS-3-26	4.160	97.188	-6.2	0.000	0.000	0.020	0.010	Pole CS-3-25	-0.020	-0.010	3.2	89.8	
Pole CS-3-27	4.160	96.462	-6.2	0.000	0.000	0.010	0.005	Pole CS-2-73	0.030	0.015	4.8	89.8	
								Pole CS-3-34	-0.040	-0.020	6.5	89.8	
Pole CS-3-28	4.160	96.160	-6.2	0.000	0.000	0.020	0.010	Pole CS-3-35	-0.020	-0.010	3.2	89.8	
Pole CS-3-29	4.160	97.694	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-23	-0.532	-0.261	84.2	89.8	
								Pole CS-3-30	0.501	0.246	79.3	89.8	
								SEC_CS-2-47	0.031	0.015	4.9	89.8	
Pole CS-3-30	4.160	97.481	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-29	-0.500	-0.245	79.3	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-31	0.084	0.042	13.4	89.5	
								Pole CS-3-32	0.416	0.203	65.9	89.8	
Pole CS-3-31	4.160	97.475	-6.2	0.000	0.000	0.000	0.000	PRI_PM_26	0.084	0.042	13.4	89.5	
								Pole CS-3-30	-0.084	-0.042	13.4	89.5	
Pole CS-3-32	4.160	97.217	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-30	-0.415	-0.203	65.9	89.8	
								Pole CS-3-33	0.374	0.183	59.4	89.8	
								Pole CS-3-24	0.041	0.020	6.5	89.8	
Pole CS-3-33	4.160	97.097	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-32	-0.373	-0.183	59.4	89.8	
								Pole CS-3-34	0.343	0.168	54.6	89.8	
								SEC_CS-2-48	0.031	0.015	4.9	89.8	
Pole CS-3-34	4.160	96.479	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-33	-0.341	-0.167	54.6	89.8	
								Pole CS-3-35	0.300	0.147	48.1	89.8	
								Pole CS-3-27	0.040	0.020	6.5	89.8	
Pole CS-3-35	4.160	96.166	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-34	-0.299	-0.147	48.1	89.8	
								Pole CS-3-52	0.279	0.137	44.9	89.8	
								Pole CS-3-28	0.020	0.010	3.2	89.8	
Pole CS-3-36	4.160	95.329	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-37	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-246~	0.000	0.000	0.0	0.0	
Pole CS-3-37	4.160	95.329	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-36	0.000	0.000	0.0	0.0	
								Pole CS-3-38	-0.010	-0.005	1.6	89.8	
Pole CS-3-38	4.160	95.330	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-37	0.010	0.005	1.6	89.8	
								Pole CS-3-39	-0.020	-0.010	3.2	89.8	
Pole CS-3-39	4.160	95.342	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-38	0.020	0.010	3.2	89.8	
								Pole CS-3-40	-0.030	-0.014	4.8	89.8	
Pole CS-3-40	4.160	95.351	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-39	0.030	0.014	4.8	89.8	
								Pole CS-3-41	-0.040	-0.019	6.4	89.8	
Pole CS-3-41	4.160	95.371	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-40	0.040	0.019	6.4	89.8	
								Pole CS-3-42	-0.049	-0.024	8.0	89.8	
Pole CS-3-42	4.160	95.387	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-41	0.049	0.024	8.0	89.8	
								Pole CS-3-43	-0.059	-0.029	9.6	89.8	
Pole CS-3-43	4.160	95.417	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-42	0.059	0.029	9.6	89.8	
								Pole CS-3-45	-0.079	-0.039	12.8	89.8	
								Pole CS-3-44	0.010	0.005	1.6	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-3-44	4.160	95.416	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-43	-0.010	-0.005	1.6	89.8	
Pole CS-3-45	4.160	95.459	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-43	0.079	0.039	12.8	89.8	
								Pole CS-3-50	-0.099	-0.048	16.0	89.8	
								Pole CS-3-46	0.010	0.005	1.6	89.8	
								Pole CS-3-47	0.010	0.005	1.6	89.8	
Pole CS-3-46	4.160	95.458	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-45	-0.010	-0.005	1.6	89.8	
Pole CS-3-47	4.160	95.458	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-45	-0.010	-0.005	1.6	89.8	
Pole CS-3-48	4.160	95.512	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-50	-0.010	-0.005	1.6	89.8	
Pole CS-3-49	4.160	95.512	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-50	-0.010	-0.005	1.6	89.8	
Pole CS-3-50	4.160	95.513	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-45	0.099	0.048	16.0	89.8	
								Pole CS-3-51	-0.119	-0.058	19.2	89.8	
								Pole CS-3-48	0.010	0.005	1.6	89.8	
								Pole CS-3-49	0.010	0.005	1.6	89.8	
Pole CS-3-51	4.160	95.523	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-50	0.119	0.058	19.2	89.8	
								Pole CS-3-63	-0.198	-0.097	32.0	89.8	
								Pole CS-3-66	0.079	0.039	12.8	89.8	
								Pole CS-3-74	0.000	0.000	0.0	0.0	
Pole CS-3-52	4.160	96.004	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-35	-0.279	-0.136	44.9	89.8	
								Pole CS-3-59	0.249	0.122	40.1	89.8	
								Pole CS-3-53	0.030	0.015	4.8	89.8	
Pole CS-3-53	4.160	95.993	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-52	-0.030	-0.015	4.8	89.8	
								Pole CS-3-54	0.020	0.010	3.2	89.8	
Pole CS-3-54	4.160	95.988	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-53	-0.020	-0.010	3.2	89.8	
								Pole CS-3-55	0.010	0.005	1.6	89.8	
Pole CS-3-55	4.160	95.985	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-54	-0.010	-0.005	1.6	89.8	
Pole CS-3-56	4.160	95.866	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-57	-0.010	-0.005	1.6	89.8	
Pole CS-3-57	4.160	95.872	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-56	0.010	0.005	1.6	89.8	
								Pole CS-3-58	-0.020	-0.010	3.2	89.8	
Pole CS-3-58	4.160	95.882	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-57	0.020	0.010	3.2	89.8	
								Pole CS-3-59	-0.030	-0.015	4.8	89.8	
Pole CS-3-59	4.160	95.887	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-52	-0.249	-0.122	40.1	89.8	
								Pole CS-3-60	0.219	0.107	35.2	89.8	
								Pole CS-3-58	0.030	0.015	4.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-3-60	4.160	95.786	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-59	-0.219	-0.107	35.2	89.8	
								Pole CS-3-62	0.219	0.107	35.2	89.8	
Pole CS-3-61	4.160	95.683	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-62	-0.208	-0.102	33.6	89.8	
								Pole CS-3-63	0.198	0.097	32.0	89.8	
Pole CS-3-62	4.160	95.733	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-61	0.208	0.102	33.6	89.8	
								Pole CS-3-60	-0.218	-0.107	35.2	89.8	
Pole CS-3-63	4.160	95.605	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-61	-0.198	-0.097	32.0	89.8	
								Pole CS-3-51	0.198	0.097	32.0	89.8	
								Pole CS-3-75	0.000	0.000	0.0	0.0	
Pole CS-3-66	4.160	95.508	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-51	-0.079	-0.039	12.8	89.8	
								Pole CS-3-67	0.069	0.034	11.2	89.8	
Pole CS-3-67	4.160	95.489	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-66	-0.069	-0.034	11.2	89.8	
								Pole CS-3-68	0.059	0.029	9.6	89.8	
Pole CS-3-68	4.160	95.470	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-67	-0.059	-0.029	9.6	89.8	
								Pole CS-3-69	0.049	0.024	8.0	89.8	
Pole CS-3-69	4.160	95.455	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-68	-0.049	-0.024	8.0	89.8	
								Pole CS-3-70	0.040	0.019	6.4	89.8	
Pole CS-3-70	4.160	95.443	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-69	-0.040	-0.019	6.4	89.8	
								Pole CS-3-71	0.030	0.015	4.8	89.8	
Pole CS-3-71	4.160	95.434	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-70	-0.030	-0.015	4.8	89.8	
								Pole CS-3-72	0.020	0.010	3.2	89.8	
Pole CS-3-72	4.160	95.427	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-71	-0.020	-0.010	3.2	89.8	
								Pole CS-3-73	0.010	0.005	1.6	89.8	
Pole CS-3-73	4.160	95.424	-6.2	0.000	0.000	0.010	0.005	Pole CS-3-72	-0.010	-0.005	1.6	89.8	
Pole CS-3-74	4.160	95.523	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-51	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-276~	0.000	0.000	0.0	0.0	
Pole CS-3-75	4.160	95.605	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-63	0.000	0.000	0.0	0.0	
Pole CS-4-1	4.160	99.165	-6.2	0.000	0.000	0.011	0.005	Pole CS-4-11	0.783	0.389	122.4	89.6	
								Pole CS-4-3	0.021	0.010	3.3	89.8	
								BUS_CLG_4kV	-0.815	-0.405	127.3	89.6	
Pole CS-4-2	4.160	98.115	-6.2	0.000	0.000	0.010	0.005	Pole CS-4-11	-0.604	-0.300	95.4	89.6	
								Pole CS-4-6	0.594	0.295	93.8	89.6	
Pole CS-4-3	4.160	99.165	-6.2	0.000	0.000	0.011	0.005	Pole CS-4-1	-0.021	-0.010	3.3	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-4-4	0.011	0.005	1.6	89.9	
Pole CS-4-4	4.160	99.155	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-3	-0.011	-0.005	1.6	89.8	
								Pole CS-4-5	0.011	0.005	1.6	89.8	
								L-SUB-FDR-EQ#18-1-283~	0.000	0.000	0.0	0.0	
Pole CS-4-5	4.160	99.153	-6.2	0.000	0.000	0.011	0.005	Pole CS-4-4	-0.011	-0.005	1.6	89.8	
Pole CS-4-6	4.160	97.662	-6.2	0.000	0.000	0.000	0.000	PRI_PM_22	0.169	0.084	26.8	89.5	
								Pole CS-4-2	-0.591	-0.294	93.8	89.5	
								Pole CS-4-7	0.422	0.210	67.0	89.6	
Pole CS-4-7	4.160	97.513	-6.2	0.000	0.000	0.021	0.010	Pole CS-4-6	-0.422	-0.209	67.0	89.6	
								Pole CS-4-8	0.401	0.199	63.8	89.6	
Pole CS-4-8	4.160	97.360	-6.2	0.000	0.000	0.010	0.005	Pole CS-4-7	-0.401	-0.199	63.8	89.6	
								Pole CS-4-9	0.390	0.194	62.1	89.6	
Pole CS-4-9	4.160	97.240	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-8	-0.390	-0.194	62.1	89.6	
								Pole CS-4-12	0.031	0.015	4.9	89.8	
								Pole CS-4-13	0.359	0.179	57.3	89.5	
Pole CS-4-11	4.160	98.575	-6.2	0.000	0.000	0.000	0.000	PRI_PM_11	0.171	0.086	27.0	89.5	
								Pole CS-4-1	-0.778	-0.387	122.4	89.5	
								Pole CS-4-2	0.607	0.301	95.4	89.6	
Pole CS-4-12	4.160	97.235	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.031	-0.015	4.9	89.8	
								SEC_CS-4-8	0.031	0.015	4.9	89.8	
Pole CS-4-13	4.160	97.108	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.359	-0.178	57.3	89.5	
								Pole CS-4-14	0.359	0.178	57.3	89.5	
Pole CS-4-14	4.160	96.966	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-13	-0.358	-0.178	57.3	89.5	
								Pole CS-4-15	0.358	0.178	57.3	89.5	
Pole CS-4-15	4.160	96.027	-6.1	0.000	0.000	0.000	0.000	Pole CS-4-14	-0.355	-0.177	57.3	89.5	
								Pole CS-4-16	0.355	0.177	57.3	89.5	
Pole CS-4-16	4.160	94.553	-6.1	0.000	0.000	0.000	0.000	Pole CS-4-15	-0.349	-0.174	57.3	89.5	
								Pole CS-4-18	0.019	0.010	3.2	89.8	
								Pole CS-4-20	0.330	0.165	54.1	89.5	
Pole CS-4-17	4.160	94.544	-6.1	0.000	0.000	0.010	0.005	Pole CS-4-18	-0.010	-0.005	1.6	89.8	
Pole CS-4-18	4.160	94.547	-6.1	0.000	0.000	0.000	0.000	Pole CS-4-17	0.010	0.005	1.6	89.8	
								Pole CS-4-16	-0.019	-0.010	3.2	89.8	
								Pole CS-4-19	0.010	0.005	1.6	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-4-19	4.160	94.539	-6.1	0.000	0.000	0.010	0.005	Pole CS-4-18	-0.010	-0.005	1.6	89.8	
Pole CS-4-20	4.160	94.369	-6.1	0.000	0.000	0.000	0.000	PRI_PM_23	0.160	0.080	26.3	89.4	
								Pole CS-4-16	-0.329	-0.164	54.1	89.5	
								Pole CS-4-21	0.169	0.085	27.8	89.5	
Pole CS-4-21	4.160	94.262	-6.1	0.000	0.000	0.010	0.005	Pole CS-4-20	-0.169	-0.084	27.8	89.5	
								Pole CS-4-22	0.159	0.080	26.2	89.4	
Pole CS-4-22	4.160	94.192	-6.1	0.000	0.000	0.000	0.000	PRI_PM_24	0.159	0.080	26.2	89.4	
								Pole CS-4-21	-0.159	-0.080	26.2	89.4	
Pole CS-5-18	24.940	94.640	-3.2	0.000	0.000	0.015	0.008	Pole CS-5-19	-0.015	-0.008	0.4	89.6	
Pole CS-5-19	24.940	94.640	-3.2	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-9	0.047	0.021	1.3	90.9	
								Pole CS-5-18	0.015	0.008	0.4	89.8	
								Pole CS-5-20	-0.062	-0.029	1.7	90.6	
Pole CS-5-20	24.940	94.640	-3.2	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-8	0.046	0.022	1.3	90.3	
								Pole CS-5-19	0.062	0.029	1.7	90.7	
								Pole CS-5-21	-0.109	-0.051	2.9	90.5	
Pole CS-5-21	24.940	94.646	-3.2	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-0.109	-0.050	2.9	90.8	
								Pole CS-5-20	0.109	0.050	2.9	90.8	
Pole HS-1-001	4.160	99.825	-6.0	0.000	0.000	0.013	0.006	BUS_HSC_4kV	-0.097	-0.047	15.0	89.9	
								Pole HS-1-4	0.084	0.041	13.0	89.9	
Pole HS-1-4	4.160	99.806	-6.0	0.000	0.000	0.019	0.009	Pole HS-1-001	-0.084	-0.041	13.0	89.9	
								Pole HS-1-16	0.065	0.032	10.0	89.9	
Pole HS-1-16	4.160	99.792	-6.0	0.000	0.000	0.039	0.019	Pole HS-1-17	0.026	0.013	4.0	89.9	
								Pole HS-1-4	-0.065	-0.032	10.0	89.9	
Pole HS-1-17	4.160	99.787	-6.0	0.000	0.000	0.006	0.003	Pole HS-1-16	-0.026	-0.013	4.0	89.9	
								Pole HS-1-19	0.019	0.009	3.0	89.9	
Pole HS-1-19	4.160	99.782	-6.0	0.000	0.000	0.019	0.009	Pole HS-1-17	-0.019	-0.009	3.0	89.9	
Pole HS-2-1	4.160	99.558	-6.0	0.000	0.000	0.011	0.005	BUS_HSC_4kV	-1.278	-0.628	198.5	89.8	
								Pole HS-2-2	1.267	0.622	196.8	89.8	
Pole HS-2-2	4.160	99.186	-6.0	0.000	0.000	0.011	0.005	Pole HS-2-1	-1.263	-0.620	196.8	89.8	
								Pole HS-2-3	1.252	0.615	195.2	89.8	
Pole HS-2-3	4.160	98.860	-6.0	0.000	0.000	0.011	0.005	Pole HS-2-2	-1.248	-0.613	195.2	89.7	
								Pole HS-2-4	1.237	0.608	193.6	89.7	
Pole HS-2-4	4.160	98.537	-6.0	0.000	0.000	0.000	0.000	Pole HS-2-3	-1.233	-0.606	193.6	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-5	1.202	0.591	188.6	89.7	
								SEC_HS-2-4	0.031	0.015	4.9	89.8	
Pole HS-2-5	4.160	98.191	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-4	-1.198	-0.589	188.6	89.7	
								Pole HS-2-6	1.167	0.574	183.7	89.7	
								SEC_HS-2-5	0.031	0.015	4.9	89.8	
Pole HS-2-6	4.160	97.895	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-5	-1.163	-0.572	183.7	89.7	
								Pole HS-2-7	1.132	0.557	178.9	89.7	
								SEC_HS-2-6	0.031	0.015	4.9	89.8	
Pole HS-2-7	4.160	97.573	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-6	-1.128	-0.555	178.9	89.7	
								Pole HS-2-8	1.098	0.540	174.0	89.7	
								SEC_HS-2-7	0.031	0.015	4.9	89.8	
Pole HS-2-8	4.160	97.260	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-7	-1.094	-0.539	174.0	89.7	
								Pole HS-2-9	0.768	0.379	122.3	89.7	
								Pole HS-2-50	0.326	0.159	51.7	89.8	
Pole HS-2-9	4.160	97.052	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-8	-0.767	-0.378	122.3	89.7	
								Pole HS-2-10	0.756	0.373	120.6	89.7	
Pole HS-2-10	4.160	96.860	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-9	-0.755	-0.373	120.6	89.7	
								Pole HS-2-11	0.745	0.368	119.0	89.7	
Pole HS-2-11	4.160	96.653	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-10	-0.743	-0.367	119.0	89.7	
								Pole HS-2-12	0.713	0.352	114.2	89.7	
								SEC_HS-2-10	0.030	0.015	4.8	89.8	
Pole HS-2-12	4.160	96.519	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-11	-0.712	-0.352	114.2	89.7	
								Pole HS-2-86	0.702	0.347	112.6	89.7	
Pole HS-2-13	4.160	96.319	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-14	0.100	0.049	16.1	89.8	
								Pole HS-2-24	0.270	0.132	43.3	89.8	
								Pole HS-2-86	-0.371	-0.181	59.5	89.8	
Pole HS-2-14	4.160	96.286	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-13	-0.100	-0.049	16.1	89.8	
								Pole HS-2-15	0.090	0.044	14.5	89.8	
Pole HS-2-15	4.160	96.252	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-14	-0.090	-0.044	14.5	89.8	
								Pole HS-2-16	0.080	0.039	12.9	89.8	
Pole HS-2-16	4.160	96.218	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-15	-0.080	-0.039	12.9	89.8	
								Pole HS-2-17	0.070	0.034	11.3	89.8	
Pole HS-2-17	4.160	96.195	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-16	-0.070	-0.034	11.3	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-18	0.060	0.029	9.7	89.8	
Pole HS-2-18	4.160	96.180	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-17	-0.060	-0.029	9.7	89.8	
								Pole HS-2-19	0.050	0.025	8.1	89.8	
Pole HS-2-19	4.160	96.168	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-18	-0.050	-0.025	8.1	89.8	
								Pole HS-2-20	0.040	0.020	6.4	89.8	
Pole HS-2-20	4.160	96.145	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-19	-0.040	-0.020	6.4	89.8	
								Pole HS-2-21	0.030	0.015	4.8	89.8	
Pole HS-2-21	4.160	96.137	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-20	-0.030	-0.015	4.8	89.8	
								Pole HS-2-22	0.020	0.010	3.2	89.8	
Pole HS-2-22	4.160	96.130	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-21	-0.020	-0.010	3.2	89.8	
								Pole HS-2-23	0.010	0.005	1.6	89.8	
Pole HS-2-23	4.160	96.128	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-22	-0.010	-0.005	1.6	89.8	
Pole HS-2-24	4.160	96.094	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-13	-0.270	-0.132	43.3	89.8	
								Pole HS-2-25	0.230	0.112	36.9	89.8	
								Pole HS-2-26	0.030	0.015	4.8	89.8	
Pole HS-2-25	4.160	96.018	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.229	-0.112	36.9	89.8	
								Pole HS-2-27	0.229	0.112	36.9	89.8	
Pole HS-2-26	4.160	96.068	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.030	-0.015	4.8	89.8	
								SEC_HS-2-23	0.030	0.015	4.8	89.8	
Pole HS-2-27	4.160	95.943	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-25	-0.229	-0.112	36.9	89.8	
								Pole HS-2-28	0.229	0.112	36.9	89.8	
Pole HS-2-28	4.160	95.819	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-27	-0.229	-0.112	36.9	89.8	
								Pole HS-2-29	0.080	0.039	12.8	89.8	
								Pole HS-2-35	0.149	0.073	24.1	89.8	
Pole HS-2-29	4.160	95.793	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-28	-0.080	-0.039	12.8	89.8	
								Pole HS-2-30	0.070	0.034	11.2	89.8	
Pole HS-2-30	4.160	95.785	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-31	0.040	0.019	6.4	89.8	
								Pole HS-2-29	-0.070	-0.034	11.2	89.8	
								SEC_HS-2-25	0.030	0.015	4.8	89.8	
Pole HS-2-31	4.160	95.779	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-30	-0.040	-0.019	6.4	89.8	
								Pole HS-2-32	0.030	0.015	4.8	89.8	
Pole HS-2-32	4.160	95.771	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-31	-0.030	-0.015	4.8	89.8	
								Pole HS-2-33	0.020	0.010	3.2	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-2-33	4.160	95.764	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-32	-0.020	-0.010	3.2	89.8	
								Pole HS-2-34	0.010	0.005	1.6	89.8	
Pole HS-2-34	4.160	95.761	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-33	-0.010	-0.005	1.6	89.8	
Pole HS-2-35	4.160	95.738	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-28	-0.149	-0.073	24.1	89.8	
								Pole HS-2-36	0.060	0.029	9.6	89.8	
								Pole HS-2-42	0.080	0.039	12.8	89.8	
								Pole HS-2-48	0.010	0.005	1.6	89.8	
Pole HS-2-36	4.160	95.714	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-35	-0.060	-0.029	9.6	89.8	
								Pole HS-2-37	0.050	0.024	8.0	89.8	
Pole HS-2-37	4.160	95.701	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-36	-0.050	-0.024	8.0	89.8	
								Pole HS-2-38	0.040	0.019	6.4	89.8	
Pole HS-2-38	4.160	95.691	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-37	-0.040	-0.019	6.4	89.8	
								Pole HS-2-39	0.030	0.015	4.8	89.8	
Pole HS-2-39	4.160	95.684	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-38	-0.030	-0.015	4.8	89.8	
								Pole HS-2-40	0.020	0.010	3.2	89.8	
Pole HS-2-40	4.160	95.679	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-39	-0.020	-0.010	3.2	89.8	
								Pole HS-2-41	0.010	0.005	1.6	89.8	
Pole HS-2-41	4.160	95.677	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-40	-0.010	-0.005	1.6	89.8	
Pole HS-2-42	4.160	95.695	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-35	-0.079	-0.039	12.8	89.8	
								Pole HS-2-43	0.070	0.034	11.2	89.8	
								Pole HS-2-49	0.010	0.005	1.6	89.8	
Pole HS-2-43	4.160	95.676	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-42	-0.070	-0.034	11.2	89.8	
								Pole HS-2-44	0.040	0.019	6.4	89.8	
								SEC_HS-2-36	0.030	0.015	4.8	89.8	
Pole HS-2-44	4.160	95.666	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-43	-0.040	-0.019	6.4	89.8	
								Pole HS-2-45	0.030	0.015	4.8	89.8	
Pole HS-2-45	4.160	95.657	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-44	-0.030	-0.015	4.8	89.8	
								Pole HS-2-46	0.020	0.010	3.2	89.8	
Pole HS-2-46	4.160	95.653	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-45	-0.020	-0.010	3.2	89.8	
								Pole HS-2-47	0.010	0.005	1.6	89.8	
Pole HS-2-47	4.160	95.650	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-46	-0.010	-0.005	1.6	89.8	
Pole HS-2-48	4.160	95.735	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-35	-0.010	-0.005	1.6	89.8	
Pole HS-2-49	4.160	95.689	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-42	-0.010	-0.005	1.6	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								L-SUB-FDR-EQ#18-1-278~	0.000	0.000	0.0	0.0	
Pole HS-2-50	4.160	97.086	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-8	-0.325	-0.159	51.7	89.8	
								Pole HS-2-51	0.315	0.154	50.1	89.8	
Pole HS-2-51	4.160	96.918	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-50	-0.314	-0.154	50.1	89.8	
								Pole HS-2-52	0.051	0.025	8.1	89.8	
								Pole HS-2-57	0.264	0.129	42.0	89.8	
Pole HS-2-52	4.160	96.912	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-51	-0.051	-0.025	8.1	89.8	
								Pole HS-2-53	0.041	0.020	6.5	89.8	
Pole HS-2-53	4.160	96.906	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-52	-0.041	-0.020	6.5	89.8	
								Pole HS-2-54	0.030	0.015	4.9	89.8	
Pole HS-2-54	4.160	96.900	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-53	-0.030	-0.015	4.9	89.8	
								Pole HS-2-55	0.020	0.010	3.2	89.8	
Pole HS-2-55	4.160	96.898	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-54	-0.020	-0.010	3.2	89.8	
								Pole HS-2-56	0.010	0.005	1.6	89.8	
Pole HS-2-56	4.160	96.896	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-55	-0.010	-0.005	1.6	89.8	
Pole HS-2-57	4.160	96.777	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-51	-0.263	-0.129	42.0	89.8	
								Pole HS-2-58	0.101	0.050	16.2	89.8	
								Pole HS-2-76	0.162	0.079	25.8	89.8	
Pole HS-2-58	4.160	96.762	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-57	-0.101	-0.050	16.2	89.8	
								Pole HS-2-67	0.091	0.045	14.5	89.8	
Pole HS-2-59	4.160	96.727	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-67	-0.081	-0.040	12.9	89.8	
								Pole HS-2-60	0.071	0.035	11.3	89.8	
Pole HS-2-60	4.160	96.713	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-59	-0.071	-0.035	11.3	89.8	
								Pole HS-2-61	0.061	0.030	9.7	89.8	
Pole HS-2-61	4.160	96.701	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-60	-0.061	-0.030	9.7	89.8	
								Pole HS-2-62	0.051	0.025	8.1	89.8	
Pole HS-2-62	4.160	96.686	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-61	-0.051	-0.025	8.1	89.8	
								Pole HS-2-63	0.040	0.020	6.5	89.8	
Pole HS-2-63	4.160	96.679	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-62	-0.040	-0.020	6.5	89.8	
								Pole HS-2-64	0.030	0.015	4.8	89.8	
Pole HS-2-64	4.160	96.674	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-63	-0.030	-0.015	4.8	89.8	
								Pole HS-2-65	0.020	0.010	3.2	89.8	
Pole HS-2-65	4.160	96.670	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-64	-0.020	-0.010	3.2	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-66	0.010	0.005	1.6	89.8	
Pole HS-2-66	4.160	96.667	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-65	-0.010	-0.005	1.6	89.8	
								L-SUB-FDR-EQ#18-1-301~	0.000	0.000	0.0	0.0	
Pole HS-2-67	4.160	96.741	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-59	0.081	0.040	12.9	89.8	
								Pole HS-2-58	-0.091	-0.045	14.5	89.8	
Pole HS-2-68	4.160	96.619	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-69	-0.010	-0.005	1.6	89.8	
Pole HS-2-69	4.160	96.621	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-68	0.010	0.005	1.6	89.8	
								Pole HS-2-70	-0.020	-0.010	3.2	89.8	
Pole HS-2-70	4.160	96.624	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-69	0.020	0.010	3.2	89.8	
								Pole HS-2-71	-0.030	-0.015	4.8	89.8	
Pole HS-2-71	4.160	96.633	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-70	0.030	0.015	4.8	89.8	
								Pole HS-2-72	-0.040	-0.020	6.5	89.8	
Pole HS-2-72	4.160	96.641	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-71	0.040	0.020	6.5	89.8	
								Pole HS-2-73	-0.051	-0.025	8.1	89.8	
Pole HS-2-73	4.160	96.651	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-72	0.051	0.025	8.1	89.8	
								Pole HS-2-74	-0.061	-0.030	9.7	89.8	
Pole HS-2-74	4.160	96.662	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-73	0.061	0.030	9.7	89.8	
								Pole HS-2-75	-0.071	-0.035	11.3	89.8	
Pole HS-2-75	4.160	96.678	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-74	0.071	0.035	11.3	89.8	
								Pole HS-2-76	-0.081	-0.040	12.9	89.8	
Pole HS-2-76	4.160	96.690	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-75	0.081	0.040	12.9	89.8	
								Pole HS-2-57	-0.162	-0.079	25.8	89.8	
								Pole HS-2-77	0.081	0.040	12.9	89.8	
Pole HS-2-77	4.160	96.644	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-76	-0.081	-0.040	12.9	89.8	
								Pole HS-2-78	0.051	0.025	8.1	89.8	
								SEC_HS-2-67	0.030	0.015	4.8	89.8	
Pole HS-2-78	4.160	96.610	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-77	-0.050	-0.025	8.1	89.8	
								Pole HS-2-79	0.010	0.005	1.6	89.8	
								Pole HS-2-80	0.040	0.020	6.5	89.8	
Pole HS-2-79	4.160	96.604	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-78	-0.010	-0.005	1.6	89.8	
Pole HS-2-80	4.160	96.584	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-78	-0.040	-0.020	6.5	89.8	
								Pole HS-2-81	0.030	0.015	4.8	89.8	
Pole HS-2-81	4.160	96.570	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-80	-0.030	-0.015	4.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-82	0.020	0.010	3.2	89.8	
Pole HS-2-82	4.160	96.551	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-81	-0.020	-0.010	3.2	89.8	
								Pole HS-2-83	0.010	0.005	1.6	89.8	
Pole HS-2-83	4.160	96.543	-5.9	0.000	0.000	0.010	0.005	Pole HS-2-82	-0.010	-0.005	1.6	89.8	
Pole HS-2-84	4.160	98.346	-6.4	0.000	0.000	0.010	0.005	Pole HS-2-85	-0.010	-0.005	1.6	89.8	
Pole HS-2-85	4.160	98.353	-6.4	0.000	0.000	0.010	0.005	Pole HS-2-84	0.010	0.005	1.6	89.8	
								Pole CS-1-2	-0.021	-0.010	3.3	89.8	
Pole HS-2-86	4.160	96.388	-5.9	0.000	0.000	0.000	0.000	PRI_PM_10	0.330	0.165	53.1	89.5	
								Pole HS-2-12	-0.701	-0.346	112.6	89.6	
								Pole HS-2-13	0.371	0.181	59.5	89.8	
Pole HS-3-1	4.160	99.786	-6.0	0.000	0.000	0.011	0.005	BUS_HSC_4kV	-0.875	-0.427	135.4	89.9	
								Pole HS-3-2	0.864	0.422	133.8	89.9	
Pole HS-3-2	4.160	99.502	-6.0	0.000	0.000	0.011	0.005	Pole HS-3-1	-0.862	-0.421	133.8	89.9	
								Pole HS-3-3	0.851	0.416	132.1	89.9	
Pole HS-3-3	4.160	99.090	-6.0	0.000	0.000	0.011	0.005	Pole HS-3-2	-0.848	-0.414	132.1	89.9	
								Pole HS-3-4	0.837	0.409	130.5	89.9	
Pole HS-3-4	4.160	98.810	-6.0	0.000	0.000	0.010	0.005	Pole HS-3-3	-0.835	-0.408	130.5	89.8	
								Pole HS-3-5	0.824	0.403	128.8	89.8	
Pole HS-3-5	4.160	98.534	-6.0	0.000	0.000	0.010	0.005	Pole HS-3-4	-0.822	-0.402	128.8	89.8	
								Pole HS-3-6	0.811	0.397	127.2	89.8	
Pole HS-3-6	4.160	98.343	-6.0	0.000	0.000	0.010	0.005	Pole HS-3-5	-0.810	-0.396	127.2	89.8	
								Pole HS-3-7	0.799	0.391	125.6	89.8	
Pole HS-3-7	4.160	98.116	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-6	-0.797	-0.390	125.6	89.8	
								Pole HS-3-8	0.787	0.385	123.9	89.8	
Pole HS-3-8	4.160	97.953	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-7	-0.786	-0.384	123.9	89.8	
								Pole HS-3-9	0.775	0.379	122.3	89.8	
Pole HS-3-9	4.160	97.740	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-8	-0.774	-0.378	122.3	89.8	
								Pole HS-3-10	0.763	0.373	120.7	89.8	
Pole HS-3-10	4.160	97.529	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-9	-0.762	-0.373	120.7	89.8	
								Pole HS-3-11	0.751	0.368	119.0	89.8	
Pole HS-3-11	4.160	97.379	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-10	-0.750	-0.367	119.0	89.8	
								Pole HS-3-12	0.740	0.362	117.4	89.8	
Pole HS-3-12	4.160	97.242	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-11	-0.739	-0.361	117.4	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-3-13	0.729	0.356	115.8	89.8	
Pole HS-3-13	4.160	97.044	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-12	-0.727	-0.356	115.8	89.8	
								Pole HS-3-14	0.717	0.351	114.2	89.8	
Pole HS-3-14	4.160	96.900	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-13	-0.716	-0.350	114.2	89.8	
								Pole HS-3-15	0.706	0.345	112.6	89.8	
Pole HS-3-15	4.160	96.731	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-14	-0.705	-0.345	112.6	89.8	
								Pole HS-3-16	0.695	0.340	110.9	89.8	
Pole HS-3-16	4.160	96.567	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-15	-0.693	-0.339	110.9	89.8	
								Pole HS-3-17	0.683	0.334	109.3	89.8	
Pole HS-3-17	4.160	96.426	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-16	-0.682	-0.334	109.3	89.8	
								Pole HS-3-18	0.441	0.216	70.7	89.8	
								Pole HS-3-23	0.241	0.118	38.6	89.8	
Pole HS-3-18	4.160	96.124	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-17	-0.440	-0.215	70.7	89.8	
								Pole HS-3-28	0.050	0.025	8.0	89.8	
								Pole HS-3-29	0.260	0.127	41.8	89.8	
								Pole HS-3-46	0.130	0.064	20.9	89.8	
Pole HS-3-19	4.160	96.152	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-20	-0.200	-0.098	32.2	89.8	
								Pole HS-3-30	0.190	0.093	30.5	89.8	
Pole HS-3-20	4.160	96.199	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-19	0.200	0.098	32.2	89.8	
								Pole HS-3-21	-0.210	-0.103	33.8	89.8	
Pole HS-3-21	4.160	96.291	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-20	0.210	0.103	33.8	89.8	
								Pole HS-3-22	-0.220	-0.108	35.4	89.8	
Pole HS-3-22	4.160	96.337	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-21	0.221	0.108	35.4	89.8	
								Pole HS-3-23	-0.231	-0.113	37.0	89.8	
Pole HS-3-23	4.160	96.377	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-17	-0.241	-0.118	38.6	89.8	
								Pole HS-3-22	0.231	0.113	37.0	89.8	
Pole HS-3-24	4.160	96.089	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-25	-0.010	-0.005	1.6	89.8	
Pole HS-3-25	4.160	96.092	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-24	0.010	0.005	1.6	89.8	
								Pole HS-3-26	-0.020	-0.010	3.2	89.8	
Pole HS-3-26	4.160	96.099	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-25	0.020	0.010	3.2	89.8	
								Pole HS-3-27	-0.030	-0.015	4.8	89.8	
Pole HS-3-27	4.160	96.107	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-26	0.030	0.015	4.8	89.8	
								Pole HS-3-28	-0.040	-0.020	6.4	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-28	4.160	96.117	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-27	0.040	0.020	6.4	89.8	
								Pole HS-3-18	-0.050	-0.025	8.0	89.8	
Pole HS-3-29	4.160	95.946	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-18	-0.259	-0.127	41.8	89.8	
								Pole HS-3-34	0.040	0.020	6.4	89.8	
								Pole HS-3-35	0.100	0.049	16.1	89.8	
								Pole HS-3-59	0.120	0.059	19.3	89.8	
Pole HS-3-30	4.160	96.109	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-19	-0.190	-0.093	30.5	89.8	
								Pole HS-3-85	0.180	0.088	28.9	89.8	
Pole HS-3-31	4.160	95.919	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-32	-0.010	-0.005	1.6	89.8	
Pole HS-3-32	4.160	95.921	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-31	0.010	0.005	1.6	89.8	
								Pole HS-3-33	-0.020	-0.010	3.2	89.8	
Pole HS-3-33	4.160	95.926	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-32	0.020	0.010	3.2	89.8	
								Pole HS-3-34	-0.030	-0.015	4.8	89.8	
Pole HS-3-34	4.160	95.932	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-29	-0.040	-0.020	6.4	89.8	
								Pole HS-3-33	0.030	0.015	4.8	89.8	
Pole HS-3-35	4.160	95.878	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.100	-0.049	16.1	89.8	
								Pole HS-3-37	0.020	0.010	3.2	89.8	
								Pole HS-3-38	0.080	0.039	12.8	89.8	
Pole HS-3-36	4.160	95.869	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-37	-0.010	-0.005	1.6	89.8	
Pole HS-3-37	4.160	95.871	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-35	-0.020	-0.010	3.2	89.8	
								Pole HS-3-36	0.010	0.005	1.6	89.8	
Pole HS-3-38	4.160	95.824	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-35	-0.080	-0.039	12.8	89.8	
								Pole HS-3-43	0.070	0.034	11.2	89.8	
Pole HS-3-39	4.160	95.754	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-44	0.020	0.010	3.2	89.8	
								Pole HS-3-40	-0.030	-0.015	4.8	89.8	
Pole HS-3-40	4.160	95.759	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-39	0.030	0.015	4.8	89.8	
								Pole HS-3-41	-0.040	-0.019	6.4	89.8	
Pole HS-3-41	4.160	95.768	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-40	0.040	0.019	6.4	89.8	
								Pole HS-3-42	-0.050	-0.024	8.0	89.8	
Pole HS-3-42	4.160	95.778	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-41	0.050	0.024	8.0	89.8	
								Pole HS-3-43	-0.060	-0.029	9.6	89.8	
Pole HS-3-43	4.160	95.791	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-42	0.060	0.029	9.6	89.8	
								Pole HS-3-38	-0.070	-0.034	11.2	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-44	4.160	95.732	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-39	-0.020	-0.010	3.2	89.8	
								Pole HS-3-45	0.010	0.005	1.6	89.8	
Pole HS-3-45	4.160	95.728	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-44	-0.010	-0.005	1.6	89.8	
Pole HS-3-46	4.160	96.107	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-18	-0.130	-0.064	20.9	89.8	
								Pole HS-3-47	0.120	0.059	19.3	89.8	
Pole HS-3-47	4.160	96.088	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-46	-0.120	-0.059	19.3	89.8	
								Pole HS-3-48	0.110	0.054	17.7	89.8	
Pole HS-3-48	4.160	96.055	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-47	-0.110	-0.054	17.7	89.8	
								Pole HS-3-49	0.100	0.049	16.1	89.8	
Pole HS-3-49	4.160	96.029	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-50	0.090	0.044	14.5	89.8	
								Pole HS-3-48	-0.100	-0.049	16.1	89.8	
Pole HS-3-50	4.160	96.013	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-49	-0.090	-0.044	14.5	89.8	
								Pole HS-3-51	0.080	0.039	12.9	89.8	
Pole HS-3-51	4.160	95.994	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-50	-0.080	-0.039	12.9	89.8	
								Pole HS-3-52	0.070	0.034	11.3	89.8	
Pole HS-3-52	4.160	95.974	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-51	-0.070	-0.034	11.3	89.8	
								Pole HS-3-53	0.060	0.029	9.6	89.8	
Pole HS-3-53	4.160	95.967	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-58	0.050	0.024	8.0	89.8	
								Pole HS-3-52	-0.060	-0.029	9.6	89.8	
Pole HS-3-54	4.160	95.925	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-55	-0.010	-0.005	1.6	89.8	
Pole HS-3-55	4.160	95.929	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-54	0.010	0.005	1.6	89.8	
								Pole HS-3-56	-0.020	-0.010	3.2	89.8	
Pole HS-3-56	4.160	95.933	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-55	0.020	0.010	3.2	89.8	
								Pole HS-3-57	-0.030	-0.015	4.8	89.8	
Pole HS-3-57	4.160	95.939	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-56	0.030	0.015	4.8	89.8	
								Pole HS-3-58	-0.040	-0.020	6.4	89.8	
Pole HS-3-58	4.160	95.961	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-53	-0.050	-0.024	8.0	89.8	
								Pole HS-3-57	0.040	0.020	6.4	89.8	
Pole HS-3-59	4.160	95.861	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.119	-0.059	19.3	89.8	
								Pole HS-3-60	0.090	0.044	14.4	89.8	
								SEC_HS-3-55	0.030	0.015	4.8	89.8	
Pole HS-3-60	4.160	95.822	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-59	-0.090	-0.044	14.4	89.8	
								Pole HS-3-61	0.080	0.039	12.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-61	4.160	95.791	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-60	-0.080	-0.039	12.8	89.8	
								Pole HS-3-62	0.050	0.024	8.0	89.8	
								SEC_HS-3-57	0.030	0.015	4.8	89.8	
Pole HS-3-62	4.160	95.773	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-61	-0.050	-0.024	8.0	89.8	
								Pole HS-3-63	0.040	0.019	6.4	89.8	
Pole HS-3-63	4.160	95.758	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-62	-0.040	-0.019	6.4	89.8	
								Pole HS-3-64	0.010	0.005	1.6	89.8	
								SEC_HS-3-59	0.030	0.015	4.8	89.8	
Pole HS-3-64	4.160	95.755	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-63	-0.010	-0.005	1.6	89.8	
Pole HS-3-65	4.160	95.862	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-66	-0.010	-0.005	1.6	89.8	
Pole HS-3-66	4.160	95.866	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-65	0.010	0.005	1.6	89.8	
								Pole HS-3-67	-0.020	-0.010	3.2	89.8	
Pole HS-3-67	4.160	95.879	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-66	0.020	0.010	3.2	89.8	
								Pole HS-3-68	-0.030	-0.015	4.8	89.8	
Pole HS-3-68	4.160	95.887	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-67	0.030	0.015	4.8	89.8	
								Pole HS-3-69	-0.040	-0.020	6.4	89.8	
Pole HS-3-69	4.160	95.898	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-68	0.040	0.020	6.4	89.8	
								Pole HS-3-70	-0.050	-0.024	8.0	89.8	
Pole HS-3-70	4.160	95.931	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-69	0.050	0.024	8.0	89.8	
								Pole HS-3-71	-0.060	-0.029	9.6	89.8	
Pole HS-3-71	4.160	95.969	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-70	0.060	0.029	9.6	89.8	
								Pole MS-1-81	-0.070	-0.034	11.3	89.8	
Pole HS-3-74	4.160	95.898	-5.9	0.000	0.000	0.020	0.010	Pole HS-3-75	-0.020	-0.010	3.2	89.8	
Pole HS-3-75	4.160	95.903	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-74	0.020	0.010	3.2	89.8	
								Pole HS-3-76	-0.030	-0.015	4.8	89.8	
Pole HS-3-76	4.160	95.916	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-75	0.030	0.015	4.8	89.8	
								Pole HS-3-77	-0.040	-0.020	6.4	89.8	
Pole HS-3-77	4.160	95.930	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-76	0.040	0.020	6.4	89.8	
								Pole HS-3-78	-0.050	-0.024	8.0	89.8	
Pole HS-3-78	4.160	95.948	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-77	0.050	0.024	8.0	89.8	
								Pole HS-3-79	-0.060	-0.029	9.6	89.8	
Pole HS-3-79	4.160	96.004	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-78	0.060	0.029	9.6	89.8	
								Pole MS-1-81	-0.070	-0.034	11.3	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-80	4.160	96.018	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-81	0.030	0.015	4.8	89.8	
								Pole HS-3-85	-0.040	-0.020	6.4	89.8	
Pole HS-3-81	4.160	95.992	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-82	0.020	0.010	3.2	89.8	
								Pole HS-3-80	-0.030	-0.015	4.8	89.8	
Pole HS-3-82	4.160	95.978	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-83	0.010	0.005	1.6	89.8	
								Pole HS-3-81	-0.020	-0.010	3.2	89.8	
Pole HS-3-83	4.160	95.974	-5.9	0.000	0.000	0.010	0.005	Pole HS-3-82	-0.010	-0.005	1.6	89.8	
Pole HS-3-85	4.160	96.045	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-80	0.040	0.020	6.4	89.8	
								Pole MS-1-81	0.140	0.068	22.5	89.8	
								Pole HS-3-30	-0.180	-0.088	28.9	89.8	
Pole HS-3-86	4.160	97.617	-6.6	0.000	0.000	0.010	0.005	Pole CS-1-3	-0.010	-0.005	1.6	89.8	
Pole HS-3-88	4.160	96.913	-6.7	0.000	0.000	0.010	0.005	Pole CS-1-6	-0.030	-0.015	4.9	89.8	
								Pole HS-3-89	0.020	0.010	3.2	89.8	
Pole HS-3-89	4.160	96.909	-6.7	0.000	0.000	0.010	0.005	Pole HS-3-88	-0.020	-0.010	3.2	89.8	
								Pole HS-3-90	0.010	0.005	1.6	89.8	
Pole HS-3-90	4.160	96.906	-6.7	0.000	0.000	0.010	0.005	Pole HS-3-89	-0.010	-0.005	1.6	89.8	
Pole HS-4-1	4.160	99.186	-6.1	0.000	0.000	0.011	0.005	BUS_HSC_4kV	-1.061	-0.524	165.6	89.7	
								Pole HS-4-2	1.050	0.519	163.9	89.7	
Pole HS-4-2	4.160	99.055	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-12	0.601	0.297	93.9	89.6	
								Pole HS-4-1	-1.049	-0.517	163.9	89.7	
								Pole HS-4-3	0.448	0.220	70.0	89.8	
Pole HS-4-3	4.160	98.843	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-44	0.153	0.075	23.9	89.8	
								Pole HS-4-53	0.098	0.048	15.4	89.8	
								Pole HS-4-2	-0.448	-0.219	70.0	89.8	
								Pole HS-4-4	0.196	0.096	30.7	89.8	
Pole HS-4-4	4.160	98.795	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-58	0.065	0.032	10.2	89.8	
								Pole HS-4-3	-0.196	-0.096	30.7	89.8	
								Pole HS-4-5	0.131	0.064	20.5	89.8	
Pole HS-4-5	4.160	98.752	-6.2	0.000	0.000	0.022	0.011	Pole HS-4-55	0.022	0.011	3.4	89.8	
								Pole HS-4-4	-0.131	-0.064	20.5	89.8	
								Pole HS-4-6	0.087	0.043	13.7	89.8	
Pole HS-4-6	4.160	98.723	-6.3	0.000	0.000	0.011	0.005	Pole HS-4-56	0.022	0.011	3.4	89.8	
								Pole HS-4-5	-0.087	-0.043	13.7	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-7	0.054	0.027	8.5	89.8	
Pole HS-4-7	4.160	98.705	-6.3	0.000	0.000	0.000	0.000	Pole HS-4-6	-0.054	-0.027	8.5	89.8	
								Pole HS-4-8	0.054	0.027	8.5	89.8	
Pole HS-4-8	4.160	98.687	-6.3	0.000	0.000	0.011	0.005	Pole HS-4-7	-0.054	-0.027	8.5	89.8	
								Pole HS-4-9	0.044	0.021	6.8	89.8	
Pole HS-4-9	4.160	98.681	-6.3	0.000	0.000	0.011	0.005	Pole HS-4-8	-0.044	-0.021	6.8	89.8	
								Pole HS-4-10	0.033	0.016	5.1	89.8	
Pole HS-4-10	4.160	98.676	-6.3	0.000	0.000	0.000	0.000	Pole HS-4-9	-0.033	-0.016	5.1	89.8	
								Pole HS-4-11	0.000	0.000	0.0	0.0	
								SEC_HS-4-7	0.033	0.016	5.1	89.8	
Pole HS-4-11	4.160	98.676	-6.3	0.000	0.000	0.000	0.000	Pole HS-4-10	0.000	0.000	0.0	0.0	
Pole HS-4-12	4.160	98.862	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-2	-0.600	-0.297	93.9	89.6	
								Pole HS-4-13	0.589	0.291	92.2	89.6	
Pole HS-4-13	4.160	98.748	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-12	-0.588	-0.291	92.2	89.6	
								Pole HS-4-14	0.577	0.286	90.5	89.6	
Pole HS-4-14	4.160	98.588	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-13	-0.576	-0.285	90.5	89.6	
								Pole HS-4-15	0.565	0.280	88.8	89.6	
Pole HS-4-15	4.160	98.426	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-14	-0.564	-0.279	88.8	89.6	
								Pole HS-4-19	0.554	0.274	87.1	89.6	
Pole HS-4-16	4.160	96.617	-6.1	0.000	0.000	0.000	0.000	PRI_PM_15	0.332	0.166	53.3	89.4	
								Pole HS-4-33	-0.332	-0.166	53.3	89.4	
Pole HS-4-17	4.160	98.185	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-19	-0.541	-0.268	85.4	89.6	
								Pole HS-4-18	0.509	0.252	80.3	89.6	
								SEC_HS-4-13	0.032	0.016	5.1	89.8	
Pole HS-4-18	4.160	98.088	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-17	-0.508	-0.252	80.3	89.6	
								Pole HS-4-20	0.498	0.247	78.6	89.6	
Pole HS-4-19	4.160	98.341	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-15	-0.553	-0.274	87.1	89.6	
								Pole HS-4-17	0.542	0.269	85.4	89.6	
Pole HS-4-20	4.160	97.968	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-18	-0.497	-0.247	78.6	89.6	
								Pole HS-4-21	0.486	0.241	76.9	89.6	
Pole HS-4-21	4.160	97.856	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-20	-0.486	-0.241	76.9	89.6	
								Pole HS-4-22	0.475	0.236	75.2	89.6	
Pole HS-4-22	4.160	97.658	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-21	-0.474	-0.235	75.2	89.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-23	0.463	0.230	73.5	89.6	
Pole HS-4-23	4.160	97.535	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-22	-0.463	-0.230	73.5	89.6	
								Pole HS-4-24	0.452	0.225	71.8	89.6	
Pole HS-4-24	4.160	97.449	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-23	-0.452	-0.224	71.8	89.6	
								Pole HS-4-26	0.032	0.016	5.1	89.8	
								Pole HS-4-27	0.420	0.209	66.7	89.5	
Pole HS-4-26	4.160	97.439	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-24	-0.032	-0.016	5.1	89.8	
								SEC_HS-4-21	0.032	0.016	5.1	89.8	
Pole HS-4-27	4.160	97.357	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-24	-0.419	-0.209	66.7	89.5	
								Pole HS-4-28	0.409	0.203	65.0	89.5	
Pole HS-4-28	4.160	97.265	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-27	-0.408	-0.203	65.0	89.5	
								Pole HS-4-29	0.397	0.198	63.4	89.5	
Pole HS-4-29	4.160	96.995	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-28	-0.396	-0.197	63.4	89.5	
								Pole HS-4-31	0.386	0.192	61.7	89.5	
Pole HS-4-30	4.160	96.757	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-31	-0.385	-0.192	61.7	89.5	
								Pole HS-4-32	0.374	0.187	60.0	89.5	
Pole HS-4-31	4.160	96.904	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-29	-0.385	-0.192	61.7	89.5	
								Pole HS-4-30	0.385	0.192	61.7	89.5	
Pole HS-4-32	4.160	96.690	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-30	-0.374	-0.186	60.0	89.5	
								Pole HS-4-33	0.363	0.181	58.3	89.5	
Pole HS-4-33	4.160	96.652	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-32	-0.363	-0.181	58.3	89.5	
								Pole HS-4-16	0.332	0.166	53.3	89.5	
								Pole HS-4-64	0.032	0.015	5.0	89.8	
								L-SUB-FDR-EQ#20-1-96~	0.000	0.000	0.0	0.0	
Pole HS-4-34	4.160	98.653	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-35	-0.022	-0.011	3.4	89.8	
								Pole HS-4-45	0.011	0.005	1.7	89.8	
Pole HS-4-35	4.160	98.661	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-36	-0.033	-0.016	5.1	89.8	
								Pole HS-4-34	0.022	0.011	3.4	89.8	
Pole HS-4-36	4.160	98.686	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-37	-0.044	-0.021	6.8	89.8	
								Pole HS-4-35	0.033	0.016	5.1	89.8	
Pole HS-4-37	4.160	98.705	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-38	-0.055	-0.027	8.5	89.8	
								Pole HS-4-36	0.044	0.021	6.8	89.8	
Pole HS-4-38	4.160	98.716	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-39	-0.065	-0.032	10.2	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-37	0.055	0.027	8.5	89.8	
Pole HS-4-39	4.160	98.722	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-40	-0.098	-0.048	15.4	89.8	
								Pole HS-4-38	0.065	0.032	10.2	89.8	
								SEC_HS-4-32	0.033	0.016	5.1	89.8	
Pole HS-4-40	4.160	98.737	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-41	-0.109	-0.053	17.1	89.8	
								Pole HS-4-39	0.098	0.048	15.4	89.8	
Pole HS-4-41	4.160	98.763	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-42	-0.120	-0.059	18.8	89.8	
								Pole HS-4-40	0.109	0.053	17.1	89.8	
Pole HS-4-42	4.160	98.793	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-43	-0.131	-0.064	20.5	89.8	
								Pole HS-4-41	0.120	0.059	18.8	89.8	
Pole HS-4-43	4.160	98.811	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-44	-0.142	-0.070	22.2	89.8	
								Pole HS-4-42	0.131	0.064	20.5	89.8	
Pole HS-4-44	4.160	98.827	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-3	-0.153	-0.075	23.9	89.8	
								Pole HS-4-43	0.142	0.070	22.2	89.8	
Pole HS-4-45	4.160	98.649	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-34	-0.011	-0.005	1.7	89.8	
Pole HS-4-47	4.160	98.720	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-48	-0.011	-0.005	1.7	89.8	
								HS-4-33~	0.000	0.000	0.0	0.0	
Pole HS-4-48	4.160	98.727	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-47	0.011	0.005	1.7	89.9	
								Pole HS-4-49	-0.044	-0.021	6.8	89.8	
								SEC_HS-4-44	0.033	0.016	5.1	89.8	
Pole HS-4-49	4.160	98.736	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-48	0.044	0.021	6.8	89.8	
								Pole HS-4-50	-0.055	-0.027	8.5	89.8	
Pole HS-4-50	4.160	98.747	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-49	0.055	0.027	8.5	89.8	
								Pole HS-4-51	-0.065	-0.032	10.2	89.8	
Pole HS-4-51	4.160	98.779	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-50	0.065	0.032	10.2	89.8	
								Pole HS-4-52	-0.076	-0.037	11.9	89.8	
Pole HS-4-52	4.160	98.796	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-51	0.076	0.037	11.9	89.8	
								Pole HS-4-53	-0.087	-0.043	13.7	89.8	
Pole HS-4-53	4.160	98.821	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-52	0.087	0.043	13.7	89.8	
								Pole HS-4-3	-0.098	-0.048	15.4	89.8	
Pole HS-4-54	4.160	98.739	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-55	-0.011	-0.005	1.7	89.8	
Pole HS-4-55	4.160	98.742	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-54	0.011	0.005	1.7	89.8	
								Pole HS-4-5	-0.022	-0.011	3.4	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-4-56	4.160	98.719	-6.3	0.000	0.000	0.011	0.005	Pole HS-4-6	-0.022	-0.011	3.4	89.8	
								Pole HS-4-57	0.011	0.005	1.7	89.8	
Pole HS-4-57	4.160	98.716	-6.3	0.000	0.000	0.011	0.005	Pole HS-4-56	-0.011	-0.005	1.7	89.8	
Pole HS-4-58	4.160	98.736	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-4	-0.065	-0.032	10.2	89.8	
								Pole HS-4-59	0.055	0.027	8.5	89.8	
Pole HS-4-59	4.160	98.713	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-58	-0.055	-0.027	8.5	89.8	
								Pole HS-4-60	0.011	0.005	1.7	89.8	
								Pole HS-4-61	0.033	0.016	5.1	89.8	
Pole HS-4-60	4.160	98.710	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-59	-0.011	-0.005	1.7	89.8	
Pole HS-4-61	4.160	98.695	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-59	-0.033	-0.016	5.1	89.8	
								Pole HS-4-62	0.022	0.011	3.4	89.8	
Pole HS-4-62	4.160	98.683	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-61	-0.022	-0.011	3.4	89.8	
								Pole HS-4-63	0.011	0.005	1.7	89.8	
Pole HS-4-63	4.160	98.680	-6.2	0.000	0.000	0.011	0.005	Pole HS-4-62	-0.011	-0.005	1.7	89.8	
Pole HS-4-64	4.160	96.644	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-65	0.011	0.005	1.7	89.8	
								Pole HS-4-33	-0.032	-0.015	5.0	89.8	
								Pole HS-4-66	0.021	0.010	3.4	89.8	
Pole HS-4-65	4.160	96.642	-6.1	0.000	0.000	0.011	0.005	Pole HS-4-64	-0.011	-0.005	1.7	89.8	
Pole HS-4-66	4.160	96.642	-6.1	0.000	0.000	0.021	0.010	Pole HS-4-64	-0.021	-0.010	3.4	89.8	
								Pole HS-4-67	0.000	0.000	0.0	0.0	
Pole HS-4-67	4.160	96.642	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-66	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#20-1-90~	0.000	0.000	0.0	0.0	
Pole MS-1-1	4.160	100.183	-3.8	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.219	-0.107	33.7	89.9	
								Pole MS-1-2	0.159	0.077	24.5	89.9	
								Pole MS-1-76	0.060	0.029	9.2	89.9	
								L-SUB-FDR-EQ#12-9~	0.000	0.000	0.0	0.0	
Pole MS-1-2	4.160	100.149	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-1	-0.159	-0.077	24.5	89.9	
								Pole MS-1-3	0.154	0.075	23.7	89.9	
Pole MS-1-3	4.160	100.123	-3.8	0.000	0.000	0.000	0.000	Pole MS-1-2	-0.154	-0.075	23.7	89.9	
								Pole MS-1-17	0.114	0.055	17.5	89.9	
								Pole MS-1-5	0.040	0.020	6.2	89.9	
Pole MS-1-5	4.160	100.108	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-3	-0.040	-0.020	6.2	89.9	
								Pole MS-1-7	0.035	0.017	5.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-7	4.160	100.099	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-5	-0.035	-0.017	5.4	89.9	
								Pole MS-1-9	0.030	0.015	4.6	89.9	
Pole MS-1-8	4.160	100.084	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-9	-0.025	-0.012	3.8	89.9	
								Pole MS-1-10	0.020	0.010	3.0	89.9	
Pole MS-1-9	4.160	100.091	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-8	0.025	0.012	3.8	89.9	
								Pole MS-1-7	-0.030	-0.015	4.6	89.9	
Pole MS-1-10	4.160	100.079	-3.8	0.000	0.000	0.000	0.000	Pole MS-1-8	-0.020	-0.010	3.0	89.9	
								Pole MS-1-11	0.015	0.008	2.4	89.9	
								SEC_MS-1-17	0.004	0.002	0.6	90.0	
Pole MS-1-11	4.160	100.075	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-10	-0.015	-0.008	2.4	89.9	
								Pole MS-1-13	0.010	0.005	1.6	89.9	
Pole MS-1-13	4.160	100.072	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-11	-0.010	-0.005	1.6	89.9	
								Pole MS-1-15	0.005	0.003	0.8	89.9	
Pole MS-1-15	4.160	100.068	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-13	-0.005	-0.003	0.8	89.9	
Pole MS-1-17	4.160	100.099	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-3	-0.114	-0.055	17.5	89.9	
								Pole MS-1-19	0.108	0.053	16.7	89.9	
Pole MS-1-18	4.160	100.068	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-19	-0.108	-0.053	16.7	89.9	
								Pole MS-1-28	0.103	0.050	15.9	89.9	
Pole MS-1-19	4.160	100.080	-3.8	0.000	0.000	0.000	0.000	Pole MS-1-18	0.108	0.053	16.7	89.9	
								Pole MS-1-17	-0.108	-0.053	16.7	89.9	
								L-SUB-FDR-EQ#16-12~	0.000	0.000	0.0	0.0	
Pole MS-1-28	4.160	100.040	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-18	-0.103	-0.050	15.9	89.9	
								Pole MS-1-50	0.057	0.028	8.8	89.9	
								Pole MS-1-30	0.041	0.020	6.4	89.9	
Pole MS-1-30	4.160	100.027	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-28	-0.041	-0.020	6.4	89.9	
								Pole MS-1-32	0.036	0.018	5.6	89.9	
Pole MS-1-32	4.160	100.016	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-30	-0.036	-0.018	5.6	89.9	
								Pole MS-1-34	0.031	0.015	4.8	89.9	
Pole MS-1-34	4.160	100.004	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-32	-0.031	-0.015	4.8	89.9	
								Pole MS-1-36	0.026	0.013	4.0	89.9	
Pole MS-1-36	4.160	99.994	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-34	-0.026	-0.013	4.0	89.9	
								Pole MS-1-38	0.021	0.010	3.2	89.9	
Pole MS-1-38	4.160	99.986	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-36	-0.021	-0.010	3.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-1-40	0.015	0.008	2.4	89.9	
Pole MS-1-40	4.160	99.980	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-38	-0.015	-0.008	2.4	89.9	
								Pole MS-1-42	0.010	0.005	1.6	89.9	
Pole MS-1-42	4.160	99.977	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-40	-0.010	-0.005	1.6	89.9	
								Pole MS-1-46	0.005	0.003	0.8	89.9	
Pole MS-1-46	4.160	99.975	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-42	-0.005	-0.003	0.8	89.9	
Pole MS-1-50	4.160	100.018	-3.8	0.000	0.000	0.000	0.000	Pole MS-1-28	-0.057	-0.028	8.8	89.9	
								Pole MS-1-70	0.015	0.008	2.4	89.9	
								Pole MS-1-52	0.041	0.020	6.4	89.9	
Pole MS-1-52	4.160	100.004	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-50	-0.041	-0.020	6.4	89.9	
								Pole MS-1-54	0.036	0.018	5.6	89.9	
Pole MS-1-54	4.160	99.993	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-52	-0.036	-0.018	5.6	89.9	
								Pole MS-1-56	0.031	0.015	4.8	89.9	
Pole MS-1-56	4.160	99.984	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-54	-0.031	-0.015	4.8	89.9	
								Pole MS-1-58	0.026	0.013	4.0	89.9	
Pole MS-1-58	4.160	99.975	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-56	-0.026	-0.013	4.0	89.9	
								Pole MS-1-60	0.021	0.010	3.2	89.9	
Pole MS-1-60	4.160	99.970	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-58	-0.021	-0.010	3.2	89.9	
								Pole MS-1-62	0.015	0.008	2.4	89.9	
Pole MS-1-62	4.160	99.965	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-60	-0.015	-0.008	2.4	89.9	
								Pole MS-1-64	0.010	0.005	1.6	89.9	
Pole MS-1-64	4.160	99.964	-3.8	0.000	0.000	0.000	0.000	Pole MS-1-62	-0.010	-0.005	1.6	89.9	
								Pole MS-1-66	0.005	0.003	0.8	89.9	
								Pole MS-1-68	0.005	0.003	0.8	89.9	
Pole MS-1-66	4.160	99.963	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-64	-0.005	-0.003	0.8	89.9	
Pole MS-1-68	4.160	99.960	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-64	-0.005	-0.003	0.8	89.9	
Pole MS-1-70	4.160	100.016	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-50	-0.015	-0.008	2.4	89.9	
								Pole MS-1-72	0.010	0.005	1.6	89.9	
Pole MS-1-72	4.160	100.014	-3.8	0.000	0.000	0.010	0.005	Pole MS-1-70	-0.010	-0.005	1.6	89.9	
Pole MS-1-73	4.160	100.106	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-74	-0.036	-0.018	5.6	89.9	
								Pole MS-1-79	0.031	0.015	4.8	89.9	
Pole MS-1-74	4.160	100.117	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-73	0.036	0.018	5.6	89.9	
								Pole MS-1-75	-0.041	-0.020	6.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-75	4.160	100.150	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-74	0.041	0.020	6.4	89.9	
								Pole MS-1-76	-0.047	-0.023	7.2	89.9	
Pole MS-1-76	4.160	100.165	-3.8	0.000	0.000	0.013	0.006	Pole MS-1-75	0.047	0.023	7.2	89.9	
								Pole MS-1-1	-0.060	-0.029	9.2	89.9	
Pole MS-1-79	4.160	100.093	-3.8	0.000	0.000	0.000	0.000	Pole MS-1-73	-0.031	-0.015	4.8	89.9	
								Pole MS-1-80	0.010	0.005	1.6	89.9	
								Pole MS-1-84	0.021	0.010	3.2	89.9	
Pole MS-1-80	4.160	100.090	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-79	-0.010	-0.005	1.6	89.9	
								Pole MS-1-82	0.005	0.003	0.8	89.9	
Pole MS-1-81	4.160	96.015	-5.9	0.000	0.000	0.000	0.000	Pole HS-3-71	0.070	0.034	11.3	89.8	
								Pole HS-3-79	0.070	0.034	11.3	89.8	
								Pole HS-3-85	-0.140	-0.068	22.5	89.8	
Pole MS-1-82	4.160	100.088	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-80	-0.005	-0.003	0.8	89.9	
Pole MS-1-84	4.160	100.086	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-79	-0.021	-0.010	3.2	89.9	
								Pole MS-1-86	0.015	0.008	2.4	89.9	
Pole MS-1-86	4.160	100.078	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-84	-0.015	-0.008	2.4	89.9	
								Pole MS-1-87	0.010	0.005	1.6	89.9	
Pole MS-1-87	4.160	100.070	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-86	-0.010	-0.005	1.6	89.9	
								Pole MS-1-88	0.005	0.003	0.8	89.9	
Pole MS-1-88	4.160	100.069	-3.8	0.000	0.000	0.005	0.003	Pole MS-1-87	-0.005	-0.003	0.8	89.9	
Pole MS-2-1	4.160	99.272	-3.5	0.000	0.000	0.000	0.000	Pole MS-2-180	-0.036	-0.018	5.6	89.9	
								Pole MS-2-2	0.024	0.012	3.7	90.0	
								SEC_MS-2-8	0.012	0.006	1.9	89.9	
Pole MS-2-2	4.160	99.262	-3.5	0.000	0.000	0.000	0.000	Pole MS-2-1	-0.024	-0.012	3.7	89.9	
								Pole MS-2-3	0.012	0.006	1.9	90.0	
								SEC_MS-2-37	0.012	0.006	1.9	89.9	
Pole MS-2-3	4.160	99.250	-3.5	0.000	0.000	0.000	0.000	Pole MS-2-2	-0.012	-0.006	1.9	90.0	
								L-SUB-FDR-EQ#16-173~	0.000	0.000	0.0	0.0	
								SEC_MS-2-38	0.012	0.006	1.9	89.9	
Pole MS-2-4	4.160	99.321	-3.5	0.000	0.000	0.000	0.000	PRI_PM_8	0.139	0.069	21.7	89.6	
								Pole MS-2-180	0.036	0.018	5.6	90.0	
								Pole MS-2-182	-0.175	-0.087	27.3	89.7	
Pole MS-2-90	4.160	99.451	-3.5	0.000	0.000	0.005	0.002	Pole MS-2-182	-0.165	-0.080	25.7	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-2-91	0.148	0.072	23.0	89.9	
								SEC_MS-2-36	0.012	0.006	1.9	89.9	
Pole MS-2-91	4.160	99.310	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-90	-0.148	-0.072	23.0	89.9	
								Pole MS-2-92	0.143	0.070	22.2	89.9	
Pole MS-2-92	4.160	99.271	-3.4	0.000	0.000	0.000	0.000	Pole MS-2-91	-0.143	-0.069	22.2	89.9	
								Pole MS-2-93	0.131	0.064	20.3	89.9	
								SEC_MS-2-39	0.012	0.006	1.9	89.9	
Pole MS-2-93	4.160	99.233	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-92	-0.131	-0.064	20.3	89.9	
								Pole MS-2-94	0.126	0.061	19.5	89.9	
Pole MS-2-94	4.160	99.205	-3.4	0.000	0.000	0.000	0.000	Pole MS-2-93	-0.126	-0.061	19.5	89.9	
								Pole MS-2-95	0.114	0.055	17.7	89.9	
								SEC_MS-2-40	0.012	0.006	1.9	89.9	
Pole MS-2-95	4.160	99.120	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-94	-0.113	-0.055	17.7	89.9	
								Pole MS-2-96	0.108	0.053	16.9	89.9	
Pole MS-2-96	4.160	99.059	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-95	-0.108	-0.053	16.9	89.9	
								Pole MS-2-98	0.103	0.050	16.1	89.9	
Pole MS-2-98	4.160	99.037	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-96	-0.103	-0.050	16.1	89.9	
								Pole MS-2-100	0.098	0.048	15.3	89.9	
Pole MS-2-100	4.160	99.024	-3.4	0.000	0.000	0.000	0.000	Pole MS-2-98	-0.098	-0.048	15.3	89.9	
								Pole MS-2-102	0.086	0.042	13.4	89.9	
								SEC_MS-2-41	0.012	0.006	1.9	89.9	
Pole MS-2-102	4.160	99.010	-3.4	0.000	0.000	0.000	0.000	Pole MS-2-100	-0.086	-0.042	13.4	89.9	
								Pole MS-2-103	0.086	0.042	13.4	89.9	
Pole MS-2-103	4.160	98.993	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-102	-0.086	-0.042	13.4	89.9	
								Pole MS-2-107	0.081	0.039	12.6	89.9	
Pole MS-2-107	4.160	98.951	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-103	-0.081	-0.039	12.6	89.9	
								Pole MS-2-108	0.076	0.037	11.8	89.9	
Pole MS-2-108	4.160	98.933	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-107	-0.076	-0.037	11.8	89.9	
								Pole MS-2-109	0.071	0.034	11.1	89.9	
Pole MS-2-109	4.160	98.915	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-108	-0.071	-0.034	11.1	89.9	
								Pole MS-2-110	0.066	0.032	10.3	89.9	
Pole MS-2-110	4.160	98.897	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-109	-0.066	-0.032	10.3	89.9	
								Pole MS-2-111	0.061	0.030	9.5	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-2-111	4.160	98.877	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-110	-0.061	-0.030	9.5	89.9	
								Pole MS-2-112	0.056	0.027	8.7	89.9	
Pole MS-2-112	4.160	98.866	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-111	-0.056	-0.027	8.7	89.9	
								Pole MS-2-113	0.051	0.025	7.9	89.9	
Pole MS-2-113	4.160	98.855	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-112	-0.051	-0.025	7.9	89.9	
								Pole MS-2-115	0.045	0.022	7.1	89.9	
Pole MS-2-115	4.160	98.841	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-113	-0.045	-0.022	7.1	89.9	
								Pole MS-2-116	0.040	0.020	6.3	89.9	
Pole MS-2-116	4.160	98.825	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-115	-0.040	-0.020	6.3	89.9	
								Pole MS-2-117	0.035	0.017	5.5	89.9	
Pole MS-2-117	4.160	98.804	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-116	-0.035	-0.017	5.5	89.9	
								Pole MS-2-118	0.030	0.015	4.7	89.9	
Pole MS-2-118	4.160	98.786	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-117	-0.030	-0.015	4.7	89.9	
								Pole MS-2-120	0.025	0.012	3.9	89.9	
Pole MS-2-120	4.160	98.777	-3.4	0.000	0.000	0.005	0.002	Pole MS-2-118	-0.025	-0.012	3.9	89.9	
								Pole MS-2-121	0.020	0.010	3.2	89.9	
Pole MS-2-121	4.160	98.764	-3.4	0.000	0.000	0.010	0.005	Pole MS-2-120	-0.020	-0.010	3.2	89.9	
								Pole MS-2-122	0.010	0.005	1.6	89.9	
Pole MS-2-122	4.160	98.761	-3.4	0.000	0.000	0.010	0.005	Pole MS-2-121	-0.010	-0.005	1.6	89.9	
								L-SUB-FDR-EQ#16-97~	0.000	0.000	0.0	0.0	
Pole MS-2-180	4.160	99.286	-3.5	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.036	-0.018	5.6	90.0	
								Pole MS-2-1	0.036	0.018	5.6	89.9	
								L-SUB-FDR-EQ#12-13~	0.000	0.000	0.0	0.0	
Pole MS-2-182	4.160	99.495	-3.5	0.000	0.000	0.000	0.000	Pole MS-2-4	0.175	0.087	27.3	89.6	
								BUS_5KV_LLP_2	-0.341	-0.167	53.0	89.8	
								Pole MS-2-90	0.165	0.080	25.7	89.9	
Pole MS-3-1	4.160	99.560	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-2	0.012	0.006	1.9	89.9	
								Pole MS-3-88	-0.232	-0.113	35.9	89.9	
								Pole MS-3-3	0.220	0.107	34.1	89.9	
Pole MS-3-2	4.160	99.559	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-1	-0.012	-0.006	1.9	89.9	
								SEC_MS-3-1	0.012	0.006	1.9	89.9	
Pole MS-3-3	4.160	99.437	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-4	0.219	0.107	34.1	89.9	
								Pole MS-3-1	-0.219	-0.107	34.1	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-4	4.160	99.412	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-3	-0.219	-0.107	34.1	89.9	
								Pole MS-3-5	0.214	0.104	33.3	89.9	
Pole MS-3-5	4.160	99.388	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-4	-0.214	-0.104	33.3	89.9	
								Pole MS-3-6	0.209	0.102	32.5	89.9	
Pole MS-3-6	4.160	99.360	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-5	-0.209	-0.102	32.5	89.9	
								Pole MS-3-7	0.197	0.096	30.6	89.9	
								SEC_MS-3-2	0.012	0.006	1.9	89.9	
Pole MS-3-7	4.160	99.281	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-6	-0.197	-0.096	30.6	89.9	
								Pole MS-3-8	0.192	0.093	29.8	89.9	
Pole MS-3-8	4.160	99.247	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-7	-0.192	-0.093	29.8	89.9	
								Pole MS-3-9	0.180	0.087	27.9	89.9	
								SEC_MS-3-3	0.012	0.006	1.9	89.9	
Pole MS-3-9	4.160	99.216	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-8	-0.180	-0.087	27.9	89.9	
								Pole MS-3-10	0.174	0.085	27.1	89.9	
Pole MS-3-10	4.160	99.155	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-9	-0.174	-0.085	27.1	89.9	
								Pole MS-3-11	0.169	0.082	26.3	89.9	
Pole MS-3-11	4.160	99.135	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-10	-0.169	-0.082	26.3	89.9	
								Pole MS-3-12	0.164	0.080	25.6	89.9	
Pole MS-3-12	4.160	99.115	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-11	-0.164	-0.080	25.6	89.9	
								Pole MS-3-13	0.159	0.077	24.8	89.9	
Pole MS-3-13	4.160	99.044	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-12	-0.159	-0.077	24.8	89.9	
								Pole MS-3-14	0.154	0.075	24.0	89.9	
Pole MS-3-14	4.160	99.016	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-13	-0.154	-0.075	24.0	89.9	
								Pole MS-3-15	0.149	0.072	23.2	89.9	
Pole MS-3-15	4.160	98.952	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-14	-0.149	-0.072	23.2	89.9	
								Pole MS-3-16	0.144	0.070	22.4	89.9	
Pole MS-3-16	4.160	98.934	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-15	-0.144	-0.070	22.4	89.9	
								Pole MS-3-17	0.138	0.067	21.6	89.9	
Pole MS-3-17	4.160	98.905	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-16	-0.138	-0.067	21.6	89.9	
								Pole MS-3-18	0.133	0.065	20.8	89.9	
Pole MS-3-18	4.160	98.881	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-17	-0.133	-0.065	20.8	89.9	
								Pole MS-3-19	0.047	0.023	7.4	89.9	
								Pole MS-3-26	0.086	0.042	13.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-19	4.160	98.871	-3.3	0.000	0.000	0.010	0.005	Pole MS-3-18	-0.047	-0.023	7.4	89.9	
								Pole MS-3-20	0.037	0.018	5.8	89.9	
Pole MS-3-20	4.160	98.863	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-19	-0.037	-0.018	5.8	89.9	
								Pole MS-3-21	0.032	0.016	5.0	89.9	
Pole MS-3-21	4.160	98.848	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-20	-0.032	-0.016	5.0	89.9	
								Pole MS-3-22	0.027	0.013	4.2	89.9	
Pole MS-3-22	4.160	98.839	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-21	-0.027	-0.013	4.2	89.9	
								Pole MS-3-23	0.022	0.011	3.4	89.9	
Pole MS-3-23	4.160	98.832	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-22	-0.022	-0.011	3.4	89.9	
								Pole MS-3-24	0.017	0.008	2.7	89.9	
Pole MS-3-24	4.160	98.826	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-23	-0.017	-0.008	2.7	89.9	
								Pole MS-3-25	0.012	0.006	1.9	89.9	
Pole MS-3-25	4.160	98.822	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-24	-0.012	-0.006	1.9	89.9	
								L-SUB-FDR-EQ#16-133~	0.000	0.000	0.0	0.0	
								SEC_MS-3-22	0.012	0.006	1.9	89.9	
Pole MS-3-26	4.160	98.848	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-27	0.020	0.010	3.2	89.9	
								Pole MS-3-18	-0.086	-0.042	13.4	89.9	
								Pole MS-3-31	0.061	0.029	9.5	89.9	
Pole MS-3-27	4.160	98.839	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-26	-0.020	-0.010	3.2	89.9	
								Pole MS-3-28	0.015	0.007	2.4	89.9	
Pole MS-3-28	4.160	98.836	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-27	-0.015	-0.007	2.4	89.9	
								Pole MS-3-29	0.010	0.005	1.6	89.9	
Pole MS-3-29	4.160	98.830	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-28	-0.010	-0.005	1.6	89.9	
								Pole MS-3-30	0.005	0.002	0.8	89.9	
Pole MS-3-30	4.160	98.829	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-29	-0.005	-0.002	0.8	89.9	
Pole MS-3-31	4.160	98.817	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-26	-0.061	-0.029	9.5	89.9	
								Pole MS-3-32	0.056	0.027	8.7	89.9	
Pole MS-3-32	4.160	98.808	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-31	-0.056	-0.027	8.7	89.9	
								Pole MS-3-33	0.051	0.025	7.9	89.9	
Pole MS-3-33	4.160	98.799	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-32	-0.051	-0.025	7.9	89.9	
								Pole MS-3-34	0.045	0.022	7.1	89.9	
Pole MS-3-34	4.160	98.790	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-36	0.035	0.017	5.5	89.9	
								Pole MS-3-33	-0.045	-0.022	7.1	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-35	0.005	0.002	0.8	89.9	
Pole MS-3-35	4.160	98.790	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-34	-0.005	-0.002	0.8	89.9	
Pole MS-3-36	4.160	98.774	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-34	-0.035	-0.017	5.5	89.9	
								Pole MS-3-37	0.030	0.015	4.7	89.9	
Pole MS-3-37	4.160	98.761	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-36	-0.030	-0.015	4.7	89.9	
								Pole MS-3-39	0.020	0.010	3.2	89.9	
								Pole MS-3-38	0.010	0.005	1.6	89.9	
Pole MS-3-38	4.160	98.758	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-37	-0.010	-0.005	1.6	89.9	
								Pole MS-3-43	0.005	0.002	0.8	90.0	
Pole MS-3-39	4.160	98.754	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-37	-0.020	-0.010	3.2	89.9	
								Pole MS-3-40	0.015	0.007	2.4	89.9	
Pole MS-3-40	4.160	98.752	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-39	-0.015	-0.007	2.4	89.9	
								Pole MS-3-41	0.010	0.005	1.6	89.9	
Pole MS-3-41	4.160	98.750	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-40	-0.010	-0.005	1.6	89.9	
								Pole MS-3-42	0.005	0.002	0.8	89.9	
Pole MS-3-42	4.160	98.748	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-41	-0.005	-0.002	0.8	89.9	
Pole MS-3-43	4.160	98.756	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-38	-0.005	-0.002	0.8	89.9	
								LINE MS-3-11~	0.000	0.000	0.0	0.0	
Pole MS-3-44	4.160	98.443	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-46	0.030	0.015	4.8	89.9	
								Pole MS-3-45	0.000	0.000	0.0	0.0	
								Pole MS-3-54	-0.030	-0.015	4.8	89.9	
Pole MS-3-45	4.160	98.443	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-44	0.000	0.000	0.0	0.0	
Pole MS-3-46	4.160	98.440	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-44	-0.030	-0.015	4.8	89.9	
								Pole MS-3-47	0.030	0.015	4.8	89.9	
Pole MS-3-47	4.160	98.432	-3.3	0.000	0.000	0.008	0.004	Pole MS-3-46	-0.030	-0.015	4.8	89.9	
								Pole MS-3-48	0.023	0.011	3.6	89.9	
Pole MS-3-48	4.160	98.421	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-47	-0.023	-0.011	3.6	89.9	
								Pole MS-3-51	0.010	0.005	1.6	89.9	
								Pole MS-3-50	0.013	0.006	2.0	89.9	
Pole MS-3-49	4.160	98.417	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-50	-0.005	-0.002	0.8	89.9	
Pole MS-3-50	4.160	98.418	-3.3	0.000	0.000	0.008	0.004	Pole MS-3-48	-0.013	-0.006	2.0	89.9	
								Pole MS-3-49	0.005	0.002	0.8	89.9	
Pole MS-3-51	4.160	98.415	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-48	-0.010	-0.005	1.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-53	0.005	0.002	0.8	89.9	
								Pole MS-3-52	0.005	0.002	0.8	89.9	
Pole MS-3-52	4.160	98.413	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-51	-0.005	-0.002	0.8	89.9	
Pole MS-3-53	4.160	98.415	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-51	-0.005	-0.002	0.8	89.9	
Pole MS-3-54	4.160	98.459	-3.3	0.000	0.000	0.000	0.000	PRI_PM_18	0.171	0.085	26.9	89.5	
								Pole MS-3-57	0.005	0.002	0.8	89.9	
								Pole MS-3-44	0.030	0.015	4.8	89.9	
								Pole MS-3-58	-0.206	-0.103	32.5	89.5	
Pole MS-3-55	4.160	99.240	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-90	0.124	0.061	19.3	89.9	
								Pole MS-3-71	0.462	0.229	72.1	89.6	
								Pole MS-3-79	-0.586	-0.290	91.4	89.7	
Pole MS-3-57	4.160	98.456	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-54	-0.005	-0.002	0.8	89.9	
Pole MS-3-58	4.160	98.574	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-59	0.010	0.005	1.6	89.9	
								Pole MS-3-61	-0.217	-0.108	34.0	89.6	
								Pole MS-3-54	0.207	0.103	32.5	89.5	
Pole MS-3-59	4.160	98.573	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-58	-0.010	-0.005	1.6	89.9	
								Pole MS-3-60	0.005	0.002	0.8	90.0	
Pole MS-3-60	4.160	98.570	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-59	-0.005	-0.002	0.8	89.9	
Pole MS-3-61	4.160	98.705	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-58	0.217	0.108	34.0	89.6	
								Pole MS-3-64	-0.227	-0.113	35.6	89.6	
								Pole MS-3-62	0.010	0.005	1.6	89.9	
Pole MS-3-62	4.160	98.703	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-61	-0.010	-0.005	1.6	89.9	
								Pole MS-3-63	0.005	0.002	0.8	89.9	
Pole MS-3-63	4.160	98.702	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-62	-0.005	-0.002	0.8	89.9	
Pole MS-3-64	4.160	98.767	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-61	0.227	0.113	35.6	89.6	
								Pole MS-3-70	-0.262	-0.130	41.1	89.6	
								Pole MS-3-65	0.030	0.015	4.7	89.9	
Pole MS-3-65	4.160	98.758	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-64	-0.030	-0.015	4.7	89.9	
								Pole MS-3-66	0.025	0.012	3.9	89.9	
Pole MS-3-66	4.160	98.753	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-65	-0.025	-0.012	3.9	89.9	
								Pole MS-3-67	0.010	0.005	1.6	89.9	
								Pole MS-3-69	0.010	0.005	1.6	89.9	
Pole MS-3-67	4.160	98.748	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-66	-0.010	-0.005	1.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-68	0.005	0.002	0.8	89.9	
Pole MS-3-68	4.160	98.747	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-67	-0.005	-0.002	0.8	89.9	
Pole MS-3-69	4.160	98.752	-3.3	0.000	0.000	0.010	0.005	Pole MS-3-66	-0.010	-0.005	1.6	89.9	
Pole MS-3-70	4.160	98.938	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-64	0.263	0.130	41.1	89.6	
								Pole MS-3-71	-0.263	-0.130	41.1	89.6	
								L-SUB-FDR-EQ#16-177~	0.000	0.000	0.0	0.0	
Pole MS-3-71	4.160	99.124	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-55	-0.461	-0.229	72.1	89.6	
								Pole MS-3-70	0.263	0.130	41.1	89.6	
								Pole MS-3-72	0.198	0.099	31.0	89.5	
Pole MS-3-72	4.160	99.098	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-71	-0.198	-0.099	31.0	89.5	
								Pole MS-3-73	0.193	0.096	30.2	89.5	
Pole MS-3-73	4.160	99.080	-3.3	0.000	0.000	0.000	0.000	PRI_PM_7	0.172	0.086	27.0	89.5	
								Pole MS-3-72	-0.193	-0.096	30.2	89.5	
								Pole MS-3-74	0.020	0.010	3.2	89.9	
Pole MS-3-74	4.160	99.077	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-73	-0.020	-0.010	3.2	89.9	
								Pole MS-3-75	0.015	0.007	2.4	89.9	
Pole MS-3-75	4.160	99.068	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-74	-0.015	-0.007	2.4	89.9	
								Pole MS-3-76	0.010	0.005	1.6	89.9	
Pole MS-3-76	4.160	99.064	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-75	-0.010	-0.005	1.6	89.9	
								Pole MS-3-77	0.005	0.002	0.8	89.9	
Pole MS-3-77	4.160	99.062	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-76	-0.005	-0.002	0.8	89.9	
Pole MS-3-79	4.160	99.386	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-55	0.587	0.290	91.4	89.7	
								Pole MS-3-82	0.041	0.020	6.4	89.9	
								Pole MS-3-87	-0.628	-0.310	97.8	89.7	
Pole MS-3-80	4.160	99.358	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-81	-0.031	-0.015	4.8	89.9	
								Pole MS-3-83	0.026	0.013	4.0	89.9	
Pole MS-3-81	4.160	99.370	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-80	0.031	0.015	4.8	89.9	
								Pole MS-3-82	-0.036	-0.017	5.6	89.9	
Pole MS-3-82	4.160	99.378	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-81	0.036	0.017	5.6	89.9	
								Pole MS-3-79	-0.041	-0.020	6.4	89.9	
Pole MS-3-83	4.160	99.354	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-80	-0.026	-0.013	4.0	89.9	
								Pole MS-3-84	0.021	0.010	3.2	89.9	
Pole MS-3-84	4.160	99.350	-3.3	0.000	0.000	0.005	0.002	Pole MS-3-83	-0.021	-0.010	3.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-85	0.015	0.008	2.4	89.9	
Pole MS-3-85	4.160	99.343	-3.3	0.000	0.000	0.008	0.004	Pole MS-3-84	-0.015	-0.008	2.4	89.9	
								Pole MS-3-86	0.008	0.004	1.2	89.9	
Pole MS-3-86	4.160	99.342	-3.3	0.000	0.000	0.008	0.004	Pole MS-3-85	-0.008	-0.004	1.2	89.9	
Pole MS-3-87	4.160	99.734	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-79	0.630	0.311	97.8	89.7	
								Pole MS-3-88	0.232	0.113	35.9	89.9	
								BUS_5KV_LLP_02	-0.863	-0.424	133.7	89.7	
Pole MS-3-88	4.160	99.606	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-87	-0.232	-0.113	35.9	89.9	
								Pole MS-3-1	0.232	0.113	35.9	89.9	
Pole MS-3-90	4.160	99.209	-3.3	0.000	0.000	0.015	0.008	Pole MS-3-55	-0.124	-0.061	19.3	89.9	
								Pole MS-3-92	0.109	0.053	16.9	89.9	
Pole MS-3-92	4.160	99.130	-3.3	0.000	0.000	0.015	0.008	Pole MS-3-95	0.093	0.045	14.5	89.9	
								Pole MS-3-90	-0.109	-0.053	16.9	89.9	
Pole MS-3-95	4.160	99.097	-3.3	0.000	0.000	0.008	0.004	Pole MS-3-96	0.008	0.004	1.2	89.9	
								Pole MS-4-36	0.078	0.038	12.1	89.9	
								Pole MS-3-92	-0.093	-0.045	14.5	89.9	
Pole MS-3-96	4.160	99.093	-3.3	0.000	0.000	0.008	0.004	Pole MS-3-95	-0.008	-0.004	1.2	89.9	
Pole MS-3-97	4.160	98.959	-3.3	0.000	0.000	0.008	0.004	Pole MS-3-98	0.052	0.025	8.1	89.9	
								Pole MS-4-36	-0.059	-0.029	9.3	89.9	
Pole MS-3-98	4.160	98.944	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-99	0.052	0.025	8.1	89.9	
								Pole MS-3-97	-0.052	-0.025	8.1	89.9	
Pole MS-3-99	4.160	98.930	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-100	0.018	0.009	2.8	89.9	
								Pole MS-3-101	0.034	0.016	5.2	89.9	
								Pole MS-3-98	-0.052	-0.025	8.1	89.9	
Pole MS-3-100	4.160	98.920	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-99	-0.018	-0.009	2.8	89.9	
								SEC_MS-3-49	0.018	0.009	2.8	89.9	
Pole MS-3-101	4.160	98.907	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-102	0.018	0.009	2.8	89.9	
								Pole MS-3-103	0.015	0.008	2.4	89.9	
								Pole MS-3-99	-0.034	-0.016	5.2	89.9	
Pole MS-3-102	4.160	98.904	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-101	-0.018	-0.009	2.8	89.9	
								SEC_MS-3-65	0.018	0.009	2.8	89.9	
Pole MS-3-103	4.160	98.902	-3.3	0.000	0.000	0.015	0.008	Pole MS-3-101	-0.015	-0.008	2.4	89.9	
Pole MS-4-1	4.160	99.834	-3.3	0.000	0.000	0.005	0.003	BUS_5KV-LLP_01	-0.274	-0.133	42.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-2	0.042	0.021	6.6	89.9	
								Pole MS-4-7	0.227	0.110	35.0	90.0	
Pole MS-4-2	4.160	99.823	-3.3	0.000	0.000	0.005	0.003	Pole MS-4-1	-0.042	-0.021	6.6	89.9	
								Pole MS-4-3	0.037	0.018	5.8	89.9	
Pole MS-4-3	4.160	99.821	-3.3	0.000	0.000	0.000	0.000	Pole MS-4-2	-0.037	-0.018	5.8	89.9	
								Pole MS-4-5	0.025	0.012	3.9	89.9	
								SEC_MS-3-73	0.012	0.006	1.9	89.9	
Pole MS-4-5	4.160	99.816	-3.3	0.000	0.000	0.013	0.006	Pole MS-4-3	-0.025	-0.012	3.9	89.9	
								Pole MS-4-6	0.012	0.006	1.9	89.9	
Pole MS-4-6	4.160	99.813	-3.3	0.000	0.000	0.000	0.000	Pole MS-4-5	-0.012	-0.006	1.9	89.9	
								SEC_MS-3-74	0.012	0.006	1.9	89.9	
Pole MS-4-7	4.160	99.706	-3.3	0.000	0.000	0.000	0.000	Pole MS-4-1	-0.226	-0.110	35.0	90.0	
								Pole MS-4-8	0.226	0.110	35.0	90.0	
Pole MS-4-8	4.160	99.455	-3.3	0.000	0.000	0.005	0.002	Pole MS-4-7	-0.226	-0.110	35.0	90.0	
								Pole MS-4-9	0.061	0.030	9.5	89.9	
								Pole MS-4-16	0.160	0.077	24.7	90.0	
Pole MS-4-9	4.160	99.439	-3.3	0.000	0.000	0.008	0.004	Pole MS-4-8	-0.061	-0.030	9.5	89.9	
								Pole MS-4-10	0.053	0.026	8.3	89.9	
Pole MS-4-10	4.160	99.426	-3.3	0.000	0.000	0.000	0.000	Pole MS-4-9	-0.053	-0.026	8.3	89.9	
								Pole MS-4-11	0.041	0.020	6.4	89.9	
								SEC_MS-3-75	0.012	0.006	1.9	89.9	
Pole MS-4-11	4.160	99.405	-3.3	0.000	0.000	0.015	0.008	Pole MS-4-10	-0.041	-0.020	6.4	89.9	
								Pole MS-4-12	0.026	0.013	4.0	89.9	
Pole MS-4-12	4.160	99.399	-3.3	0.000	0.000	0.005	0.002	Pole MS-4-11	-0.026	-0.013	4.0	89.9	
								Pole MS-4-13	0.021	0.010	3.2	89.9	
Pole MS-4-13	4.160	99.389	-3.3	0.000	0.000	0.008	0.004	Pole MS-4-12	-0.021	-0.010	3.2	89.9	
								Pole MS-4-14	0.013	0.006	2.0	89.9	
Pole MS-4-14	4.160	99.387	-3.3	0.000	0.000	0.008	0.004	Pole MS-4-13	-0.013	-0.006	2.0	89.9	
								Pole MS-4-15	0.005	0.002	0.8	89.9	
Pole MS-4-15	4.160	99.386	-3.3	0.000	0.000	0.005	0.002	Pole MS-4-14	-0.005	-0.002	0.8	89.9	
Pole MS-4-16	4.160	99.278	-3.3	0.000	0.000	0.008	0.004	Pole MS-4-17	0.152	0.073	23.5	90.0	
								Pole MS-4-8	-0.159	-0.077	24.7	90.0	
Pole MS-4-17	4.160	99.197	-3.3	0.000	0.000	0.000	0.000	Pole MS-4-16	-0.151	-0.073	23.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-18	0.133	0.064	20.7	90.0	
								SEC_MS-3-66	0.018	0.009	2.8	89.9	
Pole MS-4-18	4.160	99.117	-3.3	0.000	0.000	0.015	0.008	Pole MS-4-17	-0.133	-0.064	20.7	90.0	
								Pole MS-4-20	0.118	0.057	18.3	90.0	
Pole MS-4-20	4.160	99.071	-3.3	0.000	0.000	0.000	0.000	Pole MS-4-18	-0.118	-0.057	18.3	90.0	
								Pole MS-4-21	0.099	0.048	15.4	90.1	
								SEC_MS-3-76	0.018	0.009	2.8	89.9	
Pole MS-4-21	4.160	98.830	-3.3	0.000	0.000	0.008	0.004	Pole MS-4-20	-0.099	-0.048	15.4	90.1	
								Pole MS-4-22	0.091	0.044	14.2	90.1	
Pole MS-4-22	4.160	98.748	-3.3	0.000	0.000	0.008	0.004	Pole MS-4-21	-0.091	-0.044	14.2	90.1	
								Pole MS-4-23	0.084	0.040	13.1	90.1	
Pole MS-4-23	4.160	98.668	-3.3	0.000	0.000	0.008	0.004	Pole MS-4-22	-0.084	-0.040	13.1	90.1	
								Pole MS-4-25	0.076	0.037	11.9	90.1	
Pole MS-4-24	4.160	97.915	-3.3	0.000	0.000	0.000	0.000	Pole MS-4-25	-0.068	-0.033	10.7	90.1	
								Pole MS-4-39	0.008	0.004	1.2	89.9	
								Pole MS-4-41	0.060	0.029	9.5	90.1	
Pole MS-4-25	4.160	98.484	-3.3	0.000	0.000	0.008	0.004	Pole MS-4-23	-0.076	-0.037	11.9	90.1	
								Pole MS-4-24	0.068	0.033	10.7	90.1	
Pole MS-4-31	4.160	99.818	-3.3	0.000	0.000	0.000	0.000	Pole MS-5-1	0.708	0.354	110.1	89.4	
								BUS_5KV-LLP_01	-0.708	-0.354	110.1	89.4	
Pole MS-4-36	4.160	99.031	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-97	0.060	0.029	9.3	89.9	
								Pole MS-3-95	-0.078	-0.038	12.1	89.9	
								SEC_MS-3-45	0.018	0.009	2.8	89.9	
Pole MS-4-39	4.160	97.912	-3.3	0.000	0.000	0.008	0.004	Pole MS-4-24	-0.008	-0.004	1.2	89.9	
Pole MS-4-40	4.160	97.872	-3.3	0.000	0.000	0.008	0.004	Pole MS-4-41	-0.023	-0.011	3.6	89.9	
								Pole MS-4-42	0.015	0.007	2.4	89.9	
Pole MS-4-41	4.160	97.884	-3.3	0.000	0.000	0.000	0.000	Pole MS-4-24	-0.060	-0.029	9.5	90.1	
								Pole MS-4-40	0.023	0.011	3.6	89.9	
								Pole MS-4-44	0.038	0.018	5.9	90.2	
Pole MS-4-42	4.160	97.855	-3.3	0.000	0.000	0.008	0.004	Pole MS-4-40	-0.015	-0.007	2.4	89.9	
								Pole MS-4-43	0.008	0.004	1.2	89.9	
Pole MS-4-43	4.160	97.842	-3.3	0.000	0.000	0.008	0.004	Pole MS-4-42	-0.008	-0.004	1.2	89.9	
Pole MS-4-44	4.160	97.195	-3.3	0.000	0.000	0.000	0.000	Pole MS-4-41	-0.037	-0.018	5.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-45	0.007	0.004	1.2	89.9	
								Pole MS-4-46	0.030	0.014	4.7	90.0	
Pole MS-4-45	4.160	97.187	-3.3	0.000	0.000	0.007	0.004	Pole MS-4-44	-0.007	-0.004	1.2	89.9	
Pole MS-4-46	4.160	97.160	-3.3	0.000	0.000	0.000	0.000	Pole MS-4-44	-0.030	-0.014	4.7	90.0	
								Pole MS-4-47	0.007	0.004	1.2	89.9	
								Pole MS-4-48	0.007	0.004	1.2	89.9	
								Pole MS-4-50	0.015	0.007	2.4	90.2	
Pole MS-4-47	4.160	97.158	-3.3	0.000	0.000	0.007	0.004	Pole MS-4-46	-0.007	-0.004	1.2	89.9	
Pole MS-4-48	4.160	97.157	-3.3	0.000	0.000	0.007	0.004	Pole MS-4-46	-0.007	-0.004	1.2	89.9	
Pole MS-4-49	4.160	97.112	-3.3	0.000	0.000	0.007	0.004	Pole MS-4-50	-0.007	-0.004	1.2	89.9	
Pole MS-4-50	4.160	97.113	-3.3	0.000	0.000	0.000	0.000	Pole MS-4-46	-0.015	-0.007	2.4	90.1	
								Pole MS-4-49	0.007	0.004	1.2	89.9	
								Pole MS-4-52	0.007	0.004	1.2	90.3	
Pole MS-4-51	4.160	97.087	-3.3	0.000	0.000	0.007	0.004	Pole MS-4-52	-0.007	-0.004	1.2	89.9	
Pole MS-4-52	4.160	97.103	-3.3	0.000	0.000	0.000	0.000	Pole MS-4-50	-0.007	-0.004	1.2	90.2	
								Pole MS-4-51	0.007	0.004	1.2	90.0	
								LINE MS-4-53~	0.000	0.000	0.0	0.0	
Pole MS-5-1	4.160	98.327	-3.7	0.000	0.000	0.008	0.004	Pole MS-4-31	-0.699	-0.345	110.1	89.7	
								Pole MS-5-2	0.692	0.341	108.9	89.7	
Pole MS-5-2	4.160	98.148	-3.7	0.000	0.000	0.008	0.004	Pole MS-5-1	-0.691	-0.340	108.9	89.7	
								Pole MS-5-3	0.030	0.015	4.8	89.9	
								Pole MS-5-7	0.653	0.321	102.9	89.7	
Pole MS-5-3	4.160	98.138	-3.7	0.000	0.000	0.008	0.004	Pole MS-5-2	-0.030	-0.015	4.8	89.9	
								Pole MS-5-4	0.023	0.011	3.6	89.9	
Pole MS-5-4	4.160	98.126	-3.7	0.000	0.000	0.008	0.004	Pole MS-5-3	-0.023	-0.011	3.6	89.9	
								Pole MS-5-5	0.015	0.007	2.4	89.9	
Pole MS-5-5	4.160	98.121	-3.7	0.000	0.000	0.008	0.004	Pole MS-5-4	-0.015	-0.007	2.4	89.9	
								Pole MS-5-6	0.008	0.004	1.2	89.9	
Pole MS-5-6	4.160	98.120	-3.7	0.000	0.000	0.008	0.004	Pole MS-5-5	-0.008	-0.004	1.2	89.9	
Pole MS-5-7	4.160	97.849	-3.8	0.000	0.000	0.000	0.000	Pole MS-5-2	-0.651	-0.320	102.9	89.8	
								Pole MS-5-11	0.108	0.053	17.0	89.9	
								Pole MS-5-24	0.543	0.267	85.9	89.7	
Pole MS-5-8	4.160	97.762	-3.8	0.000	0.000	0.008	0.004	Pole MS-5-9	-0.085	-0.042	13.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-14	0.078	0.038	12.3	89.9	
Pole MS-5-9	4.160	97.783	-3.8	0.000	0.000	0.008	0.004	Pole MS-5-8	0.085	0.042	13.4	89.9	
								Pole MS-5-10	-0.093	-0.045	14.6	89.9	
Pole MS-5-10	4.160	97.809	-3.8	0.000	0.000	0.008	0.004	Pole MS-5-9	0.093	0.045	14.6	89.9	
								Pole MS-5-11	-0.100	-0.049	15.8	89.9	
Pole MS-5-11	4.160	97.836	-3.8	0.000	0.000	0.008	0.004	Pole MS-5-7	-0.108	-0.053	17.0	89.9	
								Pole MS-5-10	0.100	0.049	15.8	89.9	
Pole MS-5-12	4.160	97.691	-3.8	0.000	0.000	0.008	0.004	Pole MS-5-13	-0.062	-0.030	9.9	89.9	
								Pole MS-5-16	0.055	0.027	8.7	89.9	
Pole MS-5-13	4.160	97.734	-3.8	0.000	0.000	0.008	0.004	Pole MS-5-12	0.063	0.030	9.9	89.9	
								Pole MS-5-14	-0.070	-0.034	11.1	89.9	
Pole MS-5-14	4.160	97.746	-3.8	0.000	0.000	0.008	0.004	Pole MS-5-8	-0.078	-0.038	12.3	89.9	
								Pole MS-5-13	0.070	0.034	11.1	89.9	
Pole MS-5-15	4.160	97.674	-3.8	0.000	0.000	0.008	0.004	Pole MS-5-16	-0.043	-0.021	6.8	89.9	
								Pole MS-5-17	0.036	0.017	5.6	89.9	
Pole MS-5-16	4.160	97.679	-3.8	0.000	0.000	0.000	0.000	Pole MS-5-15	0.043	0.021	6.8	89.9	
								Pole MS-5-12	-0.055	-0.027	8.7	89.9	
								SEC_MS-5-15	0.012	0.006	1.9	89.9	
Pole MS-5-17	4.160	97.668	-3.8	0.000	0.000	0.000	0.000	Pole MS-5-15	-0.036	-0.017	5.6	89.9	
								Pole MS-5-18	0.018	0.009	2.8	89.9	
								SEC_MS-5-16	0.018	0.009	2.8	89.9	
Pole MS-5-18	4.160	97.667	-3.8	0.000	0.000	0.000	0.000	Pole MS-5-17	-0.018	-0.009	2.8	89.9	
								Pole MS-5-19	0.000	0.000	0.0	0.0	
								SEC_MS-5-17	0.018	0.009	2.8	89.9	
Pole MS-5-19	4.160	97.667	-3.8	0.000	0.000	0.000	0.000	Pole MS-5-18	0.000	0.000	0.0	0.0	
Pole MS-5-24	4.160	97.600	-3.9	0.000	0.000	0.000	0.000	Pole MS-5-7	-0.542	-0.266	85.9	89.8	
								Pole MS-5-25	0.028	0.014	4.5	89.9	
								Pole MS-5-29	0.091	0.045	14.5	89.9	
								Pole MS-5-41	0.422	0.207	66.9	89.8	
Pole MS-5-25	4.160	97.595	-3.9	0.000	0.000	0.005	0.002	Pole MS-5-24	-0.028	-0.014	4.5	89.9	
								Pole MS-5-26	0.023	0.011	3.7	89.9	
Pole MS-5-26	4.160	97.590	-3.9	0.000	0.000	0.000	0.000	Pole MS-5-25	-0.023	-0.011	3.7	89.9	
								Pole MS-5-28	0.012	0.006	1.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_MS-5-23	0.012	0.006	1.9	89.9	
Pole MS-5-27	4.160	97.483	-3.9	0.000	0.000	0.005	0.002	Pole MS-5-41	-0.415	-0.203	65.7	89.8	
								Pole MS-5-151	0.410	0.201	65.0	89.8	
Pole MS-5-28	4.160	97.583	-3.9	0.000	0.000	0.000	0.000	Pole MS-5-26	-0.012	-0.006	1.9	89.9	
								SEC_MS-5-25	0.012	0.006	1.9	89.9	
Pole MS-5-29	4.160	97.581	-3.9	0.000	0.000	0.000	0.000	Pole MS-5-24	-0.091	-0.045	14.5	89.9	
								Pole MS-5-30	0.074	0.036	11.7	89.9	
								SEC_MS-5-26	0.018	0.009	2.8	89.9	
Pole MS-5-30	4.160	97.545	-3.9	0.000	0.000	0.005	0.002	Pole MS-5-29	-0.074	-0.036	11.7	89.9	
								Pole MS-5-31	0.069	0.033	10.9	89.9	
Pole MS-5-31	4.160	97.520	-3.9	0.000	0.000	0.008	0.004	Pole MS-5-30	-0.069	-0.033	10.9	89.9	
								Pole MS-5-32	0.061	0.030	9.7	89.9	
Pole MS-5-32	4.160	97.503	-3.9	0.000	0.000	0.000	0.000	Pole MS-5-31	-0.061	-0.030	9.7	89.9	
								Pole MS-5-33	0.049	0.024	7.8	89.9	
								SEC_MS-5-29	0.012	0.006	1.9	89.9	
Pole MS-5-33	4.160	97.492	-3.9	0.000	0.000	0.000	0.000	Pole MS-5-32	-0.049	-0.024	7.8	89.9	
								Pole MS-5-34	0.032	0.015	5.0	89.9	
								SEC_MS-5-30	0.018	0.009	2.8	89.9	
Pole MS-5-34	4.160	97.486	-3.9	0.000	0.000	0.005	0.002	Pole MS-5-33	-0.032	-0.015	5.0	89.9	
								Pole MS-5-35	0.027	0.013	4.2	89.9	
Pole MS-5-35	4.160	97.479	-3.9	0.000	0.000	0.000	0.000	Pole MS-5-34	-0.027	-0.013	4.2	89.9	
								Pole MS-5-36	0.015	0.007	2.4	89.9	
								SEC_MS-5-32	0.012	0.006	1.9	89.9	
Pole MS-5-36	4.160	97.472	-3.9	0.000	0.000	0.000	0.000	Pole MS-5-35	-0.015	-0.007	2.4	89.9	
								Pole MS-5-37	0.015	0.007	2.4	89.9	
Pole MS-5-37	4.160	97.468	-3.9	0.000	0.000	0.007	0.004	Pole MS-5-36	-0.015	-0.007	2.4	89.9	
								Pole MS-5-38	0.007	0.004	1.2	89.9	
Pole MS-5-38	4.160	97.466	-3.9	0.000	0.000	0.007	0.004	Pole MS-5-37	-0.007	-0.004	1.2	89.9	
								Pole MS-5-39	0.000	0.000	0.0	0.0	
Pole MS-5-39	4.160	97.466	-3.9	0.000	0.000	0.000	0.000	Pole MS-5-38	0.000	0.000	0.0	0.0	
Pole MS-5-40	4.160	97.204	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-151	-0.409	-0.200	65.0	89.8	
								Pole MS-5-42	0.005	0.002	0.8	89.9	
								Pole MS-5-44	0.078	0.038	12.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-55	0.318	0.156	50.6	89.8	
Pole MS-5-41	4.160	97.507	-3.9	0.000	0.000	0.008	0.004	Pole MS-5-27	0.415	0.203	65.7	89.8	
								Pole MS-5-24	-0.422	-0.207	66.9	89.8	
Pole MS-5-42	4.160	97.203	-4.0	0.000	0.000	0.005	0.002	Pole MS-5-40	-0.005	-0.002	0.8	89.9	
Pole MS-5-43	4.160	97.177	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-44	-0.070	-0.034	11.2	89.9	
								Pole MS-5-45	0.063	0.031	10.0	89.9	
Pole MS-5-44	4.160	97.190	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-40	-0.078	-0.038	12.4	89.9	
								Pole MS-5-43	0.070	0.034	11.2	89.9	
Pole MS-5-45	4.160	97.168	-4.0	0.000	0.000	0.000	0.000	Pole MS-5-43	-0.063	-0.031	10.0	89.9	
								Pole MS-5-46	0.051	0.025	8.1	89.9	
								SEC_MS-5-40	0.012	0.006	1.9	89.9	
Pole MS-5-46	4.160	97.153	-4.0	0.000	0.000	0.005	0.002	Pole MS-5-45	-0.051	-0.025	8.1	89.9	
								Pole MS-5-47	0.046	0.023	7.4	89.9	
Pole MS-5-47	4.160	97.144	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-46	-0.046	-0.023	7.4	89.9	
								Pole MS-5-48	0.039	0.019	6.2	89.9	
Pole MS-5-48	4.160	97.130	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-47	-0.039	-0.019	6.2	89.9	
								Pole MS-5-49	0.031	0.015	5.0	89.9	
Pole MS-5-49	4.160	97.122	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-48	-0.031	-0.015	5.0	89.9	
								Pole MS-5-50	0.024	0.012	3.8	89.9	
Pole MS-5-50	4.160	97.110	-4.0	0.000	0.000	0.000	0.000	Pole MS-5-49	-0.024	-0.012	3.8	89.9	
								Pole MS-5-51	0.012	0.006	2.0	89.9	
								SEC_MS-5-45	0.012	0.006	1.8	89.9	
Pole MS-5-51	4.160	97.108	-4.0	0.000	0.000	0.005	0.002	Pole MS-5-50	-0.012	-0.006	2.0	89.9	
								Pole MS-5-52	0.007	0.004	1.2	89.9	
Pole MS-5-52	4.160	97.104	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-51	-0.007	-0.004	1.2	89.9	
								Pole MS-5-149	0.000	0.000	0.0	0.0	
Pole MS-5-55	4.160	97.125	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-40	-0.318	-0.156	50.6	89.8	
								Pole MS-5-68	0.311	0.152	49.4	89.8	
Pole MS-5-56	4.160	96.909	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-68	-0.303	-0.148	48.3	89.9	
								Pole MS-5-57	0.059	0.029	9.5	89.9	
								Pole MS-5-64	0.022	0.011	3.5	89.9	
								Pole MS-5-67	0.214	0.104	34.1	89.9	
Pole MS-5-57	4.160	96.894	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-56	-0.059	-0.029	9.5	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-58	0.052	0.025	8.3	89.9	
Pole MS-5-58	4.160	96.877	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-57	-0.052	-0.025	8.3	89.9	
								Pole MS-5-59	0.045	0.022	7.1	89.9	
Pole MS-5-59	4.160	96.869	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-58	-0.045	-0.022	7.1	89.9	
								Pole MS-5-60	0.037	0.018	5.9	89.9	
Pole MS-5-60	4.160	96.857	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-59	-0.037	-0.018	5.9	89.9	
								Pole MS-5-61	0.030	0.014	4.7	89.9	
Pole MS-5-61	4.160	96.853	-4.0	0.000	0.000	0.015	0.007	Pole MS-5-60	-0.030	-0.014	4.7	89.9	
								Pole MS-5-62	0.015	0.007	2.4	89.9	
Pole MS-5-62	4.160	96.850	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-61	-0.015	-0.007	2.4	89.9	
								Pole MS-5-63	0.007	0.004	1.2	89.9	
Pole MS-5-63	4.160	96.849	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-62	-0.007	-0.004	1.2	89.9	
Pole MS-5-64	4.160	96.905	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-56	-0.022	-0.011	3.5	89.9	
								Pole MS-5-65	0.015	0.007	2.4	89.9	
Pole MS-5-65	4.160	96.902	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-64	-0.015	-0.007	2.4	89.9	
								Pole MS-5-66	0.007	0.004	1.2	89.9	
Pole MS-5-66	4.160	96.893	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-65	-0.007	-0.004	1.2	89.9	
Pole MS-5-67	4.160	96.810	-4.1	0.000	0.000	0.000	0.000	Pole MS-5-56	-0.214	-0.104	34.1	89.9	
								Pole MS-5-69	0.054	0.026	8.6	89.9	
								Pole MS-5-78	0.049	0.024	7.8	89.9	
								Pole MS-5-86	0.110	0.054	17.6	89.9	
Pole MS-5-68	4.160	96.985	-4.0	0.000	0.000	0.007	0.004	Pole MS-5-56	0.303	0.148	48.3	89.8	
								Pole MS-5-55	-0.310	-0.152	49.4	89.8	
Pole MS-5-69	4.160	96.799	-4.1	0.000	0.000	0.007	0.004	Pole MS-5-67	-0.054	-0.026	8.6	89.9	
								Pole MS-5-70	0.047	0.023	7.5	89.9	
Pole MS-5-70	4.160	96.778	-4.1	0.000	0.000	0.007	0.004	Pole MS-5-69	-0.047	-0.023	7.5	89.9	
								Pole MS-5-71	0.039	0.019	6.3	89.9	
Pole MS-5-71	4.160	96.773	-4.1	0.000	0.000	0.007	0.004	Pole MS-5-70	-0.039	-0.019	6.3	89.9	
								Pole MS-5-72	0.032	0.016	5.1	89.9	
Pole MS-5-72	4.160	96.771	-4.1	0.000	0.000	0.007	0.004	Pole MS-5-71	-0.032	-0.016	5.1	89.9	
								Pole MS-5-73	0.025	0.012	3.9	89.9	
Pole MS-5-73	4.160	96.765	-4.1	0.000	0.000	0.007	0.004	Pole MS-5-72	-0.025	-0.012	3.9	89.9	
								Pole MS-5-74	0.017	0.008	2.7	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-74	4.160	96.761	-4.1	0.000	0.000	0.007	0.004	Pole MS-5-73	-0.017	-0.008	2.7	89.9	
								Pole MS-5-75	0.010	0.005	1.6	89.9	
Pole MS-5-75	4.160	96.758	-4.1	0.000	0.000	0.005	0.002	Pole MS-5-74	-0.010	-0.005	1.6	89.9	
								Pole MS-5-76	0.005	0.002	0.8	89.9	
Pole MS-5-76	4.160	96.758	-4.1	0.000	0.000	0.005	0.002	Pole MS-5-75	-0.005	-0.002	0.8	89.9	
								Line MS-5-79~	0.000	0.000	0.0	0.0	
Pole MS-5-77	4.160	96.789	-4.1	0.000	0.000	0.005	0.002	Pole MS-5-78	-0.044	-0.021	7.0	89.9	
								Pole MS-5-79	0.039	0.019	6.3	89.9	
Pole MS-5-78	4.160	96.798	-4.1	0.000	0.000	0.005	0.002	Pole MS-5-67	-0.049	-0.024	7.8	89.9	
								Pole MS-5-77	0.044	0.021	7.0	89.9	
Pole MS-5-79	4.160	96.786	-4.1	0.000	0.000	0.005	0.002	Pole MS-5-77	-0.039	-0.019	6.3	89.9	
								Pole MS-5-80	0.034	0.017	5.5	89.9	
Pole MS-5-80	4.160	96.771	-4.1	0.000	0.000	0.005	0.002	Pole MS-5-79	-0.034	-0.017	5.5	89.9	
								Pole MS-5-81	0.029	0.014	4.7	89.9	
Pole MS-5-81	4.160	96.763	-4.1	0.000	0.000	0.005	0.002	Pole MS-5-80	-0.029	-0.014	4.7	89.9	
								Pole MS-5-82	0.025	0.012	3.9	89.9	
Pole MS-5-82	4.160	96.761	-4.1	0.000	0.000	0.005	0.002	Pole MS-5-81	-0.025	-0.012	3.9	89.9	
								Pole MS-5-83	0.020	0.010	3.1	89.9	
Pole MS-5-83	4.160	96.759	-4.1	0.000	0.000	0.007	0.004	Pole MS-5-82	-0.020	-0.010	3.1	89.9	
								Pole MS-5-84	0.012	0.006	2.0	89.9	
Pole MS-5-84	4.160	96.757	-4.1	0.000	0.000	0.007	0.004	Pole MS-5-83	-0.012	-0.006	2.0	89.9	
								Pole MS-5-85	0.005	0.002	0.8	90.0	
Pole MS-5-85	4.160	96.750	-4.1	0.000	0.000	0.005	0.002	Pole MS-5-84	-0.005	-0.002	0.8	89.9	
Pole MS-5-86	4.160	96.758	-4.1	0.000	0.000	0.000	0.000	Pole MS-5-67	-0.110	-0.054	17.6	89.9	
								Pole MS-5-89	0.015	0.007	2.3	89.9	
								Pole MS-5-90	0.034	0.017	5.5	89.9	
								Pole MS-5-96	0.061	0.030	9.8	89.8	
Pole MS-5-87	4.160	96.752	-4.1	0.000	0.000	0.005	0.002	Pole MS-5-88	-0.005	-0.002	0.8	89.9	
Pole MS-5-88	4.160	96.753	-4.1	0.000	0.000	0.005	0.002	Pole MS-5-87	0.005	0.002	0.8	89.9	
								Pole MS-5-89	-0.010	-0.005	1.6	89.9	
Pole MS-5-89	4.160	96.755	-4.1	0.000	0.000	0.005	0.002	Pole MS-5-86	-0.015	-0.007	2.3	89.9	
								Pole MS-5-88	0.010	0.005	1.6	89.9	
Pole MS-5-90	4.160	96.749	-4.1	0.000	0.000	0.005	0.002	Pole MS-5-86	-0.034	-0.017	5.5	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-91	0.029	0.014	4.7	89.9	
Pole MS-5-91	4.160	96.741	-4.1	0.000	0.000	0.005	0.002	Pole MS-5-90	-0.029	-0.014	4.7	89.9	
								Pole MS-5-92	0.025	0.012	3.9	89.9	
Pole MS-5-92	4.160	96.733	-4.1	0.000	0.000	0.005	0.002	Pole MS-5-91	-0.025	-0.012	3.9	89.9	
								Pole MS-5-93	0.020	0.010	3.1	89.9	
Pole MS-5-93	4.160	96.728	-4.1	0.000	0.000	0.007	0.004	Pole MS-5-92	-0.020	-0.010	3.1	89.9	
								Pole MS-5-94	0.012	0.006	2.0	89.9	
Pole MS-5-94	4.160	96.725	-4.1	0.000	0.000	0.007	0.004	Pole MS-5-93	-0.012	-0.006	2.0	89.9	
								Pole MS-5-95	0.005	0.002	0.8	89.9	
Pole MS-5-95	4.160	96.724	-4.1	0.000	0.000	0.005	0.002	Pole MS-5-94	-0.005	-0.002	0.8	89.9	
Pole MS-5-96	4.160	96.733	-4.1	0.000	0.000	0.000	0.000	Pole MS-5-86	-0.061	-0.030	9.8	89.8	
								Pole MS-5-111	0.061	0.030	9.8	89.8	
Pole MS-5-106	4.160	100.019	-3.7	0.000	0.000	0.057	0.028	Pole MS-5-108	-0.218	-0.106	33.7	89.9	
								Pole MS-5-122	0.161	0.079	24.9	89.9	
Pole MS-5-107	4.160	100.149	-3.7	0.000	0.000	0.005	0.003	Pole MS-5-108	-0.023	-0.011	3.5	89.9	
								Pole MS-5-109	0.017	0.008	2.7	89.9	
Pole MS-5-108	4.160	100.154	-3.7	0.000	0.000	0.000	0.000	Pole MS-5-107	0.023	0.011	3.5	89.9	
								Pole MS-5-106	0.218	0.107	33.7	89.9	
								SF-2-30	-0.241	-0.117	37.1	89.9	
Pole MS-5-109	4.160	100.145	-3.7	0.000	0.000	0.005	0.003	Pole MS-5-107	-0.017	-0.008	2.7	89.9	
								Pole MS-5-110	0.012	0.006	1.9	89.9	
Pole MS-5-110	4.160	100.142	-3.7	0.000	0.000	0.000	0.000	Pole MS-5-109	-0.012	-0.006	1.9	89.9	
								SEC_MS-5-99	0.012	0.006	1.9	89.9	
Pole MS-5-111	4.160	96.709	-4.1	0.000	0.000	0.000	0.000	Pole MS-5-96	-0.061	-0.030	9.8	89.8	
								Pole MS-5-124	0.061	0.030	9.8	89.8	
Pole MS-5-122	4.160	99.910	-3.7	0.000	0.000	0.073	0.036	Pole MS-5-106	-0.161	-0.078	24.9	89.9	
								Pole MS-5-123	0.088	0.043	13.6	89.9	
Pole MS-5-123	4.160	99.852	-3.7	0.000	0.000	0.000	0.000	Pole MS-5-122	-0.088	-0.043	13.6	89.9	
								Pole MS-5-134	0.073	0.035	11.2	89.9	
								Pole MS-5-135	0.016	0.008	2.4	89.9	
Pole MS-5-124	4.160	96.684	-4.1	0.000	0.000	0.000	0.000	Pole MS-5-111	-0.061	-0.030	9.8	89.8	
								Pole MS-5-139	0.061	0.030	9.8	89.8	
Pole MS-5-125	4.160	99.716	-3.7	0.000	0.000	0.005	0.002	Pole MS-5-126	-0.005	-0.002	0.8	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Line MS-5-129~	0.000	0.000	0.0	0.0	
Pole MS-5-126	4.160	99.717	-3.7	0.000	0.000	0.008	0.004	Pole MS-5-125	0.005	0.002	0.8	89.9	
								Pole MS-5-127	-0.013	-0.006	2.0	89.9	
Pole MS-5-127	4.160	99.720	-3.7	0.000	0.000	0.008	0.004	Pole MS-5-126	0.013	0.006	2.0	89.9	
								Pole MS-5-128	-0.021	-0.010	3.2	89.9	
Pole MS-5-128	4.160	99.724	-3.7	0.000	0.000	0.008	0.004	Pole MS-5-127	0.021	0.010	3.2	89.9	
								Pole MS-5-129	-0.029	-0.014	4.4	89.9	
Pole MS-5-129	4.160	99.737	-3.7	0.000	0.000	0.008	0.004	Pole MS-5-128	0.029	0.014	4.4	89.9	
								Pole MS-5-130	-0.036	-0.018	5.6	89.9	
Pole MS-5-130	4.160	99.744	-3.7	0.000	0.000	0.005	0.003	Pole MS-5-129	0.036	0.018	5.6	89.9	
								Pole MS-5-131	-0.041	-0.020	6.4	89.9	
Pole MS-5-131	4.160	99.763	-3.7	0.000	0.000	0.005	0.003	Pole MS-5-130	0.041	0.020	6.4	89.9	
								Pole MS-5-132	-0.047	-0.023	7.2	89.9	
Pole MS-5-132	4.160	99.775	-3.7	0.000	0.000	0.005	0.003	Pole MS-5-131	0.047	0.023	7.2	89.9	
								Pole MS-5-137	-0.052	-0.025	8.0	89.9	
Pole MS-5-133	4.160	99.824	-3.7	0.000	0.000	0.005	0.003	Pole MS-5-137	0.060	0.029	9.2	89.9	
								Pole MS-5-134	-0.065	-0.032	10.0	89.9	
Pole MS-5-134	4.160	99.837	-3.7	0.000	0.000	0.008	0.004	Pole MS-5-133	0.065	0.032	10.0	89.9	
								Pole MS-5-123	-0.073	-0.035	11.2	89.9	
Pole MS-5-135	4.160	99.837	-3.7	0.000	0.000	0.008	0.004	Pole MS-5-123	-0.016	-0.008	2.4	89.9	
								Pole MS-5-136	0.008	0.004	1.2	89.9	
Pole MS-5-136	4.160	99.830	-3.7	0.000	0.000	0.008	0.004	Pole MS-5-135	-0.008	-0.004	1.2	89.9	
Pole MS-5-137	4.160	99.797	-3.7	0.000	0.000	0.008	0.004	Pole MS-5-133	-0.060	-0.029	9.2	89.9	
								Pole MS-5-132	0.052	0.025	8.0	89.9	
Pole MS-5-139	4.160	96.671	-4.1	0.000	0.000	0.061	0.030	Pole MS-5-124	-0.061	-0.030	9.8	89.8	
Pole MS-5-149	4.160	97.104	-4.0	0.000	0.000	0.000	0.000	Pole MS-5-52	0.000	0.000	0.0	0.0	
Pole MS-5-151	4.160	97.394	-3.9	0.000	0.000	0.000	0.000	Pole MS-5-40	0.409	0.201	65.0	89.8	
								Pole MS-5-27	-0.409	-0.201	65.0	89.8	
Pole MS-7-16	24.940	100.893	0.2	0.000	0.000	0.000	0.000	Pole MS-7-18	-0.032	-0.015	0.8	90.0	
								SEC_MS-7-9	0.032	0.015	0.8	90.0	
Pole MS-7-17	24.940	100.897	0.2	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	-0.084	-0.039	2.1	90.5	
								Pole MS-7-18	0.084	0.039	2.1	90.5	
Pole MS-7-18	24.940	100.893	0.2	0.000	0.000	0.000	0.000	Pole MS-7-19	0.052	0.025	1.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-7-16	0.032	0.015	0.8	90.1	
								Pole MS-7-17	-0.084	-0.041	2.1	90.0	
Pole MS-7-19	24.940	100.893	0.2	0.000	0.000	0.052	0.027	Pole MS-7-18	-0.052	-0.027	1.3	88.7	
Pole MS-8-1	4.160	99.782	-3.4	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	-0.250	-0.123	38.8	89.7	
								Pole MS-8-2	0.250	0.123	38.8	89.7	
Pole MS-8-2	4.160	99.614	-3.4	0.000	0.000	0.005	0.002	Pole MS-8-1	-0.250	-0.123	38.8	89.7	
								Pole MS-8-3	0.245	0.121	38.0	89.7	
Pole MS-8-3	4.160	99.558	-3.4	0.000	0.000	0.005	0.002	Pole MS-8-2	-0.244	-0.120	38.0	89.7	
								Pole MS-8-4	0.239	0.118	37.2	89.7	
Pole MS-8-4	4.160	99.531	-3.4	0.000	0.000	0.000	0.000	Pole MS-8-3	-0.239	-0.118	37.2	89.7	
								Pole MS-8-5	0.215	0.106	33.4	89.7	
								SEC_MS-8-3	0.024	0.012	3.8	89.9	
Pole MS-8-5	4.160	99.502	-3.4	0.000	0.000	0.005	0.002	Pole MS-8-4	-0.215	-0.106	33.4	89.7	
								Pole MS-8-6	0.210	0.104	32.6	89.7	
Pole MS-8-6	4.160	99.455	-3.4	0.000	0.000	0.005	0.002	Pole MS-8-5	-0.210	-0.103	32.6	89.7	
								Pole MS-8-7	0.205	0.101	31.9	89.7	
Pole MS-8-7	4.160	99.431	-3.4	0.000	0.000	0.010	0.005	Pole MS-8-6	-0.205	-0.101	31.9	89.7	
								Pole MS-8-8	0.194	0.096	30.3	89.7	
Pole MS-8-8	4.160	99.407	-3.4	0.000	0.000	0.000	0.000	Pole MS-8-7	-0.194	-0.096	30.3	89.7	
								Pole MS-8-9	0.037	0.018	5.7	89.8	
								Pole MS-8-10	0.158	0.078	24.6	89.7	
Pole MS-8-9	4.160	99.400	-3.4	0.000	0.000	0.000	0.000	Pole MS-8-8	-0.037	-0.018	5.7	89.8	
								SEC_MS-8-8	0.037	0.018	5.7	89.8	
Pole MS-8-10	4.160	99.366	-3.5	0.000	0.000	0.005	0.002	Pole MS-8-8	-0.158	-0.078	24.6	89.7	
								Pole MS-8-11	0.153	0.075	23.8	89.7	
Pole MS-8-11	4.160	99.327	-3.5	0.000	0.000	0.008	0.004	Pole MS-8-10	-0.153	-0.075	23.8	89.7	
								Pole MS-8-12	0.145	0.072	22.6	89.7	
Pole MS-8-12	4.160	99.292	-3.5	0.000	0.000	0.008	0.004	Pole MS-8-11	-0.145	-0.072	22.6	89.7	
								Pole MS-8-13	0.137	0.068	21.4	89.6	
Pole MS-8-13	4.160	99.284	-3.5	0.000	0.000	0.008	0.004	Pole MS-8-12	-0.137	-0.068	21.4	89.6	
								Pole MS-8-14	0.129	0.064	20.2	89.6	
Pole MS-8-14	4.160	99.264	-3.5	0.000	0.000	0.008	0.004	Pole MS-8-15	0.122	0.060	19.0	89.6	
								Pole MS-8-13	-0.129	-0.064	20.2	89.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-8-15	4.160	99.245	-3.5	0.000	0.000	0.000	0.000	PRI_PM_9	0.122	0.060	19.0	89.6	
								Pole MS-8-14	-0.122	-0.060	19.0	89.6	
Pole MS-9-1	4.160	99.814	-3.3	0.000	0.000	0.008	0.004	BUS_5KV-LLP_01	-0.559	-0.276	86.7	89.7	
								Pole MS-9-2	0.551	0.272	85.5	89.7	
Pole MS-9-2	4.160	99.695	-3.4	0.000	0.000	0.000	0.000	Pole MS-9-1	-0.551	-0.272	85.5	89.7	
								Pole MS-9-12	0.551	0.272	85.5	89.7	
Pole MS-9-12	4.160	99.469	-3.4	0.000	0.000	0.000	0.000	Pole MS-9-2	-0.550	-0.270	85.5	89.7	
								Pole MS-9-13	0.550	0.270	85.5	89.7	
Pole MS-9-13	4.160	99.431	-3.4	0.000	0.000	0.000	0.000	Pole MS-9-12	-0.550	-0.270	85.5	89.7	
								Pole MS-9-14	0.550	0.270	85.5	89.7	
Pole MS-9-14	4.160	99.364	-3.5	0.000	0.000	0.005	0.002	Pole MS-9-13	-0.549	-0.270	85.5	89.7	
								Pole MS-9-15	0.544	0.267	84.7	89.7	
Pole MS-9-15	4.160	99.264	-3.5	0.000	0.000	0.000	0.000	Pole MS-9-14	-0.544	-0.267	84.7	89.8	
								Pole MS-9-16	0.520	0.255	80.9	89.8	
								SEC_MS-9-12	0.024	0.012	3.7	89.9	
Pole MS-9-16	4.160	99.154	-3.5	0.000	0.000	0.005	0.002	Pole MS-9-15	-0.519	-0.255	80.9	89.8	
								Pole MS-9-17	0.514	0.252	80.1	89.8	
Pole MS-9-17	4.160	99.086	-3.5	0.000	0.000	0.000	0.000	Pole MS-9-16	-0.514	-0.252	80.2	89.8	
								Pole MS-9-18	0.144	0.070	22.4	89.9	
								Pole MS-9-33	0.370	0.182	57.7	89.8	
Pole MS-9-18	4.160	99.078	-3.5	0.000	0.000	0.000	0.000	Pole MS-9-17	-0.144	-0.070	22.4	89.9	
								Pole MS-9-19	0.120	0.058	18.7	89.9	
								SEC_MS-9-14	0.024	0.012	3.7	89.9	
Pole MS-9-19	4.160	99.057	-3.5	0.000	0.000	0.005	0.002	Pole MS-9-18	-0.120	-0.058	18.7	89.9	
								Pole MS-9-20	0.115	0.056	17.9	89.9	
Pole MS-9-20	4.160	99.025	-3.5	0.000	0.000	0.008	0.004	Pole MS-9-19	-0.115	-0.056	17.9	89.9	
								Pole MS-9-21	0.107	0.052	16.7	89.9	
Pole MS-9-21	4.160	98.999	-3.5	0.000	0.000	0.000	0.000	Pole MS-9-20	-0.107	-0.052	16.7	89.9	
								Pole MS-9-23	0.083	0.040	12.9	89.9	
								SEC_MS-9-17	0.024	0.012	3.7	89.9	
Pole MS-9-22	4.160	98.646	-3.6	0.000	0.000	0.000	0.000	Pole MS-9-42	-0.265	-0.130	41.5	89.8	
								Pole MS-9-43	0.037	0.018	5.7	89.9	
								Pole MS-9-47	0.229	0.112	35.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-9-23	4.160	98.992	-3.5	0.000	0.000	0.008	0.004	Pole MS-9-21	-0.083	-0.040	12.9	89.9	
								Pole MS-9-24	0.075	0.037	11.7	89.9	
Pole MS-9-24	4.160	98.983	-3.5	0.000	0.000	0.015	0.008	Pole MS-9-23	-0.075	-0.037	11.7	89.9	
								Pole MS-9-25	0.060	0.029	9.3	89.9	
Pole MS-9-25	4.160	98.979	-3.5	0.000	0.000	0.000	0.000	Pole MS-9-24	-0.060	-0.029	9.3	89.9	
								Pole MS-9-26	0.024	0.012	3.7	89.9	
								Pole MS-9-28	0.036	0.017	5.6	89.9	
Pole MS-9-26	4.160	98.968	-3.6	0.000	0.000	0.000	0.000	Pole MS-9-27	0.000	0.000	0.0	0.0	
								Pole MS-9-25	-0.024	-0.012	3.7	89.9	
								SEC_MS-9-22	0.024	0.012	3.7	89.9	
Pole MS-9-27	4.160	98.968	-3.6	0.000	0.000	0.000	0.000	Pole MS-9-26	0.000	0.000	0.0	0.0	
Pole MS-9-28	4.160	98.971	-3.6	0.000	0.000	0.005	0.002	Pole MS-9-25	-0.036	-0.017	5.6	89.9	
								Pole MS-9-29	0.031	0.015	4.8	89.9	
Pole MS-9-29	4.160	98.967	-3.6	0.000	0.000	0.008	0.004	Pole MS-9-28	-0.031	-0.015	4.8	89.9	
								Pole MS-9-30	0.023	0.011	3.6	89.9	
Pole MS-9-30	4.160	98.963	-3.6	0.000	0.000	0.008	0.004	Pole MS-9-29	-0.023	-0.011	3.6	89.9	
								Pole MS-9-31	0.015	0.008	2.4	89.9	
Pole MS-9-31	4.160	98.961	-3.6	0.000	0.000	0.008	0.004	Pole MS-9-30	-0.015	-0.008	2.4	89.9	
								Pole MS-9-32	0.008	0.004	1.2	89.9	
Pole MS-9-32	4.160	98.960	-3.6	0.000	0.000	0.008	0.004	Pole MS-9-31	-0.008	-0.004	1.2	89.9	
Pole MS-9-33	4.160	99.015	-3.5	0.000	0.000	0.008	0.004	Pole MS-9-17	-0.370	-0.181	57.7	89.8	
								Pole MS-9-34	0.362	0.178	56.5	89.8	
Pole MS-9-34	4.160	98.959	-3.6	0.000	0.000	0.008	0.004	Pole MS-9-33	-0.362	-0.178	56.5	89.8	
								Pole MS-9-35	0.354	0.174	55.3	89.8	
Pole MS-9-35	4.160	98.915	-3.6	0.000	0.000	0.000	0.000	Pole MS-9-34	-0.354	-0.174	55.3	89.8	
								Pole MS-9-36	0.008	0.004	1.2	89.9	
								Pole MS-9-37	0.346	0.170	54.1	89.8	
Pole MS-9-36	4.160	98.914	-3.6	0.000	0.000	0.008	0.004	Pole MS-9-35	-0.008	-0.004	1.2	89.9	
Pole MS-9-37	4.160	98.897	-3.6	0.000	0.000	0.000	0.000	Pole MS-9-35	-0.346	-0.170	54.1	89.8	
								Pole MS-9-38	0.322	0.158	50.4	89.8	
								SEC_MS-9-31	0.024	0.012	3.7	89.9	
Pole MS-9-38	4.160	98.856	-3.6	0.000	0.000	0.000	0.000	Pole MS-9-37	-0.322	-0.158	50.4	89.8	
								Pole MS-9-39	0.286	0.140	44.7	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_MS-9-32	0.036	0.018	5.7	89.8	
Pole MS-9-39	4.160	98.776	-3.6	0.000	0.000	0.000	0.000	Pole MS-9-38	-0.286	-0.140	44.7	89.8	
								Pole MS-9-40	0.005	0.002	0.8	89.9	
								Pole MS-9-41	0.281	0.138	43.9	89.8	
Pole MS-9-40	4.160	98.776	-3.6	0.000	0.000	0.005	0.002	Pole MS-9-39	-0.005	-0.002	0.8	89.9	
Pole MS-9-41	4.160	98.739	-3.6	0.000	0.000	0.008	0.004	Pole MS-9-39	-0.281	-0.137	43.9	89.8	
								Pole MS-9-42	0.273	0.134	42.7	89.8	
Pole MS-9-42	4.160	98.673	-3.6	0.000	0.000	0.008	0.004	Pole MS-9-22	0.265	0.130	41.5	89.8	
								Pole MS-9-41	-0.273	-0.134	42.7	89.8	
Pole MS-9-43	4.160	98.643	-3.6	0.000	0.000	0.005	0.002	Pole MS-9-22	-0.037	-0.018	5.7	89.9	
								Pole MS-9-44	0.031	0.015	4.9	89.9	
Pole MS-9-44	4.160	98.636	-3.6	0.000	0.000	0.000	0.000	Pole MS-9-43	-0.031	-0.015	4.9	89.9	
								Pole MS-9-45	0.008	0.004	1.2	89.9	
								Pole MS-9-46	0.024	0.012	3.7	89.9	
Pole MS-9-45	4.160	98.635	-3.6	0.000	0.000	0.008	0.004	Pole MS-9-44	-0.008	-0.004	1.2	89.9	
Pole MS-9-46	4.160	98.629	-3.6	0.000	0.000	0.000	0.000	Pole MS-9-44	-0.024	-0.012	3.7	89.9	
								SEC_MS-9-37	0.024	0.012	3.7	89.9	
Pole MS-9-47	4.160	98.617	-3.6	0.000	0.000	0.000	0.000	Pole MS-9-22	-0.229	-0.112	35.8	89.8	
								Pole MS-9-48	0.205	0.100	32.1	89.8	
								SEC_MS-9-38	0.024	0.012	3.7	89.9	
Pole MS-9-48	4.160	98.587	-3.6	0.000	0.000	0.000	0.000	Pole MS-9-47	-0.205	-0.100	32.1	89.8	
								Pole MS-9-49	0.168	0.082	26.4	89.8	
								SEC_MS-9-39	0.036	0.018	5.7	89.8	
Pole MS-9-49	4.160	98.540	-3.7	0.000	0.000	0.000	0.000	Pole MS-9-48	-0.168	-0.082	26.4	89.8	
								Pole MS-9-50	0.132	0.065	20.7	89.8	
								SEC_MS-9-40	0.036	0.018	5.7	89.8	
Pole MS-9-50	4.160	98.522	-3.7	0.000	0.000	0.000	0.000	Pole MS-9-49	-0.132	-0.065	20.7	89.8	
								Pole MS-9-51	0.096	0.047	15.1	89.8	
								SEC_MS-9-41	0.036	0.018	5.7	89.8	
Pole MS-9-51	4.160	98.506	-3.7	0.000	0.000	0.000	0.000	Pole MS-9-50	-0.096	-0.047	15.1	89.8	
								Pole MS-9-52	0.060	0.029	9.4	89.8	
								SEC_MS-9-42	0.036	0.018	5.7	89.8	
Pole MS-9-52	4.160	98.491	-3.7	0.000	0.000	0.000	0.000	Pole MS-9-51	-0.060	-0.029	9.4	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-9-53	0.024	0.012	3.7	89.9	
								SEC_MS-9-43	0.036	0.018	5.7	89.8	
Pole MS-9-53	4.160	98.489	-3.7	0.000	0.000	0.000	0.000	Pole MS-9-52	-0.024	-0.012	3.7	89.9	
								Pole MS-9-54	0.000	0.000	0.0	0.0	
								SEC_MS-9-44	0.024	0.012	3.7	89.9	
Pole MS-9-54	4.160	98.489	-3.7	0.000	0.000	0.000	0.000	Pole MS-9-53	0.000	0.000	0.0	0.0	
PRI_PM_1	4.160	98.095	-6.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-0.076	-0.038	12.1	89.4	
								SEC_PM_1	0.076	0.038	12.1	89.4	
PRI_PM_1-1	4.160	93.543	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.071	-0.035	11.8	89.4	
								SEC_PM_1-1	0.071	0.035	11.8	89.4	
PRI_PM_2	4.160	97.248	-6.1	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-0.075	-0.038	12.0	89.4	
								SEC_PM_2	0.075	0.038	12.0	89.4	
PRI_PM_3	4.160	96.542	-6.0	0.000	0.000	0.000	0.000	UG_JUNC-CS-3	-0.075	-0.037	12.0	89.4	
								SEC_PM_3	0.075	0.037	12.0	89.4	
PRI_PM_4	4.160	95.358	-4.4	0.000	0.000	0.000	0.000	SF-1-60	-0.226	-0.114	36.9	89.2	
								SEC_PM_4	0.226	0.114	36.9	89.2	
PRI_PM_5	4.160	95.937	-5.9	0.000	0.000	0.000	0.000	UG_JUNC-CS-5	-0.074	-0.037	11.9	89.4	
								SEC_PM_5	0.074	0.037	11.9	89.4	
PRI_PM_6	4.160	95.371	-5.8	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.073	-0.037	11.9	89.4	
								SEC_PM_6	0.073	0.037	11.9	89.4	
PRI_PM_7	4.160	99.056	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-73	-0.172	-0.086	27.0	89.4	
								SEC_PM_7	0.172	0.086	27.0	89.4	
PRI_PM_8	4.160	99.302	-3.5	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.139	-0.069	21.7	89.6	
								SEC_PM_8	0.139	0.069	21.7	89.6	
PRI_PM_9	4.160	99.229	-3.5	0.000	0.000	0.000	0.000	Pole MS-8-15	-0.122	-0.060	19.0	89.6	
								SEC_PM_9	0.122	0.060	19.0	89.6	
PRI_PM_10	4.160	96.341	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-86	-0.330	-0.165	53.1	89.4	
								PRI_PM_28	0.165	0.082	26.6	89.5	
								SEC_PM_10	0.165	0.082	26.6	89.4	
PRI_PM_11	4.160	98.552	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-11	-0.171	-0.086	27.0	89.4	
								SEC_PM_11	0.171	0.086	27.0	89.4	
PRI_PM_12	4.160	95.485	-4.5	0.000	0.000	0.000	0.000	SF-1-59	-0.227	-0.115	36.9	89.2	
								SEC_PM_12	0.227	0.115	36.9	89.2	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
PRI_PM_13	4.160	94.321	-4.4	0.000	0.000	0.000	0.000	SF-1-40	-0.426	-0.215	70.2	89.2	
								SEC_PM_13	0.426	0.215	70.2	89.2	
PRI_PM_14	4.160	95.117	-4.3	0.000	0.000	0.000	0.000	SF-1-17	-0.324	-0.162	52.8	89.4	
								SEC_PM_14	0.324	0.162	52.8	89.4	
PRI_PM_15	4.160	96.570	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-16	-0.331	-0.166	53.3	89.4	
								SEC_PM_15	0.331	0.166	53.3	89.4	
PRI_PM_16	4.160	98.336	-6.4	0.000	0.000	0.000	0.000	Pole CS-1-2	-0.171	-0.085	26.9	89.4	
								SEC_PM_16	0.171	0.085	26.9	89.4	
PRI_PM_17	4.160	96.727	-6.8	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.150	-0.075	24.0	89.5	
								SEC_PM_17	0.150	0.075	24.0	89.5	
PRI_PM_18	4.160	98.435	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-54	-0.171	-0.085	26.9	89.4	
								SEC_PM_18	0.171	0.085	26.9	89.4	
PRI_PM_19	4.160	93.154	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-37	-0.157	-0.078	26.1	89.4	
								SEC_PM_19	0.157	0.078	26.1	89.4	
PRI_PM_20	4.160	93.902	-6.0	0.000	0.000	0.000	0.000	Pole CS-2-21	-0.143	-0.071	23.6	89.5	
								SEC_PM_20	0.143	0.071	23.6	89.5	
PRI_PM_21	4.160	94.258	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-20	-0.144	-0.072	23.6	89.5	
								SEC_PM_21	0.144	0.072	23.6	89.5	
PRI_PM_22	4.160	97.639	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-6	-0.169	-0.084	26.8	89.4	
								SEC_PM_22	0.169	0.084	26.8	89.4	
PRI_PM_23	4.160	94.346	-6.1	0.000	0.000	0.000	0.000	Pole CS-4-20	-0.160	-0.080	26.3	89.4	
								SEC_PM_23	0.160	0.080	26.3	89.4	
PRI_PM_24	4.160	94.169	-6.1	0.000	0.000	0.000	0.000	Pole CS-4-22	-0.159	-0.080	26.2	89.4	
								SEC_PM_24	0.159	0.080	26.2	89.4	
PRI_PM_25	4.160	98.308	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-22	-0.085	-0.043	13.5	89.4	
								SEC_PM_25	0.085	0.043	13.5	89.4	
PRI_PM_26	4.160	97.463	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-31	-0.084	-0.042	13.4	89.4	
								SEC_PM_26	0.084	0.042	13.4	89.4	
PRI_PM_28	4.160	96.318	-5.9	0.000	0.000	0.000	0.000	PRI_PM_10	-0.165	-0.082	26.6	89.4	
								SEC_PM_28	0.165	0.082	26.6	89.4	
PV-Collector1	0.480	103.087	5.4	0.000	0.000	0.000	0.000	PV-Module_01	-0.197	0.002	230.2	100.0	
								PV-Module_2	-0.197	0.002	230.2	100.0	
								PV-Module_3	-0.197	0.002	230.2	100.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								PV-Module_4	-0.197	0.002	230.2	100.0	
								PV-Module_5	-0.197	0.002	230.2	100.0	
								PV-Module_6	-0.197	0.002	230.2	100.0	
								PV-Module_7	-0.197	0.002	230.2	100.0	
								PV-Module_8	-0.197	0.002	230.2	100.0	
								PV-Module_9	-0.197	0.002	230.2	100.0	
								PV-Module_10	-0.197	0.002	230.2	100.0	
								PV-Module_11	-0.197	0.002	230.2	100.0	
								PV-Module_12	-0.197	0.002	230.2	100.0	
								PVT1_Pri	2.367	-0.027	2762.1	100.0	
PV-Collector2	0.480	103.087	5.4	0.000	0.000	0.000	0.000	PV-Module_13	-0.197	0.002	230.2	100.0	
								PV-Module_14	-0.197	0.002	230.2	100.0	
								PV-Module_15	-0.197	0.002	230.2	100.0	
								PV-Module_16	-0.197	0.002	230.2	100.0	
								PV-Module_17	-0.197	0.002	230.2	100.0	
								PV-Module_18	-0.197	0.002	230.2	100.0	
								PV-Module_19	-0.197	0.002	230.2	100.0	
								PV-Module_20	-0.197	0.002	230.2	100.0	
								PV-Module_21	-0.197	0.002	230.2	100.0	
								PV-Module_22	-0.197	0.002	230.2	100.0	
								PV-Module_23	-0.197	0.002	230.2	100.0	
								PV-Module_24	-0.197	0.002	230.2	100.0	
								PVT1_Pri2	2.367	-0.027	2762.1	100.0	
PV-Module_01	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.2	100.0	
PV-Module_2	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.2	100.0	
PV-Module_3	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.2	100.0	
PV-Module_4	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.2	100.0	
PV-Module_5	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.2	100.0	
PV-Module_6	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.2	100.0	
PV-Module_7	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.2	100.0	
PV-Module_8	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.2	100.0	
PV-Module_9	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.2	100.0	
PV-Module_10	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.2	100.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
PV-Module_11	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.2	100.0	
PV-Module_12	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.2	100.0	
PV-Module_13	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.2	100.0	
PV-Module_14	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.2	100.0	
PV-Module_15	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.2	100.0	
PV-Module_16	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.2	100.0	
PV-Module_17	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.2	100.0	
PV-Module_18	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.2	100.0	
PV-Module_19	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.2	100.0	
PV-Module_20	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.2	100.0	
PV-Module_21	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.2	100.0	
PV-Module_22	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.2	100.0	
PV-Module_23	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.2	100.0	
PV-Module_24	0.480	104.095	6.1	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.2	100.0	
PV-PMS-Pri	24.900	102.509	2.3	0.000	0.000	0.000	0.000	P_526_2	4.698	-0.309	106.5	-99.8	
								PV-PMS-Sec	-4.698	0.309	106.5	-99.8	
PV-PMS-Sec	24.900	102.509	2.3	0.000	0.000	0.000	0.000	PVT1_Pri	-2.349	0.154	53.2	-99.8	
								PVT1_Pri2	-2.349	0.154	53.2	-99.8	
								PV-PMS-Pri	4.698	-0.309	106.5	-99.8	
PVT1_Pri	24.900	102.512	2.3	0.000	0.000	0.000	0.000	PV-PMS-Sec	2.349	-0.156	53.2	-99.8	
								PV-Collector1	-2.349	0.156	53.2	-99.8	
PVT1_Pri2	24.900	102.512	2.3	0.000	0.000	0.000	0.000	PV-PMS-Sec	2.349	-0.156	53.2	-99.8	
								PV-Collector2	-2.349	0.156	53.2	-99.8	
P_526_2	24.900	102.501	2.3	0.000	0.000	0.000	0.000	PV-PMS-Pri	-4.697	0.308	106.5	-99.8	
								BUS_WTG6	4.697	-0.308	106.5	-99.8	
SEC_6M-1-1	0.208	98.648	-3.6	0.000	0.000	0.022	0.011	Pole 6M-1-1	-0.022	-0.011	70.0	90.0	
SEC_6M-1-2	0.208	98.383	-3.6	0.000	0.000	0.022	0.011	Pole 6M-1-3	-0.022	-0.011	69.9	90.0	
SEC_6M-1-12	0.208	97.269	-3.6	0.000	0.000	0.022	0.011	Pole 6M-1-19	-0.022	-0.011	69.4	90.0	
SEC_6M-E-1	0.208	92.108	-3.4	0.000	0.000	0.032	0.015	Pole 6M-E-5	-0.032	-0.015	106.3	90.0	
SEC_6M-E-2	0.208	93.698	-3.5	0.000	0.000	0.033	0.016	Pole 6M-E-2	-0.033	-0.016	107.3	90.0	
SEC_6M-E-3	0.208	92.659	-3.5	0.000	0.000	0.032	0.016	Pole 6M-E-3	-0.032	-0.016	106.7	90.0	
SEC_6M-E-4	0.208	91.563	-3.4	0.000	0.000	0.031	0.015	Pole 6M-E-6	-0.031	-0.015	105.9	90.0	
SEC_6M-E-5	0.208	90.698	-3.4	0.000	0.000	0.031	0.015	Pole 6M-E-8	-0.031	-0.015	105.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_6M-E-6	0.208	89.129	-3.4	0.000	0.000	0.030	0.015	Pole 6M-E-10	-0.030	-0.015	104.4	90.0	
SEC_6M-E-7	0.208	89.014	-3.4	0.000	0.000	0.030	0.015	Pole 6M-E-11	-0.030	-0.015	104.3	90.0	
SEC_6M-E-8	0.208	88.866	-3.4	0.000	0.000	0.030	0.015	Pole 6M-E-14	-0.030	-0.015	104.2	90.0	
SEC_6M-E-10	0.208	88.697	-3.4	0.000	0.000	0.030	0.015	Pole 6M-E-19	-0.030	-0.015	104.1	90.0	
SEC_6M-E-11	0.208	88.656	-3.4	0.000	0.000	0.030	0.014	Pole 6M-E-20	-0.030	-0.014	104.1	90.0	
SEC_6M-E-13	0.208	93.264	-3.5	0.000	0.000	0.032	0.016	Pole 6M-E-29	-0.032	-0.016	107.1	90.0	
SEC_CS-1-1	0.208	111.386	-6.8	0.000	0.000	0.031	0.015	Pole CS-1-4	-0.031	-0.015	84.5	90.0	
SEC_CS-1-2	0.208	111.391	-6.8	0.000	0.000	0.031	0.015	Pole CS-1-5	-0.031	-0.015	84.5	90.0	
SEC_CS-1-7	0.208	109.811	-7.2	0.000	0.000	0.030	0.014	Pole CS-1-13	-0.030	-0.014	83.7	90.0	
SEC_CS-1-9	0.208	109.531	-7.2	0.000	0.000	0.030	0.014	Pole CS-1-15	-0.030	-0.014	83.6	90.0	
SEC_CS-1-10	0.208	109.582	-7.2	0.000	0.000	0.030	0.014	Pole CS-1-18	-0.030	-0.014	83.6	90.0	
SEC_CS-1-11	0.208	109.572	-7.2	0.000	0.000	0.030	0.014	Pole CS-1-19	-0.030	-0.014	83.6	90.0	
SEC_CS-1-12	0.208	109.587	-7.2	0.000	0.000	0.030	0.014	Pole CS-1-20	-0.030	-0.014	83.6	90.0	
SEC_CS-1-15	0.208	109.286	-7.3	0.000	0.000	0.030	0.014	Pole CS-1-23	-0.030	-0.014	83.4	90.0	
SEC_CS-1-16	0.208	109.154	-7.3	0.000	0.000	0.030	0.014	Pole CS-1-24	-0.030	-0.014	83.4	90.0	
SEC_CS-1-29	0.208	108.391	-7.4	0.000	0.000	0.029	0.014	Pole CS-1-40	-0.029	-0.014	83.0	90.0	
SEC_CS-1-32	0.208	108.422	-7.4	0.000	0.000	0.029	0.014	Pole CS-1-43	-0.029	-0.014	83.0	90.0	
SEC_CS-1-46	0.208	108.662	-7.4	0.000	0.000	0.029	0.014	Pole CS-1-59	-0.029	-0.014	83.1	90.0	
SEC_CS-1-53	0.208	108.403	-7.4	0.000	0.000	0.029	0.014	Pole CS-1-68	-0.029	-0.014	83.0	90.0	
SEC_CS-2-5	0.208	107.983	-6.1	0.000	0.000	0.029	0.014	Pole CS-2-8	-0.029	-0.014	82.8	90.0	
SEC_CS-2-7	0.208	107.961	-6.1	0.000	0.000	0.029	0.014	Pole CS-2-10	-0.029	-0.014	82.8	90.0	
SEC_CS-2-8	0.208	107.949	-6.1	0.000	0.000	0.029	0.014	Pole CS-2-11	-0.029	-0.014	82.8	90.0	
SEC_CS-2-10	0.208	107.695	-6.1	0.000	0.000	0.029	0.014	Pole CS-2-15	-0.029	-0.014	82.6	90.0	
SEC_CS-2-46	0.208	112.637	-6.5	0.000	0.000	0.031	0.015	Pole CS-2-66	-0.031	-0.015	85.2	90.0	
SEC_CS-2-47	0.208	111.488	-6.5	0.000	0.000	0.031	0.015	Pole CS-3-29	-0.031	-0.015	84.6	90.0	
SEC_CS-2-48	0.208	110.804	-6.5	0.000	0.000	0.030	0.015	Pole CS-3-33	-0.030	-0.015	84.2	90.0	
SEC_CS-2-49	0.208	110.064	-6.5	0.000	0.000	0.030	0.014	Pole CS-2-73	-0.030	-0.014	83.8	90.0	
SEC_CS-4-8	0.208	110.963	-6.4	0.000	0.000	0.030	0.015	Pole CS-4-12	-0.030	-0.015	84.3	90.0	
SEC_CS-5-10	0.240	93.809	-3.7	0.000	0.000	0.046	0.022	UG-JUNC-CS-5-8	-0.046	-0.022	131.3	90.0	
SEC_CS-5-12	0.240	94.594	-3.3	0.000	0.000	0.047	0.023	UG-JUNC-CS-5-9	-0.047	-0.023	132.0	90.0	
SEC_HS-2-4	0.208	112.454	-6.2	0.000	0.000	0.031	0.015	Pole HS-2-4	-0.031	-0.015	85.1	90.0	
SEC_HS-2-5	0.208	112.058	-6.2	0.000	0.000	0.031	0.015	Pole HS-2-5	-0.031	-0.015	84.9	90.0	
SEC_HS-2-6	0.208	111.719	-6.2	0.000	0.000	0.031	0.015	Pole HS-2-6	-0.031	-0.015	84.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_HS-2-7	0.208	111.350	-6.2	0.000	0.000	0.031	0.015	Pole HS-2-7	-0.031	-0.015	84.5	90.0	
SEC_HS-2-10	0.208	110.296	-6.2	0.000	0.000	0.030	0.015	Pole HS-2-11	-0.030	-0.015	84.0	90.0	
SEC_HS-2-23	0.208	109.627	-6.2	0.000	0.000	0.030	0.014	Pole HS-2-26	-0.030	-0.014	83.6	90.0	
SEC_HS-2-25	0.208	109.302	-6.2	0.000	0.000	0.030	0.014	Pole HS-2-30	-0.030	-0.014	83.4	90.0	
SEC_HS-2-36	0.208	109.178	-6.2	0.000	0.000	0.030	0.014	Pole HS-2-43	-0.030	-0.014	83.4	90.0	
SEC_HS-2-67	0.208	110.287	-6.2	0.000	0.000	0.030	0.015	Pole HS-2-77	-0.030	-0.015	84.0	90.0	
SEC_HS-3-55	0.208	109.389	-6.2	0.000	0.000	0.030	0.014	Pole HS-3-59	-0.030	-0.014	83.5	90.0	
SEC_HS-3-57	0.208	109.310	-6.2	0.000	0.000	0.030	0.014	Pole HS-3-61	-0.030	-0.014	83.4	90.0	
SEC_HS-3-59	0.208	109.271	-6.2	0.000	0.000	0.030	0.014	Pole HS-3-63	-0.030	-0.014	83.4	90.0	
SEC_HS-4-7	0.208	112.561	-6.5	0.000	0.000	0.032	0.016	Pole HS-4-10	-0.032	-0.016	88.7	90.0	
SEC_HS-4-13	0.208	111.999	-6.4	0.000	0.000	0.032	0.016	Pole HS-4-17	-0.032	-0.016	88.4	90.0	
SEC_HS-4-21	0.208	111.145	-6.4	0.000	0.000	0.032	0.015	Pole HS-4-26	-0.032	-0.015	87.9	90.0	
SEC_HS-4-32	0.208	112.614	-6.5	0.000	0.000	0.032	0.016	Pole HS-4-39	-0.032	-0.016	88.7	90.0	
SEC_HS-4-44	0.208	112.620	-6.5	0.000	0.000	0.032	0.016	Pole HS-4-48	-0.032	-0.016	88.7	90.0	
SEC_MS-1-17	0.208	99.941	-3.8	0.000	0.000	0.004	0.002	Pole MS-1-10	-0.004	-0.002	12.6	90.0	
SEC_MS-2-8	0.208	98.861	-3.6	0.000	0.000	0.012	0.006	Pole MS-2-1	-0.012	-0.006	37.5	90.0	
SEC_MS-2-36	0.208	99.040	-3.5	0.000	0.000	0.012	0.006	Pole MS-2-90	-0.012	-0.006	37.5	90.0	
SEC_MS-2-37	0.208	98.851	-3.6	0.000	0.000	0.012	0.006	Pole MS-2-2	-0.012	-0.006	37.5	90.0	
SEC_MS-2-38	0.208	98.839	-3.6	0.000	0.000	0.012	0.006	Pole MS-2-3	-0.012	-0.006	37.5	90.0	
SEC_MS-2-39	0.208	98.860	-3.5	0.000	0.000	0.012	0.006	Pole MS-2-92	-0.012	-0.006	37.5	90.0	
SEC_MS-2-40	0.208	98.794	-3.5	0.000	0.000	0.012	0.006	Pole MS-2-94	-0.012	-0.006	37.5	90.0	
SEC_MS-2-41	0.208	98.614	-3.5	0.000	0.000	0.012	0.006	Pole MS-2-100	-0.012	-0.006	37.4	90.0	
SEC_MS-3-1	0.208	99.147	-3.4	0.000	0.000	0.012	0.006	Pole MS-3-2	-0.012	-0.006	37.6	90.0	
SEC_MS-3-2	0.208	98.948	-3.4	0.000	0.000	0.012	0.006	Pole MS-3-6	-0.012	-0.006	37.5	90.0	
SEC_MS-3-3	0.208	98.836	-3.4	0.000	0.000	0.012	0.006	Pole MS-3-8	-0.012	-0.006	37.5	90.0	
SEC_MS-3-22	0.208	98.412	-3.4	0.000	0.000	0.012	0.006	Pole MS-3-25	-0.012	-0.006	37.4	90.0	
SEC_MS-3-45	0.208	98.407	-3.5	0.000	0.000	0.018	0.009	Pole MS-4-36	-0.018	-0.009	56.9	90.0	
SEC_MS-3-49	0.208	98.297	-3.5	0.000	0.000	0.018	0.009	Pole MS-3-100	-0.018	-0.009	56.8	90.0	
SEC_MS-3-65	0.208	98.281	-3.5	0.000	0.000	0.018	0.009	Pole MS-3-102	-0.018	-0.009	56.8	90.0	
SEC_MS-3-66	0.208	98.573	-3.5	0.000	0.000	0.018	0.009	Pole MS-4-17	-0.018	-0.009	56.9	90.0	
SEC_MS-3-73	0.208	99.408	-3.4	0.000	0.000	0.012	0.006	Pole MS-4-3	-0.012	-0.006	37.6	90.0	
SEC_MS-3-74	0.208	99.401	-3.4	0.000	0.000	0.012	0.006	Pole MS-4-6	-0.012	-0.006	37.6	90.0	
SEC_MS-3-75	0.208	99.014	-3.4	0.000	0.000	0.012	0.006	Pole MS-4-10	-0.012	-0.006	37.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_MS-3-76	0.208	98.447	-3.5	0.000	0.000	0.018	0.009	Pole MS-4-20	-0.018	-0.009	56.9	90.0	
SEC_MS-5-15	0.208	97.272	-3.9	0.000	0.000	0.012	0.006	Pole MS-5-16	-0.012	-0.006	37.1	90.0	
SEC_MS-5-16	0.208	97.050	-4.0	0.000	0.000	0.018	0.009	Pole MS-5-17	-0.018	-0.009	56.4	90.0	
SEC_MS-5-17	0.208	97.048	-4.0	0.000	0.000	0.018	0.009	Pole MS-5-18	-0.018	-0.009	56.4	90.0	
SEC_MS-5-23	0.208	97.183	-4.0	0.000	0.000	0.012	0.006	Pole MS-5-26	-0.012	-0.006	37.1	90.0	
SEC_MS-5-25	0.208	97.176	-4.0	0.000	0.000	0.012	0.006	Pole MS-5-28	-0.012	-0.006	37.1	90.0	
SEC_MS-5-26	0.208	96.963	-4.0	0.000	0.000	0.018	0.009	Pole MS-5-29	-0.018	-0.009	56.4	90.0	
SEC_MS-5-29	0.208	97.096	-4.0	0.000	0.000	0.012	0.006	Pole MS-5-32	-0.012	-0.006	37.1	90.0	
SEC_MS-5-30	0.208	96.874	-4.0	0.000	0.000	0.018	0.009	Pole MS-5-33	-0.018	-0.009	56.3	90.0	
SEC_MS-5-32	0.208	97.072	-4.0	0.000	0.000	0.012	0.006	Pole MS-5-35	-0.012	-0.006	37.1	90.0	
SEC_MS-5-40	0.208	96.762	-4.1	0.000	0.000	0.012	0.006	Pole MS-5-45	-0.012	-0.006	37.0	90.0	
SEC_MS-5-45	0.208	96.705	-4.1	0.000	0.000	0.012	0.006	Pole MS-5-50	-0.012	-0.006	37.0	90.0	
SEC_MS-5-99	0.208	99.728	-3.8	0.000	0.000	0.012	0.006	Pole MS-5-110	-0.012	-0.006	37.7	90.0	
SEC_MS-7-9	0.208	100.805	0.2	0.000	0.000	0.032	0.015	Pole MS-7-16	-0.032	-0.015	97.3	90.0	
SEC_MS-8-3	0.208	99.112	-3.6	0.000	0.000	0.024	0.012	Pole MS-8-4	-0.024	-0.012	75.1	90.0	
SEC_MS-8-8	0.208	98.762	-3.7	0.000	0.000	0.037	0.018	Pole MS-8-9	-0.037	-0.018	114.0	90.0	
SEC_MS-9-12	0.208	98.845	-3.6	0.000	0.000	0.024	0.012	Pole MS-9-15	-0.024	-0.012	75.0	90.0	
SEC_MS-9-14	0.208	98.659	-3.7	0.000	0.000	0.024	0.012	Pole MS-9-18	-0.024	-0.012	74.9	90.0	
SEC_MS-9-17	0.208	98.580	-3.7	0.000	0.000	0.024	0.012	Pole MS-9-21	-0.024	-0.012	74.8	90.0	
SEC_MS-9-22	0.208	98.550	-3.7	0.000	0.000	0.024	0.012	Pole MS-9-26	-0.024	-0.012	74.8	90.0	
SEC_MS-9-31	0.208	98.479	-3.7	0.000	0.000	0.024	0.012	Pole MS-9-37	-0.024	-0.012	74.8	90.0	
SEC_MS-9-32	0.208	98.220	-3.8	0.000	0.000	0.036	0.018	Pole MS-9-38	-0.036	-0.018	113.6	90.0	
SEC_MS-9-37	0.208	98.212	-3.8	0.000	0.000	0.024	0.012	Pole MS-9-46	-0.024	-0.012	74.7	90.0	
SEC_MS-9-38	0.208	98.199	-3.8	0.000	0.000	0.024	0.012	Pole MS-9-47	-0.024	-0.012	74.7	90.0	
SEC_MS-9-39	0.208	97.952	-3.9	0.000	0.000	0.036	0.017	Pole MS-9-48	-0.036	-0.017	113.4	90.0	
SEC_MS-9-40	0.208	97.906	-3.9	0.000	0.000	0.036	0.017	Pole MS-9-49	-0.036	-0.017	113.4	90.0	
SEC_MS-9-41	0.208	97.888	-3.9	0.000	0.000	0.036	0.017	Pole MS-9-50	-0.036	-0.017	113.4	90.0	
SEC_MS-9-42	0.208	97.872	-3.9	0.000	0.000	0.036	0.017	Pole MS-9-51	-0.036	-0.017	113.4	90.0	
SEC_MS-9-43	0.208	97.857	-3.9	0.000	0.000	0.036	0.017	Pole MS-9-52	-0.036	-0.017	113.4	90.0	
SEC_MS-9-44	0.208	98.071	-3.8	0.000	0.000	0.024	0.011	Pole MS-9-53	-0.024	-0.011	74.6	90.0	
SEC_PM_1	0.208	97.044	-6.9	0.000	0.000	0.076	0.037	PRI_PM_1	-0.076	-0.037	241.7	90.0	
SEC_PM_1-1	0.208	92.520	-6.7	0.000	0.000	0.071	0.034	PRI_PM_1-1	-0.071	-0.034	235.1	90.0	
SEC_PM_2	0.208	96.202	-6.8	0.000	0.000	0.075	0.036	PRI_PM_2	-0.075	-0.036	240.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_PM_3	0.208	95.500	-6.7	0.000	0.000	0.074	0.036	PRI_PM_3	-0.074	-0.036	239.4	90.0	
SEC_PM_4	0.208	93.814	-5.5	0.000	0.000	0.224	0.109	PRI_PM_4	-0.224	-0.109	737.2	90.0	
SEC_PM_5	0.208	94.899	-6.6	0.000	0.000	0.073	0.036	PRI_PM_5	-0.073	-0.036	238.6	90.0	
SEC_PM_6	0.208	94.337	-6.6	0.000	0.000	0.073	0.035	PRI_PM_6	-0.073	-0.035	237.7	90.0	
SEC_PM_7	0.208	97.928	-4.0	0.000	0.000	0.172	0.083	PRI_PM_7	-0.172	-0.083	540.1	90.0	
SEC_PM_8	0.208	98.399	-4.1	0.000	0.000	0.138	0.067	PRI_PM_8	-0.138	-0.067	433.4	90.0	
SEC_PM_9	0.208	98.438	-4.0	0.000	0.000	0.121	0.059	PRI_PM_9	-0.121	-0.059	379.3	90.0	
SEC_PM_10	0.208	95.232	-6.6	0.000	0.000	0.164	0.079	PRI_PM_10	-0.164	-0.079	531.2	90.0	
SEC_PM_11	0.208	97.500	-6.9	0.000	0.000	0.170	0.082	PRI_PM_11	-0.170	-0.082	538.7	90.0	
SEC_PM_12	0.208	94.010	-5.5	0.000	0.000	0.225	0.109	PRI_PM_12	-0.225	-0.109	738.1	90.0	
SEC_PM_13	0.208	92.922	-5.3	0.000	0.000	0.423	0.205	PRI_PM_13	-0.423	-0.205	1403.5	90.0	
SEC_PM_14	0.208	94.086	-5.0	0.000	0.000	0.322	0.156	PRI_PM_14	-0.322	-0.156	1054.9	90.0	
SEC_PM_15	0.208	95.530	-6.8	0.000	0.000	0.330	0.160	PRI_PM_15	-0.330	-0.160	1064.4	90.0	
SEC_PM_16	0.208	97.286	-7.1	0.000	0.000	0.170	0.082	PRI_PM_16	-0.170	-0.082	538.0	90.0	
SEC_PM_17	0.208	95.797	-7.4	0.000	0.000	0.149	0.072	PRI_PM_17	-0.149	-0.072	479.8	90.0	
SEC_PM_18	0.208	97.384	-4.0	0.000	0.000	0.170	0.082	PRI_PM_18	-0.170	-0.082	538.3	90.0	
SEC_PM_19	0.208	92.135	-6.7	0.000	0.000	0.156	0.075	PRI_PM_19	-0.156	-0.075	521.2	90.0	
SEC_PM_20	0.208	92.987	-6.6	0.000	0.000	0.142	0.069	PRI_PM_20	-0.142	-0.069	471.5	90.0	
SEC_PM_21	0.208	93.342	-6.5	0.000	0.000	0.143	0.069	PRI_PM_21	-0.143	-0.069	472.5	90.0	
SEC_PM_22	0.208	96.593	-6.9	0.000	0.000	0.168	0.081	PRI_PM_22	-0.168	-0.081	535.7	90.0	
SEC_PM_23	0.208	93.320	-6.8	0.000	0.000	0.159	0.077	PRI_PM_23	-0.159	-0.077	525.0	90.0	
SEC_PM_24	0.208	93.144	-6.8	0.000	0.000	0.158	0.077	PRI_PM_24	-0.158	-0.077	524.4	90.0	
SEC_PM_25	0.208	97.257	-7.0	0.000	0.000	0.085	0.041	PRI_PM_25	-0.085	-0.041	269.0	90.0	
SEC_PM_26	0.208	96.418	-7.0	0.000	0.000	0.084	0.041	PRI_PM_26	-0.084	-0.041	267.6	90.0	
SEC_PM_28	0.208	95.209	-6.6	0.000	0.000	0.164	0.079	PRI_PM_28	-0.164	-0.079	531.1	90.0	
SEC_SF-1-26	0.208	95.719	-4.8	0.000	0.000	0.029	0.014	SF-1-11	-0.029	-0.014	94.3	90.0	
SEC_SF-1-47	0.208	95.112	-4.7	0.000	0.000	0.029	0.014	SF-1-14	-0.029	-0.014	94.0	90.0	
SEC_SF-1-49	0.208	96.083	-4.8	0.000	0.000	0.029	0.014	SF-1-28	-0.029	-0.014	94.5	90.0	
SEC_SF-1-51	0.208	95.799	-4.8	0.000	0.000	0.029	0.014	SF-1-29	-0.029	-0.014	94.4	90.0	
SEC_SF-1-55	0.208	95.214	-4.8	0.000	0.000	0.029	0.014	SF-1-31	-0.029	-0.014	94.0	90.0	
SEC_SF-1-57	0.208	94.979	-4.8	0.000	0.000	0.029	0.014	SF-1-32	-0.029	-0.014	93.9	90.0	
SEC_SF-1-59	0.208	94.467	-4.8	0.000	0.000	0.029	0.014	SF-1-18	-0.029	-0.014	93.6	90.0	
SEC_SF-1-61	0.208	94.150	-4.8	0.000	0.000	0.029	0.014	SF-1-27	-0.029	-0.014	93.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_SF-1-63	0.208	93.537	-4.8	0.000	0.000	0.028	0.014	SF-1-39	-0.028	-0.014	93.0	90.0	
SEC_SF-1-65	0.208	94.288	-4.9	0.000	0.000	0.029	0.014	SF-1-62	-0.029	-0.014	93.5	90.0	
SEC_SF-1-67	0.208	93.194	-4.8	0.000	0.000	0.028	0.014	SF-1-50	-0.028	-0.014	92.8	90.0	
SEC_SF-1-69	0.208	94.684	-4.9	0.000	0.000	0.029	0.014	SF-1-58	-0.029	-0.014	93.7	90.0	
SEC_SF-1-71	0.208	95.208	-4.9	0.000	0.000	0.029	0.014	SF-1-56	-0.029	-0.014	94.0	90.0	
SEC_SF-1-73	0.208	95.516	-4.9	0.000	0.000	0.029	0.014	SF-1-54	-0.029	-0.014	94.2	90.0	
SEC_SF-1-75	0.208	95.750	-4.9	0.000	0.000	0.029	0.014	SF-1-55	-0.029	-0.014	94.3	90.0	
SEC_SF-2-7	0.208	97.960	-4.1	0.000	0.000	0.030	0.015	SF-2-12	-0.030	-0.015	95.6	90.0	
SEC_SF-2-11	0.208	97.910	-4.1	0.000	0.000	0.030	0.015	SF-2-25	-0.030	-0.015	95.6	90.0	
SEC_SF-2-15	0.208	97.795	-4.1	0.000	0.000	0.030	0.015	SF-2-17	-0.030	-0.015	95.5	90.0	
SEC_SF-2-18	0.208	97.778	-4.1	0.000	0.000	0.030	0.015	SF-2-20	-0.030	-0.015	95.5	90.0	
SEC_SF-2-19	0.208	97.975	-4.1	0.000	0.000	0.030	0.015	SF-2-22	-0.030	-0.015	95.6	90.0	
SEC_SF-2-20	0.208	97.967	-4.1	0.000	0.000	0.030	0.015	SF-2-23	-0.030	-0.015	95.6	90.0	
SEC_SF-4-01	0.208	98.890	-4.1	0.000	0.000	0.031	0.015	SF-2-46	-0.031	-0.015	96.2	90.0	
SEC_SF-4-2	0.208	99.466	-3.9	0.000	0.000	0.014	0.007	SF-2-47	-0.014	-0.007	44.2	90.0	
SEC_SF-4-3	0.208	99.463	-3.9	0.000	0.000	0.014	0.007	SF-2-48	-0.014	-0.007	44.2	90.0	
SEC_SUB_FDR_XFMR#25-49	0.208	95.430	-4.7	0.000	0.000	0.015	0.007	SF-1-57	-0.015	-0.007	47.9	90.0	
SF-1-1	4.160	99.296	-4.0	0.000	0.000	0.013	0.006	BUS_SAF_4kV	-2.172	-1.106	340.6	89.1	
								SF-1-2	2.159	1.099	338.6	89.1	
SF-1-2	4.160	98.611	-4.1	0.000	0.000	0.000	0.000	SF-1-4	0.038	0.019	6.0	89.6	
								SF-1-1	-2.147	-1.086	338.6	89.2	
								SF-1-3	2.109	1.067	332.6	89.2	
SF-1-3	4.160	98.294	-4.2	0.000	0.000	0.013	0.006	SF-1-2	-2.103	-1.061	332.6	89.3	
								SF-1-7	2.090	1.054	330.6	89.3	
SF-1-4	4.160	98.591	-4.1	0.000	0.000	0.013	0.006	SF-1-2	-0.038	-0.019	6.0	89.6	
								SF-1-5	0.026	0.013	4.0	89.6	
SF-1-5	4.160	98.573	-4.1	0.000	0.000	0.013	0.006	SF-1-4	-0.026	-0.013	4.0	89.6	
								SF-1-6	0.013	0.006	2.0	89.6	
SF-1-6	4.160	98.568	-4.1	0.000	0.000	0.013	0.006	SF-1-5	-0.013	-0.006	2.0	89.6	
SF-1-7	4.160	97.627	-4.3	0.000	0.000	0.000	0.000	SF-1-8	0.553	0.275	87.9	89.5	
								SF-1-3	-2.079	-1.041	330.6	89.4	
								SF-1-26	1.526	0.766	242.7	89.4	
SF-1-8	4.160	97.366	-4.3	0.000	0.000	0.025	0.012	SF-1-7	-0.552	-0.274	87.9	89.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-1-9	0.527	0.262	83.9	89.5	
SF-1-9	4.160	97.235	-4.3	0.000	0.000	0.012	0.006	SF-1-8	-0.526	-0.262	83.9	89.5	
								SF-1-10	0.514	0.256	81.9	89.5	
SF-1-10	4.160	97.070	-4.3	0.000	0.000	0.012	0.006	SF-1-9	-0.513	-0.255	81.9	89.5	
								SF-1-11	0.500	0.249	79.9	89.5	
SF-1-11	4.160	96.776	-4.3	0.000	0.000	0.000	0.000	SF-1-10	-0.499	-0.248	79.9	89.5	
								SF-1-12	0.469	0.234	75.2	89.5	
								SEC_SF-1-26	0.029	0.015	4.7	89.7	
SF-1-12	4.160	96.450	-4.3	0.000	0.000	0.012	0.006	SF-1-11	-0.468	-0.233	75.2	89.5	
								SF-1-13	0.455	0.227	73.2	89.5	
SF-1-13	4.160	96.349	-4.3	0.000	0.000	0.012	0.006	SF-1-12	-0.455	-0.227	73.2	89.5	
								SF-1-14	0.443	0.220	71.2	89.5	
SF-1-14	4.160	96.165	-4.3	0.000	0.000	0.000	0.000	SF-1-13	-0.442	-0.220	71.2	89.5	
								SF-1-15	0.413	0.206	66.5	89.5	
								SEC_SF-1-47	0.029	0.014	4.7	89.7	
SF-1-15	4.160	95.897	-4.3	0.000	0.000	0.012	0.006	SF-1-14	-0.411	-0.205	66.5	89.5	
								SF-1-16	0.399	0.199	64.6	89.5	
SF-1-16	4.160	95.461	-4.3	0.000	0.000	0.012	0.006	SF-1-15	-0.397	-0.198	64.6	89.5	
								SF-1-17	0.385	0.192	62.6	89.5	
SF-1-17	4.160	95.163	-4.3	0.000	0.000	0.000	0.000	PRI_PM_14	0.324	0.162	52.8	89.4	
								SF-1-16	-0.384	-0.192	62.6	89.5	
								SF-1-19	0.060	0.030	9.8	89.6	
SF-1-18	4.160	95.517	-4.4	0.000	0.000	0.000	0.000	SF-1-34	-0.643	-0.322	104.5	89.4	
								SF-1-25	0.614	0.308	99.8	89.4	
								SEC_SF-1-59	0.029	0.014	4.7	89.7	
SF-1-19	4.160	95.134	-4.3	0.000	0.000	0.000	0.000	SF-1-17	-0.060	-0.030	9.8	89.6	
								SF-1-20	0.036	0.018	5.9	89.6	
								SF-1-23	0.024	0.012	3.9	89.6	
SF-1-20	4.160	95.128	-4.3	0.000	0.000	0.012	0.006	SF-1-21	0.024	0.012	3.9	89.6	
								SF-1-19	-0.036	-0.018	5.9	89.6	
SF-1-21	4.160	95.121	-4.3	0.000	0.000	0.012	0.006	SF-1-20	-0.024	-0.012	3.9	89.6	
								SF-1-22	0.012	0.006	2.0	89.6	
SF-1-22	4.160	95.118	-4.3	0.000	0.000	0.012	0.006	SF-1-21	-0.012	-0.006	2.0	89.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-23	4.160	95.099	-4.3	0.000	0.000	0.012	0.006	SF-1-19	-0.024	-0.012	3.9	89.6	
								SF-1-24	0.012	0.006	2.0	89.6	
SF-1-24	4.160	95.097	-4.3	0.000	0.000	0.012	0.006	SF-1-23	-0.012	-0.006	2.0	89.6	
SF-1-25	4.160	95.362	-4.4	0.000	0.000	0.012	0.006	SF-1-18	-0.613	-0.308	99.8	89.4	
								SF-1-27	0.601	0.302	97.9	89.4	
SF-1-26	4.160	97.396	-4.4	0.000	0.000	0.013	0.006	SF-1-28	0.812	0.405	129.3	89.5	
								SF-1-53	0.699	0.352	111.5	89.3	
								SF-1-7	-1.523	-0.763	242.7	89.4	
SF-1-27	4.160	95.198	-4.4	0.000	0.000	0.000	0.000	SF-1-25	-0.600	-0.301	97.9	89.4	
								SF-1-35	0.571	0.287	93.2	89.4	
								SEC_SF-1-61	0.029	0.014	4.7	89.7	
SF-1-28	4.160	97.144	-4.4	0.000	0.000	0.000	0.000	SF-1-26	-0.809	-0.404	129.3	89.5	
								SF-1-29	0.780	0.390	124.5	89.5	
								SEC_SF-1-49	0.030	0.015	4.7	89.7	
SF-1-29	4.160	96.858	-4.4	0.000	0.000	0.000	0.000	SF-1-28	-0.777	-0.389	124.5	89.5	
								SF-1-30	0.748	0.374	119.8	89.4	
								SEC_SF-1-51	0.030	0.015	4.7	89.7	
SF-1-30	4.160	96.667	-4.4	0.000	0.000	0.012	0.006	SF-1-29	-0.746	-0.373	119.8	89.4	
								SF-1-31	0.734	0.367	117.8	89.4	
SF-1-31	4.160	96.268	-4.4	0.000	0.000	0.000	0.000	SF-1-30	-0.731	-0.366	117.8	89.4	
								SF-1-33	0.702	0.351	113.1	89.4	
								SEC_SF-1-55	0.029	0.014	4.7	89.7	
SF-1-32	4.160	96.032	-4.4	0.000	0.000	0.000	0.000	SF-1-33	-0.688	-0.344	111.2	89.4	
								SF-1-34	0.659	0.330	106.5	89.4	
								SEC_SF-1-57	0.029	0.014	4.7	89.7	
SF-1-33	4.160	96.110	-4.4	0.000	0.000	0.012	0.006	SF-1-32	0.688	0.345	111.2	89.4	
								SF-1-31	-0.701	-0.351	113.1	89.4	
SF-1-34	4.160	95.693	-4.4	0.000	0.000	0.012	0.006	SF-1-18	0.644	0.323	104.5	89.4	
								SF-1-32	-0.656	-0.329	106.5	89.4	
SF-1-35	4.160	95.066	-4.4	0.000	0.000	0.012	0.006	SF-1-27	-0.570	-0.287	93.2	89.4	
								SF-1-36	0.558	0.281	91.2	89.4	
SF-1-36	4.160	94.916	-4.4	0.000	0.000	0.012	0.006	SF-1-35	-0.557	-0.280	91.2	89.3	
								SF-1-37	0.545	0.274	89.3	89.3	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-37	4.160	94.748	-4.4	0.000	0.000	0.012	0.006	SF-1-36	-0.544	-0.274	89.3	89.3	
								SF-1-38	0.533	0.268	87.3	89.3	
SF-1-38	4.160	94.585	-4.4	0.000	0.000	0.000	0.000	SF-1-37	-0.532	-0.267	87.3	89.3	
								SF-1-39	0.028	0.014	4.7	89.7	
								SF-1-40	0.503	0.253	82.7	89.3	
SF-1-39	4.160	94.581	-4.4	0.000	0.000	0.000	0.000	SF-1-38	-0.028	-0.014	4.7	89.7	
								SEC_SF-1-63	0.028	0.014	4.7	89.7	
SF-1-40	4.160	94.383	-4.4	0.000	0.000	0.000	0.000	PRI_PM_13	0.426	0.215	70.2	89.3	
								SF-1-38	-0.502	-0.253	82.7	89.3	
								SF-1-42	0.076	0.037	12.4	89.6	
SF-1-42	4.160	94.331	-4.4	0.000	0.000	0.000	0.000	SF-1-40	-0.076	-0.037	12.4	89.6	
								SF-1-44	0.076	0.037	12.4	89.6	
SF-1-44	4.160	94.276	-4.4	0.000	0.000	0.012	0.006	SF-1-42	-0.076	-0.037	12.4	89.6	
								SF-1-45	0.064	0.032	10.5	89.6	
SF-1-45	4.160	94.254	-4.4	0.000	0.000	0.000	0.000	SF-1-44	-0.064	-0.032	10.5	89.6	
								SF-1-47	0.064	0.032	10.5	89.6	
								L-SUB-FDR-EQ#16-1-38~	0.000	0.000	0.0	0.0	
SF-1-47	4.160	94.243	-4.4	0.000	0.000	0.012	0.006	SF-1-45	-0.064	-0.032	10.5	89.6	
								SF-1-50	0.052	0.026	8.5	89.6	
SF-1-50	4.160	94.235	-4.4	0.000	0.000	0.000	0.000	SF-1-47	-0.052	-0.026	8.5	89.6	
								SF-1-52	0.024	0.012	3.9	89.6	
								SEC_SF-1-67	0.028	0.014	4.6	89.7	
SF-1-52	4.160	94.229	-4.4	0.000	0.000	0.024	0.012	SF-1-50	-0.024	-0.012	3.9	89.6	
SF-1-53	4.160	97.076	-4.5	0.000	0.000	0.000	0.000	SF-1-55	0.697	0.349	111.5	89.4	
								SF-1-26	-0.697	-0.349	111.5	89.4	
SF-1-54	4.160	96.572	-4.5	0.000	0.000	0.000	0.000	SF-1-55	-0.664	-0.333	106.7	89.4	
								SF-1-56	0.634	0.319	102.0	89.4	
								SEC_SF-1-73	0.029	0.014	4.7	89.7	
SF-1-55	4.160	96.808	-4.5	0.000	0.000	0.000	0.000	SF-1-53	-0.695	-0.349	111.5	89.4	
								SF-1-54	0.665	0.334	106.7	89.4	
								SEC_SF-1-75	0.030	0.015	4.7	89.7	
SF-1-56	4.160	96.262	-4.5	0.000	0.000	0.000	0.000	SF-1-54	-0.632	-0.318	102.0	89.4	
								SF-1-57	0.603	0.303	97.3	89.3	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_SF-1-71	0.029	0.014	4.7	89.7	
SF-1-57	4.160	95.966	-4.5	0.000	0.000	0.012	0.006	SF-1-56	-0.601	-0.302	97.3	89.3	
								SF-1-58	0.574	0.289	93.0	89.3	
								SEC_SUB_FDR_XFMR#25-49	0.015	0.007	2.4	89.8	
SF-1-58	4.160	95.735	-4.5	0.000	0.000	0.000	0.000	SF-1-57	-0.573	-0.288	93.0	89.3	
								SF-1-59	0.544	0.274	88.3	89.3	
								SEC_SF-1-69	0.029	0.014	4.7	89.7	
SF-1-59	4.160	95.517	-4.5	0.000	0.000	0.000	0.000	PRI_PM_12	0.227	0.115	36.9	89.2	
								SF-1-58	-0.542	-0.274	88.3	89.3	
								SF-1-60	0.316	0.159	51.3	89.3	
SF-1-60	4.160	95.390	-4.5	0.000	0.000	0.000	0.000	PRI_PM_4	0.226	0.114	36.9	89.2	
								SF-1-59	-0.315	-0.159	51.4	89.3	
								SF-1-61	0.089	0.044	14.5	89.6	
SF-1-61	4.160	95.358	-4.5	0.000	0.000	0.012	0.006	SF-1-60	-0.089	-0.044	14.5	89.6	
								SF-1-62	0.077	0.038	12.5	89.6	
SF-1-62	4.160	95.336	-4.5	0.000	0.000	0.000	0.000	SF-1-61	-0.077	-0.038	12.5	89.6	
								SF-1-63	0.048	0.024	7.9	89.6	
								SEC_SF-1-65	0.029	0.014	4.7	89.7	
SF-1-63	4.160	95.316	-4.5	0.000	0.000	0.012	0.006	SF-1-62	-0.048	-0.024	7.9	89.6	
								SF-1-64	0.036	0.018	5.9	89.6	
SF-1-64	4.160	95.303	-4.5	0.000	0.000	0.012	0.006	SF-1-63	-0.036	-0.018	5.9	89.6	
								SF-1-65	0.024	0.012	3.9	89.6	
SF-1-65	4.160	95.293	-4.5	0.000	0.000	0.012	0.006	SF-1-64	-0.024	-0.012	3.9	89.6	
								SF-1-66	0.012	0.006	2.0	89.6	
SF-1-66	4.160	95.289	-4.5	0.000	0.000	0.012	0.006	SF-1-65	-0.012	-0.006	2.0	89.6	
SF-2-1	4.160	100.082	-3.7	0.000	0.000	0.013	0.007	BUS_SAF_4kV	-0.394	-0.195	61.0	89.7	
								SF-2-2	0.381	0.188	59.0	89.7	
SF-2-2	4.160	99.956	-3.7	0.000	0.000	0.000	0.000	SF-2-1	-0.381	-0.188	59.0	89.7	
								SF-2-3	0.013	0.006	2.0	89.6	
								SF-2-5	0.368	0.181	56.9	89.7	
SF-2-3	4.160	99.952	-3.7	0.000	0.000	0.013	0.006	SF-2-2	-0.013	-0.006	2.0	89.6	
								SF-2-4	0.000	0.000	0.0	0.0	
SF-2-4	4.160	99.952	-3.7	0.000	0.000	0.000	0.000	SF-2-3	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-2-5	4.160	99.893	-3.7	0.000	0.000	0.000	0.000	SF-2-2	-0.367	-0.181	56.9	89.7	
								SF-2-7	0.026	0.013	4.1	89.6	
								SF-2-9	0.013	0.006	2.0	89.6	
								SF-2-10	0.328	0.162	50.8	89.7	
SF-2-7	4.160	99.890	-3.7	0.000	0.000	0.013	0.006	SF-2-5	-0.026	-0.013	4.1	89.6	
								SF-2-8	0.013	0.006	2.0	89.6	
SF-2-8	4.160	99.887	-3.7	0.000	0.000	0.013	0.006	SF-2-7	-0.013	-0.006	2.0	89.6	
SF-2-9	4.160	99.889	-3.7	0.000	0.000	0.013	0.006	SF-2-5	-0.013	-0.006	2.0	89.6	
SF-2-10	4.160	99.467	-3.7	0.000	0.000	0.013	0.006	SF-2-5	-0.327	-0.161	50.8	89.7	
								SF-2-11	0.314	0.155	48.8	89.7	
SF-2-11	4.160	99.064	-3.7	0.000	0.000	0.000	0.000	SF-2-10	-0.312	-0.154	48.8	89.7	
								SF-2-12	0.182	0.090	28.4	89.7	
								SF-2-14	0.069	0.034	10.8	89.7	
								SF-2-22	0.061	0.030	9.6	89.7	
SF-2-12	4.160	99.033	-3.7	0.000	0.000	0.000	0.000	SF-2-11	-0.182	-0.090	28.4	89.7	
								SF-2-13	0.151	0.075	23.7	89.6	
								SEC_SF-2-7	0.031	0.015	4.8	89.7	
SF-2-13	4.160	99.009	-3.7	0.000	0.000	0.026	0.013	SF-2-12	-0.151	-0.075	23.7	89.6	
								SF-2-15	0.126	0.062	19.6	89.7	
SF-2-14	4.160	99.032	-3.7	0.000	0.000	0.013	0.006	SF-2-11	-0.069	-0.034	10.8	89.7	
								SF-2-26	0.056	0.028	8.8	89.7	
SF-2-15	4.160	98.941	-3.7	0.000	0.000	0.026	0.013	SF-2-13	-0.125	-0.062	19.6	89.6	
								SF-2-16	0.100	0.049	15.6	89.7	
SF-2-16	4.160	98.885	-3.7	0.000	0.000	0.013	0.006	SF-2-15	-0.100	-0.049	15.6	89.7	
								SF-2-17	0.087	0.043	13.6	89.7	
SF-2-17	4.160	98.867	-3.7	0.000	0.000	0.000	0.000	SF-2-16	-0.087	-0.043	13.6	89.7	
								SF-2-18	0.056	0.028	8.8	89.7	
								SEC_SF-2-15	0.031	0.015	4.8	89.7	
SF-2-18	4.160	98.864	-3.7	0.000	0.000	0.013	0.006	SF-2-17	-0.056	-0.028	8.8	89.7	
								SF-2-19	0.043	0.021	6.8	89.7	
SF-2-19	4.160	98.858	-3.7	0.000	0.000	0.013	0.006	SF-2-18	-0.043	-0.021	6.8	89.7	
								SF-2-20	0.031	0.015	4.8	89.7	
SF-2-20	4.160	98.849	-3.7	0.000	0.000	0.000	0.000	SF-2-19	-0.031	-0.015	4.8	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-2-21	0.000	0.000	0.0	0.0	
								SEC_SF-2-18	0.031	0.015	4.8	89.7	
SF-2-21	4.160	98.849	-3.7	0.000	0.000	0.000	0.000	SF-2-20	0.000	0.000	0.0	0.0	
SF-2-22	4.160	99.048	-3.7	0.000	0.000	0.000	0.000	SF-2-11	-0.061	-0.030	9.6	89.7	
								SF-2-23	0.031	0.015	4.8	89.7	
								SEC_SF-2-19	0.031	0.015	4.8	89.7	
SF-2-23	4.160	99.040	-3.7	0.000	0.000	0.000	0.000	SF-2-22	-0.031	-0.015	4.8	89.7	
								SF-2-24	0.000	0.000	0.0	0.0	
								SEC_SF-2-20	0.031	0.015	4.8	89.7	
SF-2-24	4.160	99.040	-3.7	0.000	0.000	0.000	0.000	SF-2-23	0.000	0.000	0.0	0.0	
SF-2-25	4.160	98.983	-3.7	0.000	0.000	0.000	0.000	SF-2-26	-0.056	-0.028	8.8	89.7	
								SF-2-27	0.026	0.013	4.0	89.6	
								SEC_SF-2-11	0.031	0.015	4.8	89.7	
SF-2-26	4.160	99.019	-3.7	0.000	0.000	0.000	0.000	SF-2-25	0.056	0.028	8.8	89.7	
								SF-2-14	-0.056	-0.028	8.8	89.7	
SF-2-27	4.160	98.950	-3.7	0.000	0.000	0.013	0.006	SF-2-25	-0.026	-0.013	4.0	89.6	
								SF-2-28	0.013	0.006	2.0	89.6	
SF-2-28	4.160	98.942	-3.7	0.000	0.000	0.013	0.006	SF-2-27	-0.013	-0.006	2.0	89.6	
								SF-2-29	0.000	0.000	0.0	0.0	
SF-2-29	4.160	98.942	-3.7	0.000	0.000	0.000	0.000	SF-2-28	0.000	0.000	0.0	0.0	
SF-2-30	4.160	100.203	-3.7	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.301	-0.147	46.4	89.9	
								Pole MS-5-108	0.241	0.118	37.1	89.9	
								SF-2-33	0.060	0.029	9.2	89.8	
SF-2-33	4.160	100.096	-3.7	0.000	0.000	0.000	0.000	SF-2-37	0.060	0.029	9.2	89.8	
								SF-2-30	-0.060	-0.029	9.2	89.8	
								Line SF-2-45~	0.000	0.000	0.0	0.0	
SF-2-37	4.160	100.059	-3.7	0.000	0.000	0.000	0.000	SF-2-33	-0.060	-0.029	9.2	89.8	
								SF-2-42	0.060	0.029	9.2	89.8	
								Line SF-2-37~	0.000	0.000	0.0	0.0	
SF-2-42	4.160	100.017	-3.7	0.000	0.000	0.000	0.000	SF-2-37	-0.060	-0.029	9.2	89.8	
								SF-2-44	0.060	0.029	9.2	89.8	
								Line SF-2-49~	0.000	0.000	0.0	0.0	
SF-2-44	4.160	99.976	-3.7	0.000	0.000	0.000	0.000	SF-2-42	-0.060	-0.029	9.2	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-2-46	0.060	0.029	9.2	89.8	
								Line SF-2-53~	0.000	0.000	0.0	0.0	
SF-2-46	4.160	99.969	-3.7	0.000	0.000	0.000	0.000	SF-2-44	-0.060	-0.029	9.2	89.8	
								SF-2-47	0.029	0.014	4.4	89.9	
								SEC_SF-4-01	0.031	0.015	4.8	89.7	
SF-2-47	4.160	99.961	-3.7	0.000	0.000	0.000	0.000	SF-2-46	-0.029	-0.014	4.4	89.9	
								SF-2-48	0.014	0.007	2.2	89.9	
								SEC_SF-4-2	0.014	0.007	2.2	89.9	
SF-2-48	4.160	99.958	-3.7	0.000	0.000	0.000	0.000	SF-2-47	-0.014	-0.007	2.2	89.9	
								SF-2-50	0.000	0.000	0.0	0.0	
								SEC_SF-4-3	0.014	0.007	2.2	89.9	
SF-2-50	4.160	99.958	-3.7	0.000	0.000	0.000	0.000	SF-2-48	0.000	0.000	0.0	0.0	
								Line SF-2-61~	0.000	0.000	0.0	0.0	
UG-JUNC-CS-5-8	24.900	94.792	-3.2	0.000	0.000	0.000	0.000	Pole CS-5-20	-0.046	-0.023	1.3	89.6	
								SEC_CS-5-10	0.046	0.023	1.3	89.6	
UG-JUNC-CS-5-9	24.900	94.791	-3.2	0.000	0.000	0.000	0.000	Pole CS-5-19	-0.047	-0.023	1.3	89.9	
								SEC_CS-5-12	0.047	0.023	1.3	89.9	
UG_JUNC-CS-1	4.160	98.106	-6.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	1.335	0.653	210.3	89.8	
								Pole CS-2-5	-1.412	-0.691	222.4	89.8	
								PRI_PM_1	0.076	0.038	12.1	89.5	
UG_JUNC-CS-2	4.160	97.259	-6.1	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-1.322	-0.650	210.3	89.7	
								UG_JUNC-CS-3	1.247	0.613	198.3	89.8	
								PRI_PM_2	0.075	0.038	12.0	89.5	
UG_JUNC-CS-3	4.160	96.552	-6.0	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-1.237	-0.611	198.3	89.7	
								PRI_PM_3	0.075	0.037	12.0	89.5	
								UG_JUNC-CS-5	1.162	0.573	186.3	89.7	
UG_JUNC-CS-5	4.160	95.947	-5.9	0.000	0.000	0.000	0.000	PRI_PM_5	0.074	0.037	11.9	89.5	
								UG_JUNC-CS-3	-1.154	-0.572	186.3	89.6	
								UG_JUNC-CS-6	1.080	0.535	174.4	89.6	
UG_JUNC-CS-6	4.160	95.381	-5.8	0.000	0.000	0.000	0.000	PRI_PM_6	0.073	0.037	11.9	89.5	
								UG_JUNC-CS-5	-1.073	-0.533	174.4	89.6	
								Pole CS-2-7	1.000	0.497	162.5	89.6	
UG_JUNC-CS-7	4.160	94.381	-5.9	0.000	0.000	0.000	0.000	Pole CS-2-17	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								C_SUB-FDR-EQ#7-3-8~	0.000	0.000	0.0	0.0	
C_SUB-FDR-EQ#7-3-8~	4.160	94.381	-5.9	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
LINE 6M-26~	4.160	97.987	-3.4	0.000	0.000	0.000	0.000	Pole 6M-1-23	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-173~	4.160	95.297	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-57	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-84~	4.160	96.409	-6.9	0.000	0.000	0.000	0.000	Pole CS-1-10	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-86~	4.160	94.895	-7.1	0.000	0.000	0.000	0.000	Pole CS-1-54	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-237~	4.160	98.697	-6.3	0.000	0.000	0.000	0.000	Pole CS-2-66	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-246~	4.160	95.329	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-36	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-276~	4.160	95.523	-6.2	0.000	0.000	0.000	0.000	Pole CS-3-74	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-283~	4.160	99.155	-6.2	0.000	0.000	0.000	0.000	Pole CS-4-4	0.000	0.000	0.0	0.0	
LINE MS-4-53~	4.160	97.103	-3.3	0.000	0.000	0.000	0.000	Pole MS-4-52	0.000	0.000	0.0	0.0	
Line MS-5-79~	4.160	96.758	-4.1	0.000	0.000	0.000	0.000	Pole MS-5-76	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-97~	4.160	98.761	-3.4	0.000	0.000	0.000	0.000	Pole MS-2-122	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-173~	4.160	99.250	-3.5	0.000	0.000	0.000	0.000	Pole MS-2-3	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-13~	4.160	99.286	-3.5	0.000	0.000	0.000	0.000	Pole MS-2-180	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-133~	4.160	98.822	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-25	0.000	0.000	0.0	0.0	
LINE MS-3-11~	4.160	98.756	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-43	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-177~	4.160	98.938	-3.3	0.000	0.000	0.000	0.000	Pole MS-3-70	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-1-38~	4.160	94.254	-4.4	0.000	0.000	0.000	0.000	SF-1-45	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-12~	4.160	100.080	-3.8	0.000	0.000	0.000	0.000	Pole MS-1-19	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-9~	4.160	100.183	-3.8	0.000	0.000	0.000	0.000	Pole MS-1-1	0.000	0.000	0.0	0.0	
Line MS-5-129~	4.160	99.716	-3.7	0.000	0.000	0.000	0.000	Pole MS-5-125	0.000	0.000	0.0	0.0	
Line SF-2-37~	4.160	100.059	-3.7	0.000	0.000	0.000	0.000	SF-2-37	0.000	0.000	0.0	0.0	
Line SF-2-45~	4.160	100.096	-3.7	0.000	0.000	0.000	0.000	SF-2-33	0.000	0.000	0.0	0.0	
Line SF-2-49~	4.160	100.017	-3.7	0.000	0.000	0.000	0.000	SF-2-42	0.000	0.000	0.0	0.0	
Line SF-2-53~	4.160	99.976	-3.7	0.000	0.000	0.000	0.000	SF-2-44	0.000	0.000	0.0	0.0	
Line SF-2-61~	4.160	99.958	-3.7	0.000	0.000	0.000	0.000	SF-2-50	0.000	0.000	0.0	0.0	
HS-4-33~	4.160	98.720	-6.2	0.000	0.000	0.000	0.000	Pole HS-4-47	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-90~	4.160	96.642	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-67	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-96~	4.160	96.652	-6.1	0.000	0.000	0.000	0.000	Pole HS-4-33	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-278~	4.160	95.689	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-49	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-301~	4.160	96.667	-5.9	0.000	0.000	0.000	0.000	Pole HS-2-66	0.000	0.000	0.0	0.0	
L-25-LAM-L1-02~	24.900	99.979	-2.1	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
L-25-LLP-SW-03~	24.900	99.704	-1.6	0.000	0.000	0.000	0.000	BUS_SAF_25kV	0.000	0.000	0.0	0.0	
L-25-XFMR-03~	24.900	100.117	-1.5	0.000	0.000	0.000	0.000	BUS_25kV_03	0.000	0.000	0.0	0.0	
Line51~	69.000	99.552	0.0	0.000	0.000	0.000	0.000	BUS_LLP_69kV_02	0.000	0.000	0.0	0.0	
L-25-LLP-E-06~	24.900	95.931	-2.1	0.000	0.000	0.000	0.000	BUS_25kV_E-04	0.000	0.000	0.0	0.0	
Line15~	24.900	99.763	-1.5	0.000	0.000	0.000	0.000	BUS_25kV_W-02	0.000	0.000	0.0	0.0	
L-25-LLP-W-03~	24.900	98.933	-1.7	0.000	0.000	0.000	0.000	BUS_25kV_W-03	0.000	0.000	0.0	0.0	

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)

# Indicates a bus with a load mismatch of more than 0.1 MVA

LOAD_FLOW_REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Bus1	4.160	99.873	-0.8	0.000	0.000	0.000	0.000	BUS_5KV_LLP_2	0.000	0.000	0.0	0.0	
Bus2	4.160	95.596	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.000	0.000	0.0	0.0	
BUS_5KV-LLP_01	4.160	99.911	-0.8	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	-0.883	-0.436	136.8	89.7	
								BUS_5KV_LLP_02	0.082	0.044	12.9	88.1	
								Pole MS-9-1	0.284	0.139	43.9	89.8	
								Pole MS-4-1	0.144	0.069	22.1	90.1	
								Pole MS-4-31	0.373	0.184	57.8	89.7	
BUS_5KV_LLP_01	4.160	99.876	-0.8	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.295	-0.165	46.9	87.3	
								BUS_5KV_LLP_PLTLDCTR	0.161	0.099	26.3	85.1	
								Pole MS-8-1	0.133	0.065	20.6	89.8	
BUS_5KV_LLP_2	4.160	99.873	-0.8	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.180	-0.088	27.8	89.9	
								Bus1	0.000	0.000	0.0	0.0	
								Pole MS-2-182	0.180	0.088	27.8	89.9	
BUS_5KV_LLP_02	4.160	99.898	-0.8	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	0.295	0.164	46.8	87.4	
								BUS_5KV_XFMR_02	-1.046	-0.524	162.6	89.4	
								BUS_5KV-LLP_01	-0.082	-0.044	12.9	87.9	
								BUS_5KV_LLP_2	0.180	0.087	27.8	90.0	
								Pole CS-1-90	0.197	0.095	30.4	90.1	
								Pole MS-3-87	0.457	0.223	70.6	89.9	
BUS_5KV_LLP_PLTLDCTR	4.160	99.850	-0.8	0.000	0.000	0.161	0.100	BUS_5KV_LLP_01	-0.161	-0.100	26.3	85.0	
BUS_5KV_XFMR_02	4.160	99.975	-0.7	0.000	0.000	0.000	0.000	BUS_5KV-LLP_01	0.883	0.436	136.7	89.7	
								BUS_5KV_LLP_02	1.047	0.524	162.5	89.4	
								BUS_25kV_SUB_02	-1.930	-0.960	299.2	89.5	1.250
BUS_5_NEOPLAN	4.160	99.264	-0.7	0.000	0.000	0.196	0.095	Pole CS-1-90	-0.196	-0.095	30.4	90.0	
BUS_6M_5kV	4.160	99.893	-1.3	0.000	0.000	0.000	0.000	BUS_6M_SEC	-0.234	-0.112	36.1	90.2	
								Pole 6M-1-1	0.072	0.035	11.1	90.1	
								Pole 6M-E-1	0.163	0.078	25.0	90.2	
BUS_6M_25kV	24.900	99.793	-0.8	0.000	0.000	0.000	0.000	BUS_L1_01	-0.235	-0.114	6.1	89.9	
								L-25-LAM-L1-02~	0.000	0.000	0.0	0.0	
								BUS_6M_SEC	0.235	0.115	6.1	89.8	
BUS_6M_SEC	4.160	99.390	-1.2	0.000	0.000	0.000	0.000	BUS_6M_5kV	0.235	0.113	36.3	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_6M_25kV	-0.235	-0.113	36.3	90.1	
BUS-25kV-BEEFCITY	24.900	98.522	0.9	0.000	0.000	0.257	0.159	BUS-25kV-MCCLAVE	-0.257	-0.159	7.1	85.0	
BUS-25kV-BIG-BEND	24.900	99.618	0.8	0.000	0.000	0.262	0.162	BUS_25kV_W-10	-0.262	-0.162	7.2	85.0	
BUS-25KV-E-10	24.900	98.765	-5.2	0.000	0.000	1.208	0.749	BUS_25kV_E-09	-1.208	-0.749	33.4	85.0	
BUS-25kV-HS-01	24.900	97.699	-1.3	0.000	0.000	0.057	0.035	BUS_HIS_25kV	-0.057	-0.035	1.6	85.0	
BUS-25kV-MCCLAVE	24.900	98.574	0.8	0.000	0.000	0.307	0.190	BUS_25kV_W-11	-0.564	-0.347	15.6	85.2	
								BUS-25kV-BEEFCITY	0.257	0.157	7.1	85.4	
BUS-25kV-TS-01	24.900	97.802	-1.3	0.000	0.000	0.057	0.036	BUS_TS_25kV	-0.057	-0.036	1.6	85.0	
BUS-25kV-TS-AREA	24.900	97.804	-1.3	0.000	0.000	0.057	0.036	BUS_TSA_25kV	-0.057	-0.036	1.6	85.0	
BUS-25kV-WILEY	24.900	99.641	0.8	0.000	0.000	0.313	0.194	BUS_25kV_W-10	-0.313	-0.194	8.6	85.0	
BUS_25kV_03	24.900	99.729	0.2	0.000	0.000	0.000	0.000	L-25-XFMR-03~	0.000	-0.001	0.0	0.0	
								BUS_25kV_SUB_01	-6.210	-3.447	165.1	87.4	
								BUS_25kV_SUB_02	6.210	3.448	165.1	87.4	
BUS_25kV_BRISTOL	24.900	97.570	-2.8	0.000	0.000	0.082	0.051	BUS_25kV_E-07	-0.082	-0.051	2.3	85.0	
BUS_25kV_CO-BEEF	24.900	99.571	0.8	0.000	0.000	0.526	0.326	BUS_25kV_W-08	-0.526	-0.326	14.4	85.0	
BUS_25kV_DECHANT	24.900	96.129	-0.5	0.000	0.000	0.119	0.074	BUS_25kV_E-05	-0.119	-0.074	3.4	85.0	
BUS_25kV_E_01	24.900	99.729	0.2	0.000	0.000	0.000	0.000	BUS_25kV_E-02	1.758	1.050	47.6	85.9	
								BUS_25kV_SUB_01	-1.758	-1.050	47.6	85.9	
BUS_25kV_E-02	24.900	99.665	0.2	0.000	0.000	0.000	0.000	BUS_25kV_E_01	-1.757	-1.050	47.6	85.8	
								BUS_25kV_SUTRAK	0.076	0.047	2.1	85.0	
								BUS_25kV_E-03	1.681	1.003	45.5	85.9	
BUS_25kV_E-03	24.900	99.598	0.2	0.000	0.000	0.000	0.000	BUS_25kV_E-02	-1.680	-1.002	45.5	85.9	
								BUS_25kV_SWL	0.084	0.052	2.3	85.2	
								BUS_25kV_E-04	1.596	0.950	43.2	85.9	
BUS_25kV_E-04	24.900	97.664	-0.2	0.000	0.000	0.000	0.000	BUS_25kV_E-03	-1.571	-0.946	43.5	85.7	
								BUS_25kV_E-05	1.571	0.947	43.5	85.6	
								L-25-LLP-E-06~	0.000	-0.001	0.0	0.0	
BUS_25kV_E-05	24.900	96.134	-0.5	0.000	0.000	0.000	0.000	BUS_25kV_E-04	-1.551	-0.942	43.8	85.5	
								BUS_25kV_DECHANT	0.119	0.073	3.4	85.2	
								BUS_25kV_E-06	1.432	0.869	40.4	85.5	
BUS_25kV_E-06	24.900	99.642	-2.5	0.000	0.000	0.000	0.000	BUS_25kV_E-05	-1.425	-0.847	38.6	85.9	
								BUS_25kV_E-07	1.425	0.847	38.6	85.9	
BUS_25kV_E-07	24.900	97.574	-2.8	0.000	0.000	0.000	0.000	BUS_25kV_E-06	-1.401	-0.849	38.9	85.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_BRISTOL	0.082	0.050	2.3	85.5	
								BUS_25kV_E-08	1.319	0.799	36.7	85.5	
BUS_25kV_E-08	24.900	96.513	-3.0	0.000	0.000	0.000	0.000	BUS_25kV_E-07	-1.307	-0.801	36.8	85.3	
								BUS_25kV_HARTMAN	0.080	0.044	2.2	87.6	
								BUS_25kV_E-09	1.227	0.757	34.6	85.1	
BUS_25kV_E-09	24.900	100.179	-4.9	0.000	0.000	0.000	0.000	BUS_25kV_E-08	-1.222	-0.741	33.1	85.5	
								BUS-25KV-E-10	1.222	0.741	33.1	85.5	
BUS_25kV_HARTMAN	24.900	96.489	-3.0	0.000	0.000	0.080	0.050	BUS_25kV_E-08	-0.080	-0.050	2.3	85.0	
BUS_25kV_KMART	24.900	99.586	0.2	0.000	0.000	0.000	0.000	BUS_25kV_W-2	0.000	0.000	0.0	0.0	
BUS_25kV_KORMAN	24.900	97.656	-0.2	0.000	0.000	0.859	0.532	BUS_25kV_W-04	-0.859	-0.532	24.0	85.0	
BUS_25kV_ROAD 13	24.900	95.670	-0.5	0.000	0.000	0.000	0.000	BUS_25kV_W-05	0.000	0.000	0.0	0.0	
BUS_25kV_SUB_01	24.900	99.729	0.2	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	0.170	-5.455	126.9	-3.1	3.125
								BUS_LLP_69kV_01	0.086	-2.764	64.3	-3.1	3.125
								BUS_25kV_E_01	1.758	1.050	47.6	85.9	
								BUS_25_LLP_SE_01	-8.224	3.721	209.9	-91.1	
								BUS_25kV_03	6.210	3.447	165.1	87.4	
BUS_25kV_SUB_02	24.900	99.729	0.2	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	1.933	1.001	50.6	88.8	
								BUS_25kV_SW_01	1.635	0.846	42.8	88.8	
								BUS_25kV_W-01	2.641	1.600	71.8	85.5	
								BUS_25kV_03	-6.210	-3.448	165.1	87.4	
BUS_25kV_SUTRAK	24.900	99.665	0.2	0.000	0.000	0.076	0.047	BUS_25kV_E-02	-0.076	-0.047	2.1	85.0	
BUS_25kV_SWL	24.900	99.597	0.2	0.000	0.000	0.084	0.052	BUS_25kV_E-03	-0.084	-0.052	2.3	85.0	
BUS_25kV_SW_01	24.900	99.729	0.2	0.000	0.000	0.000	0.000	BUS_25kV_W-2	1.635	0.846	42.8	88.8	
								BUS_25kV_SUB_02	-1.635	-0.846	42.8	88.8	
BUS_25kV_W-01	24.900	99.729	0.2	0.000	0.000	0.000	0.000	BUS_25kV_W-02	2.641	1.600	71.8	85.5	
								BUS_25kV_SUB_02	-2.641	-1.600	71.8	85.5	
BUS_25kV_W-2	24.900	99.586	0.2	0.000	0.000	0.000	0.000	BUS_25kV_SW_01	-1.633	-0.846	42.8	88.8	
								BUS_SAF_25kV	1.633	0.846	42.8	88.8	
								BUS_25kV_KMART	0.000	0.000	0.0	0.0	
BUS_25kV_W-02	24.900	99.555	0.2	0.000	0.000	0.000	0.000	BUS_25kV_W-01	-2.637	-1.597	71.8	85.5	
								BUS_25kV_W-03	2.637	1.598	71.8	85.5	
								Line15~	0.000	-0.001	0.0	0.0	
BUS_25kV_W-03	24.900	99.145	0.1	0.000	0.000	0.000	0.000	BUS_25kV_W-02	-2.629	-1.591	71.9	85.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_W-04	2.629	1.591	71.9	85.5	
								L-25-LLP-W-03~	0.000	0.000	0.0	0.0	
BUS_25kV_W-04	24.900	97.724	-0.2	0.000	0.000	0.000	0.000	BUS_25kV_W-03	-2.598	-1.567	72.0	85.6	
								BUS_25kV_KORMAN	0.859	0.531	24.0	85.1	
								BUS_25kV_W-05	1.739	1.036	48.0	85.9	
BUS_25kV_W-05	24.900	95.669	-0.5	0.000	0.000	0.000	0.000	BUS_25kV_W-04	-1.709	-1.024	48.3	85.8	
								BUS_25kV_ROAD 13	0.000	-0.007	0.2	0.0	
								BUS_25kV_W-06	1.709	1.031	48.4	85.6	
BUS_25kV_W-06	24.900	100.046	0.8	0.000	0.000	0.000	0.000	BUS_25kV_W-05	-1.677	-0.991	45.2	86.1	
								BUS_25kV_W-07	1.677	0.991	45.2	86.1	
BUS_25kV_W-07	24.900	99.863	0.8	0.000	0.000	0.000	0.000	BUS_25kV_W-06	-1.675	-0.991	45.2	86.1	
								BUS_25kV_W-08	0.528	0.319	14.3	85.6	
								BUS_25kV_W-09	1.147	0.672	30.9	86.3	
BUS_25kV_W-08	24.900	99.861	0.8	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-0.528	-0.319	14.3	85.6	
								BUS_25kV_CO-BEEF	0.528	0.319	14.3	85.6	
BUS_25kV_W-09	24.900	99.691	0.8	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-1.146	-0.673	30.9	86.2	
								BUS_25kV_W-10	0.575	0.351	15.7	85.4	
								BUS_25kV_W-11	0.571	0.322	15.2	87.1	
BUS_25kV_W-10	24.900	99.680	0.8	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-0.575	-0.351	15.7	85.3	
								BUS-25kV-WILEY	0.313	0.192	8.5	85.2	
								BUS-25kV-BIG-BEND	0.262	0.159	7.1	85.5	
BUS_25kV_W-11	24.900	99.684	0.8	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-0.571	-0.322	15.2	87.1	
								BUS-25kV-MCCLAVE	0.571	0.322	15.2	87.1	
BUS_25_LLP_SE_01	24.900	99.729	0.2	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	-8.224	3.721	209.9	-91.1	
								BUS_25kV_SUB_01	8.224	-3.721	209.9	-91.1	
BUS_25_LLP_SE_02	24.900	100.176	1.0	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_01	8.314	-3.622	209.9	-91.7	
								BUS_25_LLP_SE_03	0.213	0.131	5.8	85.1	
								BUS_25_LLP_SE_04	-8.527	3.491	213.3	-92.5	
BUS_25_LLP_SE_03	24.900	100.168	1.0	0.000	0.000	0.213	0.132	BUS_25_LLP_SE_02	-0.213	-0.132	5.8	85.0	
BUS_25_LLP_SE_04	24.900	100.726	1.9	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	8.627	-3.380	213.3	-93.1	
								Pole MS-7-17	0.044	0.017	1.1	93.0	
								BUS_WTG_SOL	-8.671	3.363	214.1	-93.2	
BUS_ATT	24.900	99.764	-0.8	0.000	0.000	0.034	0.021	BUS_L3_SEC	-0.034	-0.021	0.9	85.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_CLG_4kV	4.160	99.735	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-1	0.600	0.291	92.9	90.0	
								Pole CS-1-1	0.514	0.254	79.7	89.7	
								Pole CS-3-1	0.348	0.170	53.8	89.9	
								Pole CS-4-1	0.362	0.177	56.0	89.8	
								BUS_CLG_SEC	-1.824	-0.892	282.5	89.8	
BUS_CLG_25kV	24.900	97.913	-1.3	0.000	0.000	0.000	0.000	BUS_L2_SEC	-3.374	-1.732	89.8	89.0	
								BUS_HSP_25kV	1.545	0.794	41.1	88.9	
								BUS_CLG_SEC	1.829	0.938	48.7	89.0	
BUS_CLG_SEC	4.160	97.249	-1.9	0.000	0.000	0.000	0.000	BUS_CLG_4kV	1.827	0.911	291.3	89.5	
								BUS_CLG_25kV	-1.827	-0.911	291.3	89.5	
BUS_HIS_25kV	24.900	97.702	-1.3	0.000	0.000	0.000	0.000	BUS_TS_25kV	-1.374	-0.702	36.6	89.0	
								BUS-25kV-HS-01	0.057	0.035	1.6	85.5	
								BUS_HSC_25kV	1.316	0.667	35.0	89.2	
BUS_HSC_4kV	4.160	100.214	-2.3	0.000	0.000	0.000	0.000	Pole HS-1-001	0.037	0.018	5.7	90.0	
								Pole HS-2-1	0.495	0.241	76.3	89.9	
								Pole HS-3-1	0.338	0.164	52.0	90.0	
								Pole HS-4-1	0.442	0.216	68.2	89.8	
								BUS_HSC_SEC	-1.312	-0.639	202.2	89.9	
BUS_HSC_25kV	24.900	97.609	-1.3	0.000	0.000	0.000	0.000	BUS_HIS_25kV	-1.315	-0.668	35.0	89.2	
								BUS_HSC_SEC	1.315	0.668	35.0	89.2	
BUS_HSC_SEC	4.160	96.976	-2.0	0.000	0.000	0.000	0.000	BUS_HSC_4kV	1.314	0.649	209.7	89.7	
								BUS_HSC_25kV	-1.314	-0.649	209.7	89.7	
BUS_HSP_25kV	24.900	97.859	-1.3	0.000	0.000	0.000	0.000	BUS_CLG_25kV	-1.544	-0.794	41.1	88.9	
								Pole CS-5-21	0.054	0.022	1.4	92.6	
								BUS_TSA_25kV	1.490	0.772	39.8	88.8	
BUS_L1_01	24.900	99.801	-0.8	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.235	0.114	6.1	90.0	
								BUS_LAMSO_25kV	-0.235	-0.114	6.1	90.0	
BUS_L2_SEC	24.900	99.801	-0.8	0.000	0.000	0.000	0.000	BUS_CLG_25kV	3.425	1.779	89.7	88.7	
								BUS_LAMSO_25kV	-3.425	-1.779	89.7	88.7	
BUS_L3_SEC	24.900	99.801	-0.8	0.000	0.000	0.000	0.000	BUS_ATT	0.034	-0.011	0.8	-94.9	
								BUS_LAMSO_25kV	-0.034	0.011	0.8	-94.9	
BUS_LAMSO_25kV	24.900	99.801	-0.8	0.000	0.000	0.000	0.000	BUS_LAMSO_115kV	-3.694	-1.881	96.3	89.1	0.625
								BUS_L1_01	0.235	0.114	6.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_L2_SEC	3.425	1.779	89.7	88.7	
								BUS_L3_SEC	0.034	-0.011	0.8	-94.9	
* BUS_LAMSO_115kV	115.000	100.000	0.0	3.697	1.950	0.000	0.000	BUS_LAMSO_25kV	3.697	1.950	21.0	88.4	
BUS_LLP_69kV_01	69.000	99.770	0.1	0.000	0.000	0.000	0.000	BUS_25kV_SUB_01	-0.161	5.628	47.2	-2.9	
								BUS_25kV_SUB_01	-0.082	2.851	23.9	-2.9	
								BUS_LLP_69kV_03	0.121	-4.240	35.6	-2.9	
								BUS_LLP_69kV_04	0.121	-4.240	35.6	-2.9	
BUS_LLP_69kV_02	69.000	99.770	0.1	0.000	0.000	0.000	0.000	Line51~	0.000	-0.510	4.3	0.0	
								BUS_LLP_69kV_03	0.121	-3.730	31.3	-3.2	
								BUS_LLP_69kV_04	-0.121	4.240	35.6	-2.9	
BUS_LLP_69kV_03	69.000	99.770	0.1	0.000	0.000	0.000	0.000	BUS_WC_69KV_01	0.242	-7.969	66.9	-3.0	
								BUS_LLP_69kV_01	-0.121	4.240	35.6	-2.9	
								BUS_LLP_69kV_02	-0.121	3.730	31.3	-3.2	
BUS_LLP_69kV_04	69.000	99.770	0.1	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	-0.121	4.240	35.6	-2.9	
								BUS_LLP_69kV_02	0.121	-4.240	35.6	-2.9	
BUS_SAF_4kV	4.160	100.096	-1.0	0.000	0.000	0.000	0.000	SF-2-30	0.156	0.076	24.1	90.0	
								Pole MS-1-1	0.114	0.055	17.6	90.0	
								SF-1-1	1.175	0.587	182.2	89.4	
								SF-2-1	0.182	0.089	28.1	89.9	
								BUS_SAF_SEC	-1.628	-0.808	252.0	89.6	
BUS_SAF_25kV	24.900	99.519	0.2	0.000	0.000	0.000	0.000	BUS_25kV_W-2	-1.633	-0.846	42.8	88.8	
								L-25-LLP-SW-03~	0.000	-0.004	0.1	0.0	
								BUS_SAF_SEC	1.633	0.851	42.9	88.7	
BUS_SAF_SEC	4.160	98.730	-0.6	0.000	0.000	0.000	0.000	BUS_SAF_4kV	1.631	0.822	256.7	89.3	
								BUS_SAF_25kV	-1.631	-0.822	256.7	89.3	
BUS_SW_8.5EES23	24.900	102.013	3.8	0.000	0.000	0.000	0.000	BUS_WTG_SOL	0.000	0.000	0.0	0.0	
BUS_TSA_25kV	24.900	97.807	-1.3	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-1.489	-0.772	39.8	88.8	
								BUS-25kV-TS-AREA	0.057	0.035	1.6	85.5	
								BUS_TS_25kV	1.432	0.737	38.2	88.9	
BUS_TS_25kV	24.900	97.804	-1.3	0.000	0.000	0.000	0.000	BUS_TSA_25kV	-1.432	-0.737	38.2	88.9	
								BUS-25kV-TS-01	0.057	0.035	1.6	85.5	
								BUS_HIS_25kV	1.375	0.702	36.6	89.1	
BUS_T_WTG1_SEC	0.690	100.326	12.4	1.500	-0.726	0.000	0.000	BUS_WTG1	1.500	-0.726	1389.9	-90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_T_WTG2_SEC	0.690	100.305	12.4	1.500	-0.726	0.000	0.000	BUS_WTG2	1.500	-0.726	1390.3	-90.0	
BUS_T_WTG3_SEC	0.690	103.256	7.8	0.000	0.000	0.000	0.000	BUS_WTG3	0.000	0.000	0.0	0.0	
BUS_T_WTG4_SEC	0.690	100.232	12.3	1.500	-0.726	0.000	0.000	BUS_WTG5	1.500	-0.726	1391.3	-90.0	
* BUS_WC_69KV_01	69.000	100.000	0.0	-0.233	7.924	0.000	0.000	BUS_LLP_69kV_03	-0.233	7.924	66.3	-2.9	
BUS_WTG1	24.900	103.309	7.8	0.000	0.000	0.000	0.000	BUS_WTG2	1.480	-0.869	38.5	-86.2	
								BUS_T_WTG1_SEC	-1.480	0.869	38.5	-86.2	
BUS_WTG2	24.900	103.291	7.8	0.000	0.000	0.000	0.000	BUS_WTG1	-1.479	0.856	38.4	-86.6	
								BUS_WTG3	2.959	-1.725	76.9	-86.4	
								BUS_T_WTG2_SEC	-1.480	0.869	38.5	-86.2	
BUS_WTG3	24.900	103.256	7.8	0.000	0.000	0.000	0.000	BUS_WTG2	-2.957	1.713	76.7	-86.5	
								BUS_WTG5	2.957	-1.713	76.7	-86.5	
								BUS_T_WTG3_SEC	0.000	0.000	0.0	0.0	
BUS_WTG5	24.900	103.221	7.7	0.000	0.000	0.000	0.000	BUS_WTG3	-2.956	1.701	76.6	-86.7	
								BUS_WTG6	4.435	-2.570	115.2	-86.5	
								BUS_T_WTG4_SEC	-1.480	0.869	38.6	-86.2	
BUS_WTG6	24.900	102.109	4.0	0.000	0.000	0.000	0.000	BUS_WTG_SOL	8.906	-3.105	214.2	-94.4	
								BUS_WTG5	-4.212	2.792	114.8	-83.4	
								P_526_2	-4.694	0.313	106.8	-99.8	
BUS_WTG_SOL	24.900	102.013	3.8	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	8.891	-3.121	214.2	-94.4	
								BUS_SW_8.5EES23	0.000	-0.001	0.0	0.0	
								BUS_WTG6	-8.891	3.122	214.2	-94.4	
Pole 6M-1-1	4.160	99.734	-1.3	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.072	-0.035	11.1	90.1	
								Pole 6M-1-2	0.063	0.030	9.8	90.1	
								SEC_6M-1-1	0.008	0.004	1.3	89.9	
Pole 6M-1-2	4.160	99.635	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-1	-0.063	-0.030	9.8	90.1	
								Pole 6M-1-3	0.008	0.004	1.3	90.0	
								Pole 6M-1-4	0.055	0.026	8.5	90.1	
Pole 6M-1-3	4.160	99.634	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.008	-0.004	1.3	89.9	
								SEC_6M-1-2	0.008	0.004	1.3	89.9	
Pole 6M-1-4	4.160	99.491	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.055	-0.026	8.5	90.1	
								Pole 6M-1-5	0.004	0.002	0.6	90.0	
								Pole 6M-1-6	0.051	0.025	7.9	90.1	
Pole 6M-1-5	4.160	99.489	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-4	-0.004	-0.002	0.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-1-6	4.160	99.450	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-4	-0.051	-0.025	7.9	90.1	
								Pole 6M-1-7	0.007	0.003	1.1	90.1	
								Pole 6M-1-9	0.044	0.021	6.8	90.1	
Pole 6M-1-7	4.160	99.435	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-6	-0.007	-0.003	1.1	90.0	
								Pole 6M-1-8	0.004	0.002	0.6	90.0	
Pole 6M-1-8	4.160	99.433	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-7	-0.004	-0.002	0.6	89.9	
Pole 6M-1-9	4.160	99.396	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-6	-0.044	-0.021	6.8	90.1	
								Pole 6M-1-10	0.040	0.019	6.3	90.1	
Pole 6M-1-10	4.160	99.381	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-9	-0.040	-0.019	6.3	90.1	
								Pole 6M-1-11	0.040	0.019	6.3	90.1	
Pole 6M-1-11	4.160	99.368	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-10	-0.040	-0.019	6.3	90.1	
								Pole 6M-1-12	0.037	0.018	5.7	90.1	
Pole 6M-1-12	4.160	99.344	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-11	-0.037	-0.018	5.7	90.1	
								Pole 6M-1-13	0.004	0.002	0.5	90.5	
								Pole 6M-1-14	0.033	0.016	5.2	90.1	
Pole 6M-1-13	4.160	99.325	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-12	-0.004	-0.002	0.6	89.9	
Pole 6M-1-14	4.160	99.291	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-12	-0.033	-0.016	5.2	90.1	
								Pole 6M-1-15	0.030	0.014	4.6	90.1	
Pole 6M-1-15	4.160	99.276	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-14	-0.030	-0.014	4.6	90.1	
								Pole 6M-1-16	0.026	0.013	4.1	90.1	
Pole 6M-1-16	4.160	99.228	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-15	-0.026	-0.013	4.1	90.1	
								Pole 6M-1-17	0.012	0.006	1.9	90.0	
								Pole 6M-1-20	0.014	0.007	2.2	90.1	
Pole 6M-1-17	4.160	99.228	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-16	-0.012	-0.006	1.9	90.0	
								Pole 6M-1-18	0.008	0.004	1.3	90.0	
Pole 6M-1-18	4.160	99.218	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-17	-0.008	-0.004	1.3	90.0	
								Pole 6M-1-19	0.008	0.004	1.3	90.0	
Pole 6M-1-19	4.160	99.213	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-18	-0.008	-0.004	1.3	89.9	
								SEC_6M-1-12	0.008	0.004	1.3	89.9	
Pole 6M-1-20	4.160	99.201	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-16	-0.014	-0.007	2.2	90.1	
								Pole 6M-1-21	0.007	0.003	1.1	90.1	
								Pole 6M-1-23	0.007	0.003	1.1	90.1	
Pole 6M-1-21	4.160	99.198	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-20	-0.007	-0.003	1.1	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole 6M-1-22	0.004	0.002	0.5	90.2	
Pole 6M-1-22	4.160	99.189	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-21	-0.004	-0.002	0.6	89.9	
Pole 6M-1-23	4.160	99.196	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-20	-0.007	-0.003	1.1	90.0	
								Pole 6M-1-24	0.007	0.003	1.1	90.0	
								LINE 6M-26~	0.000	0.000	0.0	0.0	
Pole 6M-1-24	4.160	99.196	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-23	-0.007	-0.003	1.1	90.0	
								Pole 6M-1-25	0.004	0.002	0.6	90.0	
Pole 6M-1-25	4.160	99.194	-1.3	0.000	0.000	0.004	0.002	Pole 6M-1-24	-0.004	-0.002	0.6	89.9	
Pole 6M-E-1	4.160	97.721	-1.3	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.159	-0.076	25.1	90.1	
								Pole 6M-E-2	0.013	0.006	2.1	90.0	
								Pole 6M-E-30	0.146	0.070	23.0	90.1	
Pole 6M-E-2	4.160	97.700	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-1	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-2	0.013	0.006	2.1	90.0	
Pole 6M-E-3	4.160	97.287	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-3	0.013	0.006	2.1	90.0	
Pole 6M-E-4	4.160	97.290	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.132	-0.063	20.9	90.1	
								Pole 6M-E-3	0.013	0.006	2.1	90.0	
								Pole 6M-E-5	0.119	0.057	18.8	90.2	
Pole 6M-E-5	4.160	97.068	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.118	-0.057	18.8	90.1	
								Pole 6M-E-6	0.105	0.050	16.7	90.2	
								SEC_6M-E-1	0.013	0.006	2.1	90.0	
Pole 6M-E-6	4.160	96.851	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-5	-0.105	-0.050	16.7	90.2	
								Pole 6M-E-7	0.092	0.044	14.6	90.2	
								SEC_6M-E-4	0.013	0.006	2.1	90.0	
Pole 6M-E-7	4.160	96.522	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-6	-0.091	-0.044	14.6	90.2	
								Pole 6M-E-8	0.013	0.006	2.1	90.0	
								Pole 6M-E-9	0.078	0.038	12.5	90.2	
Pole 6M-E-8	4.160	96.507	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-5	0.013	0.006	2.1	90.0	
Pole 6M-E-9	4.160	95.973	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.078	-0.037	12.5	90.2	
								Pole 6M-E-10	0.026	0.012	4.1	90.1	
								Pole 6M-E-13	0.052	0.025	8.4	90.2	
Pole 6M-E-10	4.160	95.882	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-9	-0.026	-0.012	4.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole 6M-E-11	0.013	0.006	2.1	90.1	
								SEC_6M-E-6	0.013	0.006	2.1	90.0	
Pole 6M-E-11	4.160	95.836	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-10	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-7	0.013	0.006	2.1	90.0	
Pole 6M-E-12	4.160	95.879	-1.3	0.000	0.000	0.003	0.002	Pole 6M-E-13	-0.003	-0.002	0.5	89.9	
Pole 6M-E-13	4.160	95.880	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-12	0.003	0.002	0.5	90.0	
								Pole 6M-E-9	-0.052	-0.025	8.4	90.2	
								Pole 6M-E-15	0.049	0.023	7.8	90.2	
Pole 6M-E-14	4.160	95.777	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-8	0.013	0.006	2.1	90.0	
Pole 6M-E-15	4.160	95.793	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-14	0.013	0.006	2.1	90.0	
								Pole 6M-E-13	-0.049	-0.023	7.8	90.2	
								Pole 6M-E-18	0.036	0.017	5.7	90.3	
Pole 6M-E-18	4.160	95.718	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.036	-0.017	5.7	90.3	
								Pole 6M-E-19	0.013	0.006	2.1	90.0	
								Pole 6M-E-20	0.023	0.011	3.7	90.4	
Pole 6M-E-19	4.160	95.710	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-10	0.013	0.006	2.1	90.0	
Pole 6M-E-20	4.160	95.694	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.023	-0.011	3.7	90.4	
								Pole 6M-E-21	0.010	0.005	1.6	91.0	
								SEC_6M-E-11	0.013	0.006	2.1	90.0	
Pole 6M-E-21	4.160	95.689	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-20	-0.010	-0.005	1.6	91.0	
								Pole 6M-E-22	0.003	0.002	0.5	90.9	
								Pole 6M-E-23	0.007	0.003	1.1	91.1	
Pole 6M-E-22	4.160	95.660	-1.3	0.000	0.000	0.003	0.002	Pole 6M-E-21	-0.003	-0.002	0.5	89.9	
Pole 6M-E-23	4.160	95.610	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.003	0.002	0.5	90.5	
								Pole 6M-E-21	-0.007	-0.003	1.1	90.4	
								Pole 6M-E-24	0.003	0.002	0.5	90.4	
Pole 6M-E-24	4.160	95.595	-1.3	0.000	0.000	0.003	0.002	Pole 6M-E-23	-0.003	-0.002	0.5	89.9	
Pole 6M-E-25	4.160	95.595	-1.3	0.000	0.000	0.003	0.002	Pole 6M-E-26	-0.003	-0.002	0.5	89.9	
Pole 6M-E-26	4.160	95.596	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-23	-0.003	-0.002	0.5	90.0	
								Pole 6M-E-25	0.003	0.002	0.5	90.0	
								Bus2	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-E-29	4.160	97.527	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.013	-0.006	2.1	90.0	
								SEC_6M-E-13	0.013	0.006	2.1	90.0	
Pole 6M-E-30	4.160	97.530	-1.3	0.000	0.000	0.000	0.000	Pole 6M-E-4	0.132	0.063	20.9	90.1	
								Pole 6M-E-29	0.013	0.006	2.1	90.0	
								Pole 6M-E-1	-0.145	-0.070	23.0	90.1	
Pole CS-1-1	4.160	99.340	-2.4	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-0.512	-0.252	79.7	89.7	
								Pole CS-1-2	0.512	0.252	79.7	89.7	
Pole CS-1-2	4.160	99.204	-2.5	0.000	0.000	0.000	0.000	PRI_PM_16	0.070	0.034	10.9	89.8	
								Pole CS-1-1	-0.512	-0.251	79.7	89.8	
								Pole CS-1-3	0.434	0.213	67.6	89.8	
								Pole HS-2-85	0.008	0.004	1.2	90.0	
Pole CS-1-3	4.160	98.921	-2.5	0.000	0.000	0.000	0.000	Pole CS-1-4	0.012	0.006	1.9	89.9	
								Pole CS-1-5	0.012	0.006	1.9	89.9	
								Pole HS-3-86	0.004	0.002	0.6	89.9	
								Pole CS-1-2	-0.433	-0.212	67.6	89.8	
								Pole CS-1-6	0.405	0.199	63.3	89.8	
Pole CS-1-4	4.160	98.915	-2.5	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.012	-0.006	1.9	89.9	
								SEC_CS-1-1	0.012	0.006	1.9	89.9	
Pole CS-1-5	4.160	98.917	-2.5	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.012	-0.006	1.9	89.9	
								SEC_CS-1-2	0.012	0.006	1.9	89.9	
Pole CS-1-6	4.160	98.656	-2.6	0.000	0.000	0.000	0.000	Pole HS-3-88	0.012	0.006	1.9	90.0	
								Pole CS-1-3	-0.404	-0.198	63.3	89.8	
								Pole CS-1-9	0.393	0.192	61.5	89.8	
Pole CS-1-9	4.160	98.587	-2.6	0.000	0.000	0.000	0.000	PRI_PM_17	0.059	0.029	9.2	89.8	
								Pole CS-1-6	-0.392	-0.192	61.5	89.9	
								Pole CS-1-10	0.334	0.163	52.3	89.9	
Pole CS-1-10	4.160	98.457	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.333	-0.162	52.3	89.9	
								Pole CS-1-11	0.333	0.162	52.3	89.9	
								L-SUB-FDR-EQ#20-1-84~	0.000	0.000	0.0	0.0	
Pole CS-1-11	4.160	98.444	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-10	-0.333	-0.162	52.3	89.9	
								Pole CS-1-12	0.333	0.162	52.3	89.9	
Pole CS-1-12	4.160	98.389	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-13	0.012	0.006	1.8	89.9	
								Pole CS-1-11	-0.333	-0.162	52.3	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-14	0.321	0.157	50.4	89.9	
Pole CS-1-13	4.160	98.388	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-12	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-7	0.012	0.006	1.8	89.9	
Pole CS-1-14	4.160	98.337	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-17	0.035	0.017	5.5	89.9	
								Pole CS-1-12	-0.321	-0.156	50.4	89.9	
								Pole CS-1-16	0.282	0.137	44.3	89.9	
Pole CS-1-15	4.160	98.294	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-16	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-9	0.012	0.006	1.8	89.9	
Pole CS-1-16	4.160	98.295	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-15	0.012	0.006	1.8	89.9	
								Pole CS-1-14	-0.282	-0.137	44.3	89.9	
								Pole CS-1-21	0.270	0.132	42.4	89.9	
Pole CS-1-17	4.160	98.315	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-14	-0.035	-0.017	5.5	89.9	
								Pole CS-1-18	0.024	0.011	3.7	89.9	
								Pole CS-1-20	0.012	0.006	1.8	89.9	
Pole CS-1-18	4.160	98.312	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.024	-0.011	3.7	89.9	
								Pole CS-1-19	0.012	0.006	1.8	89.9	
								SEC_CS-1-10	0.012	0.006	1.8	89.9	
Pole CS-1-19	4.160	98.308	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-18	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-11	0.012	0.006	1.8	89.9	
Pole CS-1-20	4.160	98.313	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-12	0.012	0.006	1.8	89.9	
Pole CS-1-21	4.160	98.255	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-16	-0.270	-0.131	42.4	89.9	
								Pole CS-1-22	0.266	0.129	41.8	89.9	
Pole CS-1-22	4.160	98.216	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-23	0.012	0.006	1.8	89.9	
								Pole CS-1-21	-0.266	-0.129	41.8	89.9	
								Pole CS-1-24	0.250	0.122	39.3	89.9	
Pole CS-1-23	4.160	98.212	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-15	0.012	0.006	1.8	89.9	
Pole CS-1-24	4.160	98.168	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.250	-0.122	39.3	89.9	
								Pole CS-1-25	0.238	0.116	37.5	89.9	
								SEC_CS-1-16	0.012	0.006	1.8	89.9	
Pole CS-1-25	4.160	98.122	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-28	0.113	0.055	17.8	89.9	
								Pole CS-1-55	0.117	0.057	18.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-24	-0.238	-0.116	37.5	89.9	
								Pole CS-1-26	0.008	0.004	1.2	89.9	
Pole CS-1-26	4.160	98.121	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-25	-0.008	-0.004	1.2	89.9	
								Pole CS-1-27	0.004	0.002	0.6	89.9	
Pole CS-1-27	4.160	98.120	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-26	-0.004	-0.002	0.6	89.9	
Pole CS-1-28	4.160	98.114	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-25	-0.113	-0.055	17.8	89.9	
								Pole CS-1-29	0.109	0.053	17.2	89.9	
Pole CS-1-29	4.160	98.085	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-28	-0.109	-0.053	17.2	89.9	
								Pole CS-1-32	0.102	0.049	16.0	89.9	
								Pole CS-1-31	0.008	0.004	1.2	89.9	
Pole CS-1-30	4.160	98.083	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-31	-0.004	-0.002	0.6	89.9	
Pole CS-1-31	4.160	98.084	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-30	0.004	0.002	0.6	89.9	
								Pole CS-1-29	-0.008	-0.004	1.2	89.9	
Pole CS-1-32	4.160	98.057	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-29	-0.102	-0.049	16.0	89.9	
								Pole CS-1-33	0.098	0.047	15.4	89.9	
Pole CS-1-33	4.160	98.014	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-32	-0.098	-0.047	15.4	89.9	
								Pole CS-1-36	0.086	0.042	13.5	89.9	
								Pole CS-1-35	0.008	0.004	1.2	89.9	
Pole CS-1-34	4.160	98.013	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-35	-0.004	-0.002	0.6	89.9	
Pole CS-1-35	4.160	98.014	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-34	0.004	0.002	0.6	90.0	
								Pole CS-1-33	-0.008	-0.004	1.2	89.9	
Pole CS-1-36	4.160	97.978	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-33	-0.086	-0.042	13.5	89.9	
								Pole CS-1-37	0.082	0.040	12.9	89.9	
Pole CS-1-37	4.160	97.961	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-36	-0.082	-0.040	12.9	89.9	
								Pole CS-1-38	0.078	0.038	12.3	89.9	
Pole CS-1-38	4.160	97.942	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-37	-0.078	-0.038	12.3	89.9	
								Pole CS-1-39	0.074	0.036	11.7	89.9	
Pole CS-1-39	4.160	97.927	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-40	0.019	0.009	3.1	90.0	
								Pole CS-1-38	-0.074	-0.036	11.7	89.9	
								Pole CS-1-43	0.055	0.027	8.6	89.9	
Pole CS-1-40	4.160	97.912	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.019	-0.009	3.1	89.9	
								Pole CS-1-41	0.008	0.004	1.2	90.0	
								SEC_CS-1-29	0.012	0.006	1.8	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-1-41	4.160	97.910	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-40	-0.008	-0.004	1.2	89.9	
								Pole CS-1-42	0.004	0.002	0.6	90.0	
Pole CS-1-42	4.160	97.909	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-41	-0.004	-0.002	0.6	89.9	
Pole CS-1-43	4.160	97.922	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.055	-0.027	8.6	89.9	
								Pole CS-1-44	0.043	0.021	6.8	89.9	
								SEC_CS-1-32	0.012	0.006	1.8	89.9	
Pole CS-1-44	4.160	97.916	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-43	-0.043	-0.021	6.8	89.9	
								Pole CS-1-45	0.039	0.019	6.1	89.9	
Pole CS-1-45	4.160	97.910	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-44	-0.039	-0.019	6.1	89.9	
								Pole CS-1-46	0.035	0.017	5.5	89.9	
Pole CS-1-46	4.160	97.904	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-45	-0.035	-0.017	5.5	89.9	
								Pole CS-1-47	0.031	0.015	4.9	89.9	
Pole CS-1-47	4.160	97.895	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-46	-0.031	-0.015	4.9	89.9	
								Pole CS-1-48	0.027	0.013	4.3	89.9	
Pole CS-1-48	4.160	97.890	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-47	-0.027	-0.013	4.3	89.9	
								Pole CS-1-49	0.023	0.011	3.7	89.9	
Pole CS-1-49	4.160	97.887	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-48	-0.023	-0.011	3.7	89.9	
								Pole CS-1-50	0.019	0.009	3.1	90.0	
Pole CS-1-50	4.160	97.883	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-49	-0.019	-0.009	3.1	89.9	
								Pole CS-1-51	0.016	0.008	2.5	90.0	
Pole CS-1-51	4.160	97.881	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-50	-0.016	-0.008	2.5	89.9	
								Pole CS-1-52	0.012	0.006	1.8	90.0	
Pole CS-1-52	4.160	97.878	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-51	-0.012	-0.006	1.8	89.9	
								Pole CS-1-53	0.008	0.004	1.2	90.0	
Pole CS-1-53	4.160	97.876	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-52	-0.008	-0.004	1.2	89.9	
								Pole CS-1-54	0.004	0.002	0.6	90.0	
Pole CS-1-54	4.160	97.876	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-53	-0.004	-0.002	0.6	89.9	
								L-SUB-FDR-EQ#20-1-86~	0.000	0.000	0.0	0.0	
Pole CS-1-55	4.160	98.079	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-25	-0.117	-0.057	18.4	89.9	
								Pole CS-1-56	0.004	0.002	0.6	90.0	
								Pole CS-1-58	0.113	0.055	17.8	89.9	
Pole CS-1-56	4.160	98.078	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-55	-0.004	-0.002	0.6	89.9	
Pole CS-1-57	4.160	98.030	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-58	-0.109	-0.053	17.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-60	0.109	0.053	17.2	89.9	
								L-SUB-FDR-EQ#18-1-173~	0.000	0.000	0.0	0.0	
Pole CS-1-58	4.160	98.052	-2.7	0.000	0.000	0.004	0.002	Pole CS-1-57	0.109	0.053	17.2	89.9	
								Pole CS-1-55	-0.113	-0.055	17.8	89.9	
Pole CS-1-59	4.160	98.003	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-61	-0.012	-0.006	1.8	89.9	
								SEC_CS-1-46	0.012	0.006	1.8	89.9	
Pole CS-1-60	4.160	98.010	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-57	-0.109	-0.053	17.2	89.9	
								Pole CS-1-61	0.105	0.051	16.6	89.9	
Pole CS-1-61	4.160	98.003	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-59	0.012	0.006	1.8	89.9	
								Pole CS-1-60	-0.105	-0.051	16.6	89.9	
								Pole CS-1-62	0.094	0.046	14.7	89.9	
Pole CS-1-62	4.160	97.990	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-61	-0.094	-0.046	14.7	89.9	
								Pole CS-1-63	0.090	0.044	14.1	89.9	
Pole CS-1-63	4.160	97.977	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-62	-0.090	-0.044	14.1	89.9	
								Pole CS-1-64	0.086	0.042	13.5	89.9	
Pole CS-1-64	4.160	97.964	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-63	-0.086	-0.042	13.5	89.9	
								Pole CS-1-65	0.000	0.000	0.0	0.0	
								Pole CS-1-66	0.086	0.042	13.5	89.9	
Pole CS-1-65	4.160	97.964	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-64	0.000	0.000	0.0	0.0	
Pole CS-1-66	4.160	97.936	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-64	-0.086	-0.042	13.5	89.9	
								Pole CS-1-67	0.082	0.040	12.9	89.9	
Pole CS-1-67	4.160	97.926	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-66	-0.082	-0.040	12.9	89.9	
								Pole CS-1-68	0.078	0.038	12.3	89.9	
Pole CS-1-68	4.160	97.916	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-67	-0.078	-0.038	12.3	89.9	
								Pole CS-1-69	0.066	0.032	10.4	90.0	
								SEC_CS-1-53	0.012	0.006	1.8	89.9	
Pole CS-1-69	4.160	97.906	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-68	-0.066	-0.032	10.4	90.0	
								Pole CS-1-70	0.062	0.030	9.8	90.0	
Pole CS-1-70	4.160	97.893	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-69	-0.062	-0.030	9.8	90.0	
								Pole CS-1-71	0.058	0.028	9.2	90.0	
Pole CS-1-71	4.160	97.884	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-70	-0.058	-0.028	9.2	90.0	
								Pole CS-1-72	0.055	0.026	8.6	90.0	
Pole CS-1-72	4.160	97.875	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-71	-0.055	-0.026	8.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-73	0.051	0.025	8.0	90.0	
Pole CS-1-73	4.160	97.865	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-72	-0.051	-0.025	8.0	90.0	
								Pole CS-1-74	0.004	0.002	0.6	89.9	
								Pole CS-1-75	0.047	0.023	7.4	90.0	
Pole CS-1-74	4.160	97.865	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-73	-0.004	-0.002	0.6	89.9	
Pole CS-1-75	4.160	97.839	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-73	-0.047	-0.023	7.4	90.0	
								Pole CS-1-76	0.019	0.009	3.1	90.0	
								Pole CS-1-86	0.027	0.013	4.3	90.0	
Pole CS-1-76	4.160	97.834	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-75	-0.019	-0.009	3.1	90.0	
								Pole CS-1-77	0.016	0.008	2.5	90.0	
Pole CS-1-77	4.160	97.829	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-76	-0.016	-0.008	2.5	89.9	
								Pole CS-1-78	0.012	0.006	1.8	90.0	
Pole CS-1-78	4.160	97.827	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-77	-0.012	-0.006	1.8	89.9	
								Pole CS-1-79	0.008	0.004	1.2	90.0	
Pole CS-1-79	4.160	97.825	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-78	-0.008	-0.004	1.2	89.9	
								Pole CS-1-80	0.004	0.002	0.6	89.9	
Pole CS-1-80	4.160	97.824	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-79	-0.004	-0.002	0.6	89.9	
Pole CS-1-81	4.160	97.791	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-82	-0.012	-0.006	1.8	89.9	
								Pole CS-1-88	0.008	0.004	1.2	90.0	
Pole CS-1-82	4.160	97.794	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-81	0.012	0.006	1.8	90.0	
								Pole CS-1-83	-0.016	-0.008	2.5	89.9	
Pole CS-1-83	4.160	97.799	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-82	0.016	0.008	2.5	90.0	
								Pole CS-1-84	-0.019	-0.009	3.1	89.9	
Pole CS-1-84	4.160	97.804	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-83	0.019	0.009	3.1	90.0	
								Pole CS-1-85	-0.023	-0.011	3.7	89.9	
Pole CS-1-85	4.160	97.816	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-84	0.023	0.011	3.7	90.0	
								Pole CS-1-86	-0.027	-0.013	4.3	90.0	
Pole CS-1-86	4.160	97.826	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-75	-0.027	-0.013	4.3	90.0	
								Pole CS-1-85	0.027	0.013	4.3	90.0	
Pole CS-1-87	4.160	97.788	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-88	-0.004	-0.002	0.6	89.9	
Pole CS-1-88	4.160	97.788	-2.8	0.000	0.000	0.004	0.002	Pole CS-1-81	-0.008	-0.004	1.2	89.9	
								Pole CS-1-87	0.004	0.002	0.6	89.9	
Pole CS-1-90	4.160	99.780	-0.7	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.197	-0.095	30.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_5_NEOPLAN	0.197	0.095	30.4	90.0	
Pole CS-2-1	4.160	99.610	-2.4	0.000	0.000	0.000	0.000	Pole CS-2-2	0.600	0.291	92.9	90.0	
								BUS_CLG_4kV	-0.600	-0.291	92.9	90.0	
Pole CS-2-2	4.160	99.484	-2.4	0.000	0.000	0.004	0.002	Pole CS-2-1	-0.599	-0.290	92.9	90.0	
								Pole CS-2-3	0.012	0.006	1.9	90.0	
								Pole CS-2-5	0.583	0.282	90.4	90.0	
Pole CS-2-3	4.160	99.479	-2.4	0.000	0.000	0.008	0.004	Pole CS-2-2	-0.012	-0.006	1.9	89.9	
								Pole CS-2-4	0.004	0.002	0.6	90.0	
Pole CS-2-4	4.160	99.478	-2.4	0.000	0.000	0.004	0.002	Pole CS-2-3	-0.004	-0.002	0.6	89.9	
Pole CS-2-5	4.160	99.361	-2.4	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	0.583	0.282	90.4	90.0	
								Pole CS-2-2	-0.583	-0.282	90.4	90.0	
Pole CS-2-7	4.160	97.735	-2.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.426	-0.208	67.3	89.8	
								Pole CS-2-8	0.426	0.208	67.3	89.8	
Pole CS-2-8	4.160	97.643	-2.2	0.000	0.000	0.000	0.000	Pole CS-2-7	-0.425	-0.208	67.3	89.8	
								Pole CS-2-9	0.027	0.013	4.3	89.9	
								Pole CS-2-12	0.387	0.189	61.2	89.8	
								SEC_CS-2-5	0.012	0.006	1.8	89.9	
Pole CS-2-9	4.160	97.638	-2.2	0.000	0.000	0.004	0.002	Pole CS-2-8	-0.027	-0.013	4.3	89.9	
								Pole CS-2-10	0.023	0.011	3.7	89.9	
Pole CS-2-10	4.160	97.636	-2.2	0.000	0.000	0.000	0.000	Pole CS-2-9	-0.023	-0.011	3.7	89.9	
								Pole CS-2-11	0.012	0.006	1.8	89.9	
								SEC_CS-2-7	0.012	0.006	1.8	89.9	
Pole CS-2-11	4.160	97.632	-2.2	0.000	0.000	0.000	0.000	Pole CS-2-10	-0.012	-0.006	1.8	89.9	
								SEC_CS-2-8	0.012	0.006	1.8	89.9	
Pole CS-2-12	4.160	97.597	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-8	-0.387	-0.189	61.2	89.8	
								Pole CS-2-13	0.383	0.187	60.6	89.8	
Pole CS-2-13	4.160	97.544	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-12	-0.383	-0.187	60.6	89.9	
								Pole CS-2-14	0.015	0.007	2.4	90.3	
								Pole CS-2-20	0.367	0.179	58.1	89.8	
Pole CS-2-14	4.160	97.541	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-13	-0.015	-0.007	2.4	90.3	
								Pole CS-2-15	0.012	0.006	1.8	89.9	
								Pole CS-2-16	0.004	0.002	0.6	91.3	
Pole CS-2-15	4.160	97.539	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.012	-0.006	1.8	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_CS-2-10	0.012	0.006	1.8	89.9	
Pole CS-2-16	4.160	97.540	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.004	-0.002	0.6	91.3	
								Pole CS-2-17	0.004	0.002	0.6	91.3	
Pole CS-2-17	4.160	97.539	-2.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
								Pole CS-2-16	-0.004	-0.002	0.6	91.2	
								Pole CS-2-18	0.004	0.002	0.6	90.0	
Pole CS-2-18	4.160	97.538	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-17	-0.004	-0.002	0.6	89.9	
Pole CS-2-20	4.160	97.496	-2.3	0.000	0.000	0.000	0.000	PRI_PM_21	0.071	0.035	11.3	89.8	
								Pole CS-2-13	-0.367	-0.179	58.1	89.8	
								Pole CS-2-21	0.296	0.144	46.8	89.9	
Pole CS-2-21	4.160	97.351	-2.3	0.000	0.000	0.000	0.000	PRI_PM_20	0.068	0.033	10.7	89.8	
								Pole CS-2-20	-0.295	-0.144	46.8	89.9	
								Pole CS-2-22	0.228	0.111	36.1	89.9	
Pole CS-2-22	4.160	97.293	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-21	-0.228	-0.111	36.1	89.9	
								Pole CS-2-23	0.224	0.109	35.5	89.9	
Pole CS-2-23	4.160	97.270	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-22	-0.224	-0.109	35.5	89.9	
								Pole CS-2-24	0.064	0.031	10.1	89.9	
								Pole CS-2-35	0.160	0.078	25.4	89.9	
Pole CS-2-24	4.160	97.244	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-23	-0.064	-0.031	10.1	89.9	
								Pole CS-2-25	0.060	0.029	9.5	89.9	
Pole CS-2-25	4.160	97.238	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-24	-0.060	-0.029	9.5	89.9	
								Pole CS-2-26	0.056	0.027	8.9	89.9	
Pole CS-2-26	4.160	97.224	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-25	-0.056	-0.027	8.9	89.9	
								Pole CS-2-27	0.052	0.025	8.3	89.9	
Pole CS-2-27	4.160	97.207	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-28	0.023	0.011	3.7	90.1	
								Pole CS-2-26	-0.052	-0.025	8.3	89.9	
								PRI_PM_1-1	0.029	0.014	4.6	89.8	
Pole CS-2-28	4.160	97.197	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.023	-0.011	3.7	89.9	
								Pole CS-2-29	0.023	0.011	3.7	89.9	
Pole CS-2-29	4.160	97.194	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-28	-0.023	-0.011	3.7	89.9	
								Pole CS-2-30	0.019	0.009	3.1	89.9	
Pole CS-2-30	4.160	97.190	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-29	-0.019	-0.009	3.1	89.9	
								Pole CS-2-31	0.015	0.007	2.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-31	4.160	97.187	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-30	-0.015	-0.007	2.4	89.9	
								Pole CS-2-32	0.012	0.006	1.8	89.9	
Pole CS-2-32	4.160	97.184	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-31	-0.012	-0.006	1.8	89.9	
								Pole CS-2-33	0.008	0.004	1.2	89.9	
Pole CS-2-33	4.160	97.183	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-32	-0.008	-0.004	1.2	89.9	
								Pole CS-2-34	0.004	0.002	0.6	89.9	
Pole CS-2-34	4.160	97.182	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-33	-0.004	-0.002	0.6	89.9	
Pole CS-2-35	4.160	97.223	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-23	-0.160	-0.078	25.4	89.9	
								Pole CS-2-36	0.160	0.078	25.4	89.9	
Pole CS-2-36	4.160	97.114	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-35	-0.160	-0.078	25.4	89.9	
								Pole CS-2-37	0.160	0.078	25.4	89.9	
Pole CS-2-37	4.160	97.055	-2.3	0.000	0.000	0.000	0.000	PRI_PM_19	0.067	0.033	10.7	89.8	
								Pole CS-2-36	-0.160	-0.078	25.4	89.9	
								Pole CS-2-38	0.012	0.006	1.8	90.0	
								Pole CS-2-41	0.081	0.039	12.8	90.0	
Pole CS-2-38	4.160	97.053	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-37	-0.012	-0.006	1.8	90.0	
								Pole CS-2-39	0.008	0.004	1.2	90.0	
Pole CS-2-39	4.160	97.048	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-38	-0.008	-0.004	1.2	89.9	
								Pole CS-2-40	0.004	0.002	0.6	90.0	
Pole CS-2-40	4.160	97.047	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-39	-0.004	-0.002	0.6	89.9	
Pole CS-2-41	4.160	97.035	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-37	-0.081	-0.039	12.8	90.0	
								Pole CS-2-42	0.077	0.037	12.2	90.0	
Pole CS-2-42	4.160	97.005	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-41	-0.077	-0.037	12.2	90.0	
								Pole CS-2-43	0.004	0.002	0.6	89.9	
								Pole CS-2-44	0.073	0.035	11.6	90.0	
Pole CS-2-43	4.160	97.005	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-42	-0.004	-0.002	0.6	89.9	
Pole CS-2-44	4.160	96.983	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-42	-0.073	-0.035	11.6	90.0	
								Pole CS-2-45	0.019	0.009	3.1	89.9	
								Pole CS-2-50	0.008	0.004	1.2	89.9	
								Pole CS-2-52	0.046	0.022	7.3	90.0	
Pole CS-2-45	4.160	96.981	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-44	-0.019	-0.009	3.1	89.9	
								Pole CS-2-46	0.015	0.007	2.4	90.0	
Pole CS-2-46	4.160	96.978	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-45	-0.015	-0.007	2.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-2-47	0.012	0.006	1.8	90.0	
Pole CS-2-47	4.160	96.975	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-46	-0.012	-0.006	1.8	89.9	
								Pole CS-2-48	0.008	0.004	1.2	90.0	
Pole CS-2-48	4.160	96.972	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-47	-0.008	-0.004	1.2	89.9	
								Pole CS-2-49	0.004	0.002	0.6	89.9	
Pole CS-2-49	4.160	96.971	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-48	-0.004	-0.002	0.6	89.9	
Pole CS-2-50	4.160	96.982	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-44	-0.008	-0.004	1.2	89.9	
								Pole CS-2-51	0.004	0.002	0.6	89.9	
Pole CS-2-51	4.160	96.981	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-50	-0.004	-0.002	0.6	89.9	
Pole CS-2-52	4.160	96.967	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-44	-0.046	-0.022	7.3	90.0	
								Pole CS-2-56	0.015	0.007	2.4	89.9	
								Pole CS-2-58	0.008	0.004	1.2	90.0	
								Pole CS-2-61	0.023	0.011	3.7	90.0	
Pole CS-2-53	4.160	96.959	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-54	-0.004	-0.002	0.6	89.9	
Pole CS-2-54	4.160	96.959	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-53	0.004	0.002	0.6	89.9	
								Pole CS-2-55	-0.008	-0.004	1.2	89.9	
Pole CS-2-55	4.160	96.961	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-54	0.008	0.004	1.2	89.9	
								Pole CS-2-56	-0.012	-0.006	1.8	89.9	
Pole CS-2-56	4.160	96.964	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-52	-0.015	-0.007	2.4	89.9	
								Pole CS-2-55	0.012	0.006	1.8	89.9	
Pole CS-2-57	4.160	96.963	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-58	-0.004	-0.002	0.6	89.9	
Pole CS-2-58	4.160	96.964	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-57	0.004	0.002	0.6	90.0	
								Pole CS-2-52	-0.008	-0.004	1.2	89.9	
Pole CS-2-60	4.160	96.955	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-61	-0.019	-0.009	3.1	89.9	
								Pole CS-2-62	0.015	0.007	2.4	90.0	
Pole CS-2-61	4.160	96.963	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-52	-0.023	-0.011	3.7	90.0	
								Pole CS-2-60	0.019	0.009	3.1	90.0	
Pole CS-2-62	4.160	96.948	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-60	-0.015	-0.007	2.4	89.9	
								Pole CS-2-63	0.012	0.006	1.8	90.0	
Pole CS-2-63	4.160	96.943	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-62	-0.012	-0.006	1.8	89.9	
								Pole CS-2-64	0.008	0.004	1.2	89.9	
Pole CS-2-64	4.160	96.942	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-63	-0.008	-0.004	1.2	89.9	
								Pole CS-2-65	0.004	0.002	0.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-65	4.160	96.941	-2.3	0.000	0.000	0.004	0.002	Pole CS-2-64	-0.004	-0.002	0.6	89.9	
Pole CS-2-66	4.160	99.326	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-10	-0.012	-0.006	1.9	90.0	
								L-SUB-FDR-EQ#18-1-237~	0.000	0.000	0.0	0.0	
								SEC_CS-2-46	0.012	0.006	1.9	89.9	
Pole CS-2-73	4.160	98.438	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-27	-0.012	-0.006	1.8	89.9	
								SEC_CS-2-49	0.012	0.006	1.8	89.9	
Pole CS-3-1	4.160	99.440	-2.4	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-0.347	-0.169	53.8	89.9	
								Pole CS-3-2	0.084	0.041	13.0	90.0	
								Pole CS-3-21	0.263	0.128	40.8	89.9	
Pole CS-3-2	4.160	99.416	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-3	0.032	0.015	5.0	90.0	
								Pole CS-3-1	-0.084	-0.041	13.0	90.0	
								Pole CS-3-11	0.048	0.023	7.4	90.0	
Pole CS-3-3	4.160	99.409	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-2	-0.032	-0.015	5.0	90.0	
								Pole CS-3-4	0.028	0.014	4.3	90.0	
Pole CS-3-4	4.160	99.393	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-3	-0.028	-0.014	4.3	90.0	
								Pole CS-3-5	0.024	0.012	3.7	90.0	
Pole CS-3-5	4.160	99.379	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-4	-0.024	-0.012	3.7	90.0	
								Pole CS-3-6	0.024	0.012	3.7	90.0	
Pole CS-3-6	4.160	99.365	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-5	-0.024	-0.012	3.7	90.0	
								Pole CS-3-7	0.020	0.010	3.1	90.0	
Pole CS-3-7	4.160	99.358	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-6	-0.020	-0.010	3.1	90.0	
								Pole CS-3-8	0.020	0.010	3.1	90.0	
Pole CS-3-8	4.160	99.352	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-7	-0.020	-0.010	3.1	90.0	
								Pole CS-3-9	0.016	0.008	2.5	90.0	
Pole CS-3-9	4.160	99.337	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-8	-0.016	-0.008	2.5	90.0	
								Pole CS-3-10	0.016	0.008	2.5	90.0	
Pole CS-3-10	4.160	99.327	-2.4	0.000	0.000	0.004	0.002	Pole CS-2-66	0.012	0.006	1.9	90.0	
								Pole CS-3-9	-0.016	-0.008	2.5	90.0	
Pole CS-3-11	4.160	99.409	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-2	-0.048	-0.023	7.4	90.0	
								Pole CS-3-12	0.044	0.021	6.8	90.0	
Pole CS-3-12	4.160	99.359	-2.4	0.000	0.000	0.008	0.004	Pole CS-3-11	-0.044	-0.021	6.8	90.0	
								Pole CS-3-13	0.036	0.017	5.6	90.0	
Pole CS-3-13	4.160	99.349	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-12	-0.036	-0.017	5.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-14	0.032	0.015	5.0	90.0	
Pole CS-3-14	4.160	99.324	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-13	-0.032	-0.016	5.0	90.0	
								Pole CS-3-15	0.028	0.014	4.3	90.0	
Pole CS-3-15	4.160	99.304	-2.4	0.000	0.000	0.008	0.004	Pole CS-3-14	-0.028	-0.014	4.3	90.0	
								Pole CS-3-16	0.020	0.010	3.1	90.0	
Pole CS-3-16	4.160	99.283	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-15	-0.020	-0.010	3.1	90.0	
								Pole CS-3-17	0.016	0.008	2.5	90.0	
Pole CS-3-17	4.160	99.279	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-16	-0.016	-0.008	2.5	90.0	
								Pole CS-3-18	0.012	0.006	1.9	90.0	
Pole CS-3-18	4.160	99.273	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-17	-0.012	-0.006	1.9	89.9	
								Pole CS-3-19	0.008	0.004	1.2	90.0	
Pole CS-3-19	4.160	99.269	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-18	-0.008	-0.004	1.2	89.9	
								Pole CS-3-20	0.004	0.002	0.6	89.9	
Pole CS-3-20	4.160	99.269	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-19	-0.004	-0.002	0.6	89.9	
Pole CS-3-21	4.160	99.381	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-1	-0.263	-0.128	40.8	89.9	
								Pole CS-3-22	0.259	0.126	40.2	89.9	
Pole CS-3-22	4.160	99.165	-2.4	0.000	0.000	0.000	0.000	PRI_PM_25	0.040	0.020	6.2	89.8	
								Pole CS-3-21	-0.258	-0.126	40.2	89.9	
								Pole CS-3-23	0.218	0.106	34.0	89.9	
Pole CS-3-23	4.160	99.035	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-29	0.214	0.104	33.3	89.9	
								Pole CS-3-22	-0.218	-0.106	34.0	89.9	
Pole CS-3-24	4.160	98.727	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-32	-0.016	-0.008	2.5	89.9	
								Pole CS-3-25	0.012	0.006	1.9	89.9	
Pole CS-3-25	4.160	98.724	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-24	-0.012	-0.006	1.9	89.9	
								Pole CS-3-26	0.008	0.004	1.2	89.9	
Pole CS-3-26	4.160	98.721	-2.4	0.000	0.000	0.008	0.004	Pole CS-3-25	-0.008	-0.004	1.2	89.9	
Pole CS-3-27	4.160	98.442	-2.4	0.000	0.000	0.004	0.002	Pole CS-2-73	0.012	0.006	1.8	89.9	
								Pole CS-3-34	-0.016	-0.008	2.5	89.9	
Pole CS-3-28	4.160	98.327	-2.4	0.000	0.000	0.008	0.004	Pole CS-3-35	-0.008	-0.004	1.2	89.9	
Pole CS-3-29	4.160	98.918	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-23	-0.214	-0.104	33.3	89.9	
								Pole CS-3-30	0.202	0.098	31.5	89.9	
								SEC_CS-2-47	0.012	0.006	1.9	89.9	
Pole CS-3-30	4.160	98.833	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-29	-0.202	-0.098	31.5	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-31	0.040	0.020	6.2	89.8	
								Pole CS-3-32	0.162	0.078	25.2	90.0	
Pole CS-3-31	4.160	98.830	-2.4	0.000	0.000	0.000	0.000	PRI_PM_26	0.040	0.020	6.2	89.8	
								Pole CS-3-30	-0.040	-0.020	6.2	89.8	
Pole CS-3-32	4.160	98.732	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-30	-0.162	-0.078	25.2	90.0	
								Pole CS-3-33	0.146	0.071	22.8	90.0	
								Pole CS-3-24	0.016	0.008	2.5	89.9	
Pole CS-3-33	4.160	98.686	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-32	-0.146	-0.071	22.8	90.0	
								Pole CS-3-34	0.134	0.065	20.9	90.0	
								SEC_CS-2-48	0.012	0.006	1.9	89.9	
Pole CS-3-34	4.160	98.449	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-33	-0.134	-0.065	20.9	90.0	
								Pole CS-3-35	0.118	0.057	18.5	90.0	
								Pole CS-3-27	0.016	0.008	2.5	89.9	
Pole CS-3-35	4.160	98.329	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-34	-0.118	-0.057	18.5	90.0	
								Pole CS-3-52	0.110	0.053	17.2	90.0	
								Pole CS-3-28	0.008	0.004	1.2	89.9	
Pole CS-3-36	4.160	98.007	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-37	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-246~	0.000	0.000	0.0	0.0	
Pole CS-3-37	4.160	98.007	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-36	0.000	0.000	0.0	0.0	
								Pole CS-3-38	-0.004	-0.002	0.6	90.0	
Pole CS-3-38	4.160	98.008	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-37	0.004	0.002	0.6	90.0	
								Pole CS-3-39	-0.008	-0.004	1.2	90.0	
Pole CS-3-39	4.160	98.012	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-38	0.008	0.004	1.2	90.0	
								Pole CS-3-40	-0.012	-0.006	1.8	90.0	
Pole CS-3-40	4.160	98.016	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-39	0.012	0.006	1.8	90.0	
								Pole CS-3-41	-0.016	-0.008	2.5	90.0	
Pole CS-3-41	4.160	98.023	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-40	0.016	0.008	2.5	90.0	
								Pole CS-3-42	-0.020	-0.009	3.1	90.0	
Pole CS-3-42	4.160	98.030	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-41	0.020	0.009	3.1	90.0	
								Pole CS-3-43	-0.023	-0.011	3.7	90.0	
Pole CS-3-43	4.160	98.041	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-42	0.023	0.011	3.7	90.0	
								Pole CS-3-45	-0.031	-0.015	4.9	90.0	
								Pole CS-3-44	0.004	0.002	0.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-3-44	4.160	98.041	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-43	-0.004	-0.002	0.6	89.9	
Pole CS-3-45	4.160	98.057	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-43	0.031	0.015	4.9	90.0	
								Pole CS-3-50	-0.039	-0.019	6.2	90.0	
								Pole CS-3-46	0.004	0.002	0.6	89.9	
								Pole CS-3-47	0.004	0.002	0.6	89.9	
Pole CS-3-46	4.160	98.057	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-45	-0.004	-0.002	0.6	89.9	
Pole CS-3-47	4.160	98.057	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-45	-0.004	-0.002	0.6	89.9	
Pole CS-3-48	4.160	98.078	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-50	-0.004	-0.002	0.6	89.9	
Pole CS-3-49	4.160	98.078	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-50	-0.004	-0.002	0.6	89.9	
Pole CS-3-50	4.160	98.078	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-45	0.039	0.019	6.2	90.0	
								Pole CS-3-51	-0.047	-0.023	7.4	90.0	
								Pole CS-3-48	0.004	0.002	0.6	89.9	
								Pole CS-3-49	0.004	0.002	0.6	89.9	
Pole CS-3-51	4.160	98.082	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-50	0.047	0.023	7.4	90.0	
								Pole CS-3-63	-0.078	-0.038	12.3	90.0	
								Pole CS-3-66	0.031	0.015	4.9	90.0	
								Pole CS-3-74	0.000	0.000	0.0	0.0	
Pole CS-3-52	4.160	98.266	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-35	-0.110	-0.053	17.2	90.0	
								Pole CS-3-59	0.098	0.048	15.4	90.0	
								Pole CS-3-53	0.012	0.006	1.8	90.0	
Pole CS-3-53	4.160	98.262	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-52	-0.012	-0.006	1.8	89.9	
								Pole CS-3-54	0.008	0.004	1.2	90.0	
Pole CS-3-54	4.160	98.260	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-53	-0.008	-0.004	1.2	89.9	
								Pole CS-3-55	0.004	0.002	0.6	90.0	
Pole CS-3-55	4.160	98.259	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-54	-0.004	-0.002	0.6	89.9	
Pole CS-3-56	4.160	98.213	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-57	-0.004	-0.002	0.6	89.9	
Pole CS-3-57	4.160	98.216	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-56	0.004	0.002	0.6	90.0	
								Pole CS-3-58	-0.008	-0.004	1.2	90.0	
Pole CS-3-58	4.160	98.220	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-57	0.008	0.004	1.2	90.0	
								Pole CS-3-59	-0.012	-0.006	1.8	90.0	
Pole CS-3-59	4.160	98.222	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-52	-0.098	-0.048	15.4	90.0	
								Pole CS-3-60	0.086	0.042	13.5	90.0	
								Pole CS-3-58	0.012	0.006	1.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-3-60	4.160	98.183	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-59	-0.086	-0.042	13.5	90.0	
								Pole CS-3-62	0.086	0.042	13.5	90.0	
Pole CS-3-61	4.160	98.143	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-62	-0.082	-0.040	12.9	90.0	
								Pole CS-3-63	0.078	0.038	12.3	90.0	
Pole CS-3-62	4.160	98.163	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-61	0.082	0.040	12.9	90.0	
								Pole CS-3-60	-0.086	-0.042	13.5	90.0	
Pole CS-3-63	4.160	98.113	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-61	-0.078	-0.038	12.3	90.0	
								Pole CS-3-51	0.078	0.038	12.3	90.0	
								Pole CS-3-75	0.000	0.000	0.0	0.0	
Pole CS-3-66	4.160	98.076	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-51	-0.031	-0.015	4.9	90.0	
								Pole CS-3-67	0.027	0.013	4.3	90.0	
Pole CS-3-67	4.160	98.069	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-66	-0.027	-0.013	4.3	90.0	
								Pole CS-3-68	0.023	0.011	3.7	90.0	
Pole CS-3-68	4.160	98.061	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-67	-0.023	-0.011	3.7	89.9	
								Pole CS-3-69	0.020	0.009	3.1	90.0	
Pole CS-3-69	4.160	98.056	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-68	-0.020	-0.009	3.1	89.9	
								Pole CS-3-70	0.016	0.008	2.5	90.0	
Pole CS-3-70	4.160	98.051	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-69	-0.016	-0.008	2.5	89.9	
								Pole CS-3-71	0.012	0.006	1.8	90.0	
Pole CS-3-71	4.160	98.048	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-70	-0.012	-0.006	1.8	89.9	
								Pole CS-3-72	0.008	0.004	1.2	90.0	
Pole CS-3-72	4.160	98.045	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-71	-0.008	-0.004	1.2	89.9	
								Pole CS-3-73	0.004	0.002	0.6	90.0	
Pole CS-3-73	4.160	98.044	-2.4	0.000	0.000	0.004	0.002	Pole CS-3-72	-0.004	-0.002	0.6	89.9	
Pole CS-3-74	4.160	98.082	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-51	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-276~	0.000	0.000	0.0	0.0	
Pole CS-3-75	4.160	98.113	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-63	0.000	0.000	0.0	0.0	
Pole CS-4-1	4.160	99.482	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-11	0.349	0.171	54.2	89.8	
								Pole CS-4-3	0.008	0.004	1.2	90.0	
								BUS_CLG_4kV	-0.361	-0.176	56.0	89.8	
Pole CS-4-2	4.160	99.012	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-11	-0.277	-0.136	43.3	89.8	
								Pole CS-4-6	0.273	0.134	42.7	89.8	
Pole CS-4-3	4.160	99.482	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-1	-0.008	-0.004	1.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-4-4	0.004	0.002	0.6	90.1	
Pole CS-4-4	4.160	99.478	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-3	-0.004	-0.002	0.6	90.0	
								Pole CS-4-5	0.004	0.002	0.6	89.9	
								L-SUB-FDR-EQ#18-1-283~	0.000	0.000	0.0	0.0	
Pole CS-4-5	4.160	99.478	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-4	-0.004	-0.002	0.6	89.9	
Pole CS-4-6	4.160	98.806	-2.4	0.000	0.000	0.000	0.000	PRI_PM_22	0.080	0.039	12.5	89.8	
								Pole CS-4-2	-0.273	-0.134	42.7	89.8	
								Pole CS-4-7	0.193	0.095	30.2	89.8	
Pole CS-4-7	4.160	98.739	-2.4	0.000	0.000	0.008	0.004	Pole CS-4-6	-0.193	-0.094	30.2	89.8	
								Pole CS-4-8	0.185	0.091	29.0	89.8	
Pole CS-4-8	4.160	98.669	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-7	-0.185	-0.091	29.0	89.8	
								Pole CS-4-9	0.181	0.089	28.4	89.8	
Pole CS-4-9	4.160	98.615	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-8	-0.181	-0.089	28.4	89.8	
								Pole CS-4-12	0.012	0.006	1.9	89.9	
								Pole CS-4-13	0.169	0.083	26.5	89.8	
Pole CS-4-11	4.160	99.221	-2.4	0.000	0.000	0.000	0.000	PRI_PM_11	0.070	0.034	10.9	89.8	
								Pole CS-4-1	-0.348	-0.170	54.2	89.8	
								Pole CS-4-2	0.278	0.136	43.3	89.8	
Pole CS-4-12	4.160	98.613	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.012	-0.006	1.9	89.9	
								SEC_CS-4-8	0.012	0.006	1.9	89.9	
Pole CS-4-13	4.160	98.553	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.169	-0.083	26.5	89.8	
								Pole CS-4-14	0.169	0.083	26.5	89.8	
Pole CS-4-14	4.160	98.487	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-13	-0.169	-0.083	26.5	89.8	
								Pole CS-4-15	0.169	0.083	26.5	89.8	
Pole CS-4-15	4.160	98.053	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-14	-0.168	-0.082	26.5	89.8	
								Pole CS-4-16	0.168	0.082	26.5	89.8	
Pole CS-4-16	4.160	97.370	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-15	-0.167	-0.082	26.5	89.8	
								Pole CS-4-18	0.008	0.004	1.2	90.0	
								Pole CS-4-20	0.159	0.078	25.3	89.8	
Pole CS-4-17	4.160	97.366	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-18	-0.004	-0.002	0.6	89.9	
Pole CS-4-18	4.160	97.368	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-17	0.004	0.002	0.6	90.0	
								Pole CS-4-16	-0.008	-0.004	1.2	90.0	
								Pole CS-4-19	0.004	0.002	0.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-4-19	4.160	97.365	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-18	-0.004	-0.002	0.6	89.9	
Pole CS-4-20	4.160	97.284	-2.4	0.000	0.000	0.000	0.000	PRI_PM_23	0.078	0.038	12.3	89.8	
								Pole CS-4-16	-0.159	-0.078	25.3	89.8	
								Pole CS-4-21	0.082	0.040	13.0	89.8	
Pole CS-4-21	4.160	97.234	-2.4	0.000	0.000	0.004	0.002	Pole CS-4-20	-0.081	-0.040	13.0	89.8	
								Pole CS-4-22	0.078	0.038	12.3	89.8	
Pole CS-4-22	4.160	97.201	-2.4	0.000	0.000	0.000	0.000	PRI_PM_24	0.078	0.038	12.3	89.8	
								Pole CS-4-21	-0.078	-0.038	12.3	89.8	
Pole CS-5-18	24.940	97.697	-1.3	0.000	0.000	0.008	0.004	Pole CS-5-19	-0.008	-0.004	0.2	89.8	
Pole CS-5-19	24.940	97.697	-1.3	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-9	0.023	0.010	0.6	92.0	
								Pole CS-5-18	0.008	0.004	0.2	90.3	
								Pole CS-5-20	-0.031	-0.014	0.8	91.6	
Pole CS-5-20	24.940	97.697	-1.3	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-8	0.023	0.010	0.6	91.2	
								Pole CS-5-19	0.031	0.014	0.8	91.7	
								Pole CS-5-21	-0.054	-0.024	1.4	91.5	
Pole CS-5-21	24.940	97.700	-1.3	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-0.054	-0.023	1.4	92.2	
								Pole CS-5-20	0.054	0.023	1.4	92.2	
Pole HS-1-001	4.160	100.192	-2.3	0.000	0.000	0.005	0.002	BUS_HSC_4kV	-0.037	-0.018	5.7	90.0	
								Pole HS-1-4	0.032	0.016	5.0	90.0	
Pole HS-1-4	4.160	100.185	-2.3	0.000	0.000	0.007	0.004	Pole HS-1-001	-0.032	-0.016	5.0	90.0	
								Pole HS-1-16	0.025	0.012	3.8	90.0	
Pole HS-1-16	4.160	100.180	-2.3	0.000	0.000	0.015	0.007	Pole HS-1-17	0.010	0.005	1.5	90.0	
								Pole HS-1-4	-0.025	-0.012	3.8	90.0	
Pole HS-1-17	4.160	100.178	-2.3	0.000	0.000	0.002	0.001	Pole HS-1-16	-0.010	-0.005	1.5	90.0	
								Pole HS-1-19	0.007	0.004	1.1	90.0	
Pole HS-1-19	4.160	100.176	-2.3	0.000	0.000	0.007	0.004	Pole HS-1-17	-0.007	-0.004	1.1	90.0	
Pole HS-2-1	4.160	100.089	-2.3	0.000	0.000	0.004	0.002	BUS_HSC_4kV	-0.495	-0.241	76.3	89.9	
								Pole HS-2-2	0.491	0.239	75.7	89.9	
Pole HS-2-2	4.160	99.946	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-1	-0.490	-0.238	75.7	89.9	
								Pole HS-2-3	0.486	0.236	75.0	89.9	
Pole HS-2-3	4.160	99.821	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-2	-0.485	-0.236	75.0	89.9	
								Pole HS-2-4	0.481	0.234	74.4	89.9	
Pole HS-2-4	4.160	99.697	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-3	-0.481	-0.234	74.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-5	0.469	0.228	72.5	89.9	
								SEC_HS-2-4	0.012	0.006	1.9	89.9	
Pole HS-2-5	4.160	99.564	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-4	-0.468	-0.228	72.5	89.9	
								Pole HS-2-6	0.456	0.222	70.7	89.9	
								SEC_HS-2-5	0.012	0.006	1.9	89.9	
Pole HS-2-6	4.160	99.450	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-5	-0.455	-0.222	70.7	89.9	
								Pole HS-2-7	0.443	0.216	68.8	89.9	
								SEC_HS-2-6	0.012	0.006	1.9	89.9	
Pole HS-2-7	4.160	99.326	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-6	-0.443	-0.215	68.8	89.9	
								Pole HS-2-8	0.431	0.210	67.0	89.9	
								SEC_HS-2-7	0.012	0.006	1.9	89.9	
Pole HS-2-8	4.160	99.206	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-7	-0.430	-0.209	67.0	89.9	
								Pole HS-2-9	0.303	0.148	47.1	89.9	
								Pole HS-2-50	0.127	0.062	19.8	90.0	
Pole HS-2-9	4.160	99.125	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-8	-0.303	-0.147	47.1	89.9	
								Pole HS-2-10	0.299	0.146	46.5	89.9	
Pole HS-2-10	4.160	99.051	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-9	-0.299	-0.145	46.5	89.9	
								Pole HS-2-11	0.295	0.144	45.9	89.9	
Pole HS-2-11	4.160	98.971	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-10	-0.294	-0.143	45.9	89.9	
								Pole HS-2-12	0.282	0.138	44.1	89.9	
								SEC_HS-2-10	0.012	0.006	1.9	89.9	
Pole HS-2-12	4.160	98.920	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-11	-0.282	-0.138	44.1	89.9	
								Pole HS-2-86	0.278	0.136	43.4	89.9	
Pole HS-2-13	4.160	98.843	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-14	0.040	0.019	6.2	90.0	
								Pole HS-2-24	0.107	0.052	16.7	90.0	
								Pole HS-2-86	-0.146	-0.071	22.9	90.0	
Pole HS-2-14	4.160	98.830	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-13	-0.040	-0.019	6.2	90.0	
								Pole HS-2-15	0.036	0.017	5.6	90.0	
Pole HS-2-15	4.160	98.817	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-14	-0.036	-0.017	5.6	90.0	
								Pole HS-2-16	0.032	0.015	4.9	90.0	
Pole HS-2-16	4.160	98.804	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-15	-0.032	-0.015	4.9	90.0	
								Pole HS-2-17	0.028	0.013	4.3	90.0	
Pole HS-2-17	4.160	98.795	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-16	-0.028	-0.013	4.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-18	0.024	0.012	3.7	90.0	
Pole HS-2-18	4.160	98.789	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-17	-0.024	-0.012	3.7	90.0	
								Pole HS-2-19	0.020	0.010	3.1	90.0	
Pole HS-2-19	4.160	98.785	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-18	-0.020	-0.010	3.1	90.0	
								Pole HS-2-20	0.016	0.008	2.5	90.0	
Pole HS-2-20	4.160	98.776	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-19	-0.016	-0.008	2.5	89.9	
								Pole HS-2-21	0.012	0.006	1.9	90.0	
Pole HS-2-21	4.160	98.773	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-20	-0.012	-0.006	1.9	89.9	
								Pole HS-2-22	0.008	0.004	1.2	90.0	
Pole HS-2-22	4.160	98.770	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-21	-0.008	-0.004	1.2	89.9	
								Pole HS-2-23	0.004	0.002	0.6	90.0	
Pole HS-2-23	4.160	98.769	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-22	-0.004	-0.002	0.6	89.9	
Pole HS-2-24	4.160	98.756	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-13	-0.107	-0.052	16.7	90.0	
								Pole HS-2-25	0.091	0.044	14.2	90.0	
								Pole HS-2-26	0.012	0.006	1.9	90.0	
Pole HS-2-25	4.160	98.727	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.091	-0.044	14.2	90.0	
								Pole HS-2-27	0.091	0.044	14.2	90.0	
Pole HS-2-26	4.160	98.746	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.012	-0.006	1.9	89.9	
								SEC_HS-2-23	0.012	0.006	1.9	89.9	
Pole HS-2-27	4.160	98.698	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-25	-0.091	-0.044	14.2	90.0	
								Pole HS-2-28	0.091	0.044	14.2	90.0	
Pole HS-2-28	4.160	98.650	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-27	-0.091	-0.044	14.2	90.0	
								Pole HS-2-29	0.032	0.015	4.9	89.9	
								Pole HS-2-35	0.059	0.029	9.3	90.0	
Pole HS-2-29	4.160	98.640	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-28	-0.032	-0.015	4.9	89.9	
								Pole HS-2-30	0.028	0.013	4.3	89.9	
Pole HS-2-30	4.160	98.637	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-31	0.016	0.008	2.5	89.9	
								Pole HS-2-29	-0.028	-0.013	4.3	89.9	
								SEC_HS-2-25	0.012	0.006	1.9	89.9	
Pole HS-2-31	4.160	98.635	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-30	-0.016	-0.008	2.5	89.9	
								Pole HS-2-32	0.012	0.006	1.9	90.0	
Pole HS-2-32	4.160	98.632	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-31	-0.012	-0.006	1.9	89.9	
								Pole HS-2-33	0.008	0.004	1.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-2-33	4.160	98.629	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-32	-0.008	-0.004	1.2	89.9	
								Pole HS-2-34	0.004	0.002	0.6	90.0	
Pole HS-2-34	4.160	98.628	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-33	-0.004	-0.002	0.6	89.9	
Pole HS-2-35	4.160	98.619	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-28	-0.059	-0.029	9.3	90.0	
								Pole HS-2-36	0.024	0.012	3.7	90.0	
								Pole HS-2-42	0.032	0.015	4.9	90.0	
								Pole HS-2-48	0.004	0.002	0.6	89.9	
Pole HS-2-36	4.160	98.610	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-35	-0.024	-0.012	3.7	89.9	
								Pole HS-2-37	0.020	0.010	3.1	89.9	
Pole HS-2-37	4.160	98.605	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-36	-0.020	-0.010	3.1	89.9	
								Pole HS-2-38	0.016	0.008	2.5	89.9	
Pole HS-2-38	4.160	98.601	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-37	-0.016	-0.008	2.5	89.9	
								Pole HS-2-39	0.012	0.006	1.9	89.9	
Pole HS-2-39	4.160	98.598	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-38	-0.012	-0.006	1.9	89.9	
								Pole HS-2-40	0.008	0.004	1.2	89.9	
Pole HS-2-40	4.160	98.596	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-39	-0.008	-0.004	1.2	89.9	
								Pole HS-2-41	0.004	0.002	0.6	89.9	
Pole HS-2-41	4.160	98.596	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-40	-0.004	-0.002	0.6	89.9	
Pole HS-2-42	4.160	98.603	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-35	-0.032	-0.015	4.9	90.0	
								Pole HS-2-43	0.028	0.013	4.3	89.9	
								Pole HS-2-49	0.004	0.002	0.6	90.0	
Pole HS-2-43	4.160	98.595	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-42	-0.028	-0.013	4.3	89.9	
								Pole HS-2-44	0.016	0.008	2.5	89.9	
								SEC_HS-2-36	0.012	0.006	1.8	89.9	
Pole HS-2-44	4.160	98.591	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-43	-0.016	-0.008	2.5	89.9	
								Pole HS-2-45	0.012	0.006	1.9	89.9	
Pole HS-2-45	4.160	98.588	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-44	-0.012	-0.006	1.9	89.9	
								Pole HS-2-46	0.008	0.004	1.2	89.9	
Pole HS-2-46	4.160	98.586	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-45	-0.008	-0.004	1.2	89.9	
								Pole HS-2-47	0.004	0.002	0.6	89.9	
Pole HS-2-47	4.160	98.585	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-46	-0.004	-0.002	0.6	89.9	
Pole HS-2-48	4.160	98.618	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-35	-0.004	-0.002	0.6	89.9	
Pole HS-2-49	4.160	98.600	-2.2	0.000	0.000	0.004	0.002	Pole HS-2-42	-0.004	-0.002	0.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								L-SUB-FDR-EQ#18-1-278~	0.000	0.000	0.0	0.0	
Pole HS-2-50	4.160	99.139	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-8	-0.127	-0.062	19.8	90.0	
								Pole HS-2-51	0.123	0.060	19.2	90.0	
Pole HS-2-51	4.160	99.075	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-50	-0.123	-0.060	19.2	90.0	
								Pole HS-2-52	0.020	0.010	3.1	89.9	
								Pole HS-2-57	0.103	0.050	16.1	90.0	
Pole HS-2-52	4.160	99.072	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-51	-0.020	-0.010	3.1	89.9	
								Pole HS-2-53	0.016	0.008	2.5	89.9	
Pole HS-2-53	4.160	99.070	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-52	-0.016	-0.008	2.5	89.9	
								Pole HS-2-54	0.012	0.006	1.9	89.9	
Pole HS-2-54	4.160	99.068	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-53	-0.012	-0.006	1.9	89.9	
								Pole HS-2-55	0.008	0.004	1.2	89.9	
Pole HS-2-55	4.160	99.067	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-54	-0.008	-0.004	1.2	89.9	
								Pole HS-2-56	0.004	0.002	0.6	90.0	
Pole HS-2-56	4.160	99.066	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-55	-0.004	-0.002	0.6	89.9	
Pole HS-2-57	4.160	99.021	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-51	-0.103	-0.050	16.1	90.0	
								Pole HS-2-58	0.040	0.019	6.2	89.9	
								Pole HS-2-76	0.064	0.031	9.9	90.0	
Pole HS-2-58	4.160	99.015	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-57	-0.040	-0.019	6.2	89.9	
								Pole HS-2-67	0.036	0.017	5.6	89.9	
Pole HS-2-59	4.160	99.001	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-67	-0.032	-0.015	5.0	89.9	
								Pole HS-2-60	0.028	0.014	4.3	89.9	
Pole HS-2-60	4.160	98.996	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-59	-0.028	-0.014	4.3	89.9	
								Pole HS-2-61	0.024	0.012	3.7	89.9	
Pole HS-2-61	4.160	98.991	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-60	-0.024	-0.012	3.7	89.9	
								Pole HS-2-62	0.020	0.010	3.1	90.0	
Pole HS-2-62	4.160	98.986	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-61	-0.020	-0.010	3.1	89.9	
								Pole HS-2-63	0.016	0.008	2.5	89.9	
Pole HS-2-63	4.160	98.983	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-62	-0.016	-0.008	2.5	89.9	
								Pole HS-2-64	0.012	0.006	1.9	90.0	
Pole HS-2-64	4.160	98.981	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-63	-0.012	-0.006	1.9	89.9	
								Pole HS-2-65	0.008	0.004	1.2	90.0	
Pole HS-2-65	4.160	98.980	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-64	-0.008	-0.004	1.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-66	0.004	0.002	0.6	90.0	
Pole HS-2-66	4.160	98.979	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-65	-0.004	-0.002	0.6	89.9	
								L-SUB-FDR-EQ#18-1-301~	0.000	0.000	0.0	0.0	
Pole HS-2-67	4.160	99.007	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-59	0.032	0.015	5.0	89.9	
								Pole HS-2-58	-0.036	-0.017	5.6	89.9	
Pole HS-2-68	4.160	98.960	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-69	-0.004	-0.002	0.6	89.9	
Pole HS-2-69	4.160	98.961	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-68	0.004	0.002	0.6	89.9	
								Pole HS-2-70	-0.008	-0.004	1.2	89.9	
Pole HS-2-70	4.160	98.962	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-69	0.008	0.004	1.2	89.9	
								Pole HS-2-71	-0.012	-0.006	1.9	89.9	
Pole HS-2-71	4.160	98.966	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-70	0.012	0.006	1.9	89.9	
								Pole HS-2-72	-0.016	-0.008	2.5	89.9	
Pole HS-2-72	4.160	98.969	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-71	0.016	0.008	2.5	89.9	
								Pole HS-2-73	-0.020	-0.010	3.1	89.9	
Pole HS-2-73	4.160	98.973	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-72	0.020	0.010	3.1	89.9	
								Pole HS-2-74	-0.024	-0.012	3.7	89.9	
Pole HS-2-74	4.160	98.976	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-73	0.024	0.012	3.7	89.9	
								Pole HS-2-75	-0.028	-0.014	4.3	89.9	
Pole HS-2-75	4.160	98.983	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-74	0.028	0.014	4.3	89.9	
								Pole HS-2-76	-0.032	-0.015	5.0	89.9	
Pole HS-2-76	4.160	98.987	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-75	0.032	0.015	5.0	89.9	
								Pole HS-2-57	-0.064	-0.031	9.9	90.0	
								Pole HS-2-77	0.032	0.015	4.9	90.0	
Pole HS-2-77	4.160	98.970	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-76	-0.032	-0.015	4.9	90.0	
								Pole HS-2-78	0.020	0.010	3.1	90.0	
								SEC_HS-2-67	0.012	0.006	1.9	89.9	
Pole HS-2-78	4.160	98.957	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-77	-0.020	-0.010	3.1	90.0	
								Pole HS-2-79	0.004	0.002	0.6	90.0	
								Pole HS-2-80	0.016	0.008	2.5	90.0	
Pole HS-2-79	4.160	98.954	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-78	-0.004	-0.002	0.6	89.9	
Pole HS-2-80	4.160	98.947	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-78	-0.016	-0.008	2.5	90.0	
								Pole HS-2-81	0.012	0.006	1.9	90.0	
Pole HS-2-81	4.160	98.941	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-80	-0.012	-0.006	1.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-82	0.008	0.004	1.2	90.0	
Pole HS-2-82	4.160	98.934	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-81	-0.008	-0.004	1.2	90.0	
								Pole HS-2-83	0.004	0.002	0.6	90.0	
Pole HS-2-83	4.160	98.931	-2.3	0.000	0.000	0.004	0.002	Pole HS-2-82	-0.004	-0.002	0.6	89.9	
Pole HS-2-84	4.160	99.199	-2.5	0.000	0.000	0.004	0.002	Pole HS-2-85	-0.004	-0.002	0.6	89.9	
Pole HS-2-85	4.160	99.201	-2.5	0.000	0.000	0.004	0.002	Pole HS-2-84	0.004	0.002	0.6	90.0	
								Pole CS-1-2	-0.008	-0.004	1.2	90.0	
Pole HS-2-86	4.160	98.869	-2.3	0.000	0.000	0.000	0.000	PRI_PM_10	0.132	0.064	20.6	89.8	
								Pole HS-2-12	-0.278	-0.136	43.4	89.9	
								Pole HS-2-13	0.146	0.071	22.9	90.0	
Pole HS-3-1	4.160	100.177	-2.3	0.000	0.000	0.004	0.002	BUS_HSC_4kV	-0.337	-0.164	52.0	90.0	
								Pole HS-3-2	0.333	0.162	51.3	90.0	
Pole HS-3-2	4.160	100.068	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-1	-0.333	-0.162	51.3	90.0	
								Pole HS-3-3	0.329	0.160	50.7	90.0	
Pole HS-3-3	4.160	99.910	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-2	-0.328	-0.159	50.7	90.0	
								Pole HS-3-4	0.324	0.157	50.1	90.0	
Pole HS-3-4	4.160	99.803	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-3	-0.324	-0.157	50.1	90.0	
								Pole HS-3-5	0.320	0.155	49.5	90.0	
Pole HS-3-5	4.160	99.697	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-4	-0.320	-0.155	49.5	90.0	
								Pole HS-3-6	0.316	0.153	48.8	90.0	
Pole HS-3-6	4.160	99.623	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-5	-0.315	-0.153	48.8	90.0	
								Pole HS-3-7	0.311	0.151	48.2	90.0	
Pole HS-3-7	4.160	99.536	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-6	-0.311	-0.151	48.2	90.0	
								Pole HS-3-8	0.307	0.149	47.6	90.0	
Pole HS-3-8	4.160	99.473	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-7	-0.307	-0.149	47.6	90.0	
								Pole HS-3-9	0.303	0.147	47.0	90.0	
Pole HS-3-9	4.160	99.391	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-8	-0.303	-0.147	47.0	90.0	
								Pole HS-3-10	0.299	0.145	46.4	90.0	
Pole HS-3-10	4.160	99.311	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-9	-0.298	-0.145	46.4	90.0	
								Pole HS-3-11	0.294	0.143	45.7	90.0	
Pole HS-3-11	4.160	99.253	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-10	-0.294	-0.143	45.7	90.0	
								Pole HS-3-12	0.290	0.141	45.1	90.0	
Pole HS-3-12	4.160	99.200	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-11	-0.290	-0.141	45.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-3-13	0.286	0.139	44.5	90.0	
Pole HS-3-13	4.160	99.124	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-12	-0.286	-0.139	44.5	90.0	
								Pole HS-3-14	0.282	0.137	43.9	90.0	
Pole HS-3-14	4.160	99.069	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-13	-0.282	-0.137	43.9	90.0	
								Pole HS-3-15	0.278	0.135	43.3	90.0	
Pole HS-3-15	4.160	99.004	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-14	-0.278	-0.135	43.3	90.0	
								Pole HS-3-16	0.274	0.133	42.6	90.0	
Pole HS-3-16	4.160	98.941	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-15	-0.273	-0.133	42.6	90.0	
								Pole HS-3-17	0.269	0.131	42.0	90.0	
Pole HS-3-17	4.160	98.887	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-16	-0.269	-0.131	42.0	90.0	
								Pole HS-3-18	0.174	0.085	27.2	90.0	
								Pole HS-3-23	0.095	0.046	14.8	90.0	
Pole HS-3-18	4.160	98.770	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-17	-0.174	-0.084	27.2	90.0	
								Pole HS-3-28	0.020	0.010	3.1	90.0	
								Pole HS-3-29	0.103	0.050	16.1	90.0	
								Pole HS-3-46	0.051	0.025	8.0	89.9	
Pole HS-3-19	4.160	98.781	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-20	-0.079	-0.038	12.4	90.0	
								Pole HS-3-30	0.075	0.037	11.7	90.0	
Pole HS-3-20	4.160	98.799	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-19	0.079	0.038	12.4	90.0	
								Pole HS-3-21	-0.083	-0.040	13.0	90.0	
Pole HS-3-21	4.160	98.835	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-20	0.083	0.040	13.0	90.0	
								Pole HS-3-22	-0.087	-0.042	13.6	90.0	
Pole HS-3-22	4.160	98.852	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-21	0.087	0.042	13.6	90.0	
								Pole HS-3-23	-0.091	-0.044	14.2	90.0	
Pole HS-3-23	4.160	98.868	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-17	-0.095	-0.046	14.8	90.0	
								Pole HS-3-22	0.091	0.044	14.2	90.0	
Pole HS-3-24	4.160	98.757	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-25	-0.004	-0.002	0.6	89.9	
Pole HS-3-25	4.160	98.758	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-24	0.004	0.002	0.6	90.0	
								Pole HS-3-26	-0.008	-0.004	1.2	89.9	
Pole HS-3-26	4.160	98.761	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-25	0.008	0.004	1.2	90.0	
								Pole HS-3-27	-0.012	-0.006	1.9	89.9	
Pole HS-3-27	4.160	98.764	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-26	0.012	0.006	1.9	90.0	
								Pole HS-3-28	-0.016	-0.008	2.5	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-28	4.160	98.768	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-27	0.016	0.008	2.5	90.0	
								Pole HS-3-18	-0.020	-0.010	3.1	89.9	
Pole HS-3-29	4.160	98.702	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-18	-0.103	-0.050	16.1	90.0	
								Pole HS-3-34	0.016	0.008	2.5	89.9	
								Pole HS-3-35	0.040	0.019	6.2	90.0	
								Pole HS-3-59	0.047	0.023	7.4	89.9	
Pole HS-3-30	4.160	98.765	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-19	-0.075	-0.037	11.7	90.0	
								Pole HS-3-85	0.071	0.035	11.1	90.0	
Pole HS-3-31	4.160	98.692	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-32	-0.004	-0.002	0.6	89.9	
Pole HS-3-32	4.160	98.693	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-31	0.004	0.002	0.6	89.9	
								Pole HS-3-33	-0.008	-0.004	1.2	89.9	
Pole HS-3-33	4.160	98.695	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-32	0.008	0.004	1.2	89.9	
								Pole HS-3-34	-0.012	-0.006	1.9	89.9	
Pole HS-3-34	4.160	98.697	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-29	-0.016	-0.008	2.5	89.9	
								Pole HS-3-33	0.012	0.006	1.9	89.9	
Pole HS-3-35	4.160	98.676	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.040	-0.019	6.2	90.0	
								Pole HS-3-37	0.008	0.004	1.2	90.0	
								Pole HS-3-38	0.032	0.015	4.9	90.0	
Pole HS-3-36	4.160	98.673	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-37	-0.004	-0.002	0.6	89.9	
Pole HS-3-37	4.160	98.673	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-35	-0.008	-0.004	1.2	89.9	
								Pole HS-3-36	0.004	0.002	0.6	89.9	
Pole HS-3-38	4.160	98.655	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-35	-0.032	-0.015	4.9	90.0	
								Pole HS-3-43	0.028	0.013	4.3	90.0	
Pole HS-3-39	4.160	98.628	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-44	0.008	0.004	1.2	90.0	
								Pole HS-3-40	-0.012	-0.006	1.9	90.0	
Pole HS-3-40	4.160	98.630	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-39	0.012	0.006	1.9	90.0	
								Pole HS-3-41	-0.016	-0.008	2.5	90.0	
Pole HS-3-41	4.160	98.634	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-40	0.016	0.008	2.5	90.0	
								Pole HS-3-42	-0.020	-0.010	3.1	90.0	
Pole HS-3-42	4.160	98.637	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-41	0.020	0.010	3.1	90.0	
								Pole HS-3-43	-0.024	-0.012	3.7	90.0	
Pole HS-3-43	4.160	98.643	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-42	0.024	0.012	3.7	90.0	
								Pole HS-3-38	-0.028	-0.013	4.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-44	4.160	98.620	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-39	-0.008	-0.004	1.2	89.9	
								Pole HS-3-45	0.004	0.002	0.6	90.0	
Pole HS-3-45	4.160	98.618	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-44	-0.004	-0.002	0.6	89.9	
Pole HS-3-46	4.160	98.764	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-18	-0.051	-0.025	8.0	89.9	
								Pole HS-3-47	0.047	0.023	7.4	89.9	
Pole HS-3-47	4.160	98.757	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-46	-0.047	-0.023	7.4	89.9	
								Pole HS-3-48	0.044	0.021	6.8	89.9	
Pole HS-3-48	4.160	98.744	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-47	-0.044	-0.021	6.8	89.9	
								Pole HS-3-49	0.040	0.019	6.2	89.9	
Pole HS-3-49	4.160	98.734	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-50	0.036	0.017	5.6	89.9	
								Pole HS-3-48	-0.040	-0.019	6.2	89.9	
Pole HS-3-50	4.160	98.728	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-49	-0.036	-0.017	5.6	89.9	
								Pole HS-3-51	0.032	0.015	4.9	89.9	
Pole HS-3-51	4.160	98.721	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-50	-0.032	-0.015	4.9	89.9	
								Pole HS-3-52	0.028	0.013	4.3	90.0	
Pole HS-3-52	4.160	98.713	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-51	-0.028	-0.013	4.3	89.9	
								Pole HS-3-53	0.024	0.012	3.7	89.9	
Pole HS-3-53	4.160	98.710	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-58	0.020	0.010	3.1	90.0	
								Pole HS-3-52	-0.024	-0.012	3.7	89.9	
Pole HS-3-54	4.160	98.694	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-55	-0.004	-0.002	0.6	89.9	
Pole HS-3-55	4.160	98.695	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-54	0.004	0.002	0.6	90.0	
								Pole HS-3-56	-0.008	-0.004	1.2	89.9	
Pole HS-3-56	4.160	98.697	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-55	0.008	0.004	1.2	90.0	
								Pole HS-3-57	-0.012	-0.006	1.9	89.9	
Pole HS-3-57	4.160	98.699	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-56	0.012	0.006	1.9	89.9	
								Pole HS-3-58	-0.016	-0.008	2.5	89.9	
Pole HS-3-58	4.160	98.708	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-53	-0.020	-0.010	3.1	90.0	
								Pole HS-3-57	0.016	0.008	2.5	90.0	
Pole HS-3-59	4.160	98.669	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.047	-0.023	7.4	89.9	
								Pole HS-3-60	0.036	0.017	5.6	89.9	
								SEC_HS-3-55	0.012	0.006	1.9	89.9	
Pole HS-3-60	4.160	98.654	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-59	-0.036	-0.017	5.6	89.9	
								Pole HS-3-61	0.032	0.015	4.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-61	4.160	98.643	-2.2	0.000	0.000	0.000	0.000	Pole HS-3-60	-0.032	-0.015	4.9	89.9	
								Pole HS-3-62	0.020	0.010	3.1	89.9	
								SEC_HS-3-57	0.012	0.006	1.9	89.9	
Pole HS-3-62	4.160	98.636	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-61	-0.020	-0.010	3.1	89.9	
								Pole HS-3-63	0.016	0.008	2.5	89.9	
Pole HS-3-63	4.160	98.630	-2.2	0.000	0.000	0.000	0.000	Pole HS-3-62	-0.016	-0.008	2.5	89.9	
								Pole HS-3-64	0.004	0.002	0.6	90.0	
								SEC_HS-3-59	0.012	0.006	1.9	89.9	
Pole HS-3-64	4.160	98.629	-2.2	0.000	0.000	0.004	0.002	Pole HS-3-63	-0.004	-0.002	0.6	89.9	
Pole HS-3-65	4.160	98.670	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-66	-0.004	-0.002	0.6	89.9	
Pole HS-3-66	4.160	98.672	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-65	0.004	0.002	0.6	89.9	
								Pole HS-3-67	-0.008	-0.004	1.2	89.9	
Pole HS-3-67	4.160	98.676	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-66	0.008	0.004	1.2	90.0	
								Pole HS-3-68	-0.012	-0.006	1.9	89.9	
Pole HS-3-68	4.160	98.680	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-67	0.012	0.006	1.9	90.0	
								Pole HS-3-69	-0.016	-0.008	2.5	89.9	
Pole HS-3-69	4.160	98.684	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-68	0.016	0.008	2.5	89.9	
								Pole HS-3-70	-0.020	-0.010	3.1	89.9	
Pole HS-3-70	4.160	98.696	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-69	0.020	0.010	3.1	90.0	
								Pole HS-3-71	-0.024	-0.012	3.7	89.9	
Pole HS-3-71	4.160	98.711	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-70	0.024	0.012	3.7	90.0	
								Pole MS-1-81	-0.028	-0.013	4.3	89.9	
Pole HS-3-74	4.160	98.684	-2.3	0.000	0.000	0.008	0.004	Pole HS-3-75	-0.008	-0.004	1.2	89.9	
Pole HS-3-75	4.160	98.686	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-74	0.008	0.004	1.2	89.9	
								Pole HS-3-76	-0.012	-0.006	1.9	89.9	
Pole HS-3-76	4.160	98.691	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-75	0.012	0.006	1.9	89.9	
								Pole HS-3-77	-0.016	-0.008	2.5	89.9	
Pole HS-3-77	4.160	98.696	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-76	0.016	0.008	2.5	89.9	
								Pole HS-3-78	-0.020	-0.010	3.1	89.9	
Pole HS-3-78	4.160	98.703	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-77	0.020	0.010	3.1	89.9	
								Pole HS-3-79	-0.024	-0.012	3.7	89.9	
Pole HS-3-79	4.160	98.724	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-78	0.024	0.012	3.7	89.9	
								Pole MS-1-81	-0.028	-0.013	4.3	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-80	4.160	98.730	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-81	0.012	0.006	1.9	90.0	
								Pole HS-3-85	-0.016	-0.008	2.5	90.0	
Pole HS-3-81	4.160	98.720	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-82	0.008	0.004	1.2	90.0	
								Pole HS-3-80	-0.012	-0.006	1.9	89.9	
Pole HS-3-82	4.160	98.714	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-83	0.004	0.002	0.6	89.9	
								Pole HS-3-81	-0.008	-0.004	1.2	89.9	
Pole HS-3-83	4.160	98.713	-2.3	0.000	0.000	0.004	0.002	Pole HS-3-82	-0.004	-0.002	0.6	89.9	
Pole HS-3-85	4.160	98.740	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-80	0.016	0.008	2.5	90.0	
								Pole MS-1-81	0.055	0.027	8.7	90.0	
								Pole HS-3-30	-0.071	-0.035	11.1	90.0	
Pole HS-3-86	4.160	98.920	-2.5	0.000	0.000	0.004	0.002	Pole CS-1-3	-0.004	-0.002	0.6	89.9	
Pole HS-3-88	4.160	98.650	-2.6	0.000	0.000	0.004	0.002	Pole CS-1-6	-0.012	-0.006	1.9	89.9	
								Pole HS-3-89	0.008	0.004	1.2	89.9	
Pole HS-3-89	4.160	98.649	-2.6	0.000	0.000	0.004	0.002	Pole HS-3-88	-0.008	-0.004	1.2	89.9	
								Pole HS-3-90	0.004	0.002	0.6	89.9	
Pole HS-3-90	4.160	98.648	-2.6	0.000	0.000	0.004	0.002	Pole HS-3-89	-0.004	-0.002	0.6	89.9	
Pole HS-4-1	4.160	99.928	-2.3	0.000	0.000	0.004	0.002	BUS_HSC_4kV	-0.441	-0.215	68.2	89.9	
								Pole HS-4-2	0.437	0.213	67.5	89.9	
Pole HS-4-2	4.160	99.874	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-12	0.263	0.128	40.6	89.8	
								Pole HS-4-1	-0.437	-0.213	67.5	89.9	
								Pole HS-4-3	0.174	0.085	26.9	89.9	
Pole HS-4-3	4.160	99.793	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-44	0.059	0.029	9.2	89.9	
								Pole HS-4-53	0.038	0.019	5.9	90.0	
								Pole HS-4-2	-0.174	-0.085	26.9	90.0	
								Pole HS-4-4	0.076	0.037	11.8	90.0	
Pole HS-4-4	4.160	99.774	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-58	0.025	0.012	3.9	90.0	
								Pole HS-4-3	-0.076	-0.037	11.8	90.0	
								Pole HS-4-5	0.051	0.025	7.9	89.9	
Pole HS-4-5	4.160	99.758	-2.4	0.000	0.000	0.008	0.004	Pole HS-4-55	0.008	0.004	1.3	90.0	
								Pole HS-4-4	-0.051	-0.025	7.9	89.9	
								Pole HS-4-6	0.034	0.016	5.3	89.9	
Pole HS-4-6	4.160	99.747	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-56	0.008	0.004	1.3	89.9	
								Pole HS-4-5	-0.034	-0.016	5.3	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-7	0.021	0.010	3.3	90.0	
Pole HS-4-7	4.160	99.740	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-6	-0.021	-0.010	3.3	89.9	
								Pole HS-4-8	0.021	0.010	3.3	89.9	
Pole HS-4-8	4.160	99.733	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-7	-0.021	-0.010	3.3	89.9	
								Pole HS-4-9	0.017	0.008	2.6	89.9	
Pole HS-4-9	4.160	99.730	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-8	-0.017	-0.008	2.6	89.9	
								Pole HS-4-10	0.013	0.006	2.0	89.9	
Pole HS-4-10	4.160	99.729	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-9	-0.013	-0.006	2.0	89.9	
								Pole HS-4-11	0.000	0.000	0.0	0.0	
								SEC_HS-4-7	0.013	0.006	2.0	89.9	
Pole HS-4-11	4.160	99.729	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-10	0.000	0.000	0.0	0.0	
Pole HS-4-12	4.160	99.791	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-2	-0.262	-0.128	40.6	89.8	
								Pole HS-4-13	0.258	0.126	40.0	89.8	
Pole HS-4-13	4.160	99.741	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-12	-0.258	-0.126	40.0	89.8	
								Pole HS-4-14	0.254	0.124	39.3	89.8	
Pole HS-4-14	4.160	99.672	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-13	-0.254	-0.124	39.3	89.8	
								Pole HS-4-15	0.249	0.122	38.7	89.8	
Pole HS-4-15	4.160	99.601	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-14	-0.249	-0.122	38.7	89.8	
								Pole HS-4-19	0.245	0.120	38.0	89.8	
Pole HS-4-16	4.160	98.789	-2.3	0.000	0.000	0.000	0.000	PRI_PM_15	0.159	0.078	24.9	89.8	
								Pole HS-4-33	-0.159	-0.078	24.9	89.8	
Pole HS-4-17	4.160	99.496	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-19	-0.241	-0.118	37.3	89.8	
								Pole HS-4-18	0.228	0.111	35.4	89.8	
								SEC_HS-4-13	0.013	0.006	2.0	89.9	
Pole HS-4-18	4.160	99.453	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-17	-0.228	-0.111	35.4	89.8	
								Pole HS-4-20	0.224	0.109	34.7	89.8	
Pole HS-4-19	4.160	99.564	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-15	-0.245	-0.120	38.0	89.8	
								Pole HS-4-17	0.241	0.118	37.3	89.8	
Pole HS-4-20	4.160	99.400	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-18	-0.223	-0.109	34.7	89.8	
								Pole HS-4-21	0.219	0.107	34.1	89.8	
Pole HS-4-21	4.160	99.350	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-20	-0.219	-0.107	34.1	89.8	
								Pole HS-4-22	0.215	0.105	33.4	89.8	
Pole HS-4-22	4.160	99.262	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-21	-0.215	-0.105	33.4	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-23	0.210	0.103	32.8	89.8	
Pole HS-4-23	4.160	99.208	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-22	-0.210	-0.103	32.8	89.8	
								Pole HS-4-24	0.206	0.101	32.1	89.8	
Pole HS-4-24	4.160	99.169	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-23	-0.206	-0.101	32.1	89.8	
								Pole HS-4-26	0.013	0.006	2.0	89.9	
								Pole HS-4-27	0.193	0.095	30.1	89.8	
Pole HS-4-26	4.160	99.165	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-24	-0.013	-0.006	2.0	89.9	
								SEC_HS-4-21	0.013	0.006	2.0	89.9	
Pole HS-4-27	4.160	99.128	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-24	-0.193	-0.095	30.1	89.8	
								Pole HS-4-28	0.189	0.093	29.5	89.8	
Pole HS-4-28	4.160	99.086	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-27	-0.189	-0.093	29.5	89.8	
								Pole HS-4-29	0.185	0.091	28.8	89.8	
Pole HS-4-29	4.160	98.963	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-28	-0.185	-0.091	28.8	89.8	
								Pole HS-4-31	0.180	0.088	28.2	89.8	
Pole HS-4-30	4.160	98.854	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-31	-0.180	-0.088	28.2	89.8	
								Pole HS-4-32	0.176	0.086	27.5	89.8	
Pole HS-4-31	4.160	98.922	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-29	-0.180	-0.088	28.2	89.8	
								Pole HS-4-30	0.180	0.088	28.2	89.8	
Pole HS-4-32	4.160	98.823	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-30	-0.176	-0.086	27.5	89.8	
								Pole HS-4-33	0.172	0.084	26.9	89.8	
Pole HS-4-33	4.160	98.806	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-32	-0.172	-0.084	26.9	89.8	
								Pole HS-4-16	0.159	0.078	24.9	89.8	
								Pole HS-4-64	0.013	0.006	2.0	90.0	
								L-SUB-FDR-EQ#20-1-96~	0.000	0.000	0.0	0.0	
Pole HS-4-34	4.160	99.720	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-35	-0.008	-0.004	1.3	89.9	
								Pole HS-4-45	0.004	0.002	0.7	90.0	
Pole HS-4-35	4.160	99.723	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-36	-0.013	-0.006	2.0	89.9	
								Pole HS-4-34	0.008	0.004	1.3	90.0	
Pole HS-4-36	4.160	99.732	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-37	-0.017	-0.008	2.6	90.0	
								Pole HS-4-35	0.013	0.006	2.0	90.0	
Pole HS-4-37	4.160	99.740	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-38	-0.021	-0.010	3.3	90.0	
								Pole HS-4-36	0.017	0.008	2.6	90.0	
Pole HS-4-38	4.160	99.744	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-39	-0.025	-0.012	3.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-37	0.021	0.010	3.3	90.0	
Pole HS-4-39	4.160	99.746	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-40	-0.038	-0.019	5.9	89.9	
								Pole HS-4-38	0.025	0.012	3.9	90.0	
								SEC_HS-4-32	0.013	0.006	2.0	89.9	
Pole HS-4-40	4.160	99.752	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-41	-0.042	-0.021	6.6	89.9	
								Pole HS-4-39	0.038	0.019	5.9	89.9	
Pole HS-4-41	4.160	99.762	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-42	-0.047	-0.023	7.2	89.9	
								Pole HS-4-40	0.042	0.021	6.6	89.9	
Pole HS-4-42	4.160	99.774	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-43	-0.051	-0.025	7.9	89.9	
								Pole HS-4-41	0.047	0.023	7.2	89.9	
Pole HS-4-43	4.160	99.780	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-44	-0.055	-0.027	8.5	89.9	
								Pole HS-4-42	0.051	0.025	7.9	89.9	
Pole HS-4-44	4.160	99.786	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-3	-0.059	-0.029	9.2	89.9	
								Pole HS-4-43	0.055	0.027	8.5	89.9	
Pole HS-4-45	4.160	99.718	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-34	-0.004	-0.002	0.7	89.9	
Pole HS-4-47	4.160	99.746	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-48	-0.004	-0.002	0.7	90.0	
								HS-4-33~	0.000	0.000	0.0	0.0	
Pole HS-4-48	4.160	99.748	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-47	0.004	0.002	0.7	90.1	
								Pole HS-4-49	-0.017	-0.008	2.6	90.0	
								SEC_HS-4-44	0.013	0.006	2.0	89.9	
Pole HS-4-49	4.160	99.752	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-48	0.017	0.008	2.6	90.0	
								Pole HS-4-50	-0.021	-0.010	3.3	90.0	
Pole HS-4-50	4.160	99.756	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-49	0.021	0.010	3.3	90.0	
								Pole HS-4-51	-0.025	-0.012	3.9	90.0	
Pole HS-4-51	4.160	99.768	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-50	0.025	0.012	3.9	90.0	
								Pole HS-4-52	-0.030	-0.014	4.6	90.0	
Pole HS-4-52	4.160	99.775	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-51	0.030	0.014	4.6	90.0	
								Pole HS-4-53	-0.034	-0.016	5.3	90.0	
Pole HS-4-53	4.160	99.784	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-52	0.034	0.016	5.3	90.0	
								Pole HS-4-3	-0.038	-0.019	5.9	90.0	
Pole HS-4-54	4.160	99.753	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-55	-0.004	-0.002	0.7	89.9	
Pole HS-4-55	4.160	99.754	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-54	0.004	0.002	0.7	89.9	
								Pole HS-4-5	-0.008	-0.004	1.3	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-4-56	4.160	99.745	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-6	-0.008	-0.004	1.3	89.9	
								Pole HS-4-57	0.004	0.002	0.7	89.9	
Pole HS-4-57	4.160	99.744	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-56	-0.004	-0.002	0.7	89.9	
Pole HS-4-58	4.160	99.752	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-4	-0.025	-0.012	3.9	90.0	
								Pole HS-4-59	0.021	0.010	3.3	90.0	
Pole HS-4-59	4.160	99.743	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-58	-0.021	-0.010	3.3	90.0	
								Pole HS-4-60	0.004	0.002	0.7	89.9	
								Pole HS-4-61	0.013	0.006	2.0	90.0	
Pole HS-4-60	4.160	99.742	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-59	-0.004	-0.002	0.7	89.9	
Pole HS-4-61	4.160	99.736	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-59	-0.013	-0.006	2.0	89.9	
								Pole HS-4-62	0.008	0.004	1.3	90.0	
Pole HS-4-62	4.160	99.731	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-61	-0.008	-0.004	1.3	89.9	
								Pole HS-4-63	0.004	0.002	0.7	89.9	
Pole HS-4-63	4.160	99.730	-2.4	0.000	0.000	0.004	0.002	Pole HS-4-62	-0.004	-0.002	0.7	89.9	
Pole HS-4-64	4.160	98.803	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-65	0.004	0.002	0.7	89.9	
								Pole HS-4-33	-0.013	-0.006	2.0	90.0	
								Pole HS-4-66	0.008	0.004	1.3	90.0	
Pole HS-4-65	4.160	98.802	-2.3	0.000	0.000	0.004	0.002	Pole HS-4-64	-0.004	-0.002	0.7	89.9	
Pole HS-4-66	4.160	98.802	-2.3	0.000	0.000	0.008	0.004	Pole HS-4-64	-0.008	-0.004	1.3	90.0	
								Pole HS-4-67	0.000	0.000	0.0	0.0	
Pole HS-4-67	4.160	98.802	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-66	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#20-1-90~	0.000	0.000	0.0	0.0	
Pole MS-1-1	4.160	100.072	-1.0	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.114	-0.055	17.6	90.0	
								Pole MS-1-2	0.083	0.040	12.8	90.0	
								Pole MS-1-76	0.031	0.015	4.8	90.0	
								L-SUB-FDR-EQ#12-9~	0.000	0.000	0.0	0.0	
Pole MS-1-2	4.160	100.055	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-1	-0.083	-0.040	12.8	90.0	
								Pole MS-1-3	0.080	0.039	12.4	90.0	
Pole MS-1-3	4.160	100.041	-1.0	0.000	0.000	0.000	0.000	Pole MS-1-2	-0.080	-0.039	12.4	90.0	
								Pole MS-1-17	0.059	0.029	9.1	90.0	
								Pole MS-1-5	0.021	0.010	3.2	90.0	
Pole MS-1-5	4.160	100.033	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-3	-0.021	-0.010	3.2	90.0	
								Pole MS-1-7	0.018	0.009	2.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-7	4.160	100.028	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-5	-0.018	-0.009	2.8	90.0	
								Pole MS-1-9	0.016	0.008	2.4	90.0	
Pole MS-1-8	4.160	100.021	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-9	-0.013	-0.006	2.0	90.0	
								Pole MS-1-10	0.010	0.005	1.6	90.0	
Pole MS-1-9	4.160	100.024	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-8	0.013	0.006	2.0	90.0	
								Pole MS-1-7	-0.016	-0.008	2.4	90.0	
Pole MS-1-10	4.160	100.018	-1.0	0.000	0.000	0.000	0.000	Pole MS-1-8	-0.010	-0.005	1.6	90.0	
								Pole MS-1-11	0.008	0.004	1.2	90.0	
								SEC_MS-1-17	0.002	0.001	0.3	90.0	
Pole MS-1-11	4.160	100.016	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-10	-0.008	-0.004	1.2	90.0	
								Pole MS-1-13	0.005	0.003	0.8	90.0	
Pole MS-1-13	4.160	100.014	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-11	-0.005	-0.003	0.8	90.0	
								Pole MS-1-15	0.003	0.001	0.4	90.0	
Pole MS-1-15	4.160	100.012	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-13	-0.003	-0.001	0.4	90.0	
Pole MS-1-17	4.160	100.028	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-3	-0.059	-0.029	9.1	90.0	
								Pole MS-1-19	0.057	0.027	8.7	90.0	
Pole MS-1-18	4.160	100.012	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-19	-0.057	-0.027	8.7	90.0	
								Pole MS-1-28	0.054	0.026	8.3	90.0	
Pole MS-1-19	4.160	100.018	-1.0	0.000	0.000	0.000	0.000	Pole MS-1-18	0.057	0.027	8.7	90.0	
								Pole MS-1-17	-0.057	-0.027	8.7	90.0	
								L-SUB-FDR-EQ#16-12~	0.000	0.000	0.0	0.0	
Pole MS-1-28	4.160	99.998	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-18	-0.054	-0.026	8.3	90.0	
								Pole MS-1-50	0.030	0.014	4.6	90.0	
								Pole MS-1-30	0.022	0.010	3.3	90.0	
Pole MS-1-30	4.160	99.991	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-28	-0.022	-0.010	3.3	90.0	
								Pole MS-1-32	0.019	0.009	2.9	90.0	
Pole MS-1-32	4.160	99.985	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-30	-0.019	-0.009	2.9	90.0	
								Pole MS-1-34	0.016	0.008	2.5	90.0	
Pole MS-1-34	4.160	99.979	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-32	-0.016	-0.008	2.5	90.0	
								Pole MS-1-36	0.013	0.007	2.1	90.0	
Pole MS-1-36	4.160	99.974	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-34	-0.013	-0.007	2.1	90.0	
								Pole MS-1-38	0.011	0.005	1.7	90.0	
Pole MS-1-38	4.160	99.969	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-36	-0.011	-0.005	1.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-1-40	0.008	0.004	1.2	90.0	
Pole MS-1-40	4.160	99.966	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-38	-0.008	-0.004	1.2	90.0	
								Pole MS-1-42	0.005	0.003	0.8	90.0	
Pole MS-1-42	4.160	99.965	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-40	-0.005	-0.003	0.8	90.0	
								Pole MS-1-46	0.003	0.001	0.4	90.0	
Pole MS-1-46	4.160	99.964	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-42	-0.003	-0.001	0.4	90.0	
Pole MS-1-50	4.160	99.986	-1.0	0.000	0.000	0.000	0.000	Pole MS-1-28	-0.030	-0.014	4.6	90.0	
								Pole MS-1-70	0.008	0.004	1.2	90.0	
								Pole MS-1-52	0.022	0.010	3.3	90.0	
Pole MS-1-52	4.160	99.979	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-50	-0.022	-0.010	3.3	90.0	
								Pole MS-1-54	0.019	0.009	2.9	90.0	
Pole MS-1-54	4.160	99.973	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-52	-0.019	-0.009	2.9	90.0	
								Pole MS-1-56	0.016	0.008	2.5	90.0	
Pole MS-1-56	4.160	99.969	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-54	-0.016	-0.008	2.5	90.0	
								Pole MS-1-58	0.013	0.007	2.1	90.0	
Pole MS-1-58	4.160	99.964	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-56	-0.013	-0.007	2.1	90.0	
								Pole MS-1-60	0.011	0.005	1.7	90.0	
Pole MS-1-60	4.160	99.961	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-58	-0.011	-0.005	1.7	90.0	
								Pole MS-1-62	0.008	0.004	1.2	90.0	
Pole MS-1-62	4.160	99.959	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-60	-0.008	-0.004	1.2	90.0	
								Pole MS-1-64	0.005	0.003	0.8	90.0	
Pole MS-1-64	4.160	99.958	-1.0	0.000	0.000	0.000	0.000	Pole MS-1-62	-0.005	-0.003	0.8	90.0	
								Pole MS-1-66	0.003	0.001	0.4	90.0	
								Pole MS-1-68	0.003	0.001	0.4	90.0	
Pole MS-1-66	4.160	99.957	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-64	-0.003	-0.001	0.4	90.0	
Pole MS-1-68	4.160	99.956	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-64	-0.003	-0.001	0.4	90.0	
Pole MS-1-70	4.160	99.985	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-50	-0.008	-0.004	1.2	90.0	
								Pole MS-1-72	0.005	0.003	0.8	90.0	
Pole MS-1-72	4.160	99.984	-1.0	0.000	0.000	0.005	0.003	Pole MS-1-70	-0.005	-0.003	0.8	90.0	
Pole MS-1-73	4.160	100.032	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-74	-0.019	-0.009	2.9	90.0	
								Pole MS-1-79	0.016	0.008	2.5	90.0	
Pole MS-1-74	4.160	100.038	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-73	0.019	0.009	2.9	90.0	
								Pole MS-1-75	-0.022	-0.010	3.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-75	4.160	100.055	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-74	0.022	0.010	3.3	90.0	
								Pole MS-1-76	-0.024	-0.012	3.7	90.0	
Pole MS-1-76	4.160	100.063	-1.0	0.000	0.000	0.007	0.003	Pole MS-1-75	0.024	0.012	3.7	90.0	
								Pole MS-1-1	-0.031	-0.015	4.8	90.0	
Pole MS-1-79	4.160	100.025	-1.0	0.000	0.000	0.000	0.000	Pole MS-1-73	-0.016	-0.008	2.5	90.0	
								Pole MS-1-80	0.005	0.003	0.8	90.0	
								Pole MS-1-84	0.011	0.005	1.7	90.0	
Pole MS-1-80	4.160	100.024	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-79	-0.005	-0.003	0.8	90.0	
								Pole MS-1-82	0.003	0.001	0.4	90.0	
Pole MS-1-81	4.160	98.729	-2.3	0.000	0.000	0.000	0.000	Pole HS-3-71	0.028	0.013	4.3	90.0	
								Pole HS-3-79	0.028	0.013	4.3	89.9	
								Pole HS-3-85	-0.055	-0.027	8.7	90.0	
Pole MS-1-82	4.160	100.022	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-80	-0.003	-0.001	0.4	90.0	
Pole MS-1-84	4.160	100.021	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-79	-0.011	-0.005	1.7	90.0	
								Pole MS-1-86	0.008	0.004	1.2	90.0	
Pole MS-1-86	4.160	100.017	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-84	-0.008	-0.004	1.2	90.0	
								Pole MS-1-87	0.005	0.003	0.8	90.0	
Pole MS-1-87	4.160	100.013	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-86	-0.005	-0.003	0.8	90.0	
								Pole MS-1-88	0.003	0.001	0.4	90.0	
Pole MS-1-88	4.160	100.013	-1.0	0.000	0.000	0.003	0.001	Pole MS-1-87	-0.003	-0.001	0.4	90.0	
Pole MS-2-1	4.160	99.578	-0.9	0.000	0.000	0.000	0.000	Pole MS-2-180	-0.019	-0.009	2.9	90.0	
								Pole MS-2-2	0.013	0.006	2.0	90.0	
								SEC_MS-2-8	0.006	0.003	1.0	90.0	
Pole MS-2-2	4.160	99.573	-0.9	0.000	0.000	0.000	0.000	Pole MS-2-1	-0.013	-0.006	2.0	90.0	
								Pole MS-2-3	0.006	0.003	1.0	90.1	
								SEC_MS-2-37	0.006	0.003	1.0	90.0	
Pole MS-2-3	4.160	99.567	-0.9	0.000	0.000	0.000	0.000	Pole MS-2-2	-0.006	-0.003	1.0	90.0	
								L-SUB-FDR-EQ#16-173~	0.000	0.000	0.0	0.0	
								SEC_MS-2-38	0.006	0.003	1.0	90.0	
Pole MS-2-4	4.160	99.604	-0.8	0.000	0.000	0.000	0.000	PRI_PM_8	0.074	0.036	11.4	89.8	
								Pole MS-2-180	0.019	0.009	2.9	90.0	
								Pole MS-2-182	-0.093	-0.045	14.4	89.8	
Pole MS-2-90	4.160	99.672	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-182	-0.087	-0.042	13.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-2-91	0.078	0.038	12.1	90.0	
								SEC_MS-2-36	0.006	0.003	1.0	90.0	
Pole MS-2-91	4.160	99.598	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-90	-0.078	-0.038	12.1	90.0	
								Pole MS-2-92	0.075	0.036	11.6	90.0	
Pole MS-2-92	4.160	99.578	-0.8	0.000	0.000	0.000	0.000	Pole MS-2-91	-0.075	-0.036	11.6	90.0	
								Pole MS-2-93	0.069	0.033	10.7	90.0	
								SEC_MS-2-39	0.006	0.003	1.0	90.0	
Pole MS-2-93	4.160	99.558	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-92	-0.069	-0.033	10.7	90.0	
								Pole MS-2-94	0.066	0.032	10.2	90.0	
Pole MS-2-94	4.160	99.543	-0.8	0.000	0.000	0.000	0.000	Pole MS-2-93	-0.066	-0.032	10.2	90.0	
								Pole MS-2-95	0.060	0.029	9.3	90.0	
								SEC_MS-2-40	0.006	0.003	1.0	90.0	
Pole MS-2-95	4.160	99.499	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-94	-0.060	-0.029	9.3	90.0	
								Pole MS-2-96	0.057	0.028	8.8	90.0	
Pole MS-2-96	4.160	99.467	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-95	-0.057	-0.028	8.8	90.0	
								Pole MS-2-98	0.054	0.026	8.4	90.0	
Pole MS-2-98	4.160	99.455	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-96	-0.054	-0.026	8.4	90.0	
								Pole MS-2-100	0.052	0.025	8.0	90.0	
Pole MS-2-100	4.160	99.448	-0.8	0.000	0.000	0.000	0.000	Pole MS-2-98	-0.052	-0.025	8.0	90.0	
								Pole MS-2-102	0.045	0.022	7.0	90.0	
								SEC_MS-2-41	0.006	0.003	1.0	90.0	
Pole MS-2-102	4.160	99.441	-0.8	0.000	0.000	0.000	0.000	Pole MS-2-100	-0.045	-0.022	7.0	90.0	
								Pole MS-2-103	0.045	0.022	7.0	90.0	
Pole MS-2-103	4.160	99.432	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-102	-0.045	-0.022	7.0	90.0	
								Pole MS-2-107	0.043	0.021	6.6	90.0	
Pole MS-2-107	4.160	99.410	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-103	-0.043	-0.021	6.6	90.0	
								Pole MS-2-108	0.040	0.019	6.2	90.0	
Pole MS-2-108	4.160	99.401	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-107	-0.040	-0.019	6.2	90.0	
								Pole MS-2-109	0.037	0.018	5.8	90.0	
Pole MS-2-109	4.160	99.391	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-108	-0.037	-0.018	5.8	90.0	
								Pole MS-2-110	0.035	0.017	5.4	90.0	
Pole MS-2-110	4.160	99.382	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-109	-0.035	-0.017	5.4	90.0	
								Pole MS-2-111	0.032	0.016	5.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-2-111	4.160	99.371	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-110	-0.032	-0.016	5.0	90.0	
								Pole MS-2-112	0.029	0.014	4.6	90.0	
Pole MS-2-112	4.160	99.365	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-111	-0.029	-0.014	4.6	90.0	
								Pole MS-2-113	0.027	0.013	4.1	90.0	
Pole MS-2-113	4.160	99.360	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-112	-0.027	-0.013	4.1	90.0	
								Pole MS-2-115	0.024	0.012	3.7	90.0	
Pole MS-2-115	4.160	99.353	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-113	-0.024	-0.012	3.7	90.0	
								Pole MS-2-116	0.021	0.010	3.3	90.0	
Pole MS-2-116	4.160	99.344	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-115	-0.021	-0.010	3.3	90.0	
								Pole MS-2-117	0.019	0.009	2.9	90.0	
Pole MS-2-117	4.160	99.333	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-116	-0.019	-0.009	2.9	90.0	
								Pole MS-2-118	0.016	0.008	2.5	90.0	
Pole MS-2-118	4.160	99.323	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-117	-0.016	-0.008	2.5	90.0	
								Pole MS-2-120	0.013	0.006	2.1	90.0	
Pole MS-2-120	4.160	99.319	-0.8	0.000	0.000	0.003	0.001	Pole MS-2-118	-0.013	-0.006	2.1	90.0	
								Pole MS-2-121	0.011	0.005	1.7	90.0	
Pole MS-2-121	4.160	99.312	-0.8	0.000	0.000	0.005	0.003	Pole MS-2-120	-0.011	-0.005	1.7	90.0	
								Pole MS-2-122	0.005	0.003	0.8	90.0	
Pole MS-2-122	4.160	99.310	-0.8	0.000	0.000	0.005	0.003	Pole MS-2-121	-0.005	-0.003	0.8	90.0	
								L-SUB-FDR-EQ#16-97~	0.000	0.000	0.0	0.0	
Pole MS-2-180	4.160	99.585	-0.9	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.019	-0.009	2.9	90.0	
								Pole MS-2-1	0.019	0.009	2.9	90.0	
								L-SUB-FDR-EQ#12-13~	0.000	0.000	0.0	0.0	
Pole MS-2-182	4.160	99.696	-0.8	0.000	0.000	0.000	0.000	Pole MS-2-4	0.093	0.045	14.4	89.8	
								BUS_5KV_LLP_2	-0.180	-0.087	27.8	89.9	
								Pole MS-2-90	0.087	0.042	13.4	90.0	
Pole MS-3-1	4.160	99.729	-0.8	0.000	0.000	0.000	0.000	Pole MS-3-2	0.006	0.003	1.0	90.0	
								Pole MS-3-88	-0.122	-0.059	18.8	90.0	
								Pole MS-3-3	0.115	0.056	17.8	90.0	
Pole MS-3-2	4.160	99.728	-0.8	0.000	0.000	0.000	0.000	Pole MS-3-1	-0.006	-0.003	1.0	90.0	
								SEC_MS-3-1	0.006	0.003	1.0	90.0	
Pole MS-3-3	4.160	99.664	-0.8	0.000	0.000	0.000	0.000	Pole MS-3-4	0.115	0.056	17.8	90.0	
								Pole MS-3-1	-0.115	-0.056	17.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-4	4.160	99.651	-0.8	0.000	0.000	0.003	0.001	Pole MS-3-3	-0.115	-0.056	17.8	90.0	
								Pole MS-3-5	0.113	0.055	17.4	90.0	
Pole MS-3-5	4.160	99.639	-0.8	0.000	0.000	0.003	0.001	Pole MS-3-4	-0.113	-0.055	17.4	90.0	
								Pole MS-3-6	0.110	0.053	17.0	90.0	
Pole MS-3-6	4.160	99.624	-0.8	0.000	0.000	0.000	0.000	Pole MS-3-5	-0.110	-0.053	17.0	90.0	
								Pole MS-3-7	0.104	0.050	16.0	90.0	
								SEC_MS-3-2	0.006	0.003	1.0	90.0	
Pole MS-3-7	4.160	99.583	-0.8	0.000	0.000	0.003	0.001	Pole MS-3-6	-0.104	-0.050	16.0	90.0	
								Pole MS-3-8	0.101	0.049	15.6	90.0	
Pole MS-3-8	4.160	99.565	-0.8	0.000	0.000	0.000	0.000	Pole MS-3-7	-0.101	-0.049	15.6	90.0	
								Pole MS-3-9	0.095	0.046	14.6	90.0	
								SEC_MS-3-3	0.006	0.003	1.0	90.0	
Pole MS-3-9	4.160	99.549	-0.8	0.000	0.000	0.003	0.001	Pole MS-3-8	-0.095	-0.046	14.6	90.0	
								Pole MS-3-10	0.092	0.044	14.2	90.0	
Pole MS-3-10	4.160	99.517	-0.8	0.000	0.000	0.003	0.001	Pole MS-3-9	-0.092	-0.044	14.2	90.0	
								Pole MS-3-11	0.089	0.043	13.8	90.0	
Pole MS-3-11	4.160	99.506	-0.8	0.000	0.000	0.003	0.001	Pole MS-3-10	-0.089	-0.043	13.8	90.0	
								Pole MS-3-12	0.086	0.042	13.4	90.0	
Pole MS-3-12	4.160	99.495	-0.8	0.000	0.000	0.003	0.001	Pole MS-3-11	-0.086	-0.042	13.4	90.0	
								Pole MS-3-13	0.084	0.041	13.0	90.0	
Pole MS-3-13	4.160	99.458	-0.8	0.000	0.000	0.003	0.001	Pole MS-3-12	-0.084	-0.041	13.0	90.0	
								Pole MS-3-14	0.081	0.039	12.6	90.0	
Pole MS-3-14	4.160	99.443	-0.8	0.000	0.000	0.003	0.001	Pole MS-3-13	-0.081	-0.039	12.6	90.0	
								Pole MS-3-15	0.078	0.038	12.2	90.0	
Pole MS-3-15	4.160	99.410	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-14	-0.078	-0.038	12.2	90.0	
								Pole MS-3-16	0.076	0.037	11.7	90.0	
Pole MS-3-16	4.160	99.401	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-15	-0.076	-0.037	11.7	90.0	
								Pole MS-3-17	0.073	0.035	11.3	90.0	
Pole MS-3-17	4.160	99.385	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-16	-0.073	-0.035	11.3	90.0	
								Pole MS-3-18	0.070	0.034	10.9	90.0	
Pole MS-3-18	4.160	99.373	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-17	-0.070	-0.034	10.9	90.0	
								Pole MS-3-19	0.025	0.012	3.9	90.0	
								Pole MS-3-26	0.045	0.022	7.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-19	4.160	99.367	-0.7	0.000	0.000	0.005	0.003	Pole MS-3-18	-0.025	-0.012	3.9	90.0	
								Pole MS-3-20	0.020	0.010	3.0	90.0	
Pole MS-3-20	4.160	99.363	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-19	-0.020	-0.010	3.0	90.0	
								Pole MS-3-21	0.017	0.008	2.6	90.0	
Pole MS-3-21	4.160	99.355	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-20	-0.017	-0.008	2.6	90.0	
								Pole MS-3-22	0.014	0.007	2.2	90.0	
Pole MS-3-22	4.160	99.351	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-21	-0.014	-0.007	2.2	90.0	
								Pole MS-3-23	0.012	0.006	1.8	90.0	
Pole MS-3-23	4.160	99.347	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-22	-0.012	-0.006	1.8	90.0	
								Pole MS-3-24	0.009	0.004	1.4	90.0	
Pole MS-3-24	4.160	99.344	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-23	-0.009	-0.004	1.4	90.0	
								Pole MS-3-25	0.006	0.003	1.0	90.0	
Pole MS-3-25	4.160	99.342	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-24	-0.006	-0.003	1.0	90.0	
								L-SUB-FDR-EQ#16-133~	0.000	0.000	0.0	0.0	
								SEC_MS-3-22	0.006	0.003	1.0	90.0	
Pole MS-3-26	4.160	99.355	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-27	0.011	0.005	1.7	90.0	
								Pole MS-3-18	-0.045	-0.022	7.0	90.0	
								Pole MS-3-31	0.032	0.015	5.0	90.0	
Pole MS-3-27	4.160	99.351	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-26	-0.011	-0.005	1.7	90.0	
								Pole MS-3-28	0.008	0.004	1.2	90.0	
Pole MS-3-28	4.160	99.349	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-27	-0.008	-0.004	1.2	90.0	
								Pole MS-3-29	0.005	0.003	0.8	90.0	
Pole MS-3-29	4.160	99.346	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-28	-0.005	-0.003	0.8	90.0	
								Pole MS-3-30	0.003	0.001	0.4	90.0	
Pole MS-3-30	4.160	99.345	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-29	-0.003	-0.001	0.4	90.0	
Pole MS-3-31	4.160	99.339	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-26	-0.032	-0.016	5.0	90.0	
								Pole MS-3-32	0.029	0.014	4.6	90.0	
Pole MS-3-32	4.160	99.335	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-31	-0.029	-0.014	4.6	90.0	
								Pole MS-3-33	0.027	0.013	4.1	90.0	
Pole MS-3-33	4.160	99.330	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-32	-0.027	-0.013	4.1	90.0	
								Pole MS-3-34	0.024	0.012	3.7	90.0	
Pole MS-3-34	4.160	99.325	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-36	0.019	0.009	2.9	90.0	
								Pole MS-3-33	-0.024	-0.012	3.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-35	0.003	0.001	0.4	90.0	
Pole MS-3-35	4.160	99.325	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-34	-0.003	-0.001	0.4	90.0	
Pole MS-3-36	4.160	99.317	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-34	-0.019	-0.009	2.9	90.0	
								Pole MS-3-37	0.016	0.008	2.5	90.0	
Pole MS-3-37	4.160	99.310	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-36	-0.016	-0.008	2.5	90.0	
								Pole MS-3-39	0.011	0.005	1.7	90.0	
								Pole MS-3-38	0.005	0.003	0.8	90.0	
Pole MS-3-38	4.160	99.308	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-37	-0.005	-0.003	0.8	90.0	
								Pole MS-3-43	0.003	0.001	0.4	90.1	
Pole MS-3-39	4.160	99.306	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-37	-0.011	-0.005	1.7	90.0	
								Pole MS-3-40	0.008	0.004	1.2	90.0	
Pole MS-3-40	4.160	99.305	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-39	-0.008	-0.004	1.2	90.0	
								Pole MS-3-41	0.005	0.003	0.8	90.0	
Pole MS-3-41	4.160	99.304	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-40	-0.005	-0.003	0.8	90.0	
								Pole MS-3-42	0.003	0.001	0.4	90.0	
Pole MS-3-42	4.160	99.303	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-41	-0.003	-0.001	0.4	90.0	
Pole MS-3-43	4.160	99.307	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-38	-0.003	-0.001	0.4	90.0	
								LINE MS-3-11~	0.000	0.000	0.0	0.0	
Pole MS-3-44	4.160	99.140	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-46	0.016	0.008	2.5	90.0	
								Pole MS-3-45	0.000	0.000	0.0	0.0	
								Pole MS-3-54	-0.016	-0.008	2.5	90.0	
Pole MS-3-45	4.160	99.140	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-44	0.000	0.000	0.0	0.0	
Pole MS-3-46	4.160	99.138	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-44	-0.016	-0.008	2.5	90.0	
								Pole MS-3-47	0.016	0.008	2.5	90.0	
Pole MS-3-47	4.160	99.134	-0.7	0.000	0.000	0.004	0.002	Pole MS-3-46	-0.016	-0.008	2.5	90.0	
								Pole MS-3-48	0.012	0.006	1.9	90.0	
Pole MS-3-48	4.160	99.128	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-47	-0.012	-0.006	1.9	90.0	
								Pole MS-3-51	0.005	0.003	0.8	90.0	
								Pole MS-3-50	0.007	0.003	1.1	90.0	
Pole MS-3-49	4.160	99.126	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-50	-0.003	-0.001	0.4	89.9	
Pole MS-3-50	4.160	99.126	-0.7	0.000	0.000	0.004	0.002	Pole MS-3-48	-0.007	-0.003	1.1	89.9	
								Pole MS-3-49	0.003	0.001	0.4	90.0	
Pole MS-3-51	4.160	99.125	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-48	-0.005	-0.003	0.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-53	0.003	0.001	0.4	90.0	
								Pole MS-3-52	0.003	0.001	0.4	90.0	
Pole MS-3-52	4.160	99.124	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-51	-0.003	-0.001	0.4	89.9	
Pole MS-3-53	4.160	99.125	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-51	-0.003	-0.001	0.4	89.9	
Pole MS-3-54	4.160	99.148	-0.7	0.000	0.000	0.000	0.000	PRI_PM_18	0.090	0.045	14.1	89.7	
								Pole MS-3-57	0.003	0.001	0.4	90.0	
								Pole MS-3-44	0.016	0.008	2.5	90.0	
								Pole MS-3-58	-0.109	-0.054	17.1	89.8	
Pole MS-3-55	4.160	99.559	-0.8	0.000	0.000	0.000	0.000	Pole MS-3-90	0.068	0.033	10.5	90.0	
								Pole MS-3-71	0.244	0.119	37.8	89.8	
								Pole MS-3-79	-0.312	-0.152	48.4	89.8	
Pole MS-3-57	4.160	99.146	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-54	-0.003	-0.001	0.4	90.0	
Pole MS-3-58	4.160	99.209	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-59	0.005	0.003	0.8	90.0	
								Pole MS-3-61	-0.115	-0.056	17.9	89.8	
								Pole MS-3-54	0.110	0.054	17.1	89.8	
Pole MS-3-59	4.160	99.208	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-58	-0.005	-0.003	0.8	90.0	
								Pole MS-3-60	0.003	0.001	0.4	90.0	
Pole MS-3-60	4.160	99.206	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-59	-0.003	-0.001	0.4	90.0	
Pole MS-3-61	4.160	99.278	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-58	0.115	0.056	17.9	89.8	
								Pole MS-3-64	-0.120	-0.059	18.7	89.8	
								Pole MS-3-62	0.005	0.003	0.8	90.0	
Pole MS-3-62	4.160	99.277	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-61	-0.005	-0.003	0.8	90.0	
								Pole MS-3-63	0.003	0.001	0.4	90.0	
Pole MS-3-63	4.160	99.276	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-62	-0.003	-0.001	0.4	90.0	
Pole MS-3-64	4.160	99.310	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-61	0.120	0.059	18.7	89.8	
								Pole MS-3-70	-0.139	-0.068	21.6	89.8	
								Pole MS-3-65	0.016	0.008	2.5	90.0	
Pole MS-3-65	4.160	99.305	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-64	-0.016	-0.008	2.5	90.0	
								Pole MS-3-66	0.013	0.006	2.1	90.0	
Pole MS-3-66	4.160	99.303	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-65	-0.013	-0.006	2.1	90.0	
								Pole MS-3-67	0.005	0.003	0.8	90.0	
								Pole MS-3-69	0.005	0.003	0.8	90.0	
Pole MS-3-67	4.160	99.300	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-66	-0.005	-0.003	0.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-68	0.003	0.001	0.4	90.0	
Pole MS-3-68	4.160	99.300	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-67	-0.003	-0.001	0.4	90.0	
Pole MS-3-69	4.160	99.302	-0.7	0.000	0.000	0.005	0.003	Pole MS-3-66	-0.005	-0.003	0.8	90.0	
Pole MS-3-70	4.160	99.400	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-64	0.139	0.068	21.6	89.8	
								Pole MS-3-71	-0.139	-0.068	21.6	89.8	
								L-SUB-FDR-EQ#16-177~	0.000	0.000	0.0	0.0	
Pole MS-3-71	4.160	99.498	-0.8	0.000	0.000	0.000	0.000	Pole MS-3-55	-0.243	-0.119	37.8	89.8	
								Pole MS-3-70	0.139	0.068	21.6	89.8	
								Pole MS-3-72	0.104	0.051	16.2	89.8	
Pole MS-3-72	4.160	99.484	-0.8	0.000	0.000	0.003	0.001	Pole MS-3-71	-0.104	-0.051	16.2	89.8	
								Pole MS-3-73	0.102	0.050	15.8	89.8	
Pole MS-3-73	4.160	99.475	-0.7	0.000	0.000	0.000	0.000	PRI_PM_7	0.091	0.045	14.1	89.7	
								Pole MS-3-72	-0.102	-0.050	15.8	89.8	
								Pole MS-3-74	0.011	0.005	1.7	90.0	
Pole MS-3-74	4.160	99.473	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-73	-0.011	-0.005	1.7	90.0	
								Pole MS-3-75	0.008	0.004	1.2	90.0	
Pole MS-3-75	4.160	99.469	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-74	-0.008	-0.004	1.2	90.0	
								Pole MS-3-76	0.005	0.003	0.8	90.0	
Pole MS-3-76	4.160	99.466	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-75	-0.005	-0.003	0.8	90.0	
								Pole MS-3-77	0.003	0.001	0.4	90.0	
Pole MS-3-77	4.160	99.466	-0.7	0.000	0.000	0.003	0.001	Pole MS-3-76	-0.003	-0.001	0.4	90.0	
Pole MS-3-79	4.160	99.636	-0.8	0.000	0.000	0.000	0.000	Pole MS-3-55	0.312	0.152	48.4	89.8	
								Pole MS-3-82	0.022	0.011	3.4	90.0	
								Pole MS-3-87	-0.334	-0.163	51.8	89.9	
Pole MS-3-80	4.160	99.621	-0.8	0.000	0.000	0.003	0.001	Pole MS-3-81	-0.017	-0.008	2.6	90.0	
								Pole MS-3-83	0.014	0.007	2.1	90.0	
Pole MS-3-81	4.160	99.627	-0.8	0.000	0.000	0.003	0.001	Pole MS-3-80	0.017	0.008	2.6	90.0	
								Pole MS-3-82	-0.019	-0.009	3.0	90.0	
Pole MS-3-82	4.160	99.632	-0.8	0.000	0.000	0.003	0.001	Pole MS-3-81	0.019	0.009	3.0	90.0	
								Pole MS-3-79	-0.022	-0.011	3.4	90.0	
Pole MS-3-83	4.160	99.619	-0.8	0.000	0.000	0.003	0.001	Pole MS-3-80	-0.014	-0.007	2.1	90.0	
								Pole MS-3-84	0.011	0.005	1.7	90.0	
Pole MS-3-84	4.160	99.616	-0.8	0.000	0.000	0.003	0.001	Pole MS-3-83	-0.011	-0.005	1.7	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-85	0.008	0.004	1.3	89.9	
Pole MS-3-85	4.160	99.613	-0.8	0.000	0.000	0.004	0.002	Pole MS-3-84	-0.008	-0.004	1.3	89.9	
								Pole MS-3-86	0.004	0.002	0.7	89.9	
Pole MS-3-86	4.160	99.612	-0.8	0.000	0.000	0.004	0.002	Pole MS-3-85	-0.004	-0.002	0.7	89.9	
Pole MS-3-87	4.160	99.820	-0.8	0.000	0.000	0.000	0.000	Pole MS-3-79	0.334	0.163	51.8	89.9	
								Pole MS-3-88	0.122	0.059	18.8	90.0	
								BUS_5KV_LLP_02	-0.456	-0.222	70.6	89.9	
Pole MS-3-88	4.160	99.753	-0.8	0.000	0.000	0.000	0.000	Pole MS-3-87	-0.122	-0.059	18.8	90.0	
								Pole MS-3-1	0.122	0.059	18.8	90.0	
Pole MS-3-90	4.160	99.542	-0.8	0.000	0.000	0.008	0.004	Pole MS-3-55	-0.068	-0.033	10.5	90.0	
								Pole MS-3-92	0.060	0.029	9.2	90.0	
Pole MS-3-92	4.160	99.498	-0.8	0.000	0.000	0.008	0.004	Pole MS-3-95	0.051	0.025	7.9	90.0	
								Pole MS-3-90	-0.060	-0.029	9.2	90.0	
Pole MS-3-95	4.160	99.481	-0.8	0.000	0.000	0.004	0.002	Pole MS-3-96	0.004	0.002	0.7	90.0	
								Pole MS-4-36	0.043	0.021	6.6	90.0	
								Pole MS-3-92	-0.051	-0.025	7.9	90.0	
Pole MS-3-96	4.160	99.478	-0.8	0.000	0.000	0.004	0.002	Pole MS-3-95	-0.004	-0.002	0.7	89.9	
Pole MS-3-97	4.160	99.405	-0.7	0.000	0.000	0.004	0.002	Pole MS-3-98	0.028	0.014	4.4	90.0	
								Pole MS-4-36	-0.033	-0.016	5.1	90.0	
Pole MS-3-98	4.160	99.397	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-99	0.028	0.014	4.4	90.0	
								Pole MS-3-97	-0.028	-0.014	4.4	90.0	
Pole MS-3-99	4.160	99.389	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-100	0.010	0.005	1.5	90.0	
								Pole MS-3-101	0.018	0.009	2.9	90.0	
								Pole MS-3-98	-0.028	-0.014	4.4	90.0	
Pole MS-3-100	4.160	99.384	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-99	-0.010	-0.005	1.6	89.9	
								SEC_MS-3-49	0.010	0.005	1.6	89.9	
Pole MS-3-101	4.160	99.377	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-102	0.010	0.005	1.5	89.9	
								Pole MS-3-103	0.008	0.004	1.3	89.9	
								Pole MS-3-99	-0.018	-0.009	2.9	89.9	
Pole MS-3-102	4.160	99.375	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-101	-0.010	-0.005	1.6	89.9	
								SEC_MS-3-65	0.010	0.005	1.6	89.9	
Pole MS-3-103	4.160	99.374	-0.7	0.000	0.000	0.008	0.004	Pole MS-3-101	-0.008	-0.004	1.3	89.9	
Pole MS-4-1	4.160	99.874	-0.8	0.000	0.000	0.003	0.001	BUS_5KV-LLP_01	-0.144	-0.069	22.1	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-2	0.022	0.011	3.4	90.0	
								Pole MS-4-7	0.119	0.057	18.3	90.1	
Pole MS-4-2	4.160	99.868	-0.8	0.000	0.000	0.003	0.001	Pole MS-4-1	-0.022	-0.011	3.4	90.0	
								Pole MS-4-3	0.019	0.009	3.0	90.0	
Pole MS-4-3	4.160	99.867	-0.8	0.000	0.000	0.000	0.000	Pole MS-4-2	-0.019	-0.009	3.0	90.0	
								Pole MS-4-5	0.013	0.006	2.0	90.0	
								SEC_MS-3-73	0.006	0.003	1.0	90.0	
Pole MS-4-5	4.160	99.864	-0.8	0.000	0.000	0.007	0.003	Pole MS-4-3	-0.013	-0.006	2.0	90.0	
								Pole MS-4-6	0.006	0.003	1.0	90.0	
Pole MS-4-6	4.160	99.863	-0.8	0.000	0.000	0.000	0.000	Pole MS-4-5	-0.006	-0.003	1.0	90.0	
								SEC_MS-3-74	0.006	0.003	1.0	90.0	
Pole MS-4-7	4.160	99.807	-0.8	0.000	0.000	0.000	0.000	Pole MS-4-1	-0.119	-0.057	18.3	90.1	
								Pole MS-4-8	0.119	0.057	18.3	90.1	
Pole MS-4-8	4.160	99.676	-0.8	0.000	0.000	0.003	0.001	Pole MS-4-7	-0.118	-0.057	18.3	90.1	
								Pole MS-4-9	0.032	0.015	4.9	90.0	
								Pole MS-4-16	0.084	0.040	13.0	90.2	
Pole MS-4-9	4.160	99.668	-0.8	0.000	0.000	0.004	0.002	Pole MS-4-8	-0.032	-0.015	4.9	90.0	
								Pole MS-4-10	0.028	0.013	4.3	90.0	
Pole MS-4-10	4.160	99.661	-0.8	0.000	0.000	0.000	0.000	Pole MS-4-9	-0.028	-0.013	4.3	90.0	
								Pole MS-4-11	0.021	0.010	3.3	90.0	
								SEC_MS-3-75	0.006	0.003	1.0	90.0	
Pole MS-4-11	4.160	99.650	-0.8	0.000	0.000	0.008	0.004	Pole MS-4-10	-0.021	-0.010	3.3	90.0	
								Pole MS-4-12	0.013	0.006	2.1	90.0	
Pole MS-4-12	4.160	99.647	-0.8	0.000	0.000	0.003	0.001	Pole MS-4-11	-0.013	-0.007	2.1	90.0	
								Pole MS-4-13	0.011	0.005	1.7	90.0	
Pole MS-4-13	4.160	99.642	-0.8	0.000	0.000	0.004	0.002	Pole MS-4-12	-0.011	-0.005	1.7	89.9	
								Pole MS-4-14	0.007	0.003	1.0	90.0	
Pole MS-4-14	4.160	99.641	-0.8	0.000	0.000	0.004	0.002	Pole MS-4-13	-0.007	-0.003	1.0	89.9	
								Pole MS-4-15	0.003	0.001	0.4	90.0	
Pole MS-4-15	4.160	99.640	-0.8	0.000	0.000	0.003	0.001	Pole MS-4-14	-0.003	-0.001	0.4	90.0	
Pole MS-4-16	4.160	99.583	-0.7	0.000	0.000	0.004	0.002	Pole MS-4-17	0.080	0.038	12.3	90.2	
								Pole MS-4-8	-0.084	-0.040	13.0	90.2	
Pole MS-4-17	4.160	99.541	-0.7	0.000	0.000	0.000	0.000	Pole MS-4-16	-0.080	-0.038	12.4	90.2	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-18	0.070	0.033	10.8	90.2	
								SEC_MS-3-66	0.010	0.005	1.6	89.9	
Pole MS-4-18	4.160	99.499	-0.7	0.000	0.000	0.008	0.004	Pole MS-4-17	-0.070	-0.033	10.8	90.2	
								Pole MS-4-20	0.062	0.029	9.6	90.3	
Pole MS-4-20	4.160	99.475	-0.7	0.000	0.000	0.000	0.000	Pole MS-4-18	-0.062	-0.029	9.6	90.3	
								Pole MS-4-21	0.052	0.025	8.0	90.3	
								SEC_MS-3-76	0.010	0.005	1.6	89.9	
Pole MS-4-21	4.160	99.350	-0.7	0.000	0.000	0.004	0.002	Pole MS-4-20	-0.052	-0.025	8.0	90.3	
								Pole MS-4-22	0.048	0.023	7.4	90.3	
Pole MS-4-22	4.160	99.307	-0.7	0.000	0.000	0.004	0.002	Pole MS-4-21	-0.048	-0.023	7.4	90.3	
								Pole MS-4-23	0.044	0.021	6.8	90.4	
Pole MS-4-23	4.160	99.266	-0.7	0.000	0.000	0.004	0.002	Pole MS-4-22	-0.044	-0.021	6.8	90.4	
								Pole MS-4-25	0.040	0.019	6.1	90.4	
Pole MS-4-24	4.160	98.875	-0.7	0.000	0.000	0.000	0.000	Pole MS-4-25	-0.036	-0.017	5.5	90.3	
								Pole MS-4-39	0.004	0.002	0.6	90.0	
								Pole MS-4-41	0.032	0.015	4.9	90.4	
Pole MS-4-25	4.160	99.170	-0.7	0.000	0.000	0.004	0.002	Pole MS-4-23	-0.040	-0.019	6.1	90.4	
								Pole MS-4-24	0.036	0.017	5.5	90.4	
Pole MS-4-31	4.160	99.866	-0.8	0.000	0.000	0.000	0.000	Pole MS-5-1	0.373	0.184	57.8	89.7	
								BUS_5KV-LLP_01	-0.373	-0.184	57.8	89.7	
Pole MS-4-36	4.160	99.445	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-97	0.033	0.016	5.1	90.0	
								Pole MS-3-95	-0.043	-0.021	6.6	90.0	
								SEC_MS-3-45	0.010	0.005	1.6	89.9	
Pole MS-4-39	4.160	98.873	-0.7	0.000	0.000	0.004	0.002	Pole MS-4-24	-0.004	-0.002	0.6	89.9	
Pole MS-4-40	4.160	98.853	-0.7	0.000	0.000	0.004	0.002	Pole MS-4-41	-0.012	-0.006	1.9	90.0	
								Pole MS-4-42	0.008	0.004	1.2	90.1	
Pole MS-4-41	4.160	98.859	-0.7	0.000	0.000	0.000	0.000	Pole MS-4-24	-0.032	-0.015	4.9	90.4	
								Pole MS-4-40	0.012	0.006	1.9	90.0	
								Pole MS-4-44	0.020	0.009	3.1	90.6	
Pole MS-4-42	4.160	98.844	-0.7	0.000	0.000	0.004	0.002	Pole MS-4-40	-0.008	-0.004	1.2	90.0	
								Pole MS-4-43	0.004	0.002	0.6	90.1	
Pole MS-4-43	4.160	98.837	-0.7	0.000	0.000	0.004	0.002	Pole MS-4-42	-0.004	-0.002	0.6	89.9	
Pole MS-4-44	4.160	98.501	-0.7	0.000	0.000	0.000	0.000	Pole MS-4-41	-0.020	-0.009	3.1	90.2	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-45	0.004	0.002	0.6	90.0	
								Pole MS-4-46	0.016	0.008	2.5	90.3	
Pole MS-4-45	4.160	98.497	-0.7	0.000	0.000	0.004	0.002	Pole MS-4-44	-0.004	-0.002	0.6	89.9	
Pole MS-4-46	4.160	98.483	-0.7	0.000	0.000	0.000	0.000	Pole MS-4-44	-0.016	-0.008	2.5	90.2	
								Pole MS-4-47	0.004	0.002	0.6	89.9	
								Pole MS-4-48	0.004	0.002	0.6	90.0	
								Pole MS-4-50	0.008	0.004	1.2	90.5	
Pole MS-4-47	4.160	98.482	-0.7	0.000	0.000	0.004	0.002	Pole MS-4-46	-0.004	-0.002	0.6	89.9	
Pole MS-4-48	4.160	98.482	-0.7	0.000	0.000	0.004	0.002	Pole MS-4-46	-0.004	-0.002	0.6	89.9	
Pole MS-4-49	4.160	98.458	-0.7	0.000	0.000	0.004	0.002	Pole MS-4-50	-0.004	-0.002	0.6	89.9	
Pole MS-4-50	4.160	98.458	-0.7	0.000	0.000	0.000	0.000	Pole MS-4-46	-0.008	-0.004	1.2	90.4	
								Pole MS-4-49	0.004	0.002	0.6	89.9	
								Pole MS-4-52	0.004	0.002	0.6	90.8	
Pole MS-4-51	4.160	98.445	-0.7	0.000	0.000	0.004	0.002	Pole MS-4-52	-0.004	-0.002	0.6	89.9	
Pole MS-4-52	4.160	98.453	-0.7	0.000	0.000	0.000	0.000	Pole MS-4-50	-0.004	-0.002	0.6	90.6	
								Pole MS-4-51	0.004	0.002	0.6	90.1	
								LINE MS-4-53~	0.000	0.000	0.0	0.0	
Pole MS-5-1	4.160	99.084	-1.0	0.000	0.000	0.004	0.002	Pole MS-4-31	-0.371	-0.181	57.8	89.9	
								Pole MS-5-2	0.367	0.179	57.1	89.9	
Pole MS-5-2	4.160	98.991	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-1	-0.366	-0.179	57.1	89.9	
								Pole MS-5-3	0.017	0.008	2.6	90.0	
								Pole MS-5-7	0.345	0.169	53.9	89.9	
Pole MS-5-3	4.160	98.985	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-2	-0.017	-0.008	2.6	89.9	
								Pole MS-5-4	0.013	0.006	2.0	90.0	
Pole MS-5-4	4.160	98.979	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-3	-0.013	-0.006	2.0	89.9	
								Pole MS-5-5	0.008	0.004	1.3	89.9	
Pole MS-5-5	4.160	98.976	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-4	-0.008	-0.004	1.3	89.9	
								Pole MS-5-6	0.004	0.002	0.7	89.9	
Pole MS-5-6	4.160	98.975	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-5	-0.004	-0.002	0.7	89.9	
Pole MS-5-7	4.160	98.834	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-2	-0.345	-0.168	53.9	89.9	
								Pole MS-5-11	0.057	0.028	8.9	90.0	
								Pole MS-5-24	0.288	0.140	44.9	89.9	
Pole MS-5-8	4.160	98.789	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-9	-0.045	-0.022	7.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-14	0.041	0.020	6.4	90.0	
Pole MS-5-9	4.160	98.799	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-8	0.045	0.022	7.0	90.0	
								Pole MS-5-10	-0.049	-0.024	7.7	90.0	
Pole MS-5-10	4.160	98.813	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-9	0.049	0.024	7.7	90.0	
								Pole MS-5-11	-0.053	-0.026	8.3	90.0	
Pole MS-5-11	4.160	98.827	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-7	-0.057	-0.028	8.9	90.0	
								Pole MS-5-10	0.053	0.026	8.3	90.0	
Pole MS-5-12	4.160	98.752	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-13	-0.033	-0.016	5.1	89.9	
								Pole MS-5-16	0.029	0.014	4.5	90.0	
Pole MS-5-13	4.160	98.774	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-12	0.033	0.016	5.1	90.0	
								Pole MS-5-14	-0.037	-0.018	5.8	90.0	
Pole MS-5-14	4.160	98.780	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-8	-0.041	-0.020	6.4	90.0	
								Pole MS-5-13	0.037	0.018	5.8	90.0	
Pole MS-5-15	4.160	98.743	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-16	-0.023	-0.011	3.5	89.9	
								Pole MS-5-17	0.019	0.009	2.9	89.9	
Pole MS-5-16	4.160	98.746	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-15	0.023	0.011	3.5	89.9	
								Pole MS-5-12	-0.029	-0.014	4.5	89.9	
								SEC_MS-5-15	0.006	0.003	1.0	90.0	
Pole MS-5-17	4.160	98.740	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-15	-0.019	-0.009	2.9	89.9	
								Pole MS-5-18	0.009	0.005	1.5	89.9	
								SEC_MS-5-16	0.009	0.005	1.5	89.9	
Pole MS-5-18	4.160	98.739	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-17	-0.009	-0.005	1.5	89.9	
								Pole MS-5-19	0.000	0.000	0.0	0.0	
								SEC_MS-5-17	0.009	0.005	1.5	89.9	
Pole MS-5-19	4.160	98.739	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-18	0.000	0.000	0.0	0.0	
Pole MS-5-24	4.160	98.704	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-7	-0.287	-0.140	44.9	89.9	
								Pole MS-5-25	0.015	0.007	2.4	90.0	
								Pole MS-5-29	0.048	0.023	7.6	90.0	
								Pole MS-5-41	0.224	0.109	35.0	89.9	
Pole MS-5-25	4.160	98.701	-1.0	0.000	0.000	0.003	0.001	Pole MS-5-24	-0.015	-0.007	2.4	90.0	
								Pole MS-5-26	0.012	0.006	2.0	90.0	
Pole MS-5-26	4.160	98.699	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-25	-0.012	-0.006	2.0	90.0	
								Pole MS-5-28	0.006	0.003	1.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_MS-5-23	0.006	0.003	1.0	90.0	
Pole MS-5-27	4.160	98.643	-1.1	0.000	0.000	0.003	0.001	Pole MS-5-41	-0.220	-0.107	34.4	89.9	
								Pole MS-5-151	0.217	0.106	34.0	89.9	
Pole MS-5-28	4.160	98.695	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-26	-0.006	-0.003	1.0	90.0	
								SEC_MS-5-25	0.006	0.003	1.0	90.0	
Pole MS-5-29	4.160	98.694	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-24	-0.048	-0.023	7.6	90.0	
								Pole MS-5-30	0.039	0.019	6.1	90.0	
								SEC_MS-5-26	0.009	0.005	1.5	89.9	
Pole MS-5-30	4.160	98.675	-1.0	0.000	0.000	0.003	0.001	Pole MS-5-29	-0.039	-0.019	6.1	90.0	
								Pole MS-5-31	0.036	0.018	5.7	90.0	
Pole MS-5-31	4.160	98.662	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-30	-0.036	-0.018	5.7	90.0	
								Pole MS-5-32	0.032	0.016	5.1	90.0	
Pole MS-5-32	4.160	98.653	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-31	-0.032	-0.016	5.1	90.0	
								Pole MS-5-33	0.026	0.013	4.1	90.0	
								SEC_MS-5-29	0.006	0.003	1.0	90.0	
Pole MS-5-33	4.160	98.647	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-32	-0.026	-0.013	4.1	90.0	
								Pole MS-5-34	0.017	0.008	2.6	90.0	
								SEC_MS-5-30	0.009	0.005	1.5	89.9	
Pole MS-5-34	4.160	98.645	-1.0	0.000	0.000	0.003	0.001	Pole MS-5-33	-0.017	-0.008	2.6	90.0	
								Pole MS-5-35	0.014	0.007	2.2	90.0	
Pole MS-5-35	4.160	98.641	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-34	-0.014	-0.007	2.2	90.0	
								Pole MS-5-36	0.008	0.004	1.2	90.0	
								SEC_MS-5-32	0.006	0.003	1.0	90.0	
Pole MS-5-36	4.160	98.637	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-35	-0.008	-0.004	1.2	90.0	
								Pole MS-5-37	0.008	0.004	1.2	90.0	
Pole MS-5-37	4.160	98.635	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-36	-0.008	-0.004	1.2	89.9	
								Pole MS-5-38	0.004	0.002	0.6	90.0	
Pole MS-5-38	4.160	98.634	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-37	-0.004	-0.002	0.6	89.9	
								Pole MS-5-39	0.000	0.000	0.0	0.0	
Pole MS-5-39	4.160	98.634	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-38	0.000	0.000	0.0	0.0	
Pole MS-5-40	4.160	98.497	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-151	-0.217	-0.105	34.0	89.9	
								Pole MS-5-42	0.003	0.001	0.4	90.0	
								Pole MS-5-44	0.041	0.020	6.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-55	0.169	0.082	26.5	89.9	
Pole MS-5-41	4.160	98.656	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-27	0.220	0.107	34.4	89.9	
								Pole MS-5-24	-0.224	-0.109	35.0	89.9	
Pole MS-5-42	4.160	98.497	-1.1	0.000	0.000	0.003	0.001	Pole MS-5-40	-0.003	-0.001	0.4	89.9	
Pole MS-5-43	4.160	98.483	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-44	-0.037	-0.018	5.9	90.0	
								Pole MS-5-45	0.033	0.016	5.2	90.0	
Pole MS-5-44	4.160	98.490	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-40	-0.041	-0.020	6.5	90.0	
								Pole MS-5-43	0.037	0.018	5.9	90.0	
Pole MS-5-45	4.160	98.478	-1.1	0.000	0.000	0.000	0.000	Pole MS-5-43	-0.033	-0.016	5.2	90.0	
								Pole MS-5-46	0.027	0.013	4.3	90.0	
								SEC_MS-5-40	0.006	0.003	1.0	90.0	
Pole MS-5-46	4.160	98.471	-1.1	0.000	0.000	0.003	0.001	Pole MS-5-45	-0.027	-0.013	4.3	90.0	
								Pole MS-5-47	0.025	0.012	3.9	90.0	
Pole MS-5-47	4.160	98.466	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-46	-0.025	-0.012	3.9	90.0	
								Pole MS-5-48	0.021	0.010	3.2	90.0	
Pole MS-5-48	4.160	98.458	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-47	-0.021	-0.010	3.2	90.0	
								Pole MS-5-49	0.017	0.008	2.6	90.0	
Pole MS-5-49	4.160	98.454	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-48	-0.017	-0.008	2.6	90.0	
								Pole MS-5-50	0.013	0.006	2.0	90.0	
Pole MS-5-50	4.160	98.448	-1.1	0.000	0.000	0.000	0.000	Pole MS-5-49	-0.013	-0.006	2.0	90.0	
								Pole MS-5-51	0.007	0.003	1.0	90.0	
								SEC_MS-5-45	0.006	0.003	1.0	90.0	
Pole MS-5-51	4.160	98.447	-1.1	0.000	0.000	0.003	0.001	Pole MS-5-50	-0.007	-0.003	1.0	90.0	
								Pole MS-5-52	0.004	0.002	0.6	90.0	
Pole MS-5-52	4.160	98.445	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-51	-0.004	-0.002	0.6	90.0	
								Pole MS-5-149	0.000	0.000	0.0	0.0	
Pole MS-5-55	4.160	98.456	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-40	-0.169	-0.082	26.5	89.9	
								Pole MS-5-68	0.165	0.080	25.9	89.9	
Pole MS-5-56	4.160	98.343	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-68	-0.161	-0.078	25.3	90.0	
								Pole MS-5-57	0.031	0.015	4.9	89.9	
								Pole MS-5-64	0.012	0.006	1.8	90.0	
								Pole MS-5-67	0.114	0.055	17.9	90.0	
Pole MS-5-57	4.160	98.335	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-56	-0.031	-0.015	4.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-58	0.027	0.013	4.3	89.9	
Pole MS-5-58	4.160	98.326	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-57	-0.027	-0.013	4.3	89.9	
								Pole MS-5-59	0.024	0.011	3.7	89.9	
Pole MS-5-59	4.160	98.322	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-58	-0.024	-0.011	3.7	89.9	
								Pole MS-5-60	0.020	0.010	3.1	89.9	
Pole MS-5-60	4.160	98.316	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-59	-0.020	-0.010	3.1	89.9	
								Pole MS-5-61	0.016	0.008	2.5	89.9	
Pole MS-5-61	4.160	98.314	-1.1	0.000	0.000	0.008	0.004	Pole MS-5-60	-0.016	-0.008	2.5	89.9	
								Pole MS-5-62	0.008	0.004	1.2	89.9	
Pole MS-5-62	4.160	98.312	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-61	-0.008	-0.004	1.2	89.9	
								Pole MS-5-63	0.004	0.002	0.6	89.9	
Pole MS-5-63	4.160	98.312	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-62	-0.004	-0.002	0.6	89.9	
Pole MS-5-64	4.160	98.341	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-56	-0.012	-0.006	1.8	90.0	
								Pole MS-5-65	0.008	0.004	1.2	90.0	
Pole MS-5-65	4.160	98.339	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-64	-0.008	-0.004	1.2	90.0	
								Pole MS-5-66	0.004	0.002	0.6	90.0	
Pole MS-5-66	4.160	98.335	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-65	-0.004	-0.002	0.6	89.9	
Pole MS-5-67	4.160	98.291	-1.1	0.000	0.000	0.000	0.000	Pole MS-5-56	-0.114	-0.055	17.9	90.0	
								Pole MS-5-69	0.029	0.014	4.5	90.0	
								Pole MS-5-78	0.026	0.013	4.1	90.0	
								Pole MS-5-86	0.059	0.029	9.2	90.0	
Pole MS-5-68	4.160	98.383	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-56	0.161	0.078	25.3	89.9	
								Pole MS-5-55	-0.165	-0.080	25.9	89.9	
Pole MS-5-69	4.160	98.285	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-67	-0.029	-0.014	4.5	90.0	
								Pole MS-5-70	0.025	0.012	3.9	90.0	
Pole MS-5-70	4.160	98.274	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-69	-0.025	-0.012	3.9	90.0	
								Pole MS-5-71	0.021	0.010	3.3	90.0	
Pole MS-5-71	4.160	98.272	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-70	-0.021	-0.010	3.3	90.0	
								Pole MS-5-72	0.017	0.008	2.7	90.0	
Pole MS-5-72	4.160	98.271	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-71	-0.017	-0.008	2.7	90.0	
								Pole MS-5-73	0.013	0.006	2.1	90.0	
Pole MS-5-73	4.160	98.267	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-72	-0.013	-0.006	2.1	90.0	
								Pole MS-5-74	0.009	0.004	1.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-74	4.160	98.265	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-73	-0.009	-0.004	1.4	90.0	
								Pole MS-5-75	0.005	0.003	0.8	90.0	
Pole MS-5-75	4.160	98.264	-1.1	0.000	0.000	0.003	0.001	Pole MS-5-74	-0.005	-0.003	0.8	90.0	
								Pole MS-5-76	0.003	0.001	0.4	90.0	
Pole MS-5-76	4.160	98.264	-1.1	0.000	0.000	0.003	0.001	Pole MS-5-75	-0.003	-0.001	0.4	90.0	
								Line MS-5-79~	0.000	0.000	0.0	0.0	
Pole MS-5-77	4.160	98.280	-1.1	0.000	0.000	0.003	0.001	Pole MS-5-78	-0.024	-0.011	3.7	90.0	
								Pole MS-5-79	0.021	0.010	3.3	90.0	
Pole MS-5-78	4.160	98.285	-1.1	0.000	0.000	0.003	0.001	Pole MS-5-67	-0.026	-0.013	4.1	90.0	
								Pole MS-5-77	0.024	0.011	3.7	90.0	
Pole MS-5-79	4.160	98.279	-1.1	0.000	0.000	0.003	0.001	Pole MS-5-77	-0.021	-0.010	3.3	90.0	
								Pole MS-5-80	0.018	0.009	2.9	90.0	
Pole MS-5-80	4.160	98.271	-1.1	0.000	0.000	0.003	0.001	Pole MS-5-79	-0.018	-0.009	2.9	90.0	
								Pole MS-5-81	0.016	0.008	2.5	90.0	
Pole MS-5-81	4.160	98.266	-1.1	0.000	0.000	0.003	0.001	Pole MS-5-80	-0.016	-0.008	2.5	90.0	
								Pole MS-5-82	0.013	0.006	2.1	90.0	
Pole MS-5-82	4.160	98.265	-1.1	0.000	0.000	0.003	0.001	Pole MS-5-81	-0.013	-0.006	2.1	90.0	
								Pole MS-5-83	0.010	0.005	1.6	90.0	
Pole MS-5-83	4.160	98.264	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-82	-0.010	-0.005	1.6	90.0	
								Pole MS-5-84	0.007	0.003	1.0	90.0	
Pole MS-5-84	4.160	98.263	-1.1	0.000	0.000	0.004	0.002	Pole MS-5-83	-0.007	-0.003	1.0	90.0	
								Pole MS-5-85	0.003	0.001	0.4	90.2	
Pole MS-5-85	4.160	98.259	-1.1	0.000	0.000	0.003	0.001	Pole MS-5-84	-0.003	-0.001	0.4	89.9	
Pole MS-5-86	4.160	98.264	-1.2	0.000	0.000	0.000	0.000	Pole MS-5-67	-0.059	-0.029	9.2	90.0	
								Pole MS-5-89	0.008	0.004	1.2	90.0	
								Pole MS-5-90	0.018	0.009	2.9	90.0	
								Pole MS-5-96	0.033	0.016	5.1	89.9	
Pole MS-5-87	4.160	98.261	-1.2	0.000	0.000	0.003	0.001	Pole MS-5-88	-0.003	-0.001	0.4	89.9	
Pole MS-5-88	4.160	98.261	-1.2	0.000	0.000	0.003	0.001	Pole MS-5-87	0.003	0.001	0.4	90.0	
								Pole MS-5-89	-0.005	-0.003	0.8	90.0	
Pole MS-5-89	4.160	98.262	-1.2	0.000	0.000	0.003	0.001	Pole MS-5-86	-0.008	-0.004	1.2	90.0	
								Pole MS-5-88	0.005	0.003	0.8	90.0	
Pole MS-5-90	4.160	98.259	-1.2	0.000	0.000	0.003	0.001	Pole MS-5-86	-0.018	-0.009	2.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-91	0.016	0.008	2.5	90.0	
Pole MS-5-91	4.160	98.255	-1.2	0.000	0.000	0.003	0.001	Pole MS-5-90	-0.016	-0.008	2.5	90.0	
								Pole MS-5-92	0.013	0.006	2.1	90.0	
Pole MS-5-92	4.160	98.251	-1.2	0.000	0.000	0.003	0.001	Pole MS-5-91	-0.013	-0.006	2.1	90.0	
								Pole MS-5-93	0.010	0.005	1.6	90.0	
Pole MS-5-93	4.160	98.248	-1.2	0.000	0.000	0.004	0.002	Pole MS-5-92	-0.010	-0.005	1.6	89.9	
								Pole MS-5-94	0.007	0.003	1.0	90.0	
Pole MS-5-94	4.160	98.246	-1.2	0.000	0.000	0.004	0.002	Pole MS-5-93	-0.007	-0.003	1.0	89.9	
								Pole MS-5-95	0.003	0.001	0.4	90.0	
Pole MS-5-95	4.160	98.246	-1.2	0.000	0.000	0.003	0.001	Pole MS-5-94	-0.003	-0.001	0.4	89.9	
Pole MS-5-96	4.160	98.251	-1.2	0.000	0.000	0.000	0.000	Pole MS-5-86	-0.033	-0.016	5.1	89.9	
								Pole MS-5-111	0.033	0.016	5.1	89.9	
Pole MS-5-106	4.160	99.987	-1.0	0.000	0.000	0.030	0.014	Pole MS-5-108	-0.113	-0.055	17.4	90.0	
								Pole MS-5-122	0.083	0.040	12.9	90.0	
Pole MS-5-107	4.160	100.055	-1.0	0.000	0.000	0.003	0.001	Pole MS-5-108	-0.012	-0.006	1.8	90.0	
								Pole MS-5-109	0.009	0.004	1.4	90.0	
Pole MS-5-108	4.160	100.057	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-107	0.012	0.006	1.8	90.0	
								Pole MS-5-106	0.113	0.055	17.4	90.0	
								SF-2-30	-0.125	-0.061	19.3	90.0	
Pole MS-5-109	4.160	100.053	-1.0	0.000	0.000	0.003	0.001	Pole MS-5-107	-0.009	-0.004	1.4	90.0	
								Pole MS-5-110	0.006	0.003	1.0	90.0	
Pole MS-5-110	4.160	100.051	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-109	-0.006	-0.003	1.0	90.0	
								SEC_MS-5-99	0.006	0.003	1.0	90.0	
Pole MS-5-111	4.160	98.238	-1.2	0.000	0.000	0.000	0.000	Pole MS-5-96	-0.033	-0.016	5.1	89.9	
								Pole MS-5-124	0.033	0.016	5.1	89.9	
Pole MS-5-122	4.160	99.931	-1.0	0.000	0.000	0.038	0.018	Pole MS-5-106	-0.083	-0.040	12.9	90.0	
								Pole MS-5-123	0.046	0.022	7.1	90.0	
Pole MS-5-123	4.160	99.901	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-122	-0.046	-0.022	7.1	90.0	
								Pole MS-5-134	0.038	0.018	5.8	90.0	
								Pole MS-5-135	0.008	0.004	1.2	90.0	
Pole MS-5-124	4.160	98.225	-1.2	0.000	0.000	0.000	0.000	Pole MS-5-111	-0.033	-0.016	5.1	89.9	
								Pole MS-5-139	0.033	0.016	5.1	89.9	
Pole MS-5-125	4.160	99.830	-1.0	0.000	0.000	0.003	0.001	Pole MS-5-126	-0.003	-0.001	0.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Line MS-5-129~	0.000	0.000	0.0	0.0	
Pole MS-5-126	4.160	99.831	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-125	0.003	0.001	0.4	90.0	
								Pole MS-5-127	-0.007	-0.003	1.0	90.0	
Pole MS-5-127	4.160	99.832	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-126	0.007	0.003	1.0	90.0	
								Pole MS-5-128	-0.011	-0.005	1.7	90.0	
Pole MS-5-128	4.160	99.835	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-127	0.011	0.005	1.7	90.0	
								Pole MS-5-129	-0.015	-0.007	2.3	90.0	
Pole MS-5-129	4.160	99.841	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-128	0.015	0.007	2.3	90.0	
								Pole MS-5-130	-0.019	-0.009	2.9	90.0	
Pole MS-5-130	4.160	99.845	-1.0	0.000	0.000	0.003	0.001	Pole MS-5-129	0.019	0.009	2.9	90.0	
								Pole MS-5-131	-0.021	-0.010	3.3	90.0	
Pole MS-5-131	4.160	99.855	-1.0	0.000	0.000	0.003	0.001	Pole MS-5-130	0.021	0.010	3.3	90.0	
								Pole MS-5-132	-0.024	-0.012	3.7	90.0	
Pole MS-5-132	4.160	99.861	-1.0	0.000	0.000	0.003	0.001	Pole MS-5-131	0.024	0.012	3.7	90.0	
								Pole MS-5-137	-0.027	-0.013	4.2	90.0	
Pole MS-5-133	4.160	99.886	-1.0	0.000	0.000	0.003	0.001	Pole MS-5-137	0.031	0.015	4.8	90.0	
								Pole MS-5-134	-0.034	-0.016	5.2	90.0	
Pole MS-5-134	4.160	99.893	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-133	0.034	0.016	5.2	90.0	
								Pole MS-5-123	-0.038	-0.018	5.8	90.0	
Pole MS-5-135	4.160	99.893	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-123	-0.008	-0.004	1.2	90.0	
								Pole MS-5-136	0.004	0.002	0.6	90.0	
Pole MS-5-136	4.160	99.889	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-135	-0.004	-0.002	0.6	89.9	
Pole MS-5-137	4.160	99.873	-1.0	0.000	0.000	0.004	0.002	Pole MS-5-133	-0.031	-0.015	4.8	90.0	
								Pole MS-5-132	0.027	0.013	4.2	90.0	
Pole MS-5-139	4.160	98.218	-1.2	0.000	0.000	0.033	0.016	Pole MS-5-124	-0.033	-0.016	5.1	89.9	
Pole MS-5-149	4.160	98.445	-1.1	0.000	0.000	0.000	0.000	Pole MS-5-52	0.000	0.000	0.0	0.0	
Pole MS-5-151	4.160	98.596	-1.1	0.000	0.000	0.000	0.000	Pole MS-5-40	0.217	0.106	34.0	89.9	
								Pole MS-5-27	-0.217	-0.106	34.0	89.9	
Pole MS-7-16	24.940	100.560	1.9	0.000	0.000	0.000	0.000	Pole MS-7-18	-0.017	-0.008	0.4	90.0	
								SEC_MS-7-9	0.017	0.008	0.4	90.0	
Pole MS-7-17	24.940	100.562	1.9	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	-0.044	-0.019	1.1	91.9	
								Pole MS-7-18	0.044	0.019	1.1	91.9	
Pole MS-7-18	24.940	100.560	1.9	0.000	0.000	0.000	0.000	Pole MS-7-19	0.028	0.012	0.7	91.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-7-16	0.017	0.008	0.4	90.2	
								Pole MS-7-17	-0.044	-0.020	1.1	91.1	
Pole MS-7-19	24.940	100.560	1.9	0.000	0.000	0.028	0.014	Pole MS-7-18	-0.028	-0.014	0.7	89.3	
Pole MS-8-1	4.160	99.845	-0.8	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	-0.133	-0.065	20.6	89.8	
								Pole MS-8-2	0.133	0.065	20.6	89.8	
Pole MS-8-2	4.160	99.756	-0.8	0.000	0.000	0.003	0.001	Pole MS-8-1	-0.133	-0.065	20.6	89.9	
								Pole MS-8-3	0.131	0.064	20.2	89.9	
Pole MS-8-3	4.160	99.726	-0.8	0.000	0.000	0.003	0.001	Pole MS-8-2	-0.131	-0.064	20.2	89.9	
								Pole MS-8-4	0.128	0.062	19.8	89.9	
Pole MS-8-4	4.160	99.712	-0.8	0.000	0.000	0.000	0.000	Pole MS-8-3	-0.128	-0.062	19.8	89.9	
								Pole MS-8-5	0.115	0.056	17.8	89.8	
								SEC_MS-8-3	0.013	0.006	2.0	89.9	
Pole MS-8-5	4.160	99.696	-0.8	0.000	0.000	0.003	0.001	Pole MS-8-4	-0.115	-0.056	17.8	89.8	
								Pole MS-8-6	0.112	0.055	17.4	89.8	
Pole MS-8-6	4.160	99.671	-0.8	0.000	0.000	0.003	0.001	Pole MS-8-5	-0.112	-0.055	17.4	89.9	
								Pole MS-8-7	0.110	0.054	17.0	89.8	
Pole MS-8-7	4.160	99.658	-0.8	0.000	0.000	0.005	0.003	Pole MS-8-6	-0.110	-0.054	17.0	89.9	
								Pole MS-8-8	0.104	0.051	16.2	89.8	
Pole MS-8-8	4.160	99.645	-0.8	0.000	0.000	0.000	0.000	Pole MS-8-7	-0.104	-0.051	16.2	89.8	
								Pole MS-8-9	0.019	0.009	2.9	89.9	
								Pole MS-8-10	0.085	0.042	13.2	89.8	
Pole MS-8-9	4.160	99.642	-0.8	0.000	0.000	0.000	0.000	Pole MS-8-8	-0.019	-0.009	2.9	89.9	
								SEC_MS-8-8	0.019	0.009	2.9	89.9	
Pole MS-8-10	4.160	99.623	-0.8	0.000	0.000	0.003	0.001	Pole MS-8-8	-0.085	-0.042	13.2	89.8	
								Pole MS-8-11	0.083	0.040	12.8	89.8	
Pole MS-8-11	4.160	99.602	-0.8	0.000	0.000	0.004	0.002	Pole MS-8-10	-0.083	-0.040	12.8	89.8	
								Pole MS-8-12	0.079	0.038	12.2	89.8	
Pole MS-8-12	4.160	99.583	-0.8	0.000	0.000	0.004	0.002	Pole MS-8-11	-0.079	-0.038	12.2	89.8	
								Pole MS-8-13	0.075	0.037	11.6	89.8	
Pole MS-8-13	4.160	99.579	-0.8	0.000	0.000	0.004	0.002	Pole MS-8-12	-0.075	-0.037	11.6	89.8	
								Pole MS-8-14	0.071	0.035	11.0	89.8	
Pole MS-8-14	4.160	99.568	-0.8	0.000	0.000	0.004	0.002	Pole MS-8-15	0.067	0.033	10.3	89.8	
								Pole MS-8-13	-0.071	-0.035	11.0	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-8-15	4.160	99.558	-0.8	0.000	0.000	0.000	0.000	PRI_PM_9	0.067	0.033	10.3	89.8	
								Pole MS-8-14	-0.067	-0.033	10.3	89.8	
Pole MS-9-1	4.160	99.865	-0.8	0.000	0.000	0.004	0.002	BUS_5KV-LLP_01	-0.284	-0.139	43.9	89.8	
								Pole MS-9-2	0.280	0.137	43.3	89.8	
Pole MS-9-2	4.160	99.805	-0.8	0.000	0.000	0.000	0.000	Pole MS-9-1	-0.280	-0.137	43.3	89.9	
								Pole MS-9-12	0.280	0.137	43.3	89.9	
Pole MS-9-12	4.160	99.691	-0.8	0.000	0.000	0.000	0.000	Pole MS-9-2	-0.280	-0.136	43.3	89.9	
								Pole MS-9-13	0.280	0.136	43.3	89.9	
Pole MS-9-13	4.160	99.671	-0.8	0.000	0.000	0.000	0.000	Pole MS-9-12	-0.280	-0.136	43.3	89.9	
								Pole MS-9-14	0.280	0.136	43.3	89.9	
Pole MS-9-14	4.160	99.637	-0.8	0.000	0.000	0.003	0.001	Pole MS-9-13	-0.280	-0.136	43.3	89.9	
								Pole MS-9-15	0.277	0.135	42.9	89.9	
Pole MS-9-15	4.160	99.587	-0.8	0.000	0.000	0.000	0.000	Pole MS-9-14	-0.277	-0.135	42.9	89.9	
								Pole MS-9-16	0.264	0.129	40.9	89.9	
								SEC_MS-9-12	0.013	0.006	2.0	89.9	
Pole MS-9-16	4.160	99.531	-0.8	0.000	0.000	0.003	0.001	Pole MS-9-15	-0.264	-0.129	40.9	89.9	
								Pole MS-9-17	0.261	0.127	40.5	89.9	
Pole MS-9-17	4.160	99.497	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-16	-0.261	-0.127	40.5	89.9	
								Pole MS-9-18	0.075	0.037	11.7	89.9	
								Pole MS-9-33	0.186	0.091	28.9	89.9	
Pole MS-9-18	4.160	99.493	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-17	-0.075	-0.037	11.7	89.9	
								Pole MS-9-19	0.063	0.030	9.7	89.9	
								SEC_MS-9-14	0.013	0.006	2.0	89.9	
Pole MS-9-19	4.160	99.482	-0.9	0.000	0.000	0.003	0.001	Pole MS-9-18	-0.063	-0.030	9.7	89.9	
								Pole MS-9-20	0.060	0.029	9.3	89.9	
Pole MS-9-20	4.160	99.465	-0.9	0.000	0.000	0.004	0.002	Pole MS-9-19	-0.060	-0.029	9.3	89.9	
								Pole MS-9-21	0.056	0.027	8.7	89.9	
Pole MS-9-21	4.160	99.451	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-20	-0.056	-0.027	8.7	89.9	
								Pole MS-9-23	0.043	0.021	6.7	90.0	
								SEC_MS-9-17	0.013	0.006	2.0	89.9	
Pole MS-9-22	4.160	99.279	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-42	-0.131	-0.064	20.4	89.9	
								Pole MS-9-43	0.019	0.009	3.0	90.0	
								Pole MS-9-47	0.112	0.055	17.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-9-23	4.160	99.448	-0.9	0.000	0.000	0.004	0.002	Pole MS-9-21	-0.043	-0.021	6.7	90.0	
								Pole MS-9-24	0.039	0.019	6.1	90.0	
Pole MS-9-24	4.160	99.443	-0.9	0.000	0.000	0.008	0.004	Pole MS-9-23	-0.039	-0.019	6.1	90.0	
								Pole MS-9-25	0.031	0.015	4.9	90.0	
Pole MS-9-25	4.160	99.441	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-24	-0.031	-0.015	4.9	90.0	
								Pole MS-9-26	0.013	0.006	2.0	90.0	
								Pole MS-9-28	0.019	0.009	2.9	90.0	
Pole MS-9-26	4.160	99.436	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-27	0.000	0.000	0.0	0.0	
								Pole MS-9-25	-0.013	-0.006	2.0	89.9	
								SEC_MS-9-22	0.013	0.006	2.0	89.9	
Pole MS-9-27	4.160	99.436	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-26	0.000	0.000	0.0	0.0	
Pole MS-9-28	4.160	99.437	-0.9	0.000	0.000	0.003	0.001	Pole MS-9-25	-0.019	-0.009	2.9	89.9	
								Pole MS-9-29	0.016	0.008	2.5	89.9	
Pole MS-9-29	4.160	99.435	-0.9	0.000	0.000	0.004	0.002	Pole MS-9-28	-0.016	-0.008	2.5	89.9	
								Pole MS-9-30	0.012	0.006	1.9	89.9	
Pole MS-9-30	4.160	99.433	-0.9	0.000	0.000	0.004	0.002	Pole MS-9-29	-0.012	-0.006	1.9	89.9	
								Pole MS-9-31	0.008	0.004	1.2	89.9	
Pole MS-9-31	4.160	99.432	-0.9	0.000	0.000	0.004	0.002	Pole MS-9-30	-0.008	-0.004	1.2	89.9	
								Pole MS-9-32	0.004	0.002	0.6	89.9	
Pole MS-9-32	4.160	99.431	-0.9	0.000	0.000	0.004	0.002	Pole MS-9-31	-0.004	-0.002	0.6	89.9	
Pole MS-9-33	4.160	99.461	-0.9	0.000	0.000	0.004	0.002	Pole MS-9-17	-0.186	-0.091	28.9	89.9	
								Pole MS-9-34	0.182	0.089	28.2	89.9	
Pole MS-9-34	4.160	99.433	-0.9	0.000	0.000	0.004	0.002	Pole MS-9-33	-0.182	-0.089	28.2	89.9	
								Pole MS-9-35	0.178	0.087	27.6	89.9	
Pole MS-9-35	4.160	99.412	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-34	-0.178	-0.087	27.6	89.9	
								Pole MS-9-36	0.004	0.002	0.6	89.9	
								Pole MS-9-37	0.174	0.085	27.0	89.9	
Pole MS-9-36	4.160	99.411	-0.9	0.000	0.000	0.004	0.002	Pole MS-9-35	-0.004	-0.002	0.6	89.9	
Pole MS-9-37	4.160	99.403	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-35	-0.174	-0.085	27.0	89.9	
								Pole MS-9-38	0.161	0.079	25.0	89.9	
								SEC_MS-9-31	0.013	0.006	2.0	89.9	
Pole MS-9-38	4.160	99.382	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-37	-0.161	-0.078	25.0	89.9	
								Pole MS-9-39	0.142	0.069	22.1	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_MS-9-32	0.019	0.009	2.9	89.9	
Pole MS-9-39	4.160	99.343	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-38	-0.142	-0.069	22.1	89.9	
								Pole MS-9-40	0.003	0.001	0.4	90.0	
								Pole MS-9-41	0.140	0.068	21.7	89.9	
Pole MS-9-40	4.160	99.343	-0.9	0.000	0.000	0.003	0.001	Pole MS-9-39	-0.003	-0.001	0.4	90.0	
Pole MS-9-41	4.160	99.324	-0.9	0.000	0.000	0.004	0.002	Pole MS-9-39	-0.139	-0.068	21.7	89.9	
								Pole MS-9-42	0.136	0.066	21.1	89.9	
Pole MS-9-42	4.160	99.292	-0.9	0.000	0.000	0.004	0.002	Pole MS-9-22	0.131	0.064	20.4	89.9	
								Pole MS-9-41	-0.135	-0.066	21.1	89.9	
Pole MS-9-43	4.160	99.277	-0.9	0.000	0.000	0.003	0.001	Pole MS-9-22	-0.019	-0.009	3.0	90.0	
								Pole MS-9-44	0.017	0.008	2.6	90.0	
Pole MS-9-44	4.160	99.274	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-43	-0.017	-0.008	2.6	89.9	
								Pole MS-9-45	0.004	0.002	0.6	89.9	
								Pole MS-9-46	0.013	0.006	2.0	89.9	
Pole MS-9-45	4.160	99.273	-0.9	0.000	0.000	0.004	0.002	Pole MS-9-44	-0.004	-0.002	0.6	89.9	
Pole MS-9-46	4.160	99.270	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-44	-0.013	-0.006	2.0	89.9	
								SEC_MS-9-37	0.013	0.006	2.0	89.9	
Pole MS-9-47	4.160	99.264	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-22	-0.112	-0.055	17.4	89.9	
								Pole MS-9-48	0.100	0.048	15.5	89.9	
								SEC_MS-9-38	0.013	0.006	2.0	89.9	
Pole MS-9-48	4.160	99.250	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-47	-0.100	-0.048	15.5	89.9	
								Pole MS-9-49	0.081	0.039	12.6	89.9	
								SEC_MS-9-39	0.019	0.009	2.9	89.9	
Pole MS-9-49	4.160	99.228	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-48	-0.081	-0.039	12.6	89.9	
								Pole MS-9-50	0.062	0.030	9.6	89.9	
								SEC_MS-9-40	0.019	0.009	2.9	89.9	
Pole MS-9-50	4.160	99.220	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-49	-0.062	-0.030	9.6	89.9	
								Pole MS-9-51	0.045	0.022	7.0	89.9	
								SEC_MS-9-41	0.017	0.008	2.6	89.9	
Pole MS-9-51	4.160	99.212	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-50	-0.045	-0.022	7.0	89.9	
								Pole MS-9-52	0.028	0.014	4.4	89.9	
								SEC_MS-9-42	0.017	0.008	2.6	89.9	
Pole MS-9-52	4.160	99.205	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-51	-0.028	-0.014	4.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-9-53	0.012	0.006	1.8	90.0	
								SEC_MS-9-43	0.017	0.008	2.6	89.9	
Pole MS-9-53	4.160	99.204	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-52	-0.012	-0.006	1.8	89.9	
								Pole MS-9-54	0.000	0.000	0.0	0.0	
								SEC_MS-9-44	0.012	0.006	1.8	89.9	
Pole MS-9-54	4.160	99.204	-0.9	0.000	0.000	0.000	0.000	Pole MS-9-53	0.000	0.000	0.0	0.0	
PRI_PM_1	4.160	99.067	-2.4	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-0.030	-0.015	4.6	89.8	
								SEC_PM_1	0.030	0.015	4.6	89.8	
PRI_PM_1-1	4.160	97.202	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.029	-0.014	4.6	89.8	
								SEC_PM_1-1	0.029	0.014	4.6	89.8	
PRI_PM_2	4.160	98.721	-2.4	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-0.030	-0.015	4.6	89.8	
								SEC_PM_2	0.030	0.015	4.6	89.8	
PRI_PM_3	4.160	98.432	-2.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-3	-0.029	-0.014	4.6	89.8	
								SEC_PM_3	0.029	0.014	4.6	89.8	
PRI_PM_4	4.160	97.487	-1.4	0.000	0.000	0.000	0.000	SF-1-60	-0.125	-0.062	19.8	89.6	
								SEC_PM_4	0.125	0.062	19.8	89.6	
PRI_PM_5	4.160	98.183	-2.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-5	-0.029	-0.014	4.6	89.8	
								SEC_PM_5	0.029	0.014	4.6	89.8	
PRI_PM_6	4.160	97.949	-2.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.029	-0.014	4.6	89.8	
								SEC_PM_6	0.029	0.014	4.6	89.8	
PRI_PM_7	4.160	99.462	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-73	-0.091	-0.045	14.1	89.7	
								SEC_PM_7	0.091	0.045	14.1	89.7	
PRI_PM_8	4.160	99.594	-0.8	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.074	-0.036	11.4	89.8	
								SEC_PM_8	0.074	0.036	11.4	89.8	
PRI_PM_9	4.160	99.549	-0.8	0.000	0.000	0.000	0.000	Pole MS-8-15	-0.067	-0.033	10.3	89.8	
								SEC_PM_9	0.067	0.033	10.3	89.8	
PRI_PM_10	4.160	98.851	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-86	-0.132	-0.065	20.6	89.8	
								PRI_PM_28	0.066	0.032	10.3	89.8	
								SEC_PM_10	0.066	0.032	10.3	89.8	
PRI_PM_11	4.160	99.211	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-11	-0.070	-0.034	10.9	89.8	
								SEC_PM_11	0.070	0.034	10.9	89.8	
PRI_PM_12	4.160	97.555	-1.4	0.000	0.000	0.000	0.000	SF-1-59	-0.125	-0.062	19.9	89.6	
								SEC_PM_12	0.125	0.062	19.9	89.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
PRI_PM_13	4.160	96.943	-1.3	0.000	0.000	0.000	0.000	SF-1-40	-0.234	-0.116	37.4	89.6	
								SEC_PM_13	0.234	0.116	37.4	89.6	
PRI_PM_14	4.160	97.377	-1.3	0.000	0.000	0.000	0.000	SF-1-17	-0.176	-0.087	27.9	89.7	
								SEC_PM_14	0.176	0.087	27.9	89.7	
PRI_PM_15	4.160	98.767	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-16	-0.159	-0.078	24.9	89.7	
								SEC_PM_15	0.159	0.078	24.9	89.7	
PRI_PM_16	4.160	99.194	-2.5	0.000	0.000	0.000	0.000	Pole CS-1-2	-0.070	-0.034	10.9	89.8	
								SEC_PM_16	0.070	0.034	10.9	89.8	
PRI_PM_17	4.160	98.579	-2.6	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.059	-0.029	9.2	89.8	
								SEC_PM_17	0.059	0.029	9.2	89.8	
PRI_PM_18	4.160	99.136	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-54	-0.090	-0.045	14.1	89.7	
								SEC_PM_18	0.090	0.045	14.1	89.7	
PRI_PM_19	4.160	97.046	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-37	-0.067	-0.033	10.7	89.8	
								SEC_PM_19	0.067	0.033	10.7	89.8	
PRI_PM_20	4.160	97.342	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-21	-0.068	-0.033	10.7	89.8	
								SEC_PM_20	0.068	0.033	10.7	89.8	
PRI_PM_21	4.160	97.486	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-20	-0.071	-0.035	11.3	89.8	
								SEC_PM_21	0.071	0.035	11.3	89.8	
PRI_PM_22	4.160	98.795	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-6	-0.080	-0.039	12.5	89.7	
								SEC_PM_22	0.080	0.039	12.5	89.7	
PRI_PM_23	4.160	97.273	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-20	-0.078	-0.038	12.3	89.7	
								SEC_PM_23	0.078	0.038	12.3	89.7	
PRI_PM_24	4.160	97.190	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-22	-0.078	-0.038	12.3	89.7	
								SEC_PM_24	0.078	0.038	12.3	89.7	
PRI_PM_25	4.160	99.160	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-22	-0.040	-0.020	6.2	89.7	
								SEC_PM_25	0.040	0.020	6.2	89.7	
PRI_PM_26	4.160	98.825	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-31	-0.040	-0.020	6.2	89.7	
								SEC_PM_26	0.040	0.020	6.2	89.7	
PRI_PM_28	4.160	98.842	-2.2	0.000	0.000	0.000	0.000	PRI_PM_10	-0.066	-0.032	10.3	89.8	
								SEC_PM_28	0.066	0.032	10.3	89.8	
PV-Collector1	0.480	102.750	7.2	0.000	0.000	0.000	0.000	PV-Module_01	-0.197	0.002	230.9	100.0	
								PV-Module_2	-0.197	0.002	230.9	100.0	
								PV-Module_3	-0.197	0.002	230.9	100.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								PV-Module_4	-0.197	0.002	230.9	100.0	
								PV-Module_5	-0.197	0.002	230.9	100.0	
								PV-Module_6	-0.197	0.002	230.9	100.0	
								PV-Module_7	-0.197	0.002	230.9	100.0	
								PV-Module_8	-0.197	0.002	230.9	100.0	
								PV-Module_9	-0.197	0.002	230.9	100.0	
								PV-Module_10	-0.197	0.002	230.9	100.0	
								PV-Module_11	-0.197	0.002	230.9	100.0	
								PV-Module_12	-0.197	0.002	230.9	100.0	
								PVT1_Pri	2.367	-0.027	2770.9	100.0	
PV-Collector2	0.480	102.750	7.2	0.000	0.000	0.000	0.000	PV-Module_13	-0.197	0.002	230.9	100.0	
								PV-Module_14	-0.197	0.002	230.9	100.0	
								PV-Module_15	-0.197	0.002	230.9	100.0	
								PV-Module_16	-0.197	0.002	230.9	100.0	
								PV-Module_17	-0.197	0.002	230.9	100.0	
								PV-Module_18	-0.197	0.002	230.9	100.0	
								PV-Module_19	-0.197	0.002	230.9	100.0	
								PV-Module_20	-0.197	0.002	230.9	100.0	
								PV-Module_21	-0.197	0.002	230.9	100.0	
								PV-Module_22	-0.197	0.002	230.9	100.0	
								PV-Module_23	-0.197	0.002	230.9	100.0	
								PV-Module_24	-0.197	0.002	230.9	100.0	
								PVT1_Pri2	2.367	-0.027	2770.9	100.0	
PV-Module_01	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.9	100.0	
PV-Module_2	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.9	100.0	
PV-Module_3	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.9	100.0	
PV-Module_4	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.9	100.0	
PV-Module_5	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.9	100.0	
PV-Module_6	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.9	100.0	
PV-Module_7	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.9	100.0	
PV-Module_8	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.9	100.0	
PV-Module_9	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.9	100.0	
PV-Module_10	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.9	100.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
PV-Module_11	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.9	100.0	
PV-Module_12	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	230.9	100.0	
PV-Module_13	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.9	100.0	
PV-Module_14	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.9	100.0	
PV-Module_15	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.9	100.0	
PV-Module_16	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.9	100.0	
PV-Module_17	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.9	100.0	
PV-Module_18	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.9	100.0	
PV-Module_19	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.9	100.0	
PV-Module_20	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.9	100.0	
PV-Module_21	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.9	100.0	
PV-Module_22	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.9	100.0	
PV-Module_23	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.9	100.0	
PV-Module_24	0.480	103.762	7.8	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	230.9	100.0	
PV-PMS-Pri	24.900	102.172	4.0	0.000	0.000	0.000	0.000	P_526_2	4.697	-0.311	106.8	-99.8	
								PV-PMS-Sec	-4.697	0.311	106.8	-99.8	
PV-PMS-Sec	24.900	102.172	4.0	0.000	0.000	0.000	0.000	PVT1_Pri	-2.349	0.155	53.4	-99.8	
								PVT1_Pri2	-2.349	0.155	53.4	-99.8	
								PV-PMS-Pri	4.697	-0.311	106.8	-99.8	
PVT1_Pri	24.900	102.175	4.0	0.000	0.000	0.000	0.000	PV-PMS-Sec	2.349	-0.157	53.4	-99.8	
								PV-Collector1	-2.349	0.157	53.4	-99.8	
PVT1_Pri2	24.900	102.175	4.0	0.000	0.000	0.000	0.000	PV-PMS-Sec	2.349	-0.157	53.4	-99.8	
								PV-Collector2	-2.349	0.157	53.4	-99.8	
P_526_2	24.900	102.164	4.0	0.000	0.000	0.000	0.000	PV-PMS-Pri	-4.697	0.310	106.8	-99.8	
								BUS_WTG6	4.697	-0.310	106.8	-99.8	
SEC_6M-1-1	0.208	99.447	-1.4	0.000	0.000	0.008	0.004	Pole 6M-1-1	-0.008	-0.004	26.2	90.0	
SEC_6M-1-2	0.208	99.347	-1.4	0.000	0.000	0.008	0.004	Pole 6M-1-3	-0.008	-0.004	26.2	90.0	
SEC_6M-1-12	0.208	98.927	-1.4	0.000	0.000	0.008	0.004	Pole 6M-1-19	-0.008	-0.004	26.1	90.0	
SEC_6M-E-1	0.208	96.839	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-5	-0.013	-0.006	41.8	90.0	
SEC_6M-E-2	0.208	97.470	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-2	-0.013	-0.006	42.0	90.0	
SEC_6M-E-3	0.208	97.057	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-3	-0.013	-0.006	41.9	90.0	
SEC_6M-E-4	0.208	96.622	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-6	-0.013	-0.006	41.8	90.0	
SEC_6M-E-5	0.208	96.278	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-8	-0.013	-0.006	41.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_6M-E-6	0.208	95.654	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-10	-0.013	-0.006	41.5	90.0	
SEC_6M-E-7	0.208	95.608	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-11	-0.013	-0.006	41.5	90.0	
SEC_6M-E-8	0.208	95.549	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-14	-0.013	-0.006	41.5	90.0	
SEC_6M-E-10	0.208	95.482	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-19	-0.013	-0.006	41.5	90.0	
SEC_6M-E-11	0.208	95.466	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-20	-0.013	-0.006	41.5	90.0	
SEC_6M-E-13	0.208	97.297	-1.3	0.000	0.000	0.013	0.006	Pole 6M-E-29	-0.013	-0.006	42.0	90.0	
SEC_CS-1-1	0.208	113.664	-2.6	0.000	0.000	0.012	0.006	Pole CS-1-4	-0.012	-0.006	32.1	90.0	
SEC_CS-1-2	0.208	113.666	-2.6	0.000	0.000	0.012	0.006	Pole CS-1-5	-0.012	-0.006	32.1	90.0	
SEC_CS-1-7	0.208	113.058	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-13	-0.012	-0.006	32.0	90.0	
SEC_CS-1-9	0.208	112.949	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-15	-0.012	-0.006	32.0	90.0	
SEC_CS-1-10	0.208	112.969	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-18	-0.012	-0.006	32.0	90.0	
SEC_CS-1-11	0.208	112.966	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-19	-0.012	-0.006	32.0	90.0	
SEC_CS-1-12	0.208	112.971	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-20	-0.012	-0.006	32.0	90.0	
SEC_CS-1-15	0.208	112.855	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-23	-0.012	-0.006	32.0	90.0	
SEC_CS-1-16	0.208	112.804	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-24	-0.012	-0.006	32.0	90.0	
SEC_CS-1-29	0.208	112.509	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-40	-0.012	-0.006	31.9	90.0	
SEC_CS-1-32	0.208	112.521	-2.8	0.000	0.000	0.012	0.006	Pole CS-1-43	-0.012	-0.006	31.9	90.0	
SEC_CS-1-46	0.208	112.614	-2.9	0.000	0.000	0.012	0.006	Pole CS-1-59	-0.012	-0.006	31.9	90.0	
SEC_CS-1-53	0.208	112.514	-2.9	0.000	0.000	0.012	0.006	Pole CS-1-68	-0.012	-0.006	31.9	90.0	
SEC_CS-2-5	0.208	112.201	-2.3	0.000	0.000	0.012	0.006	Pole CS-2-8	-0.012	-0.006	31.9	90.0	
SEC_CS-2-7	0.208	112.192	-2.3	0.000	0.000	0.012	0.006	Pole CS-2-10	-0.012	-0.006	31.9	90.0	
SEC_CS-2-8	0.208	112.188	-2.3	0.000	0.000	0.012	0.006	Pole CS-2-11	-0.012	-0.006	31.8	90.0	
SEC_CS-2-10	0.208	112.081	-2.4	0.000	0.000	0.012	0.006	Pole CS-2-15	-0.012	-0.006	31.8	90.0	
SEC_CS-2-46	0.208	114.137	-2.5	0.000	0.000	0.012	0.006	Pole CS-2-66	-0.012	-0.006	32.2	90.0	
SEC_CS-2-47	0.208	113.666	-2.5	0.000	0.000	0.012	0.006	Pole CS-3-29	-0.012	-0.006	32.1	90.0	
SEC_CS-2-48	0.208	113.400	-2.5	0.000	0.000	0.012	0.006	Pole CS-3-33	-0.012	-0.006	32.1	90.0	
SEC_CS-2-49	0.208	113.115	-2.5	0.000	0.000	0.012	0.006	Pole CS-2-73	-0.012	-0.006	32.0	90.0	
SEC_CS-4-8	0.208	113.316	-2.5	0.000	0.000	0.012	0.006	Pole CS-4-12	-0.012	-0.006	32.1	90.0	
SEC_CS-5-10	0.240	97.378	-1.5	0.000	0.000	0.023	0.011	UG-JUNC-CS-5-8	-0.023	-0.011	63.8	90.0	
SEC_CS-5-12	0.240	97.759	-1.3	0.000	0.000	0.023	0.011	UG-JUNC-CS-5-9	-0.023	-0.011	63.9	90.0	
SEC_HS-2-4	0.208	114.563	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-4	-0.012	-0.006	32.3	90.0	
SEC_HS-2-5	0.208	114.410	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-5	-0.012	-0.006	32.3	90.0	
SEC_HS-2-6	0.208	114.279	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-6	-0.012	-0.006	32.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_HS-2-7	0.208	114.137	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-7	-0.012	-0.006	32.2	90.0	
SEC_HS-2-10	0.208	113.728	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-11	-0.012	-0.006	32.2	90.0	
SEC_HS-2-23	0.208	113.470	-2.3	0.000	0.000	0.012	0.006	Pole HS-2-26	-0.012	-0.006	32.1	90.0	
SEC_HS-2-25	0.208	113.344	-2.3	0.000	0.000	0.012	0.006	Pole HS-2-30	-0.012	-0.006	32.1	90.0	
SEC_HS-2-36	0.208	113.296	-2.3	0.000	0.000	0.012	0.006	Pole HS-2-43	-0.012	-0.006	32.1	90.0	
SEC_HS-2-67	0.208	113.727	-2.4	0.000	0.000	0.012	0.006	Pole HS-2-77	-0.012	-0.006	32.2	90.0	
SEC_HS-3-55	0.208	113.381	-2.3	0.000	0.000	0.012	0.006	Pole HS-3-59	-0.012	-0.006	32.1	90.0	
SEC_HS-3-57	0.208	113.350	-2.3	0.000	0.000	0.012	0.006	Pole HS-3-61	-0.012	-0.006	32.1	90.0	
SEC_HS-3-59	0.208	113.335	-2.3	0.000	0.000	0.012	0.006	Pole HS-3-63	-0.012	-0.006	32.1	90.0	
SEC_HS-4-7	0.208	114.573	-2.5	0.000	0.000	0.013	0.006	Pole HS-4-10	-0.013	-0.006	34.1	90.0	
SEC_HS-4-13	0.208	114.306	-2.5	0.000	0.000	0.013	0.006	Pole HS-4-17	-0.013	-0.006	34.1	90.0	
SEC_HS-4-21	0.208	113.925	-2.4	0.000	0.000	0.013	0.006	Pole HS-4-26	-0.013	-0.006	34.0	90.0	
SEC_HS-4-32	0.208	114.594	-2.5	0.000	0.000	0.013	0.006	Pole HS-4-39	-0.013	-0.006	34.1	90.0	
SEC_HS-4-44	0.208	114.596	-2.5	0.000	0.000	0.013	0.006	Pole HS-4-48	-0.013	-0.006	34.1	90.0	
SEC_MS-1-17	0.208	99.946	-1.0	0.000	0.000	0.002	0.001	Pole MS-1-10	-0.002	-0.001	6.6	90.0	
SEC_MS-2-8	0.208	99.363	-0.9	0.000	0.000	0.006	0.003	Pole MS-2-1	-0.006	-0.003	19.6	90.0	
SEC_MS-2-36	0.208	99.457	-0.9	0.000	0.000	0.006	0.003	Pole MS-2-90	-0.006	-0.003	19.6	90.0	
SEC_MS-2-37	0.208	99.358	-0.9	0.000	0.000	0.006	0.003	Pole MS-2-2	-0.006	-0.003	19.6	90.0	
SEC_MS-2-38	0.208	99.352	-0.9	0.000	0.000	0.006	0.003	Pole MS-2-3	-0.006	-0.003	19.6	90.0	
SEC_MS-2-39	0.208	99.363	-0.9	0.000	0.000	0.006	0.003	Pole MS-2-92	-0.006	-0.003	19.6	90.0	
SEC_MS-2-40	0.208	99.328	-0.9	0.000	0.000	0.006	0.003	Pole MS-2-94	-0.006	-0.003	19.6	90.0	
SEC_MS-2-41	0.208	99.234	-0.9	0.000	0.000	0.006	0.003	Pole MS-2-100	-0.006	-0.003	19.6	90.0	
SEC_MS-3-1	0.208	99.513	-0.8	0.000	0.000	0.006	0.003	Pole MS-3-2	-0.006	-0.003	19.6	90.0	
SEC_MS-3-2	0.208	99.409	-0.8	0.000	0.000	0.006	0.003	Pole MS-3-6	-0.006	-0.003	19.6	90.0	
SEC_MS-3-3	0.208	99.350	-0.8	0.000	0.000	0.006	0.003	Pole MS-3-8	-0.006	-0.003	19.6	90.0	
SEC_MS-3-22	0.208	99.127	-0.8	0.000	0.000	0.006	0.003	Pole MS-3-25	-0.006	-0.003	19.6	90.0	
SEC_MS-3-45	0.208	99.105	-0.8	0.000	0.000	0.010	0.005	Pole MS-4-36	-0.010	-0.005	31.0	90.0	
SEC_MS-3-49	0.208	99.044	-0.8	0.000	0.000	0.010	0.005	Pole MS-3-100	-0.010	-0.005	31.0	90.0	
SEC_MS-3-65	0.208	99.035	-0.8	0.000	0.000	0.010	0.005	Pole MS-3-102	-0.010	-0.005	31.0	90.0	
SEC_MS-3-66	0.208	99.200	-0.8	0.000	0.000	0.010	0.005	Pole MS-4-17	-0.010	-0.005	31.0	90.0	
SEC_MS-3-73	0.208	99.652	-0.8	0.000	0.000	0.006	0.003	Pole MS-4-3	-0.006	-0.003	19.7	90.0	
SEC_MS-3-74	0.208	99.648	-0.8	0.000	0.000	0.006	0.003	Pole MS-4-6	-0.006	-0.003	19.7	90.0	
SEC_MS-3-75	0.208	99.445	-0.8	0.000	0.000	0.006	0.003	Pole MS-4-10	-0.006	-0.003	19.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_MS-3-76	0.208	99.135	-0.8	0.000	0.000	0.010	0.005	Pole MS-4-20	-0.010	-0.005	31.0	90.0	
SEC_MS-5-15	0.208	98.532	-1.1	0.000	0.000	0.006	0.003	Pole MS-5-16	-0.006	-0.003	19.5	90.0	
SEC_MS-5-16	0.208	98.419	-1.1	0.000	0.000	0.009	0.005	Pole MS-5-17	-0.009	-0.005	29.3	90.0	
SEC_MS-5-17	0.208	98.418	-1.1	0.000	0.000	0.009	0.005	Pole MS-5-18	-0.009	-0.005	29.3	90.0	
SEC_MS-5-23	0.208	98.485	-1.1	0.000	0.000	0.006	0.003	Pole MS-5-26	-0.006	-0.003	19.5	90.0	
SEC_MS-5-25	0.208	98.481	-1.1	0.000	0.000	0.006	0.003	Pole MS-5-28	-0.006	-0.003	19.5	90.0	
SEC_MS-5-26	0.208	98.374	-1.1	0.000	0.000	0.009	0.005	Pole MS-5-29	-0.009	-0.005	29.2	90.0	
SEC_MS-5-29	0.208	98.439	-1.1	0.000	0.000	0.006	0.003	Pole MS-5-32	-0.006	-0.003	19.5	90.0	
SEC_MS-5-30	0.208	98.327	-1.1	0.000	0.000	0.009	0.005	Pole MS-5-33	-0.009	-0.005	29.2	90.0	
SEC_MS-5-32	0.208	98.427	-1.1	0.000	0.000	0.006	0.003	Pole MS-5-35	-0.006	-0.003	19.5	90.0	
SEC_MS-5-40	0.208	98.264	-1.1	0.000	0.000	0.006	0.003	Pole MS-5-45	-0.006	-0.003	19.5	90.0	
SEC_MS-5-45	0.208	98.234	-1.1	0.000	0.000	0.006	0.003	Pole MS-5-50	-0.006	-0.003	19.5	90.0	
SEC_MS-5-99	0.208	99.835	-1.0	0.000	0.000	0.006	0.003	Pole MS-5-110	-0.006	-0.003	19.7	90.0	
SEC_MS-7-9	0.208	100.510	1.9	0.000	0.000	0.017	0.008	Pole MS-7-16	-0.017	-0.008	51.0	90.0	
SEC_MS-8-3	0.208	99.492	-0.9	0.000	0.000	0.013	0.006	Pole MS-8-4	-0.013	-0.006	39.3	90.0	
SEC_MS-8-8	0.208	99.313	-0.9	0.000	0.000	0.019	0.009	Pole MS-8-9	-0.019	-0.009	58.8	90.0	
SEC_MS-9-12	0.208	99.368	-0.9	0.000	0.000	0.013	0.006	Pole MS-9-15	-0.013	-0.006	39.2	90.0	
SEC_MS-9-14	0.208	99.274	-0.9	0.000	0.000	0.013	0.006	Pole MS-9-18	-0.013	-0.006	39.2	90.0	
SEC_MS-9-17	0.208	99.232	-0.9	0.000	0.000	0.013	0.006	Pole MS-9-21	-0.013	-0.006	39.2	90.0	
SEC_MS-9-22	0.208	99.217	-1.0	0.000	0.000	0.013	0.006	Pole MS-9-26	-0.013	-0.006	39.2	90.0	
SEC_MS-9-31	0.208	99.184	-1.0	0.000	0.000	0.013	0.006	Pole MS-9-37	-0.013	-0.006	39.2	90.0	
SEC_MS-9-32	0.208	99.054	-1.0	0.000	0.000	0.019	0.009	Pole MS-9-38	-0.019	-0.009	58.7	90.0	
SEC_MS-9-37	0.208	99.051	-1.0	0.000	0.000	0.013	0.006	Pole MS-9-46	-0.013	-0.006	39.2	90.0	
SEC_MS-9-38	0.208	99.046	-1.0	0.000	0.000	0.013	0.006	Pole MS-9-47	-0.013	-0.006	39.2	90.0	
SEC_MS-9-39	0.208	98.922	-1.0	0.000	0.000	0.019	0.009	Pole MS-9-48	-0.019	-0.009	58.7	90.0	
SEC_MS-9-40	0.208	98.900	-1.0	0.000	0.000	0.019	0.009	Pole MS-9-49	-0.019	-0.009	58.7	90.0	
SEC_MS-9-41	0.208	98.928	-1.0	0.000	0.000	0.017	0.008	Pole MS-9-50	-0.017	-0.008	52.2	90.0	
SEC_MS-9-42	0.208	98.920	-1.0	0.000	0.000	0.017	0.008	Pole MS-9-51	-0.017	-0.008	52.2	90.0	
SEC_MS-9-43	0.208	98.913	-1.0	0.000	0.000	0.017	0.008	Pole MS-9-52	-0.017	-0.008	52.2	90.0	
SEC_MS-9-44	0.208	99.003	-1.0	0.000	0.000	0.012	0.006	Pole MS-9-53	-0.012	-0.006	35.9	90.0	
SEC_PM_1	0.208	98.710	-2.7	0.000	0.000	0.030	0.014	PRI_PM_1	-0.030	-0.014	92.8	90.0	
SEC_PM_1-1	0.208	96.849	-2.6	0.000	0.000	0.029	0.014	PRI_PM_1-1	-0.029	-0.014	91.8	90.0	
SEC_PM_2	0.208	98.365	-2.6	0.000	0.000	0.030	0.014	PRI_PM_2	-0.030	-0.014	92.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_PM_3	0.208	98.076	-2.6	0.000	0.000	0.029	0.014	PRI_PM_3	-0.029	-0.014	92.5	90.0	
SEC_PM_4	0.208	96.661	-1.9	0.000	0.000	0.124	0.060	PRI_PM_4	-0.124	-0.060	396.6	90.0	
SEC_PM_5	0.208	97.828	-2.6	0.000	0.000	0.029	0.014	PRI_PM_5	-0.029	-0.014	92.3	90.0	
SEC_PM_6	0.208	97.594	-2.5	0.000	0.000	0.029	0.014	PRI_PM_6	-0.029	-0.014	92.2	90.0	
SEC_PM_7	0.208	98.874	-1.1	0.000	0.000	0.091	0.044	PRI_PM_7	-0.091	-0.044	282.5	90.0	
SEC_PM_8	0.208	99.119	-1.1	0.000	0.000	0.073	0.036	PRI_PM_8	-0.073	-0.036	228.5	90.0	
SEC_PM_9	0.208	99.119	-1.1	0.000	0.000	0.066	0.032	PRI_PM_9	-0.066	-0.032	206.8	90.0	
SEC_PM_10	0.208	98.423	-2.5	0.000	0.000	0.066	0.032	PRI_PM_10	-0.066	-0.032	205.9	90.0	
SEC_PM_11	0.208	98.833	-2.7	0.000	0.000	0.070	0.034	PRI_PM_11	-0.070	-0.034	217.3	90.0	
SEC_PM_12	0.208	96.800	-1.9	0.000	0.000	0.125	0.060	PRI_PM_12	-0.125	-0.060	396.9	90.0	
SEC_PM_13	0.208	96.236	-1.8	0.000	0.000	0.234	0.113	PRI_PM_13	-0.234	-0.113	748.3	90.0	
SEC_PM_14	0.208	96.869	-1.7	0.000	0.000	0.175	0.085	PRI_PM_14	-0.175	-0.085	558.1	90.0	
SEC_PM_15	0.208	98.322	-2.7	0.000	0.000	0.159	0.077	PRI_PM_15	-0.159	-0.077	498.2	90.0	
SEC_PM_16	0.208	98.816	-2.8	0.000	0.000	0.070	0.034	PRI_PM_16	-0.070	-0.034	217.3	90.0	
SEC_PM_17	0.208	98.269	-2.9	0.000	0.000	0.059	0.028	PRI_PM_17	-0.059	-0.028	184.0	90.0	
SEC_PM_18	0.208	98.622	-1.1	0.000	0.000	0.090	0.044	PRI_PM_18	-0.090	-0.044	282.1	90.0	
SEC_PM_19	0.208	96.672	-2.6	0.000	0.000	0.067	0.033	PRI_PM_19	-0.067	-0.033	214.4	90.0	
SEC_PM_20	0.208	96.967	-2.6	0.000	0.000	0.068	0.033	PRI_PM_20	-0.068	-0.033	214.8	90.0	
SEC_PM_21	0.208	97.089	-2.6	0.000	0.000	0.071	0.034	PRI_PM_21	-0.071	-0.034	225.7	90.0	
SEC_PM_22	0.208	98.350	-2.7	0.000	0.000	0.079	0.038	PRI_PM_22	-0.079	-0.038	249.1	90.0	
SEC_PM_23	0.208	96.832	-2.7	0.000	0.000	0.077	0.038	PRI_PM_23	-0.077	-0.038	246.8	90.0	
SEC_PM_24	0.208	96.749	-2.7	0.000	0.000	0.077	0.037	PRI_PM_24	-0.077	-0.037	246.7	90.0	
SEC_PM_25	0.208	98.714	-2.7	0.000	0.000	0.040	0.019	PRI_PM_25	-0.040	-0.019	124.8	90.0	
SEC_PM_26	0.208	98.379	-2.7	0.000	0.000	0.040	0.019	PRI_PM_26	-0.040	-0.019	124.6	90.0	
SEC_PM_28	0.208	98.414	-2.5	0.000	0.000	0.066	0.032	PRI_PM_28	-0.066	-0.032	205.9	90.0	
SEC_SF-1-26	0.208	97.696	-1.5	0.000	0.000	0.016	0.008	SF-1-11	-0.016	-0.008	50.2	90.0	
SEC_SF-1-47	0.208	97.372	-1.5	0.000	0.000	0.016	0.008	SF-1-14	-0.016	-0.008	50.1	90.0	
SEC_SF-1-49	0.208	97.888	-1.5	0.000	0.000	0.016	0.008	SF-1-28	-0.016	-0.008	50.2	90.0	
SEC_SF-1-51	0.208	97.736	-1.5	0.000	0.000	0.016	0.008	SF-1-29	-0.016	-0.008	50.2	90.0	
SEC_SF-1-55	0.208	97.422	-1.5	0.000	0.000	0.016	0.008	SF-1-31	-0.016	-0.008	50.1	90.0	
SEC_SF-1-57	0.208	97.296	-1.5	0.000	0.000	0.016	0.008	SF-1-32	-0.016	-0.008	50.0	90.0	
SEC_SF-1-59	0.208	97.022	-1.5	0.000	0.000	0.016	0.008	SF-1-18	-0.016	-0.008	50.0	90.0	
SEC_SF-1-61	0.208	96.853	-1.5	0.000	0.000	0.016	0.008	SF-1-27	-0.016	-0.008	49.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_SF-1-63	0.208	96.524	-1.5	0.000	0.000	0.016	0.008	SF-1-39	-0.016	-0.008	49.8	90.0	
SEC_SF-1-65	0.208	96.916	-1.6	0.000	0.000	0.016	0.008	SF-1-62	-0.016	-0.008	49.9	90.0	
SEC_SF-1-67	0.208	96.340	-1.5	0.000	0.000	0.016	0.008	SF-1-50	-0.016	-0.008	49.7	90.0	
SEC_SF-1-69	0.208	97.130	-1.6	0.000	0.000	0.016	0.008	SF-1-58	-0.016	-0.008	50.0	90.0	
SEC_SF-1-71	0.208	97.413	-1.6	0.000	0.000	0.016	0.008	SF-1-56	-0.016	-0.008	50.1	90.0	
SEC_SF-1-73	0.208	97.580	-1.6	0.000	0.000	0.016	0.008	SF-1-54	-0.016	-0.008	50.1	90.0	
SEC_SF-1-75	0.208	97.707	-1.6	0.000	0.000	0.016	0.008	SF-1-55	-0.016	-0.008	50.2	90.0	
SEC_SF-2-7	0.208	99.051	-1.1	0.000	0.000	0.014	0.007	SF-2-12	-0.014	-0.007	44.1	90.0	
SEC_SF-2-11	0.208	99.028	-1.1	0.000	0.000	0.014	0.007	SF-2-25	-0.014	-0.007	44.1	90.0	
SEC_SF-2-15	0.208	98.975	-1.1	0.000	0.000	0.014	0.007	SF-2-17	-0.014	-0.007	44.0	90.0	
SEC_SF-2-18	0.208	98.967	-1.1	0.000	0.000	0.014	0.007	SF-2-20	-0.014	-0.007	44.0	90.0	
SEC_SF-2-19	0.208	99.058	-1.1	0.000	0.000	0.014	0.007	SF-2-22	-0.014	-0.007	44.1	90.0	
SEC_SF-2-20	0.208	99.054	-1.1	0.000	0.000	0.014	0.007	SF-2-23	-0.014	-0.007	44.1	90.0	
SEC_SF-4-01	0.208	99.392	-1.2	0.000	0.000	0.016	0.008	SF-2-46	-0.016	-0.008	50.7	90.0	
SEC_SF-4-2	0.208	99.699	-1.1	0.000	0.000	0.007	0.004	SF-2-47	-0.007	-0.004	22.9	90.0	
SEC_SF-4-3	0.208	99.698	-1.1	0.000	0.000	0.007	0.004	SF-2-48	-0.007	-0.004	22.9	90.0	
SEC_SUB_FDR_XFMR#25-49	0.208	97.452	-1.5	0.000	0.000	0.010	0.005	SF-1-57	-0.010	-0.005	32.3	90.0	
SF-1-1	4.160	99.599	-1.1	0.000	0.000	0.007	0.003	BUS_SAF_4kV	-1.171	-0.582	182.2	89.5	
								SF-1-2	1.164	0.579	181.1	89.5	
SF-1-2	4.160	99.234	-1.2	0.000	0.000	0.000	0.000	SF-1-4	0.021	0.010	3.2	89.8	
								SF-1-1	-1.160	-0.575	181.1	89.6	
								SF-1-3	1.140	0.565	177.9	89.6	
SF-1-3	4.160	99.065	-1.2	0.000	0.000	0.007	0.003	SF-1-2	-1.138	-0.563	177.9	89.6	
								SF-1-7	1.132	0.560	176.9	89.6	
SF-1-4	4.160	99.224	-1.2	0.000	0.000	0.007	0.003	SF-1-2	-0.021	-0.010	3.2	89.8	
								SF-1-5	0.014	0.007	2.1	89.8	
SF-1-5	4.160	99.214	-1.2	0.000	0.000	0.007	0.003	SF-1-4	-0.014	-0.007	2.1	89.8	
								SF-1-6	0.007	0.003	1.1	89.8	
SF-1-6	4.160	99.212	-1.2	0.000	0.000	0.007	0.003	SF-1-5	-0.007	-0.003	1.1	89.8	
SF-1-7	4.160	98.709	-1.3	0.000	0.000	0.000	0.000	SF-1-8	0.298	0.146	46.7	89.8	
								SF-1-3	-1.128	-0.556	176.9	89.7	
								SF-1-26	0.830	0.410	130.2	89.7	
SF-1-8	4.160	98.570	-1.3	0.000	0.000	0.014	0.007	SF-1-7	-0.297	-0.146	46.7	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-1-9	0.284	0.139	44.5	89.8	
SF-1-9	4.160	98.501	-1.3	0.000	0.000	0.007	0.003	SF-1-8	-0.284	-0.139	44.5	89.8	
								SF-1-10	0.277	0.136	43.5	89.8	
SF-1-10	4.160	98.413	-1.3	0.000	0.000	0.007	0.003	SF-1-9	-0.277	-0.136	43.5	89.8	
								SF-1-11	0.270	0.133	42.4	89.8	
SF-1-11	4.160	98.258	-1.3	0.000	0.000	0.000	0.000	SF-1-10	-0.270	-0.132	42.4	89.8	
								SF-1-12	0.254	0.125	39.9	89.8	
								SEC_SF-1-26	0.016	0.008	2.5	89.8	
SF-1-12	4.160	98.085	-1.3	0.000	0.000	0.007	0.003	SF-1-11	-0.253	-0.124	39.9	89.8	
								SF-1-13	0.246	0.121	38.9	89.8	
SF-1-13	4.160	98.031	-1.3	0.000	0.000	0.007	0.003	SF-1-12	-0.246	-0.121	38.9	89.8	
								SF-1-14	0.240	0.118	37.8	89.8	
SF-1-14	4.160	97.933	-1.3	0.000	0.000	0.000	0.000	SF-1-13	-0.239	-0.118	37.8	89.8	
								SF-1-15	0.224	0.110	35.3	89.7	
								SEC_SF-1-47	0.016	0.008	2.5	89.8	
SF-1-15	4.160	97.791	-1.3	0.000	0.000	0.007	0.003	SF-1-14	-0.223	-0.110	35.3	89.7	
								SF-1-16	0.216	0.106	34.2	89.7	
SF-1-16	4.160	97.559	-1.3	0.000	0.000	0.007	0.003	SF-1-15	-0.216	-0.106	34.2	89.7	
								SF-1-17	0.209	0.103	33.2	89.7	
SF-1-17	4.160	97.402	-1.3	0.000	0.000	0.000	0.000	PRI_PM_14	0.176	0.087	27.9	89.7	
								SF-1-16	-0.209	-0.103	33.2	89.7	
								SF-1-19	0.033	0.016	5.3	89.8	
SF-1-18	4.160	97.582	-1.3	0.000	0.000	0.000	0.000	SF-1-34	-0.352	-0.174	55.8	89.7	
								SF-1-25	0.336	0.166	53.3	89.7	
								SEC_SF-1-59	0.016	0.008	2.5	89.8	
SF-1-19	4.160	97.386	-1.3	0.000	0.000	0.000	0.000	SF-1-17	-0.033	-0.016	5.3	89.8	
								SF-1-20	0.020	0.010	3.2	89.8	
								SF-1-23	0.013	0.006	2.1	89.8	
SF-1-20	4.160	97.383	-1.3	0.000	0.000	0.007	0.003	SF-1-21	0.013	0.007	2.1	89.8	
								SF-1-19	-0.020	-0.010	3.2	89.8	
SF-1-21	4.160	97.379	-1.3	0.000	0.000	0.007	0.003	SF-1-20	-0.013	-0.007	2.1	89.8	
								SF-1-22	0.007	0.003	1.1	89.8	
SF-1-22	4.160	97.377	-1.3	0.000	0.000	0.007	0.003	SF-1-21	-0.007	-0.003	1.1	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-23	4.160	97.367	-1.3	0.000	0.000	0.007	0.003	SF-1-19	-0.013	-0.007	2.1	89.8	
								SF-1-24	0.007	0.003	1.1	89.8	
SF-1-24	4.160	97.366	-1.3	0.000	0.000	0.007	0.003	SF-1-23	-0.007	-0.003	1.1	89.8	
SF-1-25	4.160	97.499	-1.3	0.000	0.000	0.007	0.003	SF-1-18	-0.336	-0.166	53.3	89.7	
								SF-1-27	0.329	0.162	52.3	89.7	
SF-1-26	4.160	98.586	-1.3	0.000	0.000	0.007	0.003	SF-1-28	0.440	0.216	69.0	89.7	
								SF-1-53	0.383	0.189	60.1	89.7	
								SF-1-7	-0.830	-0.409	130.2	89.7	
SF-1-27	4.160	97.412	-1.3	0.000	0.000	0.000	0.000	SF-1-25	-0.329	-0.162	52.3	89.7	
								SF-1-35	0.313	0.155	49.8	89.7	
								SEC_SF-1-61	0.016	0.008	2.5	89.8	
SF-1-28	4.160	98.451	-1.3	0.000	0.000	0.000	0.000	SF-1-26	-0.439	-0.216	69.0	89.7	
								SF-1-29	0.423	0.208	66.5	89.7	
								SEC_SF-1-49	0.016	0.008	2.5	89.8	
SF-1-29	4.160	98.298	-1.3	0.000	0.000	0.000	0.000	SF-1-28	-0.423	-0.208	66.5	89.7	
								SF-1-30	0.407	0.200	64.0	89.7	
								SEC_SF-1-51	0.016	0.008	2.5	89.8	
SF-1-30	4.160	98.197	-1.3	0.000	0.000	0.007	0.003	SF-1-29	-0.406	-0.200	64.0	89.7	
								SF-1-31	0.399	0.197	62.9	89.7	
SF-1-31	4.160	97.983	-1.3	0.000	0.000	0.000	0.000	SF-1-30	-0.399	-0.196	62.9	89.7	
								SF-1-33	0.383	0.189	60.4	89.7	
								SEC_SF-1-55	0.016	0.008	2.5	89.8	
SF-1-32	4.160	97.857	-1.3	0.000	0.000	0.000	0.000	SF-1-33	-0.376	-0.185	59.4	89.7	
								SF-1-34	0.360	0.177	56.9	89.7	
								SEC_SF-1-57	0.016	0.008	2.5	89.8	
SF-1-33	4.160	97.899	-1.3	0.000	0.000	0.007	0.003	SF-1-32	0.376	0.185	59.4	89.7	
								SF-1-31	-0.382	-0.188	60.4	89.7	
SF-1-34	4.160	97.676	-1.3	0.000	0.000	0.007	0.003	SF-1-18	0.352	0.174	55.8	89.7	
								SF-1-32	-0.359	-0.177	56.9	89.7	
SF-1-35	4.160	97.341	-1.3	0.000	0.000	0.007	0.003	SF-1-27	-0.313	-0.155	49.8	89.7	
								SF-1-36	0.306	0.151	48.7	89.7	
SF-1-36	4.160	97.261	-1.3	0.000	0.000	0.007	0.003	SF-1-35	-0.306	-0.151	48.7	89.7	
								SF-1-37	0.300	0.148	47.7	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-37	4.160	97.171	-1.3	0.000	0.000	0.007	0.003	SF-1-36	-0.299	-0.148	47.7	89.7	
								SF-1-38	0.293	0.145	46.6	89.7	
SF-1-38	4.160	97.084	-1.3	0.000	0.000	0.000	0.000	SF-1-37	-0.292	-0.144	46.6	89.7	
								SF-1-39	0.016	0.008	2.5	89.8	
								SF-1-40	0.277	0.137	44.1	89.7	
SF-1-39	4.160	97.082	-1.3	0.000	0.000	0.000	0.000	SF-1-38	-0.016	-0.008	2.5	89.8	
								SEC_SF-1-63	0.016	0.008	2.5	89.8	
SF-1-40	4.160	96.976	-1.3	0.000	0.000	0.000	0.000	PRI_PM_13	0.234	0.116	37.4	89.6	
								SF-1-38	-0.276	-0.137	44.1	89.7	
								SF-1-42	0.042	0.021	6.7	89.8	
SF-1-42	4.160	96.948	-1.3	0.000	0.000	0.000	0.000	SF-1-40	-0.042	-0.021	6.7	89.8	
								SF-1-44	0.042	0.021	6.7	89.8	
SF-1-44	4.160	96.919	-1.3	0.000	0.000	0.007	0.003	SF-1-42	-0.042	-0.021	6.7	89.8	
								SF-1-45	0.035	0.017	5.6	89.8	
SF-1-45	4.160	96.907	-1.3	0.000	0.000	0.000	0.000	SF-1-44	-0.035	-0.017	5.6	89.8	
								SF-1-47	0.035	0.017	5.6	89.8	
								L-SUB-FDR-EQ#16-1-38~	0.000	0.000	0.0	0.0	
SF-1-47	4.160	96.901	-1.3	0.000	0.000	0.007	0.003	SF-1-45	-0.035	-0.017	5.6	89.8	
								SF-1-50	0.029	0.014	4.6	89.8	
SF-1-50	4.160	96.897	-1.3	0.000	0.000	0.000	0.000	SF-1-47	-0.029	-0.014	4.6	89.8	
								SF-1-52	0.013	0.006	2.1	89.8	
								SEC_SF-1-67	0.016	0.008	2.5	89.8	
SF-1-52	4.160	96.894	-1.3	0.000	0.000	0.013	0.006	SF-1-50	-0.013	-0.006	2.1	89.8	
SF-1-53	4.160	98.413	-1.4	0.000	0.000	0.000	0.000	SF-1-55	0.382	0.189	60.1	89.7	
								SF-1-26	-0.382	-0.189	60.1	89.7	
SF-1-54	4.160	98.142	-1.4	0.000	0.000	0.000	0.000	SF-1-55	-0.365	-0.180	57.6	89.7	
								SF-1-56	0.350	0.173	55.1	89.7	
								SEC_SF-1-73	0.016	0.008	2.5	89.8	
SF-1-55	4.160	98.269	-1.4	0.000	0.000	0.000	0.000	SF-1-53	-0.382	-0.188	60.1	89.7	
								SF-1-54	0.366	0.181	57.6	89.7	
								SEC_SF-1-75	0.016	0.008	2.5	89.8	
SF-1-56	4.160	97.974	-1.4	0.000	0.000	0.000	0.000	SF-1-54	-0.349	-0.172	55.1	89.7	
								SF-1-57	0.333	0.164	52.6	89.7	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_SF-1-71	0.016	0.008	2.5	89.8	
SF-1-57	4.160	97.814	-1.4	0.000	0.000	0.007	0.003	SF-1-56	-0.332	-0.164	52.6	89.7	
								SF-1-58	0.316	0.156	49.9	89.6	
								SEC_SUB_FDR_XFMR#25-49	0.010	0.005	1.6	89.9	
SF-1-58	4.160	97.690	-1.4	0.000	0.000	0.000	0.000	SF-1-57	-0.315	-0.156	49.9	89.6	
								SF-1-59	0.299	0.148	47.4	89.6	
								SEC_SF-1-69	0.016	0.008	2.5	89.8	
SF-1-59	4.160	97.573	-1.4	0.000	0.000	0.000	0.000	PRI_PM_12	0.125	0.062	19.9	89.6	
								SF-1-58	-0.299	-0.148	47.4	89.6	
								SF-1-60	0.174	0.086	27.6	89.7	
SF-1-60	4.160	97.504	-1.4	0.000	0.000	0.000	0.000	PRI_PM_4	0.125	0.062	19.8	89.6	
								SF-1-59	-0.174	-0.086	27.6	89.7	
								SF-1-61	0.049	0.024	7.8	89.8	
SF-1-61	4.160	97.487	-1.4	0.000	0.000	0.007	0.003	SF-1-60	-0.049	-0.024	7.8	89.8	
								SF-1-62	0.042	0.021	6.7	89.8	
SF-1-62	4.160	97.476	-1.4	0.000	0.000	0.000	0.000	SF-1-61	-0.042	-0.021	6.7	89.8	
								SF-1-63	0.027	0.013	4.2	89.8	
								SEC_SF-1-65	0.016	0.008	2.5	89.8	
SF-1-63	4.160	97.465	-1.4	0.000	0.000	0.007	0.003	SF-1-62	-0.027	-0.013	4.2	89.8	
								SF-1-64	0.020	0.010	3.2	89.8	
SF-1-64	4.160	97.458	-1.4	0.000	0.000	0.007	0.003	SF-1-63	-0.020	-0.010	3.2	89.8	
								SF-1-65	0.013	0.007	2.1	89.8	
SF-1-65	4.160	97.452	-1.4	0.000	0.000	0.007	0.003	SF-1-64	-0.013	-0.007	2.1	89.8	
								SF-1-66	0.007	0.003	1.1	89.8	
SF-1-66	4.160	97.450	-1.4	0.000	0.000	0.007	0.003	SF-1-65	-0.007	-0.003	1.1	89.8	
SF-2-1	4.160	100.028	-1.0	0.000	0.000	0.006	0.003	BUS_SAF_4kV	-0.182	-0.089	28.1	89.9	
								SF-2-2	0.176	0.086	27.2	89.9	
SF-2-2	4.160	99.970	-1.0	0.000	0.000	0.000	0.000	SF-2-1	-0.176	-0.086	27.2	89.9	
								SF-2-3	0.006	0.003	0.9	89.8	
								SF-2-5	0.170	0.083	26.2	89.9	
SF-2-3	4.160	99.969	-1.0	0.000	0.000	0.006	0.003	SF-2-2	-0.006	-0.003	0.9	89.8	
								SF-2-4	0.000	0.000	0.0	0.0	
SF-2-4	4.160	99.969	-1.0	0.000	0.000	0.000	0.000	SF-2-3	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-2-5	4.160	99.941	-1.0	0.000	0.000	0.000	0.000	SF-2-2	-0.170	-0.083	26.2	89.9	
								SF-2-7	0.012	0.006	1.9	89.8	
								SF-2-9	0.006	0.003	0.9	89.8	
								SF-2-10	0.152	0.074	23.4	89.9	
SF-2-7	4.160	99.940	-1.0	0.000	0.000	0.006	0.003	SF-2-5	-0.012	-0.006	1.9	89.8	
								SF-2-8	0.006	0.003	0.9	89.8	
SF-2-8	4.160	99.939	-1.0	0.000	0.000	0.006	0.003	SF-2-7	-0.006	-0.003	0.9	89.8	
SF-2-9	4.160	99.939	-1.0	0.000	0.000	0.006	0.003	SF-2-5	-0.006	-0.003	0.9	89.8	
SF-2-10	4.160	99.745	-1.0	0.000	0.000	0.006	0.003	SF-2-5	-0.151	-0.074	23.4	89.9	
								SF-2-11	0.145	0.071	22.5	89.9	
SF-2-11	4.160	99.559	-1.0	0.000	0.000	0.000	0.000	SF-2-10	-0.145	-0.071	22.5	89.9	
								SF-2-12	0.085	0.041	13.1	89.8	
								SF-2-14	0.032	0.016	5.0	89.9	
								SF-2-22	0.028	0.014	4.4	89.9	
SF-2-12	4.160	99.545	-1.0	0.000	0.000	0.000	0.000	SF-2-11	-0.085	-0.041	13.1	89.8	
								SF-2-13	0.070	0.034	10.9	89.8	
								SEC_SF-2-7	0.014	0.007	2.2	89.9	
SF-2-13	4.160	99.534	-1.0	0.000	0.000	0.012	0.006	SF-2-12	-0.070	-0.034	10.9	89.8	
								SF-2-15	0.058	0.029	9.1	89.9	
SF-2-14	4.160	99.544	-1.0	0.000	0.000	0.006	0.003	SF-2-11	-0.032	-0.016	5.0	89.9	
								SF-2-26	0.026	0.013	4.1	89.9	
SF-2-15	4.160	99.502	-1.0	0.000	0.000	0.012	0.006	SF-2-13	-0.058	-0.029	9.1	89.8	
								SF-2-16	0.046	0.023	7.2	89.9	
SF-2-16	4.160	99.477	-1.0	0.000	0.000	0.006	0.003	SF-2-15	-0.046	-0.023	7.2	89.9	
								SF-2-17	0.040	0.020	6.3	89.9	
SF-2-17	4.160	99.468	-1.0	0.000	0.000	0.000	0.000	SF-2-16	-0.040	-0.020	6.3	89.9	
								SF-2-18	0.026	0.013	4.1	89.9	
								SEC_SF-2-15	0.014	0.007	2.2	89.9	
SF-2-18	4.160	99.467	-1.0	0.000	0.000	0.006	0.003	SF-2-17	-0.026	-0.013	4.1	89.8	
								SF-2-19	0.020	0.010	3.1	89.9	
SF-2-19	4.160	99.464	-1.0	0.000	0.000	0.006	0.003	SF-2-18	-0.020	-0.010	3.1	89.9	
								SF-2-20	0.014	0.007	2.2	89.9	
SF-2-20	4.160	99.460	-1.0	0.000	0.000	0.000	0.000	SF-2-19	-0.014	-0.007	2.2	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-2-21	0.000	0.000	0.0	0.0	
								SEC_SF-2-18	0.014	0.007	2.2	89.9	
SF-2-21	4.160	99.460	-1.0	0.000	0.000	0.000	0.000	SF-2-20	0.000	0.000	0.0	0.0	
SF-2-22	4.160	99.552	-1.0	0.000	0.000	0.000	0.000	SF-2-11	-0.028	-0.014	4.4	89.9	
								SF-2-23	0.014	0.007	2.2	89.9	
								SEC_SF-2-19	0.014	0.007	2.2	89.9	
SF-2-23	4.160	99.548	-1.0	0.000	0.000	0.000	0.000	SF-2-22	-0.014	-0.007	2.2	89.9	
								SF-2-24	0.000	0.000	0.0	0.0	
								SEC_SF-2-20	0.014	0.007	2.2	89.9	
SF-2-24	4.160	99.548	-1.0	0.000	0.000	0.000	0.000	SF-2-23	0.000	0.000	0.0	0.0	
SF-2-25	4.160	99.522	-1.0	0.000	0.000	0.000	0.000	SF-2-26	-0.026	-0.013	4.1	89.9	
								SF-2-27	0.012	0.006	1.9	89.9	
								SEC_SF-2-11	0.014	0.007	2.2	89.9	
SF-2-26	4.160	99.538	-1.0	0.000	0.000	0.000	0.000	SF-2-25	0.026	0.013	4.1	89.9	
								SF-2-14	-0.026	-0.013	4.1	89.9	
SF-2-27	4.160	99.506	-1.0	0.000	0.000	0.006	0.003	SF-2-25	-0.012	-0.006	1.9	89.8	
								SF-2-28	0.006	0.003	0.9	89.9	
SF-2-28	4.160	99.503	-1.0	0.000	0.000	0.006	0.003	SF-2-27	-0.006	-0.003	0.9	89.8	
								SF-2-29	0.000	0.000	0.0	0.0	
SF-2-29	4.160	99.503	-1.0	0.000	0.000	0.000	0.000	SF-2-28	0.000	0.000	0.0	0.0	
SF-2-30	4.160	100.083	-1.0	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.156	-0.076	24.1	90.0	
								Pole MS-5-108	0.125	0.061	19.3	90.0	
								SF-2-33	0.031	0.015	4.8	90.0	
SF-2-33	4.160	100.027	-1.0	0.000	0.000	0.000	0.000	SF-2-37	0.031	0.015	4.8	89.9	
								SF-2-30	-0.031	-0.015	4.8	89.9	
								Line SF-2-45~	0.000	0.000	0.0	0.0	
SF-2-37	4.160	100.007	-1.0	0.000	0.000	0.000	0.000	SF-2-33	-0.031	-0.015	4.8	89.9	
								SF-2-42	0.031	0.015	4.8	89.9	
								Line SF-2-37~	0.000	0.000	0.0	0.0	
SF-2-42	4.160	99.986	-1.0	0.000	0.000	0.000	0.000	SF-2-37	-0.031	-0.015	4.8	89.9	
								SF-2-44	0.031	0.015	4.8	89.9	
								Line SF-2-49~	0.000	0.000	0.0	0.0	
SF-2-44	4.160	99.964	-1.0	0.000	0.000	0.000	0.000	SF-2-42	-0.031	-0.015	4.8	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-2-46	0.031	0.015	4.8	89.9	
								Line SF-2-53~	0.000	0.000	0.0	0.0	
SF-2-46	4.160	99.960	-1.0	0.000	0.000	0.000	0.000	SF-2-44	-0.031	-0.015	4.8	89.9	
								SF-2-47	0.015	0.007	2.3	90.0	
								SEC_SF-4-01	0.016	0.008	2.5	89.8	
SF-2-47	4.160	99.956	-1.0	0.000	0.000	0.000	0.000	SF-2-46	-0.015	-0.007	2.3	90.0	
								SF-2-48	0.007	0.004	1.1	90.0	
								SEC_SF-4-2	0.007	0.004	1.1	89.9	
SF-2-48	4.160	99.955	-1.0	0.000	0.000	0.000	0.000	SF-2-47	-0.007	-0.004	1.1	90.0	
								SF-2-50	0.000	0.000	0.0	0.0	
								SEC_SF-4-3	0.007	0.004	1.1	89.9	
SF-2-50	4.160	99.955	-1.0	0.000	0.000	0.000	0.000	SF-2-48	0.000	0.000	0.0	0.0	
								Line SF-2-61~	0.000	0.000	0.0	0.0	
UG-JUNC-CS-5-8	24.900	97.854	-1.3	0.000	0.000	0.000	0.000	Pole CS-5-20	-0.023	-0.011	0.6	89.8	
								SEC_CS-5-10	0.023	0.011	0.6	89.8	
UG-JUNC-CS-5-9	24.900	97.854	-1.3	0.000	0.000	0.000	0.000	Pole CS-5-19	-0.023	-0.011	0.6	90.0	
								SEC_CS-5-12	0.023	0.011	0.6	90.0	
UG_JUNC-CS-1	4.160	99.071	-2.4	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	0.551	0.267	85.7	90.0	
								Pole CS-2-5	-0.581	-0.281	90.4	90.0	
								PRI_PM_1	0.030	0.015	4.6	89.8	
UG_JUNC-CS-2	4.160	98.726	-2.4	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-0.549	-0.266	85.8	90.0	
								UG_JUNC-CS-3	0.519	0.252	81.1	90.0	
								PRI_PM_2	0.030	0.014	4.6	89.8	
UG_JUNC-CS-3	4.160	98.436	-2.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-0.517	-0.252	81.1	89.9	
								PRI_PM_3	0.029	0.014	4.6	89.8	
								UG_JUNC-CS-5	0.488	0.237	76.5	89.9	
UG_JUNC-CS-5	4.160	98.187	-2.3	0.000	0.000	0.000	0.000	PRI_PM_5	0.029	0.014	4.6	89.8	
								UG_JUNC-CS-3	-0.487	-0.237	76.5	89.9	
								UG_JUNC-CS-6	0.457	0.223	71.9	89.9	
UG_JUNC-CS-6	4.160	97.954	-2.2	0.000	0.000	0.000	0.000	PRI_PM_6	0.029	0.014	4.6	89.8	
								UG_JUNC-CS-5	-0.456	-0.223	71.9	89.9	
								Pole CS-2-7	0.427	0.208	67.3	89.9	
UG_JUNC-CS-7	4.160	97.539	-2.3	0.000	0.000	0.000	0.000	Pole CS-2-17	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								C_SUB-FDR-EQ#7-3-8~	0.000	0.000	0.0	0.0	
C_SUB-FDR-EQ#7-3-8~	4.160	97.539	-2.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
LINE 6M-26~	4.160	99.196	-1.3	0.000	0.000	0.000	0.000	Pole 6M-1-23	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-173~	4.160	98.030	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-57	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-84~	4.160	98.457	-2.7	0.000	0.000	0.000	0.000	Pole CS-1-10	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-86~	4.160	97.876	-2.8	0.000	0.000	0.000	0.000	Pole CS-1-54	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-237~	4.160	99.326	-2.4	0.000	0.000	0.000	0.000	Pole CS-2-66	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-246~	4.160	98.007	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-36	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-276~	4.160	98.082	-2.4	0.000	0.000	0.000	0.000	Pole CS-3-74	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-283~	4.160	99.478	-2.4	0.000	0.000	0.000	0.000	Pole CS-4-4	0.000	0.000	0.0	0.0	
LINE MS-4-53~	4.160	98.453	-0.7	0.000	0.000	0.000	0.000	Pole MS-4-52	0.000	0.000	0.0	0.0	
Line MS-5-79~	4.160	98.264	-1.1	0.000	0.000	0.000	0.000	Pole MS-5-76	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-97~	4.160	99.310	-0.8	0.000	0.000	0.000	0.000	Pole MS-2-122	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-173~	4.160	99.567	-0.9	0.000	0.000	0.000	0.000	Pole MS-2-3	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-13~	4.160	99.585	-0.9	0.000	0.000	0.000	0.000	Pole MS-2-180	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-133~	4.160	99.342	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-25	0.000	0.000	0.0	0.0	
LINE MS-3-11~	4.160	99.307	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-43	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-177~	4.160	99.400	-0.7	0.000	0.000	0.000	0.000	Pole MS-3-70	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-1-38~	4.160	96.907	-1.3	0.000	0.000	0.000	0.000	SF-1-45	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-12~	4.160	100.018	-1.0	0.000	0.000	0.000	0.000	Pole MS-1-19	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-9~	4.160	100.072	-1.0	0.000	0.000	0.000	0.000	Pole MS-1-1	0.000	0.000	0.0	0.0	
Line MS-5-129~	4.160	99.830	-1.0	0.000	0.000	0.000	0.000	Pole MS-5-125	0.000	0.000	0.0	0.0	
Line SF-2-37~	4.160	100.007	-1.0	0.000	0.000	0.000	0.000	SF-2-37	0.000	0.000	0.0	0.0	
Line SF-2-45~	4.160	100.027	-1.0	0.000	0.000	0.000	0.000	SF-2-33	0.000	0.000	0.0	0.0	
Line SF-2-49~	4.160	99.986	-1.0	0.000	0.000	0.000	0.000	SF-2-42	0.000	0.000	0.0	0.0	
Line SF-2-53~	4.160	99.964	-1.0	0.000	0.000	0.000	0.000	SF-2-44	0.000	0.000	0.0	0.0	
Line SF-2-61~	4.160	99.955	-1.0	0.000	0.000	0.000	0.000	SF-2-50	0.000	0.000	0.0	0.0	
HS-4-33~	4.160	99.746	-2.4	0.000	0.000	0.000	0.000	Pole HS-4-47	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-90~	4.160	98.802	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-67	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-96~	4.160	98.806	-2.3	0.000	0.000	0.000	0.000	Pole HS-4-33	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-278~	4.160	98.600	-2.2	0.000	0.000	0.000	0.000	Pole HS-2-49	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-301~	4.160	98.979	-2.3	0.000	0.000	0.000	0.000	Pole HS-2-66	0.000	0.000	0.0	0.0	
L-25-LAM-L1-02~	24.900	99.793	-0.8	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
L-25-LLP-SW-03~	24.900	99.519	0.2	0.000	0.000	0.000	0.000	BUS_SAF_25kV	0.000	0.000	0.0	0.0	
L-25-XFMR-03~	24.900	99.729	0.2	0.000	0.000	0.000	0.000	BUS_25kV_03	0.000	0.000	0.0	0.0	
Line51~	69.000	99.830	0.1	0.000	0.000	0.000	0.000	BUS_LLP_69kV_02	0.000	0.000	0.0	0.0	
L-25-LLP-E-06~	24.900	97.664	-0.2	0.000	0.000	0.000	0.000	BUS_25kV_E-04	0.000	0.000	0.0	0.0	
Line15~	24.900	99.555	0.2	0.000	0.000	0.000	0.000	BUS_25kV_W-02	0.000	0.000	0.0	0.0	
L-25-LLP-W-03~	24.900	99.145	0.1	0.000	0.000	0.000	0.000	BUS_25kV_W-03	0.000	0.000	0.0	0.0	

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)

# Indicates a bus with a load mismatch of more than 0.1 MVA

LOAD FLOW REPORT

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Bus1	4.160	100.243	0.5	0.000	0.000	0.000	0.000	BUS_5KV_LLP_2	0.000	0.000	0.0	0.0	
Bus2	4.160	97.563	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.000	0.000	0.0	0.0	
BUS_5KV-LLP_01	4.160	100.264	0.5	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	-0.503	-0.246	77.5	89.8	
								BUS_5KV_LLP_02	0.043	0.023	6.8	88.3	
								Pole MS-9-1	0.167	0.081	25.7	89.9	
								Pole MS-4-1	0.081	0.039	12.4	90.3	
								Pole MS-4-31	0.212	0.103	32.7	89.9	
BUS_5KV_LLP_01	4.160	100.246	0.5	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.159	-0.088	25.2	87.4	
								BUS_5KV_LLP_PLTLDCTR	0.085	0.052	13.9	85.2	
								Pole MS-8-1	0.074	0.036	11.3	89.9	
BUS_5KV_LLP_2	4.160	100.243	0.5	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.105	-0.051	16.1	90.0	
								Bus1	0.000	0.000	0.0	0.0	
								Pole MS-2-182	0.105	0.051	16.2	90.0	
BUS_5KV_LLP_02	4.160	100.258	0.5	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	0.159	0.087	25.1	87.7	
								BUS_5KV_XFMR_02	-0.590	-0.293	91.2	89.6	
								BUS_5KV-LLP_01	-0.043	-0.024	6.8	87.9	
								BUS_5KV_LLP_2	0.105	0.050	16.1	90.1	
								Pole CS-1-90	0.108	0.052	16.6	90.1	
								Pole MS-3-87	0.261	0.127	40.2	90.0	
BUS_5KV_LLP_PLTLDCTR	4.160	100.232	0.5	0.000	0.000	0.085	0.053	BUS_5KV_LLP_01	-0.085	-0.053	13.9	85.0	
BUS_5KV_XFMR_02	4.160	100.300	0.5	0.000	0.000	0.000	0.000	BUS_5KV-LLP_01	0.503	0.245	77.5	89.9	
								BUS_5KV_LLP_02	0.590	0.292	91.1	89.6	
								BUS_25kV_SUB_02	-1.093	-0.538	168.6	89.7	0.625
BUS_5_NEOPLAN	4.160	99.910	0.5	0.000	0.000	0.108	0.052	Pole CS-1-90	-0.108	-0.052	16.6	90.0	
BUS_6M_5kV	4.160	99.912	-0.7	0.000	0.000	0.000	0.000	BUS_6M_SEC	-0.129	-0.061	19.9	90.3	
								Pole 6M-1-1	0.041	0.019	6.2	90.3	
								Pole 6M-E-1	0.089	0.042	13.7	90.3	
BUS_6M_25kV	24.900	100.195	-0.5	0.000	0.000	0.000	0.000	BUS_L1_01	-0.129	-0.062	3.3	90.3	
								L-25-LAM-L1-02~	0.000	0.000	0.0	0.0	
								BUS_6M_SEC	0.129	0.062	3.3	90.1	
BUS_6M_SEC	4.160	99.976	-0.7	0.000	0.000	0.000	0.000	BUS_6M_5kV	0.129	0.062	19.9	90.3	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_6M_25kV	-0.129	-0.062	19.9	90.3	
BUS-25kV-BEEFCITY	24.900	99.559	1.3	0.000	0.000	0.143	0.089	BUS-25kV-MCCLAVE	-0.143	-0.089	3.9	85.0	
BUS-25kV-BIG-BEND	24.900	100.154	1.3	0.000	0.000	0.145	0.090	BUS_25kV_W-10	-0.145	-0.090	3.9	85.0	
BUS-25KV-E-10	24.900	98.771	-1.6	0.000	0.000	0.667	0.413	BUS_25kV_E-09	-0.667	-0.413	18.4	85.0	
BUS-25kV-HS-01	24.900	99.060	-0.7	0.000	0.000	0.033	0.021	BUS_HIS_25kV	-0.033	-0.021	0.9	85.0	
BUS-25kV-MCCLAVE	24.900	99.588	1.3	0.000	0.000	0.169	0.105	BUS_25kV_W-11	-0.312	-0.191	8.5	85.3	
								BUS-25kV-BEEFCITY	0.143	0.086	3.9	85.7	
BUS-25kV-TS-01	24.900	99.115	-0.7	0.000	0.000	0.033	0.021	BUS_TS_25kV	-0.033	-0.021	0.9	85.0	
BUS-25kV-TS-AREA	24.900	99.117	-0.7	0.000	0.000	0.033	0.021	BUS_TSA_25kV	-0.033	-0.021	0.9	85.0	
BUS-25kV-WILEY	24.900	100.168	1.3	0.000	0.000	0.170	0.106	BUS_25kV_W-10	-0.170	-0.106	4.6	85.0	
BUS_25kV_03	24.900	100.224	1.0	0.000	0.000	0.000	0.000	L-25-XFMR-03~	0.000	-0.001	0.0	0.0	
								BUS_25kV_SUB_01	-3.449	-1.801	90.0	88.6	
								BUS_25kV_SUB_02	3.449	1.802	90.0	88.6	
BUS_25kV_BRISTOL	24.900	98.721	-0.5	0.000	0.000	0.042	0.026	BUS_25kV_E-07	-0.042	-0.026	1.1	85.0	
BUS_25kV_CO-BEEF	24.900	100.128	1.3	0.000	0.000	0.289	0.179	BUS_25kV_W-08	-0.289	-0.179	7.9	85.0	
BUS_25kV_DECHANT	24.900	98.440	0.6	0.000	0.000	0.062	0.038	BUS_25kV_E-05	-0.062	-0.038	1.7	85.0	
BUS_25kV_E_01	24.900	100.224	1.0	0.000	0.000	0.000	0.000	BUS_25kV_E-02	0.918	0.468	23.8	89.1	
								BUS_25kV_SUB_01	-0.918	-0.468	23.8	89.1	
BUS_25kV_E-02	24.900	100.192	1.0	0.000	0.000	0.000	0.000	BUS_25kV_E_01	-0.917	-0.469	23.8	89.0	
								BUS_25kV_SUTRAK	0.034	0.021	0.9	85.1	
								BUS_25kV_E-03	0.883	0.448	22.9	89.2	
BUS_25kV_E-03	24.900	100.159	1.0	0.000	0.000	0.000	0.000	BUS_25kV_E-02	-0.883	-0.448	22.9	89.2	
								BUS_25kV_SWL	0.043	0.026	1.2	85.3	
								BUS_25kV_E-04	0.840	0.422	21.8	89.3	
BUS_25kV_E-04	24.900	99.205	0.8	0.000	0.000	0.000	0.000	BUS_25kV_E-03	-0.834	-0.440	22.0	88.5	
								BUS_25kV_E-05	0.834	0.441	22.0	88.4	
								L-25-LLP-E-06~	0.000	-0.001	0.0	0.0	
BUS_25kV_E-05	24.900	98.442	0.6	0.000	0.000	0.000	0.000	BUS_25kV_E-04	-0.829	-0.454	22.3	87.7	
								BUS_25kV_DECHANT	0.062	0.038	1.7	85.4	
								BUS_25kV_E-06	0.767	0.416	20.5	87.9	
BUS_25kV_E-06	24.900	99.795	-0.3	0.000	0.000	0.000	0.000	BUS_25kV_E-05	-0.765	-0.410	20.2	88.1	
								BUS_25kV_E-07	0.765	0.410	20.2	88.1	
BUS_25kV_E-07	24.900	98.723	-0.5	0.000	0.000	0.000	0.000	BUS_25kV_E-06	-0.758	-0.432	20.5	86.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_BRISTOL	0.042	0.025	1.1	85.9	
								BUS_25kV_E-08	0.717	0.407	19.4	86.9	
BUS_25kV_E-08	24.900	98.165	-0.6	0.000	0.000	0.000	0.000	BUS_25kV_E-07	-0.714	-0.419	19.5	86.2	
								BUS_25kV_HARTMAN	0.041	0.020	1.1	90.2	
								BUS_25kV_E-09	0.672	0.399	18.5	86.0	
BUS_25kV_E-09	24.900	99.547	-1.4	0.000	0.000	0.000	0.000	BUS_25kV_E-08	-0.671	-0.395	18.1	86.2	
								BUS-25KV-E-10	0.671	0.395	18.1	86.2	
BUS_25kV_HARTMAN	24.900	98.154	-0.6	0.000	0.000	0.041	0.026	BUS_25kV_E-08	-0.041	-0.026	1.1	85.0	
BUS_25kV_KMART	24.900	100.145	1.0	0.000	0.000	0.000	0.000	BUS_25kV_W-2	0.000	0.000	0.0	0.0	
BUS_25kV_KORMAN	24.900	99.139	0.8	0.000	0.000	0.483	0.299	BUS_25kV_W-04	-0.483	-0.299	13.3	85.0	
BUS_25kV_ROAD 13	24.900	98.129	0.6	0.000	0.000	0.000	0.000	BUS_25kV_W-05	0.000	0.000	0.0	0.0	
BUS_25kV_SUB_01	24.900	100.224	1.0	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	2.642	-3.920	109.4	-55.9	2.500
								BUS_LLP_69kV_01	1.339	-1.986	55.4	-55.9	2.500
								BUS_25kV_E_01	0.918	0.468	23.8	89.1	
								BUS_25_LLP_SE_01	-8.348	3.636	210.7	-91.7	
								BUS_25kV_03	3.449	1.801	90.0	88.6	
BUS_25kV_SUB_02	24.900	100.224	1.0	0.000	0.000	0.000	0.000	BUS_5KV_XFMR_02	1.094	0.551	28.3	89.3	
								BUS_25kV_SW_01	0.923	0.458	23.8	89.6	
								BUS_25kV_W-01	1.432	0.793	37.9	87.5	
								BUS_25kV_03	-3.449	-1.802	90.0	88.6	
BUS_25kV_SUTRAK	24.900	100.192	1.0	0.000	0.000	0.034	0.021	BUS_25kV_E-02	-0.034	-0.021	0.9	85.0	
BUS_25kV_SWL	24.900	100.159	1.0	0.000	0.000	0.043	0.026	BUS_25kV_E-03	-0.043	-0.026	1.2	85.0	
BUS_25kV_SW_01	24.900	100.224	1.0	0.000	0.000	0.000	0.000	BUS_25kV_W-2	0.923	0.458	23.8	89.6	
								BUS_25kV_SUB_02	-0.923	-0.458	23.8	89.6	
BUS_25kV_W-01	24.900	100.224	1.0	0.000	0.000	0.000	0.000	BUS_25kV_W-02	1.432	0.793	37.9	87.5	
								BUS_25kV_SUB_02	-1.432	-0.793	37.9	87.5	
BUS_25kV_W-2	24.900	100.145	1.0	0.000	0.000	0.000	0.000	BUS_25kV_SW_01	-0.922	-0.459	23.9	89.5	
								BUS_SAF_25kV	0.922	0.459	23.9	89.5	
								BUS_25kV_KMART	0.000	0.000	0.0	0.0	
BUS_25kV_W-02	24.900	100.133	1.0	0.000	0.000	0.000	0.000	BUS_25kV_W-01	-1.431	-0.794	37.9	87.5	
								BUS_25kV_W-03	1.431	0.795	37.9	87.4	
								Line15~	0.000	-0.001	0.0	0.0	
BUS_25kV_W-03	24.900	99.919	1.0	0.000	0.000	0.000	0.000	BUS_25kV_W-02	-1.429	-0.795	37.9	87.4	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_25kV_W-04	1.429	0.795	37.9	87.4	
								L-25-LLP-W-03~	0.000	0.000	0.0	0.0	
BUS_25kV_W-04	24.900	99.177	0.8	0.000	0.000	0.000	0.000	BUS_25kV_W-03	-1.420	-0.796	38.1	87.2	
								BUS_25kV_KORMAN	0.483	0.298	13.3	85.1	
								BUS_25kV_W-05	0.937	0.498	24.8	88.3	
BUS_25kV_W-05	24.900	98.128	0.6	0.000	0.000	0.000	0.000	BUS_25kV_W-04	-0.929	-0.512	25.1	87.6	
								BUS_25kV_ROAD 13	0.000	-0.008	0.2	0.0	
								BUS_25kV_W-06	0.929	0.520	25.2	87.3	
BUS_25kV_W-06	24.900	100.385	1.3	0.000	0.000	0.000	0.000	BUS_25kV_W-05	-0.921	-0.521	24.4	87.0	
								BUS_25kV_W-07	0.921	0.521	24.4	87.0	
BUS_25kV_W-07	24.900	100.287	1.3	0.000	0.000	0.000	0.000	BUS_25kV_W-06	-0.920	-0.523	24.5	86.9	
								BUS_25kV_W-08	0.290	0.172	7.8	86.0	
								BUS_25kV_W-09	0.630	0.351	16.7	87.4	
BUS_25kV_W-08	24.900	100.286	1.3	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-0.290	-0.172	7.8	86.0	
								BUS_25kV_CO-BEEF	0.290	0.172	7.8	86.0	
BUS_25kV_W-09	24.900	100.195	1.2	0.000	0.000	0.000	0.000	BUS_25kV_W-07	-0.630	-0.354	16.7	87.2	
								BUS_25kV_W-10	0.315	0.190	8.5	85.7	
								BUS_25kV_W-11	0.314	0.164	8.2	88.7	
BUS_25kV_W-10	24.900	100.188	1.2	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-0.315	-0.190	8.5	85.6	
								BUS-25kV-WILEY	0.171	0.104	4.6	85.4	
								BUS-25kV-BIG-BEND	0.145	0.086	3.9	85.9	
BUS_25kV_W-11	24.900	100.191	1.2	0.000	0.000	0.000	0.000	BUS_25kV_W-09	-0.314	-0.164	8.2	88.7	
								BUS-25kV-MCCLAVE	0.314	0.164	8.2	88.7	
BUS_25_LLP_SE_01	24.900	100.224	1.0	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	-8.348	3.636	210.7	-91.7	
								BUS_25kV_SUB_01	8.348	-3.636	210.7	-91.7	
BUS_25_LLP_SE_02	24.900	100.693	1.8	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_01	8.438	-3.537	210.7	-92.2	
								BUS_25_LLP_SE_03	0.115	0.071	3.1	85.3	
								BUS_25_LLP_SE_04	-8.553	3.466	212.5	-92.7	
BUS_25_LLP_SE_03	24.900	100.688	1.8	0.000	0.000	0.115	0.071	BUS_25_LLP_SE_02	-0.115	-0.071	3.1	85.0	
BUS_25_LLP_SE_04	24.900	101.246	2.7	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_02	8.653	-3.356	212.6	-93.2	
								Pole MS-7-17	0.025	0.008	0.6	95.6	
								BUS_WTG_SOL	-8.678	3.349	213.0	-93.3	
BUS_ATT	24.900	100.189	-0.5	0.000	0.000	0.017	0.011	BUS_L3_SEC	-0.017	-0.011	0.5	85.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_CLG_4kV	4.160	99.780	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-1	0.331	0.159	51.0	90.1	
								Pole CS-1-1	0.289	0.141	44.8	89.9	
								Pole CS-3-1	0.186	0.090	28.8	90.0	
								Pole CS-4-1	0.180	0.087	27.8	89.9	
								BUS_CLG_SEC	-0.986	-0.478	152.4	90.0	
BUS_CLG_25kV	24.900	99.177	-0.7	0.000	0.000	0.000	0.000	BUS_L2_SEC	-1.876	-0.932	49.0	89.5	
								BUS_HSP_25kV	0.888	0.441	23.2	89.5	
								BUS_CLG_SEC	0.988	0.491	25.8	89.5	
BUS_CLG_SEC	4.160	98.830	-1.0	0.000	0.000	0.000	0.000	BUS_CLG_4kV	0.987	0.483	154.3	89.8	
								BUS_CLG_25kV	-0.987	-0.483	154.3	89.8	
BUS_HIS_25kV	24.900	99.061	-0.7	0.000	0.000	0.000	0.000	BUS_TS_25kV	-0.758	-0.378	19.8	89.5	
								BUS-25kV-HS-01	0.033	0.020	0.9	85.8	
								BUS_HSC_25kV	0.725	0.358	18.9	89.7	
BUS_HSC_4kV	4.160	100.312	-1.2	0.000	0.000	0.000	0.000	Pole HS-1-001	0.020	0.010	3.1	90.0	
								Pole HS-2-1	0.280	0.136	43.1	90.0	
								Pole HS-3-1	0.189	0.091	29.0	90.0	
								Pole HS-4-1	0.234	0.114	36.1	89.9	
								BUS_HSC_SEC	-0.724	-0.351	111.3	90.0	
BUS_HSC_25kV	24.900	99.011	-0.7	0.000	0.000	0.000	0.000	BUS_HIS_25kV	-0.725	-0.359	18.9	89.6	
								BUS_HSC_SEC	0.725	0.359	18.9	89.6	
BUS_HSC_SEC	4.160	98.673	-1.1	0.000	0.000	0.000	0.000	BUS_HSC_4kV	0.724	0.354	113.4	89.9	
								BUS_HSC_25kV	-0.724	-0.354	113.4	89.9	
BUS_HSP_25kV	24.900	99.146	-0.7	0.000	0.000	0.000	0.000	BUS_CLG_25kV	-0.888	-0.442	23.2	89.5	
								Pole CS-5-21	0.062	0.026	1.6	92.4	
								BUS_TSA_25kV	0.826	0.416	21.6	89.3	
BUS_L1_01	24.900	100.199	-0.5	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.129	0.061	3.3	90.5	
								BUS_LAMSO_25kV	-0.129	-0.061	3.3	90.5	
BUS_L2_SEC	24.900	100.199	-0.5	0.000	0.000	0.000	0.000	BUS_CLG_25kV	1.891	0.938	48.8	89.6	
								BUS_LAMSO_25kV	-1.891	-0.938	48.8	89.6	
BUS_L3_SEC	24.900	100.199	-0.5	0.000	0.000	0.000	0.000	BUS_ATT	0.017	-0.022	0.6	-61.5	
								BUS_LAMSO_25kV	-0.017	0.022	0.6	-61.5	
BUS_LAMSO_25kV	24.900	100.199	-0.5	0.000	0.000	0.000	0.000	BUS_LAMSO_115kV	-2.037	-0.977	52.3	90.2	0.625
								BUS_L1_01	0.129	0.061	3.3	90.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_L2_SEC	1.891	0.938	48.8	89.6	
								BUS_L3_SEC	0.017	-0.022	0.6	-61.5	
* BUS_LAMSO_115kV	115.000	100.000	0.0	2.038	0.997	0.000	0.000	BUS_LAMSO_25kV	2.038	0.997	11.4	89.8	
BUS_LLP_69kV_01	69.000	99.893	0.1	0.000	0.000	0.000	0.000	BUS_25kV_SUB_01	-2.635	4.047	40.5	-54.6	
								BUS_25kV_SUB_01	-1.335	2.051	20.5	-54.6	
								BUS_LLP_69kV_03	1.985	-3.049	30.5	-54.6	
								BUS_LLP_69kV_04	1.985	-3.049	30.5	-54.6	
BUS_LLP_69kV_02	69.000	99.893	0.1	0.000	0.000	0.000	0.000	Line51~	0.000	-0.511	4.3	0.0	
								BUS_LLP_69kV_03	1.985	-2.538	27.0	-61.6	
								BUS_LLP_69kV_04	-1.985	3.049	30.5	-54.6	
BUS_LLP_69kV_03	69.000	99.893	0.1	0.000	0.000	0.000	0.000	BUS_WC_69KV_01	3.971	-5.587	57.4	-57.9	
								BUS_LLP_69kV_01	-1.985	3.049	30.5	-54.6	
								BUS_LLP_69kV_02	-1.985	2.538	27.0	-61.6	
BUS_LLP_69kV_04	69.000	99.893	0.1	0.000	0.000	0.000	0.000	BUS_LLP_69kV_01	-1.985	3.049	30.5	-54.6	
								BUS_LLP_69kV_02	1.985	-3.049	30.5	-54.6	
BUS_SAF_4kV	4.160	100.033	0.4	0.000	0.000	0.000	0.000	SF-2-30	0.088	0.043	13.6	90.0	
								Pole MS-1-1	0.064	0.031	9.9	90.0	
								SF-1-1	0.653	0.322	101.0	89.7	
								SF-2-1	0.115	0.056	17.7	89.9	
								BUS_SAF_SEC	-0.920	-0.451	142.2	89.8	
BUS_SAF_25kV	24.900	100.107	1.0	0.000	0.000	0.000	0.000	BUS_25kV_W-2	-0.922	-0.460	23.9	89.5	
								L-25-LLP-SW-03~	0.000	-0.004	0.1	0.0	
								BUS_SAF_SEC	0.922	0.464	23.9	89.3	
BUS_SAF_SEC	4.160	99.676	0.6	0.000	0.000	0.000	0.000	BUS_SAF_4kV	0.921	0.456	143.1	89.6	
								BUS_SAF_25kV	-0.921	-0.456	143.1	89.6	
BUS_SW_8.5EES23	24.900	102.531	4.6	0.000	0.000	0.000	0.000	BUS_WTG_SOL	0.000	0.000	0.0	0.0	
BUS_TSA_25kV	24.900	99.118	-0.7	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-0.826	-0.417	21.6	89.3	
								BUS-25kV-TS-AREA	0.033	0.020	0.9	85.8	
								BUS_TS_25kV	0.792	0.397	20.7	89.4	
BUS_TS_25kV	24.900	99.116	-0.7	0.000	0.000	0.000	0.000	BUS_TSA_25kV	-0.792	-0.397	20.7	89.4	
								BUS-25kV-TS-01	0.033	0.020	0.9	85.8	
								BUS_HIS_25kV	0.759	0.377	19.8	89.6	
BUS_T_WTG1_SEC	0.690	100.866	13.1	1.500	-0.726	0.000	0.000	BUS_WTG1	1.500	-0.726	1382.4	-90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
BUS_T_WTG2_SEC	0.690	100.845	13.1	1.500	-0.726	0.000	0.000	BUS_WTG2	1.500	-0.726	1382.9	-90.0	
BUS_T_WTG3_SEC	0.690	103.777	8.5	0.000	0.000	0.000	0.000	BUS_WTG3	0.000	0.000	0.0	0.0	
BUS_T_WTG4_SEC	0.690	100.772	13.0	1.500	-0.726	0.000	0.000	BUS_WTG5	1.500	-0.726	1383.9	-90.0	
* BUS_WC_69KV_01	69.000	100.000	0.0	-3.964	5.537	0.000	0.000	BUS_LLP_69kV_03	-3.964	5.537	57.0	-58.2	
BUS_WTG1	24.900	103.829	8.5	0.000	0.000	0.000	0.000	BUS_WTG2	1.480	-0.867	38.3	-86.3	
								BUS_T_WTG1_SEC	-1.480	0.867	38.3	-86.3	
BUS_WTG2	24.900	103.812	8.5	0.000	0.000	0.000	0.000	BUS_WTG1	-1.480	0.854	38.2	-86.6	
								BUS_WTG3	2.960	-1.722	76.5	-86.4	
								BUS_T_WTG2_SEC	-1.480	0.868	38.3	-86.3	
BUS_WTG3	24.900	103.777	8.5	0.000	0.000	0.000	0.000	BUS_WTG2	-2.958	1.710	76.3	-86.6	
								BUS_WTG5	2.958	-1.710	76.3	-86.6	
								BUS_T_WTG3_SEC	0.000	0.000	0.0	0.0	
BUS_WTG5	24.900	103.742	8.5	0.000	0.000	0.000	0.000	BUS_WTG3	-2.956	1.698	76.2	-86.7	
								BUS_WTG6	4.436	-2.565	114.5	-86.6	
								BUS_T_WTG4_SEC	-1.480	0.868	38.3	-86.3	
BUS_WTG6	24.900	102.627	4.7	0.000	0.000	0.000	0.000	BUS_WTG_SOL	8.910	-3.093	213.1	-94.5	
								BUS_WTG5	-4.216	2.784	114.1	-83.4	
								P_526_2	-4.695	0.309	106.3	-99.8	
BUS_WTG_SOL	24.900	102.531	4.6	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	8.895	-3.110	213.1	-94.4	
								BUS_SW_8.5EES23	0.000	-0.001	0.0	0.0	
								BUS_WTG6	-8.895	3.111	213.1	-94.4	
Pole 6M-1-1	4.160	99.822	-0.7	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.040	-0.019	6.2	90.3	
								Pole 6M-1-2	0.036	0.017	5.5	90.3	
								SEC_6M-1-1	0.005	0.002	0.7	90.0	
Pole 6M-1-2	4.160	99.767	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-1	-0.036	-0.017	5.5	90.3	
								Pole 6M-1-3	0.005	0.002	0.7	90.0	
								Pole 6M-1-4	0.031	0.015	4.8	90.3	
Pole 6M-1-3	4.160	99.766	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.005	-0.002	0.7	90.0	
								SEC_6M-1-2	0.005	0.002	0.7	90.0	
Pole 6M-1-4	4.160	99.686	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-2	-0.031	-0.015	4.8	90.3	
								Pole 6M-1-5	0.002	0.001	0.3	90.1	
								Pole 6M-1-6	0.029	0.014	4.5	90.3	
Pole 6M-1-5	4.160	99.685	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-4	-0.002	-0.001	0.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-1-6	4.160	99.662	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-4	-0.029	-0.014	4.5	90.3	
								Pole 6M-1-7	0.004	0.002	0.6	90.2	
								Pole 6M-1-9	0.025	0.012	3.8	90.3	
Pole 6M-1-7	4.160	99.654	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-6	-0.004	-0.002	0.6	90.0	
								Pole 6M-1-8	0.002	0.001	0.3	90.1	
Pole 6M-1-8	4.160	99.653	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-7	-0.002	-0.001	0.3	90.0	
Pole 6M-1-9	4.160	99.632	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-6	-0.025	-0.012	3.8	90.3	
								Pole 6M-1-10	0.023	0.011	3.5	90.3	
Pole 6M-1-10	4.160	99.624	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-9	-0.023	-0.011	3.5	90.3	
								Pole 6M-1-11	0.023	0.011	3.5	90.3	
Pole 6M-1-11	4.160	99.616	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-10	-0.023	-0.011	3.5	90.3	
								Pole 6M-1-12	0.021	0.010	3.2	90.3	
Pole 6M-1-12	4.160	99.603	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-11	-0.021	-0.010	3.2	90.3	
								Pole 6M-1-13	0.002	0.001	0.3	91.0	
								Pole 6M-1-14	0.019	0.009	2.9	90.2	
Pole 6M-1-13	4.160	99.592	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-12	-0.002	-0.001	0.3	90.0	
Pole 6M-1-14	4.160	99.573	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-12	-0.019	-0.009	2.9	90.2	
								Pole 6M-1-15	0.017	0.008	2.6	90.2	
Pole 6M-1-15	4.160	99.565	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-14	-0.017	-0.008	2.6	90.2	
								Pole 6M-1-16	0.015	0.007	2.3	90.3	
Pole 6M-1-16	4.160	99.538	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-15	-0.015	-0.007	2.3	90.2	
								Pole 6M-1-17	0.007	0.003	1.0	90.1	
								Pole 6M-1-20	0.008	0.004	1.2	90.3	
Pole 6M-1-17	4.160	99.537	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-16	-0.007	-0.003	1.0	90.1	
								Pole 6M-1-18	0.005	0.002	0.7	90.1	
Pole 6M-1-18	4.160	99.532	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-17	-0.005	-0.002	0.7	90.0	
								Pole 6M-1-19	0.005	0.002	0.7	90.0	
Pole 6M-1-19	4.160	99.529	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-18	-0.005	-0.002	0.7	90.0	
								SEC_6M-1-12	0.005	0.002	0.7	90.0	
Pole 6M-1-20	4.160	99.522	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-16	-0.008	-0.004	1.2	90.2	
								Pole 6M-1-21	0.004	0.002	0.6	90.3	
								Pole 6M-1-23	0.004	0.002	0.6	90.2	
Pole 6M-1-21	4.160	99.521	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-20	-0.004	-0.002	0.6	90.2	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole 6M-1-22	0.002	0.001	0.3	90.5	
Pole 6M-1-22	4.160	99.515	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-21	-0.002	-0.001	0.3	90.0	
Pole 6M-1-23	4.160	99.520	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-20	-0.004	-0.002	0.6	90.1	
								Pole 6M-1-24	0.004	0.002	0.6	90.0	
								LINE 6M-26~	0.000	0.000	0.0	0.0	
Pole 6M-1-24	4.160	99.519	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-23	-0.004	-0.002	0.6	90.0	
								Pole 6M-1-25	0.002	0.001	0.3	90.1	
Pole 6M-1-25	4.160	99.518	-0.7	0.000	0.000	0.002	0.001	Pole 6M-1-24	-0.002	-0.001	0.3	90.0	
Pole 6M-E-1	4.160	98.727	-0.7	0.000	0.000	0.000	0.000	BUS_6M_5kV	-0.088	-0.042	13.7	90.3	
								Pole 6M-E-2	0.007	0.004	1.1	90.1	
								Pole 6M-E-30	0.080	0.038	12.5	90.3	
Pole 6M-E-2	4.160	98.716	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-1	-0.007	-0.004	1.1	90.0	
								SEC_6M-E-2	0.007	0.004	1.1	90.0	
Pole 6M-E-3	4.160	98.491	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.007	-0.004	1.1	90.0	
								SEC_6M-E-3	0.007	0.004	1.1	90.0	
Pole 6M-E-4	4.160	98.493	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.073	-0.035	11.4	90.3	
								Pole 6M-E-3	0.007	0.004	1.1	90.0	
								Pole 6M-E-5	0.066	0.031	10.3	90.3	
Pole 6M-E-5	4.160	98.371	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-4	-0.066	-0.031	10.3	90.3	
								Pole 6M-E-6	0.058	0.028	9.1	90.4	
								SEC_6M-E-1	0.007	0.004	1.1	90.0	
Pole 6M-E-6	4.160	98.252	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-5	-0.058	-0.028	9.1	90.4	
								Pole 6M-E-7	0.051	0.024	8.0	90.4	
								SEC_6M-E-4	0.007	0.004	1.1	90.0	
Pole 6M-E-7	4.160	98.072	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-6	-0.051	-0.024	8.0	90.4	
								Pole 6M-E-8	0.007	0.003	1.1	90.0	
								Pole 6M-E-9	0.044	0.021	6.9	90.4	
Pole 6M-E-8	4.160	98.064	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.007	-0.003	1.1	90.0	
								SEC_6M-E-5	0.007	0.003	1.1	90.0	
Pole 6M-E-9	4.160	97.772	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-7	-0.044	-0.021	6.9	90.4	
								Pole 6M-E-10	0.014	0.007	2.3	90.2	
								Pole 6M-E-13	0.029	0.014	4.6	90.5	
Pole 6M-E-10	4.160	97.722	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-9	-0.014	-0.007	2.3	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole 6M-E-11	0.007	0.003	1.1	90.2	
								SEC_6M-E-6	0.007	0.003	1.1	90.0	
Pole 6M-E-11	4.160	97.697	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-10	-0.007	-0.003	1.1	90.0	
								SEC_6M-E-7	0.007	0.003	1.1	90.0	
Pole 6M-E-12	4.160	97.720	-0.7	0.000	0.000	0.002	0.001	Pole 6M-E-13	-0.002	-0.001	0.3	90.0	
Pole 6M-E-13	4.160	97.720	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-12	0.002	0.001	0.3	90.0	
								Pole 6M-E-9	-0.029	-0.014	4.6	90.5	
								Pole 6M-E-15	0.027	0.013	4.3	90.5	
Pole 6M-E-14	4.160	97.664	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.007	-0.003	1.1	90.0	
								SEC_6M-E-8	0.007	0.003	1.1	90.0	
Pole 6M-E-15	4.160	97.673	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-14	0.007	0.003	1.1	90.0	
								Pole 6M-E-13	-0.027	-0.013	4.3	90.5	
								Pole 6M-E-18	0.020	0.009	3.2	90.6	
Pole 6M-E-18	4.160	97.631	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-15	-0.020	-0.009	3.2	90.6	
								Pole 6M-E-19	0.007	0.003	1.1	90.0	
								Pole 6M-E-20	0.013	0.006	2.0	90.9	
Pole 6M-E-19	4.160	97.627	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.007	-0.003	1.1	90.0	
								SEC_6M-E-10	0.007	0.003	1.1	90.0	
Pole 6M-E-20	4.160	97.618	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-18	-0.013	-0.006	2.0	90.8	
								Pole 6M-E-21	0.006	0.003	0.9	91.9	
								SEC_6M-E-11	0.007	0.003	1.1	90.0	
Pole 6M-E-21	4.160	97.615	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-20	-0.006	-0.003	0.9	91.8	
								Pole 6M-E-22	0.002	0.001	0.3	91.6	
								Pole 6M-E-23	0.004	0.002	0.6	91.9	
Pole 6M-E-22	4.160	97.599	-0.7	0.000	0.000	0.002	0.001	Pole 6M-E-21	-0.002	-0.001	0.3	90.0	
Pole 6M-E-23	4.160	97.571	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-26	0.002	0.001	0.3	90.9	
								Pole 6M-E-21	-0.004	-0.002	0.6	90.8	
								Pole 6M-E-24	0.002	0.001	0.3	90.8	
Pole 6M-E-24	4.160	97.562	-0.7	0.000	0.000	0.002	0.001	Pole 6M-E-23	-0.002	-0.001	0.3	90.0	
Pole 6M-E-25	4.160	97.562	-0.7	0.000	0.000	0.002	0.001	Pole 6M-E-26	-0.002	-0.001	0.3	90.0	
Pole 6M-E-26	4.160	97.563	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-23	-0.002	-0.001	0.3	90.1	
								Pole 6M-E-25	0.002	0.001	0.3	90.1	
								Bus2	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole 6M-E-29	4.160	98.622	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-30	-0.007	-0.004	1.1	90.0	
								SEC_6M-E-13	0.007	0.004	1.1	90.0	
Pole 6M-E-30	4.160	98.624	-0.7	0.000	0.000	0.000	0.000	Pole 6M-E-4	0.073	0.035	11.4	90.3	
								Pole 6M-E-29	0.007	0.004	1.1	90.0	
								Pole 6M-E-1	-0.080	-0.038	12.5	90.3	
Pole CS-1-1	4.160	99.558	-1.3	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-0.289	-0.141	44.8	89.9	
								Pole CS-1-2	0.289	0.141	44.8	89.9	
Pole CS-1-2	4.160	99.482	-1.3	0.000	0.000	0.000	0.000	PRI_PM_16	0.039	0.019	6.0	89.9	
								Pole CS-1-1	-0.289	-0.141	44.8	89.9	
								Pole CS-1-3	0.245	0.120	38.1	89.9	
								Pole HS-2-85	0.004	0.002	0.7	90.1	
Pole CS-1-3	4.160	99.322	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-4	0.007	0.003	1.0	90.0	
								Pole CS-1-5	0.007	0.003	1.0	90.0	
								Pole HS-3-86	0.002	0.001	0.3	90.0	
								Pole CS-1-2	-0.245	-0.119	38.1	89.9	
								Pole CS-1-6	0.230	0.112	35.7	89.9	
Pole CS-1-4	4.160	99.319	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-1	0.007	0.003	1.0	90.0	
Pole CS-1-5	4.160	99.320	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-3	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-2	0.007	0.003	1.0	90.0	
Pole CS-1-6	4.160	99.173	-1.4	0.000	0.000	0.000	0.000	Pole HS-3-88	0.007	0.003	1.0	90.0	
								Pole CS-1-3	-0.229	-0.111	35.7	89.9	
								Pole CS-1-9	0.223	0.108	34.6	89.9	
Pole CS-1-9	4.160	99.134	-1.4	0.000	0.000	0.000	0.000	PRI_PM_17	0.035	0.017	5.4	89.9	
								Pole CS-1-6	-0.223	-0.108	34.6	90.0	
								Pole CS-1-10	0.188	0.091	29.2	90.0	
Pole CS-1-10	4.160	99.062	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.188	-0.091	29.2	90.0	
								Pole CS-1-11	0.188	0.091	29.2	90.0	
								L-SUB-FDR-EQ#20-1-84~	0.000	0.000	0.0	0.0	
Pole CS-1-11	4.160	99.054	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-10	-0.188	-0.091	29.2	90.0	
								Pole CS-1-12	0.188	0.091	29.2	90.0	
Pole CS-1-12	4.160	99.024	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-13	0.007	0.003	1.0	90.0	
								Pole CS-1-11	-0.188	-0.091	29.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-14	0.181	0.088	28.2	90.0	
Pole CS-1-13	4.160	99.023	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-12	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-7	0.007	0.003	1.0	90.0	
Pole CS-1-14	4.160	98.995	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-17	0.020	0.010	3.1	90.0	
								Pole CS-1-12	-0.181	-0.088	28.2	90.0	
								Pole CS-1-16	0.159	0.077	24.7	90.0	
Pole CS-1-15	4.160	98.971	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-16	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-9	0.007	0.003	1.0	90.0	
Pole CS-1-16	4.160	98.971	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-15	0.007	0.003	1.0	90.0	
								Pole CS-1-14	-0.159	-0.077	24.7	90.0	
								Pole CS-1-21	0.152	0.074	23.7	90.0	
Pole CS-1-17	4.160	98.983	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-14	-0.020	-0.010	3.1	90.0	
								Pole CS-1-18	0.013	0.006	2.1	90.0	
								Pole CS-1-20	0.007	0.003	1.0	90.0	
Pole CS-1-18	4.160	98.981	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.013	-0.006	2.1	90.0	
								Pole CS-1-19	0.007	0.003	1.0	90.0	
								SEC_CS-1-10	0.007	0.003	1.0	90.0	
Pole CS-1-19	4.160	98.979	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-18	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-11	0.007	0.003	1.0	90.0	
Pole CS-1-20	4.160	98.982	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-17	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-12	0.007	0.003	1.0	90.0	
Pole CS-1-21	4.160	98.949	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-16	-0.152	-0.074	23.7	90.0	
								Pole CS-1-22	0.150	0.073	23.4	90.0	
Pole CS-1-22	4.160	98.928	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-23	0.007	0.003	1.0	90.0	
								Pole CS-1-21	-0.150	-0.073	23.4	90.0	
								Pole CS-1-24	0.141	0.068	22.0	90.0	
Pole CS-1-23	4.160	98.925	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-15	0.007	0.003	1.0	90.0	
Pole CS-1-24	4.160	98.900	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-22	-0.141	-0.068	22.0	90.0	
								Pole CS-1-25	0.134	0.065	21.0	90.0	
								SEC_CS-1-16	0.007	0.003	1.0	90.0	
Pole CS-1-25	4.160	98.875	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-28	0.064	0.031	10.0	90.0	
								Pole CS-1-55	0.066	0.032	10.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-24	-0.134	-0.065	21.0	90.0	
								Pole CS-1-26	0.004	0.002	0.7	90.0	
Pole CS-1-26	4.160	98.874	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-25	-0.004	-0.002	0.7	90.0	
								Pole CS-1-27	0.002	0.001	0.3	90.0	
Pole CS-1-27	4.160	98.874	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-26	-0.002	-0.001	0.3	90.0	
Pole CS-1-28	4.160	98.870	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-25	-0.064	-0.031	10.0	90.0	
								Pole CS-1-29	0.062	0.030	9.6	90.0	
Pole CS-1-29	4.160	98.854	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-28	-0.062	-0.030	9.6	90.0	
								Pole CS-1-32	0.057	0.028	8.9	90.0	
								Pole CS-1-31	0.004	0.002	0.7	90.0	
Pole CS-1-30	4.160	98.853	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-31	-0.002	-0.001	0.3	90.0	
Pole CS-1-31	4.160	98.853	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-30	0.002	0.001	0.3	90.0	
								Pole CS-1-29	-0.004	-0.002	0.7	90.0	
Pole CS-1-32	4.160	98.838	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-29	-0.057	-0.028	8.9	90.0	
								Pole CS-1-33	0.055	0.027	8.6	90.0	
Pole CS-1-33	4.160	98.815	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-32	-0.055	-0.027	8.6	90.0	
								Pole CS-1-36	0.048	0.023	7.6	90.0	
								Pole CS-1-35	0.004	0.002	0.7	90.0	
Pole CS-1-34	4.160	98.814	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-35	-0.002	-0.001	0.3	90.0	
Pole CS-1-35	4.160	98.814	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-34	0.002	0.001	0.3	90.0	
								Pole CS-1-33	-0.004	-0.002	0.7	90.0	
Pole CS-1-36	4.160	98.794	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-33	-0.048	-0.023	7.6	90.0	
								Pole CS-1-37	0.046	0.022	7.2	90.0	
Pole CS-1-37	4.160	98.785	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-36	-0.046	-0.022	7.2	90.0	
								Pole CS-1-38	0.044	0.021	6.9	90.0	
Pole CS-1-38	4.160	98.774	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-37	-0.044	-0.021	6.9	90.0	
								Pole CS-1-39	0.042	0.020	6.5	90.0	
Pole CS-1-39	4.160	98.766	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-40	0.011	0.005	1.7	90.0	
								Pole CS-1-38	-0.042	-0.020	6.5	90.0	
								Pole CS-1-43	0.031	0.015	4.8	90.0	
Pole CS-1-40	4.160	98.757	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.011	-0.005	1.7	90.0	
								Pole CS-1-41	0.004	0.002	0.7	90.0	
								SEC_CS-1-29	0.007	0.003	1.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-1-41	4.160	98.756	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-40	-0.004	-0.002	0.7	90.0	
								Pole CS-1-42	0.002	0.001	0.3	90.0	
Pole CS-1-42	4.160	98.756	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-41	-0.002	-0.001	0.3	90.0	
Pole CS-1-43	4.160	98.763	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-39	-0.031	-0.015	4.8	90.0	
								Pole CS-1-44	0.024	0.012	3.8	90.0	
								SEC_CS-1-32	0.007	0.003	1.0	90.0	
Pole CS-1-44	4.160	98.760	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-43	-0.024	-0.012	3.8	90.0	
								Pole CS-1-45	0.022	0.011	3.4	90.0	
Pole CS-1-45	4.160	98.756	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-44	-0.022	-0.011	3.4	90.0	
								Pole CS-1-46	0.020	0.010	3.1	90.0	
Pole CS-1-46	4.160	98.753	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-45	-0.020	-0.010	3.1	90.0	
								Pole CS-1-47	0.018	0.009	2.7	90.0	
Pole CS-1-47	4.160	98.748	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-46	-0.018	-0.009	2.7	90.0	
								Pole CS-1-48	0.015	0.007	2.4	90.0	
Pole CS-1-48	4.160	98.745	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-47	-0.015	-0.007	2.4	90.0	
								Pole CS-1-49	0.013	0.006	2.1	90.0	
Pole CS-1-49	4.160	98.743	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-48	-0.013	-0.006	2.1	90.0	
								Pole CS-1-50	0.011	0.005	1.7	90.0	
Pole CS-1-50	4.160	98.741	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-49	-0.011	-0.005	1.7	90.0	
								Pole CS-1-51	0.009	0.004	1.4	90.0	
Pole CS-1-51	4.160	98.740	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-50	-0.009	-0.004	1.4	90.0	
								Pole CS-1-52	0.007	0.003	1.0	90.0	
Pole CS-1-52	4.160	98.738	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-51	-0.007	-0.003	1.0	90.0	
								Pole CS-1-53	0.004	0.002	0.7	90.0	
Pole CS-1-53	4.160	98.737	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-52	-0.004	-0.002	0.7	90.0	
								Pole CS-1-54	0.002	0.001	0.3	90.0	
Pole CS-1-54	4.160	98.737	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-53	-0.002	-0.001	0.3	90.0	
								L-SUB-FDR-EQ#20-1-86~	0.000	0.000	0.0	0.0	
Pole CS-1-55	4.160	98.851	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-25	-0.066	-0.032	10.3	90.0	
								Pole CS-1-56	0.002	0.001	0.3	90.0	
								Pole CS-1-58	0.064	0.031	10.0	90.0	
Pole CS-1-56	4.160	98.850	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-55	-0.002	-0.001	0.3	90.0	
Pole CS-1-57	4.160	98.823	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-58	-0.062	-0.030	9.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-60	0.062	0.030	9.6	90.0	
								L-SUB-FDR-EQ#18-1-173~	0.000	0.000	0.0	0.0	
Pole CS-1-58	4.160	98.835	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-57	0.062	0.030	9.6	90.0	
								Pole CS-1-55	-0.064	-0.031	10.0	90.0	
Pole CS-1-59	4.160	98.808	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-61	-0.007	-0.003	1.0	90.0	
								SEC_CS-1-46	0.007	0.003	1.0	90.0	
Pole CS-1-60	4.160	98.812	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-57	-0.062	-0.030	9.6	90.0	
								Pole CS-1-61	0.059	0.029	9.3	90.0	
Pole CS-1-61	4.160	98.808	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-59	0.007	0.003	1.0	90.0	
								Pole CS-1-60	-0.059	-0.029	9.3	90.0	
								Pole CS-1-62	0.053	0.026	8.2	90.0	
Pole CS-1-62	4.160	98.801	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-61	-0.053	-0.026	8.2	90.0	
								Pole CS-1-63	0.051	0.024	7.9	90.0	
Pole CS-1-63	4.160	98.793	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-62	-0.051	-0.024	7.9	90.0	
								Pole CS-1-64	0.048	0.023	7.6	90.0	
Pole CS-1-64	4.160	98.786	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-63	-0.048	-0.023	7.6	90.0	
								Pole CS-1-65	0.000	0.000	0.0	0.0	
								Pole CS-1-66	0.048	0.023	7.6	90.0	
Pole CS-1-65	4.160	98.786	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-64	0.000	0.000	0.0	0.0	
Pole CS-1-66	4.160	98.771	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-64	-0.048	-0.023	7.6	90.0	
								Pole CS-1-67	0.046	0.022	7.2	90.0	
Pole CS-1-67	4.160	98.765	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-66	-0.046	-0.022	7.2	90.0	
								Pole CS-1-68	0.044	0.021	6.9	90.0	
Pole CS-1-68	4.160	98.759	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-67	-0.044	-0.021	6.9	90.0	
								Pole CS-1-69	0.037	0.018	5.8	90.0	
								SEC_CS-1-53	0.007	0.003	1.0	90.0	
Pole CS-1-69	4.160	98.754	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-68	-0.037	-0.018	5.8	90.0	
								Pole CS-1-70	0.035	0.017	5.5	90.0	
Pole CS-1-70	4.160	98.747	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-69	-0.035	-0.017	5.5	90.0	
								Pole CS-1-71	0.033	0.016	5.2	90.0	
Pole CS-1-71	4.160	98.742	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-70	-0.033	-0.016	5.2	90.0	
								Pole CS-1-72	0.031	0.015	4.8	90.0	
Pole CS-1-72	4.160	98.737	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-71	-0.031	-0.015	4.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-1-73	0.029	0.014	4.5	90.0	
Pole CS-1-73	4.160	98.731	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-72	-0.029	-0.014	4.5	90.0	
								Pole CS-1-74	0.002	0.001	0.3	90.0	
								Pole CS-1-75	0.026	0.013	4.1	90.0	
Pole CS-1-74	4.160	98.731	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-73	-0.002	-0.001	0.3	90.0	
Pole CS-1-75	4.160	98.717	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-73	-0.026	-0.013	4.1	90.0	
								Pole CS-1-76	0.011	0.005	1.7	90.0	
								Pole CS-1-86	0.015	0.007	2.4	90.0	
Pole CS-1-76	4.160	98.714	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-75	-0.011	-0.005	1.7	90.0	
								Pole CS-1-77	0.009	0.004	1.4	90.0	
Pole CS-1-77	4.160	98.711	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-76	-0.009	-0.004	1.4	90.0	
								Pole CS-1-78	0.007	0.003	1.0	90.0	
Pole CS-1-78	4.160	98.710	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-77	-0.007	-0.003	1.0	90.0	
								Pole CS-1-79	0.004	0.002	0.7	90.0	
Pole CS-1-79	4.160	98.709	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-78	-0.004	-0.002	0.7	90.0	
								Pole CS-1-80	0.002	0.001	0.3	90.0	
Pole CS-1-80	4.160	98.708	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-79	-0.002	-0.001	0.3	90.0	
Pole CS-1-81	4.160	98.690	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-82	-0.007	-0.003	1.0	90.0	
								Pole CS-1-88	0.004	0.002	0.7	90.0	
Pole CS-1-82	4.160	98.691	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-81	0.007	0.003	1.0	90.0	
								Pole CS-1-83	-0.009	-0.004	1.4	90.0	
Pole CS-1-83	4.160	98.694	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-82	0.009	0.004	1.4	90.0	
								Pole CS-1-84	-0.011	-0.005	1.7	90.0	
Pole CS-1-84	4.160	98.697	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-83	0.011	0.005	1.7	90.0	
								Pole CS-1-85	-0.013	-0.006	2.1	90.0	
Pole CS-1-85	4.160	98.704	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-84	0.013	0.006	2.1	90.0	
								Pole CS-1-86	-0.015	-0.007	2.4	90.0	
Pole CS-1-86	4.160	98.709	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-75	-0.015	-0.007	2.4	90.0	
								Pole CS-1-85	0.015	0.007	2.4	90.0	
Pole CS-1-87	4.160	98.688	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-88	-0.002	-0.001	0.3	90.0	
Pole CS-1-88	4.160	98.688	-1.5	0.000	0.000	0.002	0.001	Pole CS-1-81	-0.004	-0.002	0.7	90.0	
								Pole CS-1-87	0.002	0.001	0.3	90.0	
Pole CS-1-90	4.160	100.193	0.5	0.000	0.000	0.000	0.000	BUS_5KV_LLP_02	-0.108	-0.052	16.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								BUS_5_NEOPLAN	0.108	0.052	16.6	90.0	
Pole CS-2-1	4.160	99.711	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-2	0.330	0.159	51.0	90.1	
								BUS_CLG_4kV	-0.330	-0.159	51.0	90.1	
Pole CS-2-2	4.160	99.642	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-1	-0.330	-0.159	51.0	90.1	
								Pole CS-2-3	0.007	0.003	1.0	90.0	
								Pole CS-2-5	0.321	0.154	49.6	90.1	
Pole CS-2-3	4.160	99.639	-1.3	0.000	0.000	0.004	0.002	Pole CS-2-2	-0.007	-0.003	1.0	90.0	
								Pole CS-2-4	0.002	0.001	0.3	90.0	
Pole CS-2-4	4.160	99.638	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-3	-0.002	-0.001	0.3	90.0	
Pole CS-2-5	4.160	99.574	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	0.321	0.154	49.6	90.2	
								Pole CS-2-2	-0.321	-0.154	49.6	90.2	
Pole CS-2-7	4.160	98.688	-1.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.232	-0.112	36.2	90.0	
								Pole CS-2-8	0.232	0.112	36.2	90.0	
Pole CS-2-8	4.160	98.639	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-7	-0.232	-0.112	36.2	90.0	
								Pole CS-2-9	0.015	0.007	2.4	90.0	
								Pole CS-2-12	0.210	0.102	32.8	90.0	
								SEC_CS-2-5	0.007	0.003	1.0	90.0	
Pole CS-2-9	4.160	98.636	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-8	-0.015	-0.007	2.4	90.0	
								Pole CS-2-10	0.013	0.006	2.1	90.0	
Pole CS-2-10	4.160	98.634	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-9	-0.013	-0.006	2.1	90.0	
								Pole CS-2-11	0.007	0.003	1.0	90.0	
								SEC_CS-2-7	0.007	0.003	1.0	90.0	
Pole CS-2-11	4.160	98.632	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-10	-0.007	-0.003	1.0	90.0	
								SEC_CS-2-8	0.007	0.003	1.0	90.0	
Pole CS-2-12	4.160	98.614	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-8	-0.210	-0.102	32.8	90.0	
								Pole CS-2-13	0.208	0.101	32.5	90.0	
Pole CS-2-13	4.160	98.585	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-12	-0.208	-0.101	32.5	90.0	
								Pole CS-2-14	0.009	0.004	1.4	90.6	
								Pole CS-2-20	0.199	0.096	31.1	90.0	
Pole CS-2-14	4.160	98.584	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-13	-0.009	-0.004	1.4	90.6	
								Pole CS-2-15	0.007	0.003	1.0	90.0	
								Pole CS-2-16	0.002	0.001	0.3	92.4	
Pole CS-2-15	4.160	98.583	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.007	-0.003	1.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_CS-2-10	0.007	0.003	1.0	90.0	
Pole CS-2-16	4.160	98.583	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-14	-0.002	-0.001	0.3	92.4	
								Pole CS-2-17	0.002	0.001	0.3	92.4	
Pole CS-2-17	4.160	98.583	-1.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
								Pole CS-2-16	-0.002	-0.001	0.3	92.3	
								Pole CS-2-18	0.002	0.001	0.3	90.0	
Pole CS-2-18	4.160	98.582	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-17	-0.002	-0.001	0.3	90.0	
Pole CS-2-20	4.160	98.560	-1.2	0.000	0.000	0.000	0.000	PRI_PM_21	0.035	0.017	5.4	89.9	
								Pole CS-2-13	-0.199	-0.096	31.1	90.0	
								Pole CS-2-21	0.164	0.080	25.7	90.0	
Pole CS-2-21	4.160	98.480	-1.3	0.000	0.000	0.000	0.000	PRI_PM_20	0.035	0.017	5.4	89.9	
								Pole CS-2-20	-0.164	-0.079	25.7	90.0	
								Pole CS-2-22	0.129	0.063	20.3	90.0	
Pole CS-2-22	4.160	98.448	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-21	-0.129	-0.063	20.3	90.0	
								Pole CS-2-23	0.127	0.062	19.9	90.0	
Pole CS-2-23	4.160	98.435	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-22	-0.127	-0.062	19.9	90.0	
								Pole CS-2-24	0.037	0.018	5.8	90.1	
								Pole CS-2-35	0.090	0.044	14.2	90.0	
Pole CS-2-24	4.160	98.420	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-23	-0.037	-0.018	5.8	90.1	
								Pole CS-2-25	0.035	0.017	5.4	90.1	
Pole CS-2-25	4.160	98.416	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-24	-0.035	-0.017	5.4	90.1	
								Pole CS-2-26	0.032	0.016	5.1	90.1	
Pole CS-2-26	4.160	98.408	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-25	-0.032	-0.016	5.1	90.1	
								Pole CS-2-27	0.030	0.015	4.7	90.1	
Pole CS-2-27	4.160	98.399	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-28	0.013	0.006	2.0	90.3	
								Pole CS-2-26	-0.030	-0.015	4.7	90.1	
								PRI_PM_1-1	0.017	0.008	2.7	89.9	
Pole CS-2-28	4.160	98.393	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.013	-0.006	2.1	90.0	
								Pole CS-2-29	0.013	0.006	2.1	90.0	
Pole CS-2-29	4.160	98.391	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-28	-0.013	-0.006	2.1	90.0	
								Pole CS-2-30	0.011	0.005	1.7	90.0	
Pole CS-2-30	4.160	98.389	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-29	-0.011	-0.005	1.7	90.0	
								Pole CS-2-31	0.009	0.004	1.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-31	4.160	98.387	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-30	-0.009	-0.004	1.4	90.0	
								Pole CS-2-32	0.007	0.003	1.0	90.0	
Pole CS-2-32	4.160	98.386	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-31	-0.007	-0.003	1.0	90.0	
								Pole CS-2-33	0.004	0.002	0.7	90.0	
Pole CS-2-33	4.160	98.385	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-32	-0.004	-0.002	0.7	90.0	
								Pole CS-2-34	0.002	0.001	0.3	90.0	
Pole CS-2-34	4.160	98.385	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-33	-0.002	-0.001	0.3	90.0	
Pole CS-2-35	4.160	98.408	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-23	-0.090	-0.044	14.2	90.0	
								Pole CS-2-36	0.090	0.044	14.2	90.0	
Pole CS-2-36	4.160	98.348	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-35	-0.090	-0.044	14.2	90.0	
								Pole CS-2-37	0.090	0.044	14.2	90.0	
Pole CS-2-37	4.160	98.315	-1.3	0.000	0.000	0.000	0.000	PRI_PM_19	0.038	0.018	6.0	89.9	
								Pole CS-2-36	-0.090	-0.044	14.2	90.0	
								Pole CS-2-38	0.007	0.003	1.0	90.0	
								Pole CS-2-41	0.046	0.022	7.2	90.0	
Pole CS-2-38	4.160	98.314	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-37	-0.007	-0.003	1.0	90.0	
								Pole CS-2-39	0.004	0.002	0.7	90.1	
Pole CS-2-39	4.160	98.311	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-38	-0.004	-0.002	0.7	90.0	
								Pole CS-2-40	0.002	0.001	0.3	90.0	
Pole CS-2-40	4.160	98.310	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-39	-0.002	-0.001	0.3	90.0	
Pole CS-2-41	4.160	98.304	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-37	-0.046	-0.022	7.2	90.0	
								Pole CS-2-42	0.044	0.021	6.9	90.0	
Pole CS-2-42	4.160	98.287	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-41	-0.044	-0.021	6.9	90.0	
								Pole CS-2-43	0.002	0.001	0.3	90.0	
								Pole CS-2-44	0.041	0.020	6.5	90.0	
Pole CS-2-43	4.160	98.287	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-42	-0.002	-0.001	0.3	90.0	
Pole CS-2-44	4.160	98.275	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-42	-0.041	-0.020	6.5	90.0	
								Pole CS-2-45	0.011	0.005	1.7	90.0	
								Pole CS-2-50	0.004	0.002	0.7	90.0	
								Pole CS-2-52	0.026	0.013	4.1	90.0	
Pole CS-2-45	4.160	98.273	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-44	-0.011	-0.005	1.7	90.0	
								Pole CS-2-46	0.009	0.004	1.4	90.0	
Pole CS-2-46	4.160	98.271	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-45	-0.009	-0.004	1.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-2-47	0.007	0.003	1.0	90.0	
Pole CS-2-47	4.160	98.270	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-46	-0.007	-0.003	1.0	90.0	
								Pole CS-2-48	0.004	0.002	0.7	90.0	
Pole CS-2-48	4.160	98.268	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-47	-0.004	-0.002	0.7	90.0	
								Pole CS-2-49	0.002	0.001	0.3	90.0	
Pole CS-2-49	4.160	98.268	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-48	-0.002	-0.001	0.3	90.0	
Pole CS-2-50	4.160	98.274	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-44	-0.004	-0.002	0.7	90.0	
								Pole CS-2-51	0.002	0.001	0.3	90.0	
Pole CS-2-51	4.160	98.273	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-50	-0.002	-0.001	0.3	90.0	
Pole CS-2-52	4.160	98.266	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-44	-0.026	-0.013	4.1	90.0	
								Pole CS-2-56	0.009	0.004	1.4	90.0	
								Pole CS-2-58	0.004	0.002	0.7	90.0	
								Pole CS-2-61	0.013	0.006	2.1	90.0	
Pole CS-2-53	4.160	98.261	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-54	-0.002	-0.001	0.3	90.0	
Pole CS-2-54	4.160	98.261	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-53	0.002	0.001	0.3	90.0	
								Pole CS-2-55	-0.004	-0.002	0.7	90.0	
Pole CS-2-55	4.160	98.262	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-54	0.004	0.002	0.7	90.0	
								Pole CS-2-56	-0.007	-0.003	1.0	90.0	
Pole CS-2-56	4.160	98.264	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-52	-0.009	-0.004	1.4	90.0	
								Pole CS-2-55	0.007	0.003	1.0	90.0	
Pole CS-2-57	4.160	98.263	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-58	-0.002	-0.001	0.3	90.0	
Pole CS-2-58	4.160	98.264	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-57	0.002	0.001	0.3	90.0	
								Pole CS-2-52	-0.004	-0.002	0.7	90.0	
Pole CS-2-60	4.160	98.259	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-61	-0.011	-0.005	1.7	90.0	
								Pole CS-2-62	0.009	0.004	1.4	90.0	
Pole CS-2-61	4.160	98.263	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-52	-0.013	-0.006	2.1	90.0	
								Pole CS-2-60	0.011	0.005	1.7	90.0	
Pole CS-2-62	4.160	98.255	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-60	-0.009	-0.004	1.4	90.0	
								Pole CS-2-63	0.007	0.003	1.0	90.0	
Pole CS-2-63	4.160	98.252	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-62	-0.007	-0.003	1.0	90.0	
								Pole CS-2-64	0.004	0.002	0.7	90.0	
Pole CS-2-64	4.160	98.251	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-63	-0.004	-0.002	0.7	90.0	
								Pole CS-2-65	0.002	0.001	0.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-2-65	4.160	98.251	-1.2	0.000	0.000	0.002	0.001	Pole CS-2-64	-0.002	-0.001	0.3	90.0	
Pole CS-2-66	4.160	99.558	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-10	-0.007	-0.003	1.0	90.0	
								L-SUB-FDR-EQ#18-1-237~	0.000	0.000	0.0	0.0	
								SEC_CS-2-46	0.007	0.003	1.0	90.0	
Pole CS-2-73	4.160	99.075	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-27	-0.007	-0.003	1.0	90.0	
								SEC_CS-2-49	0.007	0.003	1.0	90.0	
Pole CS-3-1	4.160	99.622	-1.3	0.000	0.000	0.000	0.000	BUS_CLG_4kV	-0.186	-0.090	28.8	90.0	
								Pole CS-3-2	0.047	0.023	7.3	90.1	
								Pole CS-3-21	0.139	0.067	21.5	90.0	
Pole CS-3-2	4.160	99.609	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-3	0.018	0.009	2.8	90.1	
								Pole CS-3-1	-0.047	-0.023	7.3	90.1	
								Pole CS-3-11	0.027	0.013	4.1	90.0	
Pole CS-3-3	4.160	99.605	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-2	-0.018	-0.009	2.8	90.1	
								Pole CS-3-4	0.016	0.008	2.4	90.1	
Pole CS-3-4	4.160	99.596	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-3	-0.016	-0.008	2.4	90.1	
								Pole CS-3-5	0.013	0.006	2.1	90.1	
Pole CS-3-5	4.160	99.588	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-4	-0.013	-0.006	2.1	90.1	
								Pole CS-3-6	0.013	0.006	2.1	90.1	
Pole CS-3-6	4.160	99.580	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-5	-0.013	-0.006	2.1	90.1	
								Pole CS-3-7	0.011	0.005	1.7	90.1	
Pole CS-3-7	4.160	99.576	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-6	-0.011	-0.005	1.7	90.1	
								Pole CS-3-8	0.011	0.005	1.7	90.1	
Pole CS-3-8	4.160	99.573	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-7	-0.011	-0.005	1.7	90.1	
								Pole CS-3-9	0.009	0.004	1.4	90.1	
Pole CS-3-9	4.160	99.564	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-8	-0.009	-0.004	1.4	90.0	
								Pole CS-3-10	0.009	0.004	1.4	90.0	
Pole CS-3-10	4.160	99.559	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-66	0.007	0.003	1.0	90.0	
								Pole CS-3-9	-0.009	-0.004	1.4	90.0	
Pole CS-3-11	4.160	99.605	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-2	-0.027	-0.013	4.1	90.0	
								Pole CS-3-12	0.025	0.012	3.8	90.0	
Pole CS-3-12	4.160	99.577	-1.3	0.000	0.000	0.004	0.002	Pole CS-3-11	-0.025	-0.012	3.8	90.0	
								Pole CS-3-13	0.020	0.010	3.1	90.0	
Pole CS-3-13	4.160	99.571	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-12	-0.020	-0.010	3.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-14	0.018	0.009	2.8	90.0	
Pole CS-3-14	4.160	99.557	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-13	-0.018	-0.009	2.8	90.0	
								Pole CS-3-15	0.016	0.008	2.4	90.0	
Pole CS-3-15	4.160	99.546	-1.3	0.000	0.000	0.004	0.002	Pole CS-3-14	-0.016	-0.008	2.4	90.0	
								Pole CS-3-16	0.011	0.005	1.7	90.0	
Pole CS-3-16	4.160	99.534	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-15	-0.011	-0.005	1.7	90.0	
								Pole CS-3-17	0.009	0.004	1.4	90.0	
Pole CS-3-17	4.160	99.532	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-16	-0.009	-0.004	1.4	90.0	
								Pole CS-3-18	0.007	0.003	1.0	90.0	
Pole CS-3-18	4.160	99.529	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-17	-0.007	-0.003	1.0	90.0	
								Pole CS-3-19	0.004	0.002	0.7	90.0	
Pole CS-3-19	4.160	99.527	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-18	-0.004	-0.002	0.7	90.0	
								Pole CS-3-20	0.002	0.001	0.3	90.0	
Pole CS-3-20	4.160	99.526	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-19	-0.002	-0.001	0.3	90.0	
Pole CS-3-21	4.160	99.591	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-1	-0.139	-0.067	21.5	90.0	
								Pole CS-3-22	0.137	0.066	21.2	90.0	
Pole CS-3-22	4.160	99.477	-1.3	0.000	0.000	0.000	0.000	PRI_PM_25	0.018	0.009	2.7	90.0	
								Pole CS-3-21	-0.137	-0.066	21.2	90.0	
								Pole CS-3-23	0.119	0.058	18.5	90.0	
Pole CS-3-23	4.160	99.406	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-29	0.117	0.057	18.1	90.0	
								Pole CS-3-22	-0.119	-0.058	18.5	90.0	
Pole CS-3-24	4.160	99.237	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-32	-0.009	-0.004	1.4	90.0	
								Pole CS-3-25	0.007	0.003	1.0	90.0	
Pole CS-3-25	4.160	99.235	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-24	-0.007	-0.003	1.0	90.0	
								Pole CS-3-26	0.004	0.002	0.7	90.0	
Pole CS-3-26	4.160	99.234	-1.3	0.000	0.000	0.004	0.002	Pole CS-3-25	-0.004	-0.002	0.7	90.0	
Pole CS-3-27	4.160	99.078	-1.3	0.000	0.000	0.002	0.001	Pole CS-2-73	0.007	0.003	1.0	90.0	
								Pole CS-3-34	-0.009	-0.004	1.4	90.0	
Pole CS-3-28	4.160	99.013	-1.3	0.000	0.000	0.004	0.002	Pole CS-3-35	-0.004	-0.002	0.7	90.0	
Pole CS-3-29	4.160	99.342	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-23	-0.117	-0.056	18.1	90.0	
								Pole CS-3-30	0.110	0.053	17.1	90.0	
								SEC_CS-2-47	0.007	0.003	1.0	90.0	
Pole CS-3-30	4.160	99.296	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-29	-0.110	-0.053	17.1	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-3-31	0.019	0.009	3.0	90.0	
								Pole CS-3-32	0.091	0.044	14.1	90.0	
Pole CS-3-31	4.160	99.295	-1.3	0.000	0.000	0.000	0.000	PRI_PM_26	0.019	0.009	3.0	90.0	
								Pole CS-3-30	-0.019	-0.009	3.0	90.0	
Pole CS-3-32	4.160	99.240	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-30	-0.091	-0.044	14.1	90.0	
								Pole CS-3-33	0.082	0.040	12.7	90.0	
								Pole CS-3-24	0.009	0.004	1.4	90.0	
Pole CS-3-33	4.160	99.214	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-32	-0.082	-0.040	12.7	90.0	
								Pole CS-3-34	0.075	0.036	11.7	90.1	
								SEC_CS-2-48	0.007	0.003	1.0	90.0	
Pole CS-3-34	4.160	99.081	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-33	-0.075	-0.036	11.7	90.0	
								Pole CS-3-35	0.066	0.032	10.3	90.0	
								Pole CS-3-27	0.009	0.004	1.4	90.0	
Pole CS-3-35	4.160	99.014	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-34	-0.066	-0.032	10.3	90.0	
								Pole CS-3-52	0.062	0.030	9.6	90.0	
								Pole CS-3-28	0.004	0.002	0.7	90.0	
Pole CS-3-36	4.160	98.835	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-37	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-246~	0.000	0.000	0.0	0.0	
Pole CS-3-37	4.160	98.835	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-36	0.000	0.000	0.0	0.0	
								Pole CS-3-38	-0.002	-0.001	0.3	90.2	
Pole CS-3-38	4.160	98.835	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-37	0.002	0.001	0.3	90.2	
								Pole CS-3-39	-0.004	-0.002	0.7	90.1	
Pole CS-3-39	4.160	98.837	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-38	0.004	0.002	0.7	90.1	
								Pole CS-3-40	-0.007	-0.003	1.0	90.1	
Pole CS-3-40	4.160	98.839	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-39	0.007	0.003	1.0	90.1	
								Pole CS-3-41	-0.009	-0.004	1.4	90.0	
Pole CS-3-41	4.160	98.844	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-40	0.009	0.004	1.4	90.1	
								Pole CS-3-42	-0.011	-0.005	1.7	90.0	
Pole CS-3-42	4.160	98.847	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-41	0.011	0.005	1.7	90.1	
								Pole CS-3-43	-0.013	-0.006	2.1	90.0	
Pole CS-3-43	4.160	98.854	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-42	0.013	0.006	2.1	90.1	
								Pole CS-3-45	-0.018	-0.009	2.8	90.0	
								Pole CS-3-44	0.002	0.001	0.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-3-44	4.160	98.853	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-43	-0.002	-0.001	0.3	90.0	
Pole CS-3-45	4.160	98.863	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-43	0.018	0.009	2.7	90.0	
								Pole CS-3-50	-0.022	-0.011	3.4	90.0	
								Pole CS-3-46	0.002	0.001	0.3	90.0	
								Pole CS-3-47	0.002	0.001	0.3	90.0	
Pole CS-3-46	4.160	98.862	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-45	-0.002	-0.001	0.3	90.0	
Pole CS-3-47	4.160	98.862	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-45	-0.002	-0.001	0.3	90.0	
Pole CS-3-48	4.160	98.874	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-50	-0.002	-0.001	0.3	90.0	
Pole CS-3-49	4.160	98.874	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-50	-0.002	-0.001	0.3	90.0	
Pole CS-3-50	4.160	98.874	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-45	0.022	0.011	3.4	90.0	
								Pole CS-3-51	-0.026	-0.013	4.1	90.0	
								Pole CS-3-48	0.002	0.001	0.3	90.0	
								Pole CS-3-49	0.002	0.001	0.3	90.0	
Pole CS-3-51	4.160	98.876	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-50	0.026	0.013	4.1	90.0	
								Pole CS-3-63	-0.044	-0.021	6.9	90.0	
								Pole CS-3-66	0.018	0.009	2.8	90.0	
								Pole CS-3-74	0.000	0.000	0.0	0.0	
Pole CS-3-52	4.160	98.980	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-35	-0.062	-0.030	9.6	90.0	
								Pole CS-3-59	0.055	0.027	8.6	90.0	
								Pole CS-3-53	0.007	0.003	1.0	90.0	
Pole CS-3-53	4.160	98.977	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-52	-0.007	-0.003	1.0	90.0	
								Pole CS-3-54	0.004	0.002	0.7	90.0	
Pole CS-3-54	4.160	98.976	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-53	-0.004	-0.002	0.7	90.0	
								Pole CS-3-55	0.002	0.001	0.3	90.0	
Pole CS-3-55	4.160	98.976	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-54	-0.002	-0.001	0.3	90.0	
Pole CS-3-56	4.160	98.950	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-57	-0.002	-0.001	0.3	90.0	
Pole CS-3-57	4.160	98.951	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-56	0.002	0.001	0.3	90.1	
								Pole CS-3-58	-0.004	-0.002	0.7	90.0	
Pole CS-3-58	4.160	98.953	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-57	0.004	0.002	0.7	90.1	
								Pole CS-3-59	-0.007	-0.003	1.0	90.0	
Pole CS-3-59	4.160	98.955	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-52	-0.055	-0.027	8.6	90.0	
								Pole CS-3-60	0.049	0.023	7.6	90.0	
								Pole CS-3-58	0.007	0.003	1.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-3-60	4.160	98.933	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-59	-0.049	-0.023	7.6	90.0	
								Pole CS-3-62	0.049	0.023	7.6	90.0	
Pole CS-3-61	4.160	98.911	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-62	-0.046	-0.022	7.2	90.0	
								Pole CS-3-63	0.044	0.021	6.9	90.0	
Pole CS-3-62	4.160	98.922	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-61	0.046	0.022	7.2	90.0	
								Pole CS-3-60	-0.049	-0.023	7.6	90.0	
Pole CS-3-63	4.160	98.894	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-61	-0.044	-0.021	6.9	90.0	
								Pole CS-3-51	0.044	0.021	6.9	90.0	
								Pole CS-3-75	0.000	0.000	0.0	0.0	
Pole CS-3-66	4.160	98.873	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-51	-0.018	-0.009	2.8	90.0	
								Pole CS-3-67	0.015	0.007	2.4	90.0	
Pole CS-3-67	4.160	98.869	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-66	-0.015	-0.007	2.4	90.0	
								Pole CS-3-68	0.013	0.006	2.1	90.0	
Pole CS-3-68	4.160	98.865	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-67	-0.013	-0.006	2.1	90.0	
								Pole CS-3-69	0.011	0.005	1.7	90.0	
Pole CS-3-69	4.160	98.862	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-68	-0.011	-0.005	1.7	90.0	
								Pole CS-3-70	0.009	0.004	1.4	90.0	
Pole CS-3-70	4.160	98.859	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-69	-0.009	-0.004	1.4	90.0	
								Pole CS-3-71	0.007	0.003	1.0	90.0	
Pole CS-3-71	4.160	98.857	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-70	-0.007	-0.003	1.0	90.0	
								Pole CS-3-72	0.004	0.002	0.7	90.0	
Pole CS-3-72	4.160	98.856	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-71	-0.004	-0.002	0.7	90.0	
								Pole CS-3-73	0.002	0.001	0.3	90.0	
Pole CS-3-73	4.160	98.855	-1.3	0.000	0.000	0.002	0.001	Pole CS-3-72	-0.002	-0.001	0.3	90.0	
Pole CS-3-74	4.160	98.876	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-51	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#18-1-276~	0.000	0.000	0.0	0.0	
Pole CS-3-75	4.160	98.894	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-63	0.000	0.000	0.0	0.0	
Pole CS-4-1	4.160	99.654	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-11	0.173	0.084	26.8	90.0	
								Pole CS-4-3	0.004	0.002	0.7	90.1	
								BUS_CLG_4kV	-0.180	-0.087	27.8	90.0	
Pole CS-4-2	4.160	99.422	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-11	-0.138	-0.067	21.3	90.0	
								Pole CS-4-6	0.135	0.066	21.0	90.0	
Pole CS-4-3	4.160	99.654	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-1	-0.004	-0.002	0.7	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole CS-4-4	0.002	0.001	0.3	90.2	
Pole CS-4-4	4.160	99.652	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-3	-0.002	-0.001	0.3	90.0	
								Pole CS-4-5	0.002	0.001	0.3	90.0	
								L-SUB-FDR-EQ#18-1-283~	0.000	0.000	0.0	0.0	
Pole CS-4-5	4.160	99.651	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-4	-0.002	-0.001	0.3	90.0	
Pole CS-4-6	4.160	99.321	-1.3	0.000	0.000	0.000	0.000	PRI_PM_22	0.039	0.019	6.0	89.9	
								Pole CS-4-2	-0.135	-0.066	21.0	90.0	
								Pole CS-4-7	0.097	0.047	15.0	90.0	
Pole CS-4-7	4.160	99.287	-1.3	0.000	0.000	0.004	0.002	Pole CS-4-6	-0.097	-0.047	15.0	90.0	
								Pole CS-4-8	0.092	0.045	14.3	90.0	
Pole CS-4-8	4.160	99.253	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-7	-0.092	-0.045	14.3	90.0	
								Pole CS-4-9	0.090	0.044	14.0	90.0	
Pole CS-4-9	4.160	99.226	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-8	-0.090	-0.044	14.0	90.0	
								Pole CS-4-12	0.007	0.003	1.0	90.0	
								Pole CS-4-13	0.083	0.040	12.9	90.0	
Pole CS-4-11	4.160	99.525	-1.3	0.000	0.000	0.000	0.000	PRI_PM_11	0.035	0.017	5.5	89.9	
								Pole CS-4-1	-0.173	-0.084	26.8	90.0	
								Pole CS-4-2	0.138	0.067	21.3	90.0	
Pole CS-4-12	4.160	99.225	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.007	-0.003	1.0	90.0	
								SEC_CS-4-8	0.007	0.003	1.0	90.0	
Pole CS-4-13	4.160	99.196	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-9	-0.083	-0.040	12.9	90.0	
								Pole CS-4-14	0.083	0.040	12.9	90.0	
Pole CS-4-14	4.160	99.164	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-13	-0.083	-0.040	12.9	90.0	
								Pole CS-4-15	0.083	0.040	12.9	90.0	
Pole CS-4-15	4.160	98.951	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-14	-0.083	-0.040	12.9	90.0	
								Pole CS-4-16	0.083	0.040	12.9	90.0	
Pole CS-4-16	4.160	98.618	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-15	-0.083	-0.040	12.9	89.9	
								Pole CS-4-18	0.004	0.002	0.7	90.1	
								Pole CS-4-20	0.078	0.038	12.3	89.9	
Pole CS-4-17	4.160	98.616	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-18	-0.002	-0.001	0.3	90.0	
Pole CS-4-18	4.160	98.617	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-17	0.002	0.001	0.3	90.0	
								Pole CS-4-16	-0.004	-0.002	0.7	90.1	
								Pole CS-4-19	0.002	0.001	0.3	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole CS-4-19	4.160	98.615	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-18	-0.002	-0.001	0.3	90.0	
Pole CS-4-20	4.160	98.576	-1.3	0.000	0.000	0.000	0.000	PRI_PM_23	0.038	0.019	6.0	89.9	
								Pole CS-4-16	-0.078	-0.038	12.3	89.9	
								Pole CS-4-21	0.040	0.020	6.3	89.9	
Pole CS-4-21	4.160	98.552	-1.3	0.000	0.000	0.002	0.001	Pole CS-4-20	-0.040	-0.020	6.3	89.9	
								Pole CS-4-22	0.038	0.019	6.0	89.9	
Pole CS-4-22	4.160	98.536	-1.3	0.000	0.000	0.000	0.000	PRI_PM_24	0.038	0.019	6.0	89.9	
								Pole CS-4-21	-0.038	-0.019	6.0	89.9	
Pole CS-5-18	24.940	98.982	-0.7	0.000	0.000	0.009	0.004	Pole CS-5-19	-0.009	-0.004	0.2	89.8	
Pole CS-5-19	24.940	98.982	-0.7	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-9	0.027	0.011	0.7	91.8	
								Pole CS-5-18	0.009	0.004	0.2	90.2	
								Pole CS-5-20	-0.035	-0.016	0.9	91.4	
Pole CS-5-20	24.940	98.982	-0.7	0.000	0.000	0.000	0.000	UG-JUNC-CS-5-8	0.026	0.012	0.7	91.0	
								Pole CS-5-19	0.035	0.016	0.9	91.5	
								Pole CS-5-21	-0.062	-0.028	1.6	91.3	
Pole CS-5-21	24.940	98.985	-0.7	0.000	0.000	0.000	0.000	BUS_HSP_25kV	-0.062	-0.026	1.6	91.9	
								Pole CS-5-20	0.062	0.026	1.6	91.9	
Pole HS-1-001	4.160	100.300	-1.2	0.000	0.000	0.003	0.001	BUS_HSC_4kV	-0.020	-0.010	3.1	90.0	
								Pole HS-1-4	0.018	0.009	2.7	90.0	
Pole HS-1-4	4.160	100.296	-1.2	0.000	0.000	0.004	0.002	Pole HS-1-001	-0.018	-0.009	2.7	90.0	
								Pole HS-1-16	0.014	0.007	2.1	90.0	
Pole HS-1-16	4.160	100.293	-1.2	0.000	0.000	0.008	0.004	Pole HS-1-17	0.005	0.003	0.8	90.0	
								Pole HS-1-4	-0.014	-0.007	2.1	90.0	
Pole HS-1-17	4.160	100.292	-1.2	0.000	0.000	0.001	0.001	Pole HS-1-16	-0.005	-0.003	0.8	90.0	
								Pole HS-1-19	0.004	0.002	0.6	90.0	
Pole HS-1-19	4.160	100.291	-1.2	0.000	0.000	0.004	0.002	Pole HS-1-17	-0.004	-0.002	0.6	90.0	
Pole HS-2-1	4.160	100.242	-1.2	0.000	0.000	0.002	0.001	BUS_HSC_4kV	-0.280	-0.136	43.1	90.0	
								Pole HS-2-2	0.278	0.135	42.7	90.0	
Pole HS-2-2	4.160	100.161	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-1	-0.278	-0.134	42.7	90.0	
								Pole HS-2-3	0.275	0.133	42.4	90.0	
Pole HS-2-3	4.160	100.090	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-2	-0.275	-0.133	42.4	90.0	
								Pole HS-2-4	0.273	0.132	42.0	90.0	
Pole HS-2-4	4.160	100.020	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-3	-0.273	-0.132	42.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-5	0.266	0.129	41.0	90.0	
								SEC_HS-2-4	0.007	0.003	1.0	90.0	
Pole HS-2-5	4.160	99.945	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-4	-0.266	-0.129	41.0	90.0	
								Pole HS-2-6	0.259	0.125	40.0	90.0	
								SEC_HS-2-5	0.007	0.003	1.0	90.0	
Pole HS-2-6	4.160	99.880	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-5	-0.259	-0.125	40.0	90.0	
								Pole HS-2-7	0.252	0.122	38.9	90.0	
								SEC_HS-2-6	0.007	0.003	1.0	90.0	
Pole HS-2-7	4.160	99.810	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-6	-0.252	-0.122	38.9	90.0	
								Pole HS-2-8	0.245	0.119	37.9	90.0	
								SEC_HS-2-7	0.007	0.003	1.0	90.0	
Pole HS-2-8	4.160	99.742	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-7	-0.245	-0.119	37.9	90.0	
								Pole HS-2-9	0.173	0.084	26.8	90.0	
								Pole HS-2-50	0.072	0.035	11.1	90.0	
Pole HS-2-9	4.160	99.697	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-8	-0.173	-0.084	26.8	90.0	
								Pole HS-2-10	0.171	0.083	26.5	90.0	
Pole HS-2-10	4.160	99.654	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-9	-0.171	-0.083	26.5	90.0	
								Pole HS-2-11	0.169	0.082	26.1	90.0	
Pole HS-2-11	4.160	99.609	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-10	-0.169	-0.082	26.1	90.0	
								Pole HS-2-12	0.162	0.079	25.1	90.0	
								SEC_HS-2-10	0.007	0.003	1.0	90.0	
Pole HS-2-12	4.160	99.580	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-11	-0.162	-0.079	25.1	90.0	
								Pole HS-2-86	0.160	0.078	24.7	90.0	
Pole HS-2-13	4.160	99.536	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-14	0.022	0.011	3.5	90.0	
								Pole HS-2-24	0.060	0.029	9.3	90.0	
								Pole HS-2-86	-0.082	-0.040	12.8	90.0	
Pole HS-2-14	4.160	99.529	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-13	-0.022	-0.011	3.5	90.0	
								Pole HS-2-15	0.020	0.010	3.1	90.0	
Pole HS-2-15	4.160	99.521	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-14	-0.020	-0.010	3.1	90.0	
								Pole HS-2-16	0.018	0.009	2.8	90.0	
Pole HS-2-16	4.160	99.514	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-15	-0.018	-0.009	2.8	90.0	
								Pole HS-2-17	0.016	0.008	2.4	90.0	
Pole HS-2-17	4.160	99.509	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-16	-0.016	-0.008	2.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-18	0.013	0.006	2.1	90.0	
Pole HS-2-18	4.160	99.506	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-17	-0.013	-0.006	2.1	90.0	
								Pole HS-2-19	0.011	0.005	1.7	90.0	
Pole HS-2-19	4.160	99.503	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-18	-0.011	-0.005	1.7	90.0	
								Pole HS-2-20	0.009	0.004	1.4	90.0	
Pole HS-2-20	4.160	99.498	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-19	-0.009	-0.004	1.4	90.0	
								Pole HS-2-21	0.007	0.003	1.0	90.0	
Pole HS-2-21	4.160	99.497	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-20	-0.007	-0.003	1.0	90.0	
								Pole HS-2-22	0.004	0.002	0.7	90.0	
Pole HS-2-22	4.160	99.495	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-21	-0.004	-0.002	0.7	90.0	
								Pole HS-2-23	0.002	0.001	0.3	90.0	
Pole HS-2-23	4.160	99.495	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-22	-0.002	-0.001	0.3	90.0	
Pole HS-2-24	4.160	99.487	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-13	-0.060	-0.029	9.3	90.0	
								Pole HS-2-25	0.051	0.025	7.9	90.0	
								Pole HS-2-26	0.007	0.003	1.0	90.0	
Pole HS-2-25	4.160	99.471	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.051	-0.025	7.9	90.0	
								Pole HS-2-27	0.051	0.025	7.9	90.0	
Pole HS-2-26	4.160	99.482	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-24	-0.007	-0.003	1.0	90.0	
								SEC_HS-2-23	0.007	0.003	1.0	90.0	
Pole HS-2-27	4.160	99.455	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-25	-0.051	-0.025	7.9	90.0	
								Pole HS-2-28	0.051	0.025	7.9	90.0	
Pole HS-2-28	4.160	99.428	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-27	-0.051	-0.025	7.9	90.0	
								Pole HS-2-29	0.018	0.009	2.8	90.0	
								Pole HS-2-35	0.033	0.016	5.2	90.0	
Pole HS-2-29	4.160	99.423	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-28	-0.018	-0.009	2.8	90.0	
								Pole HS-2-30	0.016	0.008	2.4	90.0	
Pole HS-2-30	4.160	99.421	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-31	0.009	0.004	1.4	90.0	
								Pole HS-2-29	-0.016	-0.008	2.4	90.0	
								SEC_HS-2-25	0.007	0.003	1.0	90.0	
Pole HS-2-31	4.160	99.420	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-30	-0.009	-0.004	1.4	90.0	
								Pole HS-2-32	0.007	0.003	1.0	90.0	
Pole HS-2-32	4.160	99.418	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-31	-0.007	-0.003	1.0	90.0	
								Pole HS-2-33	0.004	0.002	0.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-2-33	4.160	99.417	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-32	-0.004	-0.002	0.7	90.0	
								Pole HS-2-34	0.002	0.001	0.3	90.0	
Pole HS-2-34	4.160	99.416	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-33	-0.002	-0.001	0.3	90.0	
Pole HS-2-35	4.160	99.411	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-28	-0.033	-0.016	5.2	90.0	
								Pole HS-2-36	0.013	0.006	2.1	90.0	
								Pole HS-2-42	0.018	0.009	2.8	90.0	
								Pole HS-2-48	0.002	0.001	0.3	90.0	
Pole HS-2-36	4.160	99.406	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-35	-0.013	-0.006	2.1	90.0	
								Pole HS-2-37	0.011	0.005	1.7	90.0	
Pole HS-2-37	4.160	99.403	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-36	-0.011	-0.005	1.7	90.0	
								Pole HS-2-38	0.009	0.004	1.4	90.0	
Pole HS-2-38	4.160	99.401	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-37	-0.009	-0.004	1.4	90.0	
								Pole HS-2-39	0.007	0.003	1.0	90.0	
Pole HS-2-39	4.160	99.399	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-38	-0.007	-0.003	1.0	90.0	
								Pole HS-2-40	0.004	0.002	0.7	90.0	
Pole HS-2-40	4.160	99.398	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-39	-0.004	-0.002	0.7	90.0	
								Pole HS-2-41	0.002	0.001	0.3	90.0	
Pole HS-2-41	4.160	99.398	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-40	-0.002	-0.001	0.3	90.0	
Pole HS-2-42	4.160	99.402	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-35	-0.018	-0.009	2.8	90.0	
								Pole HS-2-43	0.016	0.008	2.4	90.0	
								Pole HS-2-49	0.002	0.001	0.3	90.1	
Pole HS-2-43	4.160	99.398	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-42	-0.016	-0.008	2.4	90.0	
								Pole HS-2-44	0.009	0.004	1.4	90.0	
								SEC_HS-2-36	0.007	0.003	1.0	90.0	
Pole HS-2-44	4.160	99.395	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-43	-0.009	-0.004	1.4	90.0	
								Pole HS-2-45	0.007	0.003	1.0	90.0	
Pole HS-2-45	4.160	99.393	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-44	-0.007	-0.003	1.0	90.0	
								Pole HS-2-46	0.004	0.002	0.7	90.0	
Pole HS-2-46	4.160	99.393	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-45	-0.004	-0.002	0.7	90.0	
								Pole HS-2-47	0.002	0.001	0.3	90.0	
Pole HS-2-47	4.160	99.392	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-46	-0.002	-0.001	0.3	90.0	
Pole HS-2-48	4.160	99.410	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-35	-0.002	-0.001	0.3	90.0	
Pole HS-2-49	4.160	99.400	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-42	-0.002	-0.001	0.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								L-SUB-FDR-EQ#18-1-278~	0.000	0.000	0.0	0.0	
Pole HS-2-50	4.160	99.705	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-8	-0.072	-0.035	11.1	90.0	
								Pole HS-2-51	0.069	0.034	10.7	90.0	
Pole HS-2-51	4.160	99.669	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-50	-0.069	-0.034	10.7	90.0	
								Pole HS-2-52	0.011	0.005	1.7	90.0	
								Pole HS-2-57	0.058	0.028	9.0	90.0	
Pole HS-2-52	4.160	99.668	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-51	-0.011	-0.005	1.7	90.0	
								Pole HS-2-53	0.009	0.004	1.4	90.0	
Pole HS-2-53	4.160	99.666	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-52	-0.009	-0.004	1.4	90.0	
								Pole HS-2-54	0.007	0.003	1.0	90.0	
Pole HS-2-54	4.160	99.665	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-53	-0.007	-0.003	1.0	90.0	
								Pole HS-2-55	0.004	0.002	0.7	90.0	
Pole HS-2-55	4.160	99.665	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-54	-0.004	-0.002	0.7	90.0	
								Pole HS-2-56	0.002	0.001	0.3	90.0	
Pole HS-2-56	4.160	99.664	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-55	-0.002	-0.001	0.3	90.0	
Pole HS-2-57	4.160	99.639	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-51	-0.058	-0.028	9.0	90.0	
								Pole HS-2-58	0.022	0.011	3.5	90.0	
								Pole HS-2-76	0.036	0.017	5.5	90.0	
Pole HS-2-58	4.160	99.636	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-57	-0.022	-0.011	3.5	90.0	
								Pole HS-2-67	0.020	0.010	3.1	90.0	
Pole HS-2-59	4.160	99.628	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-67	-0.018	-0.009	2.8	90.0	
								Pole HS-2-60	0.016	0.008	2.4	90.0	
Pole HS-2-60	4.160	99.625	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-59	-0.016	-0.008	2.4	90.0	
								Pole HS-2-61	0.013	0.006	2.1	90.0	
Pole HS-2-61	4.160	99.623	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-60	-0.013	-0.006	2.1	90.0	
								Pole HS-2-62	0.011	0.005	1.7	90.0	
Pole HS-2-62	4.160	99.619	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-61	-0.011	-0.005	1.7	90.0	
								Pole HS-2-63	0.009	0.004	1.4	90.0	
Pole HS-2-63	4.160	99.618	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-62	-0.009	-0.004	1.4	90.0	
								Pole HS-2-64	0.007	0.003	1.0	90.0	
Pole HS-2-64	4.160	99.617	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-63	-0.007	-0.003	1.0	90.0	
								Pole HS-2-65	0.004	0.002	0.7	90.0	
Pole HS-2-65	4.160	99.616	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-64	-0.004	-0.002	0.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-66	0.002	0.001	0.3	90.0	
Pole HS-2-66	4.160	99.615	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-65	-0.002	-0.001	0.3	90.0	
								L-SUB-FDR-EQ#18-1-301~	0.000	0.000	0.0	0.0	
Pole HS-2-67	4.160	99.631	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-59	0.018	0.009	2.8	90.0	
								Pole HS-2-58	-0.020	-0.010	3.1	90.0	
Pole HS-2-68	4.160	99.605	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-69	-0.002	-0.001	0.3	90.0	
Pole HS-2-69	4.160	99.605	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-68	0.002	0.001	0.3	90.0	
								Pole HS-2-70	-0.004	-0.002	0.7	90.0	
Pole HS-2-70	4.160	99.606	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-69	0.004	0.002	0.7	90.0	
								Pole HS-2-71	-0.007	-0.003	1.0	90.0	
Pole HS-2-71	4.160	99.608	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-70	0.007	0.003	1.0	90.0	
								Pole HS-2-72	-0.009	-0.004	1.4	90.0	
Pole HS-2-72	4.160	99.610	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-71	0.009	0.004	1.4	90.0	
								Pole HS-2-73	-0.011	-0.005	1.7	90.0	
Pole HS-2-73	4.160	99.612	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-72	0.011	0.005	1.7	90.0	
								Pole HS-2-74	-0.013	-0.006	2.1	90.0	
Pole HS-2-74	4.160	99.614	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-73	0.013	0.006	2.1	90.0	
								Pole HS-2-75	-0.016	-0.008	2.4	90.0	
Pole HS-2-75	4.160	99.618	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-74	0.016	0.008	2.4	90.0	
								Pole HS-2-76	-0.018	-0.009	2.8	90.0	
Pole HS-2-76	4.160	99.620	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-75	0.018	0.009	2.8	90.0	
								Pole HS-2-57	-0.036	-0.017	5.5	90.0	
								Pole HS-2-77	0.018	0.009	2.8	90.1	
Pole HS-2-77	4.160	99.610	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-76	-0.018	-0.009	2.8	90.0	
								Pole HS-2-78	0.011	0.005	1.7	90.1	
								SEC_HS-2-67	0.007	0.003	1.0	90.0	
Pole HS-2-78	4.160	99.603	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-77	-0.011	-0.005	1.7	90.1	
								Pole HS-2-79	0.002	0.001	0.3	90.1	
								Pole HS-2-80	0.009	0.004	1.4	90.1	
Pole HS-2-79	4.160	99.602	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-78	-0.002	-0.001	0.3	90.0	
Pole HS-2-80	4.160	99.598	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-78	-0.009	-0.004	1.4	90.1	
								Pole HS-2-81	0.007	0.003	1.0	90.1	
Pole HS-2-81	4.160	99.595	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-80	-0.007	-0.003	1.0	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-2-82	0.004	0.002	0.7	90.1	
Pole HS-2-82	4.160	99.590	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-81	-0.004	-0.002	0.7	90.0	
								Pole HS-2-83	0.002	0.001	0.3	90.1	
Pole HS-2-83	4.160	99.589	-1.2	0.000	0.000	0.002	0.001	Pole HS-2-82	-0.002	-0.001	0.3	90.0	
Pole HS-2-84	4.160	99.479	-1.3	0.000	0.000	0.002	0.001	Pole HS-2-85	-0.002	-0.001	0.3	90.0	
Pole HS-2-85	4.160	99.480	-1.3	0.000	0.000	0.002	0.001	Pole HS-2-84	0.002	0.001	0.3	90.1	
								Pole CS-1-2	-0.004	-0.002	0.7	90.0	
Pole HS-2-86	4.160	99.551	-1.2	0.000	0.000	0.000	0.000	PRI_PM_10	0.077	0.038	12.0	89.9	
								Pole HS-2-12	-0.160	-0.077	24.7	90.0	
								Pole HS-2-13	0.082	0.040	12.8	90.0	
Pole HS-3-1	4.160	100.291	-1.2	0.000	0.000	0.002	0.001	BUS_HSC_4kV	-0.189	-0.091	29.0	90.0	
								Pole HS-3-2	0.187	0.090	28.7	90.0	
Pole HS-3-2	4.160	100.231	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-1	-0.186	-0.090	28.7	90.0	
								Pole HS-3-3	0.184	0.089	28.3	90.0	
Pole HS-3-3	4.160	100.142	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-2	-0.184	-0.089	28.3	90.0	
								Pole HS-3-4	0.182	0.088	28.0	90.0	
Pole HS-3-4	4.160	100.082	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-3	-0.182	-0.088	28.0	90.0	
								Pole HS-3-5	0.179	0.087	27.6	90.0	
Pole HS-3-5	4.160	100.023	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-4	-0.179	-0.087	27.6	90.0	
								Pole HS-3-6	0.177	0.086	27.3	90.0	
Pole HS-3-6	4.160	99.982	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-5	-0.177	-0.086	27.3	90.0	
								Pole HS-3-7	0.175	0.085	26.9	90.0	
Pole HS-3-7	4.160	99.933	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-6	-0.175	-0.084	26.9	90.0	
								Pole HS-3-8	0.172	0.083	26.6	90.0	
Pole HS-3-8	4.160	99.898	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-7	-0.172	-0.083	26.6	90.0	
								Pole HS-3-9	0.170	0.082	26.2	90.0	
Pole HS-3-9	4.160	99.852	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-8	-0.170	-0.082	26.2	90.0	
								Pole HS-3-10	0.168	0.081	25.9	90.0	
Pole HS-3-10	4.160	99.807	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-9	-0.168	-0.081	25.9	90.0	
								Pole HS-3-11	0.165	0.080	25.6	90.0	
Pole HS-3-11	4.160	99.775	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-10	-0.165	-0.080	25.6	90.0	
								Pole HS-3-12	0.163	0.079	25.2	90.0	
Pole HS-3-12	4.160	99.746	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-11	-0.163	-0.079	25.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-3-13	0.161	0.078	24.9	90.0	
Pole HS-3-13	4.160	99.703	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-12	-0.161	-0.078	24.9	90.0	
								Pole HS-3-14	0.159	0.077	24.5	90.0	
Pole HS-3-14	4.160	99.672	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-13	-0.158	-0.077	24.5	90.0	
								Pole HS-3-15	0.156	0.076	24.2	90.0	
Pole HS-3-15	4.160	99.636	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-14	-0.156	-0.076	24.2	90.0	
								Pole HS-3-16	0.154	0.075	23.8	90.0	
Pole HS-3-16	4.160	99.601	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-15	-0.154	-0.074	23.8	90.0	
								Pole HS-3-17	0.152	0.073	23.5	90.0	
Pole HS-3-17	4.160	99.570	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-16	-0.152	-0.073	23.5	90.0	
								Pole HS-3-18	0.098	0.047	15.2	90.0	
								Pole HS-3-23	0.054	0.026	8.3	90.0	
Pole HS-3-18	4.160	99.505	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-17	-0.098	-0.047	15.2	90.0	
								Pole HS-3-28	0.011	0.005	1.7	90.0	
								Pole HS-3-29	0.058	0.028	9.0	90.0	
								Pole HS-3-46	0.029	0.014	4.5	90.0	
Pole HS-3-19	4.160	99.511	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-20	-0.045	-0.022	6.9	90.0	
								Pole HS-3-30	0.042	0.020	6.6	90.0	
Pole HS-3-20	4.160	99.522	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-19	0.045	0.022	6.9	90.0	
								Pole HS-3-21	-0.047	-0.023	7.3	90.0	
Pole HS-3-21	4.160	99.541	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-20	0.047	0.023	7.3	90.0	
								Pole HS-3-22	-0.049	-0.024	7.6	90.0	
Pole HS-3-22	4.160	99.551	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-21	0.049	0.024	7.6	90.0	
								Pole HS-3-23	-0.051	-0.025	7.9	90.0	
Pole HS-3-23	4.160	99.560	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-17	-0.054	-0.026	8.3	90.0	
								Pole HS-3-22	0.051	0.025	7.9	90.0	
Pole HS-3-24	4.160	99.498	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-25	-0.002	-0.001	0.3	90.0	
Pole HS-3-25	4.160	99.499	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-24	0.002	0.001	0.3	90.0	
								Pole HS-3-26	-0.004	-0.002	0.7	90.0	
Pole HS-3-26	4.160	99.500	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-25	0.004	0.002	0.7	90.0	
								Pole HS-3-27	-0.007	-0.003	1.0	90.0	
Pole HS-3-27	4.160	99.502	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-26	0.007	0.003	1.0	90.0	
								Pole HS-3-28	-0.009	-0.004	1.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-28	4.160	99.504	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-27	0.009	0.004	1.4	90.0	
								Pole HS-3-18	-0.011	-0.005	1.7	90.0	
Pole HS-3-29	4.160	99.467	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-18	-0.058	-0.028	9.0	90.0	
								Pole HS-3-34	0.009	0.004	1.4	90.0	
								Pole HS-3-35	0.022	0.011	3.5	90.0	
								Pole HS-3-59	0.027	0.013	4.1	90.0	
Pole HS-3-30	4.160	99.502	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-19	-0.042	-0.020	6.6	90.0	
								Pole HS-3-85	0.040	0.019	6.2	90.0	
Pole HS-3-31	4.160	99.461	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-32	-0.002	-0.001	0.3	90.0	
Pole HS-3-32	4.160	99.462	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-31	0.002	0.001	0.3	90.0	
								Pole HS-3-33	-0.004	-0.002	0.7	90.0	
Pole HS-3-33	4.160	99.463	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-32	0.004	0.002	0.7	90.0	
								Pole HS-3-34	-0.007	-0.003	1.0	90.0	
Pole HS-3-34	4.160	99.464	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-29	-0.009	-0.004	1.4	90.0	
								Pole HS-3-33	0.007	0.003	1.0	90.0	
Pole HS-3-35	4.160	99.453	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.022	-0.011	3.5	90.0	
								Pole HS-3-37	0.004	0.002	0.7	90.0	
								Pole HS-3-38	0.018	0.009	2.8	90.0	
Pole HS-3-36	4.160	99.451	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-37	-0.002	-0.001	0.3	90.0	
Pole HS-3-37	4.160	99.451	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-35	-0.004	-0.002	0.7	90.0	
								Pole HS-3-36	0.002	0.001	0.3	90.0	
Pole HS-3-38	4.160	99.441	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-35	-0.018	-0.009	2.8	90.0	
								Pole HS-3-43	0.016	0.008	2.4	90.0	
Pole HS-3-39	4.160	99.426	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-44	0.004	0.002	0.7	90.1	
								Pole HS-3-40	-0.007	-0.003	1.0	90.0	
Pole HS-3-40	4.160	99.427	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-39	0.007	0.003	1.0	90.1	
								Pole HS-3-41	-0.009	-0.004	1.4	90.0	
Pole HS-3-41	4.160	99.429	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-40	0.009	0.004	1.4	90.0	
								Pole HS-3-42	-0.011	-0.005	1.7	90.0	
Pole HS-3-42	4.160	99.431	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-41	0.011	0.005	1.7	90.0	
								Pole HS-3-43	-0.013	-0.006	2.1	90.0	
Pole HS-3-43	4.160	99.434	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-42	0.013	0.006	2.1	90.0	
								Pole HS-3-38	-0.016	-0.008	2.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-44	4.160	99.421	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-39	-0.004	-0.002	0.7	90.0	
								Pole HS-3-45	0.002	0.001	0.3	90.0	
Pole HS-3-45	4.160	99.420	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-44	-0.002	-0.001	0.3	90.0	
Pole HS-3-46	4.160	99.502	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-18	-0.029	-0.014	4.5	90.0	
								Pole HS-3-47	0.027	0.013	4.1	90.0	
Pole HS-3-47	4.160	99.498	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-46	-0.027	-0.013	4.1	90.0	
								Pole HS-3-48	0.025	0.012	3.8	90.0	
Pole HS-3-48	4.160	99.491	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-47	-0.025	-0.012	3.8	90.0	
								Pole HS-3-49	0.022	0.011	3.5	90.0	
Pole HS-3-49	4.160	99.485	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-50	0.020	0.010	3.1	90.0	
								Pole HS-3-48	-0.022	-0.011	3.5	90.0	
Pole HS-3-50	4.160	99.482	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-49	-0.020	-0.010	3.1	90.0	
								Pole HS-3-51	0.018	0.009	2.8	90.0	
Pole HS-3-51	4.160	99.478	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-50	-0.018	-0.009	2.8	90.0	
								Pole HS-3-52	0.016	0.008	2.4	90.0	
Pole HS-3-52	4.160	99.473	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-51	-0.016	-0.008	2.4	90.0	
								Pole HS-3-53	0.013	0.006	2.1	90.0	
Pole HS-3-53	4.160	99.472	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-58	0.011	0.005	1.7	90.0	
								Pole HS-3-52	-0.013	-0.006	2.1	90.0	
Pole HS-3-54	4.160	99.463	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-55	-0.002	-0.001	0.3	90.0	
Pole HS-3-55	4.160	99.464	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-54	0.002	0.001	0.3	90.0	
								Pole HS-3-56	-0.004	-0.002	0.7	90.0	
Pole HS-3-56	4.160	99.464	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-55	0.004	0.002	0.7	90.0	
								Pole HS-3-57	-0.007	-0.003	1.0	90.0	
Pole HS-3-57	4.160	99.466	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-56	0.007	0.003	1.0	90.0	
								Pole HS-3-58	-0.009	-0.004	1.4	90.0	
Pole HS-3-58	4.160	99.471	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-53	-0.011	-0.005	1.7	90.0	
								Pole HS-3-57	0.009	0.004	1.4	90.0	
Pole HS-3-59	4.160	99.449	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-29	-0.027	-0.013	4.1	90.0	
								Pole HS-3-60	0.020	0.010	3.1	90.0	
								SEC_HS-3-55	0.007	0.003	1.0	90.0	
Pole HS-3-60	4.160	99.441	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-59	-0.020	-0.010	3.1	90.0	
								Pole HS-3-61	0.018	0.009	2.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-61	4.160	99.434	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-60	-0.018	-0.009	2.8	90.0	
								Pole HS-3-62	0.011	0.005	1.7	90.0	
								SEC_HS-3-57	0.007	0.003	1.0	90.0	
Pole HS-3-62	4.160	99.430	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-61	-0.011	-0.005	1.7	90.0	
								Pole HS-3-63	0.009	0.004	1.4	90.0	
Pole HS-3-63	4.160	99.427	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-62	-0.009	-0.004	1.4	90.0	
								Pole HS-3-64	0.002	0.001	0.3	90.0	
								SEC_HS-3-59	0.007	0.003	1.0	90.0	
Pole HS-3-64	4.160	99.426	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-63	-0.002	-0.001	0.3	90.0	
Pole HS-3-65	4.160	99.449	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-66	-0.002	-0.001	0.3	90.0	
Pole HS-3-66	4.160	99.450	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-65	0.002	0.001	0.3	90.0	
								Pole HS-3-67	-0.004	-0.002	0.7	90.0	
Pole HS-3-67	4.160	99.453	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-66	0.004	0.002	0.7	90.0	
								Pole HS-3-68	-0.007	-0.003	1.0	90.0	
Pole HS-3-68	4.160	99.455	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-67	0.007	0.003	1.0	90.0	
								Pole HS-3-69	-0.009	-0.004	1.4	90.0	
Pole HS-3-69	4.160	99.457	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-68	0.009	0.004	1.4	90.0	
								Pole HS-3-70	-0.011	-0.005	1.7	90.0	
Pole HS-3-70	4.160	99.464	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-69	0.011	0.005	1.7	90.0	
								Pole HS-3-71	-0.013	-0.006	2.1	90.0	
Pole HS-3-71	4.160	99.472	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-70	0.013	0.006	2.1	90.0	
								Pole MS-1-81	-0.016	-0.008	2.4	90.0	
Pole HS-3-74	4.160	99.457	-1.2	0.000	0.000	0.004	0.002	Pole HS-3-75	-0.004	-0.002	0.7	90.0	
Pole HS-3-75	4.160	99.458	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-74	0.004	0.002	0.7	90.0	
								Pole HS-3-76	-0.007	-0.003	1.0	90.0	
Pole HS-3-76	4.160	99.461	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-75	0.007	0.003	1.0	90.0	
								Pole HS-3-77	-0.009	-0.004	1.4	90.0	
Pole HS-3-77	4.160	99.464	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-76	0.009	0.004	1.4	90.0	
								Pole HS-3-78	-0.011	-0.005	1.7	90.0	
Pole HS-3-78	4.160	99.468	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-77	0.011	0.005	1.7	90.0	
								Pole HS-3-79	-0.013	-0.006	2.1	90.0	
Pole HS-3-79	4.160	99.480	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-78	0.013	0.006	2.1	90.0	
								Pole MS-1-81	-0.016	-0.008	2.4	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-3-80	4.160	99.483	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-81	0.007	0.003	1.0	90.0	
								Pole HS-3-85	-0.009	-0.004	1.4	90.0	
Pole HS-3-81	4.160	99.477	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-82	0.004	0.002	0.7	90.0	
								Pole HS-3-80	-0.007	-0.003	1.0	90.0	
Pole HS-3-82	4.160	99.474	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-83	0.002	0.001	0.3	90.0	
								Pole HS-3-81	-0.004	-0.002	0.7	90.0	
Pole HS-3-83	4.160	99.473	-1.2	0.000	0.000	0.002	0.001	Pole HS-3-82	-0.002	-0.001	0.3	90.0	
Pole HS-3-85	4.160	99.488	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-80	0.009	0.004	1.4	90.0	
								Pole MS-1-81	0.031	0.015	4.8	90.0	
								Pole HS-3-30	-0.040	-0.019	6.2	90.0	
Pole HS-3-86	4.160	99.322	-1.4	0.000	0.000	0.002	0.001	Pole CS-1-3	-0.002	-0.001	0.3	90.0	
Pole HS-3-88	4.160	99.170	-1.4	0.000	0.000	0.002	0.001	Pole CS-1-6	-0.007	-0.003	1.0	90.0	
								Pole HS-3-89	0.004	0.002	0.7	90.0	
Pole HS-3-89	4.160	99.169	-1.4	0.000	0.000	0.002	0.001	Pole HS-3-88	-0.004	-0.002	0.7	90.0	
								Pole HS-3-90	0.002	0.001	0.3	90.0	
Pole HS-3-90	4.160	99.169	-1.4	0.000	0.000	0.002	0.001	Pole HS-3-89	-0.002	-0.001	0.3	90.0	
Pole HS-4-1	4.160	100.161	-1.3	0.000	0.000	0.002	0.001	BUS_HSC_4kV	-0.234	-0.114	36.1	90.0	
								Pole HS-4-2	0.232	0.112	35.7	90.0	
Pole HS-4-2	4.160	100.133	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-12	0.130	0.063	20.0	90.0	
								Pole HS-4-1	-0.232	-0.112	35.7	90.0	
								Pole HS-4-3	0.102	0.049	15.6	90.0	
Pole HS-4-3	4.160	100.085	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-44	0.035	0.017	5.3	90.0	
								Pole HS-4-53	0.022	0.011	3.4	90.0	
								Pole HS-4-2	-0.101	-0.049	15.6	90.0	
								Pole HS-4-4	0.045	0.022	6.9	90.0	
Pole HS-4-4	4.160	100.075	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-58	0.015	0.007	2.3	90.0	
								Pole HS-4-3	-0.045	-0.022	6.9	90.0	
								Pole HS-4-5	0.030	0.014	4.6	90.0	
Pole HS-4-5	4.160	100.065	-1.3	0.000	0.000	0.005	0.002	Pole HS-4-55	0.005	0.002	0.8	90.0	
								Pole HS-4-4	-0.030	-0.014	4.6	90.0	
								Pole HS-4-6	0.020	0.010	3.0	90.0	
Pole HS-4-6	4.160	100.059	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-56	0.005	0.002	0.8	90.0	
								Pole HS-4-5	-0.020	-0.010	3.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-7	0.012	0.006	1.9	90.0	
Pole HS-4-7	4.160	100.055	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-6	-0.012	-0.006	1.9	90.0	
								Pole HS-4-8	0.012	0.006	1.9	90.0	
Pole HS-4-8	4.160	100.051	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-7	-0.012	-0.006	1.9	90.0	
								Pole HS-4-9	0.010	0.005	1.5	90.0	
Pole HS-4-9	4.160	100.049	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-8	-0.010	-0.005	1.5	90.0	
								Pole HS-4-10	0.007	0.004	1.1	90.0	
Pole HS-4-10	4.160	100.048	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-9	-0.007	-0.004	1.1	90.0	
								Pole HS-4-11	0.000	0.000	0.0	0.0	
								SEC_HS-4-7	0.007	0.004	1.1	90.0	
Pole HS-4-11	4.160	100.048	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-10	0.000	0.000	0.0	0.0	
Pole HS-4-12	4.160	100.091	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-2	-0.130	-0.063	20.0	90.0	
								Pole HS-4-13	0.128	0.062	19.7	90.0	
Pole HS-4-13	4.160	100.067	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-12	-0.128	-0.062	19.7	90.0	
								Pole HS-4-14	0.125	0.061	19.3	90.0	
Pole HS-4-14	4.160	100.033	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-13	-0.125	-0.061	19.3	90.0	
								Pole HS-4-15	0.123	0.060	18.9	90.0	
Pole HS-4-15	4.160	99.998	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-14	-0.123	-0.060	18.9	90.0	
								Pole HS-4-19	0.120	0.058	18.5	90.0	
Pole HS-4-16	4.160	99.619	-1.3	0.000	0.000	0.000	0.000	PRI_PM_15	0.070	0.034	10.9	89.9	
								Pole HS-4-33	-0.070	-0.034	10.9	89.9	
Pole HS-4-17	4.160	99.947	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-19	-0.118	-0.057	18.1	90.0	
								Pole HS-4-18	0.110	0.053	17.0	90.0	
								SEC_HS-4-13	0.007	0.004	1.1	90.0	
Pole HS-4-18	4.160	99.927	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-17	-0.110	-0.053	17.0	90.0	
								Pole HS-4-20	0.108	0.052	16.6	90.0	
Pole HS-4-19	4.160	99.980	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-15	-0.120	-0.058	18.5	90.0	
								Pole HS-4-17	0.118	0.057	18.1	90.0	
Pole HS-4-20	4.160	99.901	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-18	-0.108	-0.052	16.6	89.9	
								Pole HS-4-21	0.105	0.051	16.2	89.9	
Pole HS-4-21	4.160	99.878	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-20	-0.105	-0.051	16.2	89.9	
								Pole HS-4-22	0.103	0.050	15.9	89.9	
Pole HS-4-22	4.160	99.836	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-21	-0.103	-0.050	15.9	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-23	0.100	0.049	15.5	89.9	
Pole HS-4-23	4.160	99.810	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-22	-0.100	-0.049	15.5	89.9	
								Pole HS-4-24	0.098	0.047	15.1	89.9	
Pole HS-4-24	4.160	99.792	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-23	-0.098	-0.047	15.1	89.9	
								Pole HS-4-26	0.007	0.004	1.1	90.0	
								Pole HS-4-27	0.090	0.044	14.0	89.9	
Pole HS-4-26	4.160	99.790	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-24	-0.007	-0.004	1.1	90.0	
								SEC_HS-4-21	0.007	0.004	1.1	90.0	
Pole HS-4-27	4.160	99.773	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-24	-0.090	-0.044	14.0	89.9	
								Pole HS-4-28	0.088	0.043	13.6	89.9	
Pole HS-4-28	4.160	99.754	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-27	-0.088	-0.043	13.6	89.9	
								Pole HS-4-29	0.085	0.041	13.2	89.9	
Pole HS-4-29	4.160	99.697	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-28	-0.085	-0.041	13.2	89.9	
								Pole HS-4-31	0.083	0.040	12.8	89.9	
Pole HS-4-30	4.160	99.648	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-31	-0.083	-0.040	12.8	89.9	
								Pole HS-4-32	0.080	0.039	12.4	89.9	
Pole HS-4-31	4.160	99.678	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-29	-0.083	-0.040	12.8	89.9	
								Pole HS-4-30	0.083	0.040	12.8	89.9	
Pole HS-4-32	4.160	99.634	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-30	-0.080	-0.039	12.4	89.9	
								Pole HS-4-33	0.078	0.038	12.1	89.9	
Pole HS-4-33	4.160	99.626	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-32	-0.078	-0.038	12.1	89.9	
								Pole HS-4-16	0.070	0.034	10.9	89.9	
								Pole HS-4-64	0.007	0.004	1.1	90.0	
								L-SUB-FDR-EQ#20-1-96~	0.000	0.000	0.0	0.0	
Pole HS-4-34	4.160	100.043	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-35	-0.005	-0.002	0.8	90.0	
								Pole HS-4-45	0.002	0.001	0.4	90.0	
Pole HS-4-35	4.160	100.045	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-36	-0.007	-0.004	1.1	90.0	
								Pole HS-4-34	0.005	0.002	0.8	90.0	
Pole HS-4-36	4.160	100.050	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-37	-0.010	-0.005	1.5	90.0	
								Pole HS-4-35	0.007	0.004	1.1	90.0	
Pole HS-4-37	4.160	100.055	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-38	-0.012	-0.006	1.9	90.0	
								Pole HS-4-36	0.010	0.005	1.5	90.0	
Pole HS-4-38	4.160	100.057	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-39	-0.015	-0.007	2.3	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole HS-4-37	0.012	0.006	1.9	90.0	
Pole HS-4-39	4.160	100.058	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-40	-0.022	-0.011	3.4	90.0	
								Pole HS-4-38	0.015	0.007	2.3	90.0	
								SEC_HS-4-32	0.007	0.004	1.1	90.0	
Pole HS-4-40	4.160	100.062	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-41	-0.025	-0.012	3.8	90.0	
								Pole HS-4-39	0.022	0.011	3.4	90.0	
Pole HS-4-41	4.160	100.067	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-42	-0.027	-0.013	4.2	90.0	
								Pole HS-4-40	0.025	0.012	3.8	90.0	
Pole HS-4-42	4.160	100.074	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-43	-0.030	-0.014	4.6	90.0	
								Pole HS-4-41	0.027	0.013	4.2	90.0	
Pole HS-4-43	4.160	100.078	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-44	-0.032	-0.016	5.0	90.0	
								Pole HS-4-42	0.030	0.014	4.6	90.0	
Pole HS-4-44	4.160	100.082	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-3	-0.035	-0.017	5.3	90.0	
								Pole HS-4-43	0.032	0.016	5.0	90.0	
Pole HS-4-45	4.160	100.042	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-34	-0.002	-0.001	0.4	90.0	
Pole HS-4-47	4.160	100.058	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-48	-0.002	-0.001	0.4	90.1	
								HS-4-33~	0.000	0.000	0.0	0.0	
Pole HS-4-48	4.160	100.059	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-47	0.002	0.001	0.4	90.2	
								Pole HS-4-49	-0.010	-0.005	1.5	90.0	
								SEC_HS-4-44	0.007	0.004	1.1	90.0	
Pole HS-4-49	4.160	100.061	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-48	0.010	0.005	1.5	90.0	
								Pole HS-4-50	-0.012	-0.006	1.9	90.0	
Pole HS-4-50	4.160	100.064	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-49	0.012	0.006	1.9	90.0	
								Pole HS-4-51	-0.015	-0.007	2.3	90.0	
Pole HS-4-51	4.160	100.071	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-50	0.015	0.007	2.3	90.0	
								Pole HS-4-52	-0.017	-0.008	2.7	90.0	
Pole HS-4-52	4.160	100.075	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-51	0.017	0.008	2.7	90.0	
								Pole HS-4-53	-0.020	-0.010	3.0	90.0	
Pole HS-4-53	4.160	100.080	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-52	0.020	0.010	3.0	90.0	
								Pole HS-4-3	-0.022	-0.011	3.4	90.0	
Pole HS-4-54	4.160	100.062	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-55	-0.002	-0.001	0.4	90.0	
Pole HS-4-55	4.160	100.063	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-54	0.002	0.001	0.4	90.0	
								Pole HS-4-5	-0.005	-0.002	0.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole HS-4-56	4.160	100.058	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-6	-0.005	-0.002	0.8	90.0	
								Pole HS-4-57	0.002	0.001	0.4	90.0	
Pole HS-4-57	4.160	100.057	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-56	-0.002	-0.001	0.4	90.0	
Pole HS-4-58	4.160	100.062	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-4	-0.015	-0.007	2.3	90.0	
								Pole HS-4-59	0.012	0.006	1.9	90.0	
Pole HS-4-59	4.160	100.056	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-58	-0.012	-0.006	1.9	90.0	
								Pole HS-4-60	0.002	0.001	0.4	90.0	
								Pole HS-4-61	0.007	0.004	1.1	90.0	
Pole HS-4-60	4.160	100.056	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-59	-0.002	-0.001	0.4	90.0	
Pole HS-4-61	4.160	100.052	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-59	-0.007	-0.004	1.1	90.0	
								Pole HS-4-62	0.005	0.002	0.8	90.0	
Pole HS-4-62	4.160	100.050	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-61	-0.005	-0.002	0.8	90.0	
								Pole HS-4-63	0.002	0.001	0.4	90.0	
Pole HS-4-63	4.160	100.049	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-62	-0.002	-0.001	0.4	90.0	
Pole HS-4-64	4.160	99.624	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-65	0.002	0.001	0.4	90.0	
								Pole HS-4-33	-0.007	-0.004	1.1	90.0	
								Pole HS-4-66	0.005	0.002	0.8	90.0	
Pole HS-4-65	4.160	99.624	-1.3	0.000	0.000	0.002	0.001	Pole HS-4-64	-0.002	-0.001	0.4	90.0	
Pole HS-4-66	4.160	99.624	-1.3	0.000	0.000	0.005	0.002	Pole HS-4-64	-0.005	-0.002	0.8	90.0	
								Pole HS-4-67	0.000	0.000	0.0	0.0	
Pole HS-4-67	4.160	99.624	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-66	0.000	0.000	0.0	0.0	
								L-SUB-FDR-EQ#20-1-90~	0.000	0.000	0.0	0.0	
Pole MS-1-1	4.160	100.020	0.4	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.064	-0.031	9.9	90.0	
								Pole MS-1-2	0.048	0.023	7.5	90.0	
								Pole MS-1-76	0.016	0.008	2.4	90.0	
								L-SUB-FDR-EQ#12-9~	0.000	0.000	0.0	0.0	
Pole MS-1-2	4.160	100.009	0.4	0.000	0.000	0.002	0.001	Pole MS-1-1	-0.048	-0.023	7.5	90.0	
								Pole MS-1-3	0.047	0.023	7.2	90.0	
Pole MS-1-3	4.160	100.001	0.4	0.000	0.000	0.000	0.000	Pole MS-1-2	-0.047	-0.023	7.2	90.0	
								Pole MS-1-17	0.035	0.017	5.3	90.0	
								Pole MS-1-5	0.012	0.006	1.9	90.0	
Pole MS-1-5	4.160	99.997	0.4	0.000	0.000	0.002	0.001	Pole MS-1-3	-0.012	-0.006	1.9	90.0	
								Pole MS-1-7	0.011	0.005	1.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-7	4.160	99.994	0.4	0.000	0.000	0.002	0.001	Pole MS-1-5	-0.011	-0.005	1.6	90.0	
								Pole MS-1-9	0.009	0.004	1.4	90.0	
Pole MS-1-8	4.160	99.989	0.4	0.000	0.000	0.002	0.001	Pole MS-1-9	-0.008	-0.004	1.2	90.0	
								Pole MS-1-10	0.006	0.003	0.9	90.0	
Pole MS-1-9	4.160	99.991	0.4	0.000	0.000	0.002	0.001	Pole MS-1-8	0.008	0.004	1.2	90.0	
								Pole MS-1-7	-0.009	-0.004	1.4	90.0	
Pole MS-1-10	4.160	99.988	0.4	0.000	0.000	0.000	0.000	Pole MS-1-8	-0.006	-0.003	0.9	90.0	
								Pole MS-1-11	0.005	0.002	0.7	90.0	
								SEC_MS-1-17	0.001	0.001	0.2	90.0	
Pole MS-1-11	4.160	99.987	0.4	0.000	0.000	0.002	0.001	Pole MS-1-10	-0.005	-0.002	0.7	90.0	
								Pole MS-1-13	0.003	0.002	0.5	90.0	
Pole MS-1-13	4.160	99.986	0.4	0.000	0.000	0.002	0.001	Pole MS-1-11	-0.003	-0.002	0.5	90.0	
								Pole MS-1-15	0.002	0.001	0.2	90.1	
Pole MS-1-15	4.160	99.985	0.4	0.000	0.000	0.002	0.001	Pole MS-1-13	-0.002	-0.001	0.2	90.0	
Pole MS-1-17	4.160	99.994	0.4	0.000	0.000	0.002	0.001	Pole MS-1-3	-0.035	-0.017	5.3	90.0	
								Pole MS-1-19	0.033	0.016	5.1	90.0	
Pole MS-1-18	4.160	99.985	0.3	0.000	0.000	0.002	0.001	Pole MS-1-19	-0.033	-0.016	5.1	90.0	
								Pole MS-1-28	0.031	0.015	4.9	90.0	
Pole MS-1-19	4.160	99.988	0.3	0.000	0.000	0.000	0.000	Pole MS-1-18	0.033	0.016	5.1	90.0	
								Pole MS-1-17	-0.033	-0.016	5.1	90.0	
								L-SUB-FDR-EQ#16-12~	0.000	0.000	0.0	0.0	
Pole MS-1-28	4.160	99.976	0.3	0.000	0.000	0.002	0.001	Pole MS-1-18	-0.031	-0.015	4.9	90.0	
								Pole MS-1-50	0.017	0.008	2.7	90.0	
								Pole MS-1-30	0.013	0.006	1.9	90.0	
Pole MS-1-30	4.160	99.972	0.3	0.000	0.000	0.002	0.001	Pole MS-1-28	-0.013	-0.006	1.9	90.0	
								Pole MS-1-32	0.011	0.005	1.7	90.0	
Pole MS-1-32	4.160	99.969	0.3	0.000	0.000	0.002	0.001	Pole MS-1-30	-0.011	-0.005	1.7	90.0	
								Pole MS-1-34	0.009	0.005	1.5	90.0	
Pole MS-1-34	4.160	99.965	0.3	0.000	0.000	0.002	0.001	Pole MS-1-32	-0.009	-0.005	1.5	90.0	
								Pole MS-1-36	0.008	0.004	1.2	90.0	
Pole MS-1-36	4.160	99.962	0.3	0.000	0.000	0.002	0.001	Pole MS-1-34	-0.008	-0.004	1.2	90.0	
								Pole MS-1-38	0.006	0.003	1.0	90.0	
Pole MS-1-38	4.160	99.960	0.3	0.000	0.000	0.002	0.001	Pole MS-1-36	-0.006	-0.003	1.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-1-40	0.005	0.002	0.7	90.0	
Pole MS-1-40	4.160	99.958	0.3	0.000	0.000	0.002	0.001	Pole MS-1-38	-0.005	-0.002	0.7	90.0	
								Pole MS-1-42	0.003	0.002	0.5	90.0	
Pole MS-1-42	4.160	99.957	0.3	0.000	0.000	0.002	0.001	Pole MS-1-40	-0.003	-0.002	0.5	90.0	
								Pole MS-1-46	0.002	0.001	0.2	90.0	
Pole MS-1-46	4.160	99.956	0.3	0.000	0.000	0.002	0.001	Pole MS-1-42	-0.002	-0.001	0.2	90.0	
Pole MS-1-50	4.160	99.969	0.3	0.000	0.000	0.000	0.000	Pole MS-1-28	-0.017	-0.008	2.7	90.0	
								Pole MS-1-70	0.005	0.002	0.7	90.0	
								Pole MS-1-52	0.013	0.006	1.9	90.0	
Pole MS-1-52	4.160	99.965	0.3	0.000	0.000	0.002	0.001	Pole MS-1-50	-0.013	-0.006	1.9	90.0	
								Pole MS-1-54	0.011	0.005	1.7	90.0	
Pole MS-1-54	4.160	99.962	0.3	0.000	0.000	0.002	0.001	Pole MS-1-52	-0.011	-0.005	1.7	90.0	
								Pole MS-1-56	0.009	0.005	1.5	90.0	
Pole MS-1-56	4.160	99.959	0.3	0.000	0.000	0.002	0.001	Pole MS-1-54	-0.009	-0.005	1.5	90.0	
								Pole MS-1-58	0.008	0.004	1.2	90.0	
Pole MS-1-58	4.160	99.956	0.3	0.000	0.000	0.002	0.001	Pole MS-1-56	-0.008	-0.004	1.2	90.0	
								Pole MS-1-60	0.006	0.003	1.0	90.0	
Pole MS-1-60	4.160	99.955	0.3	0.000	0.000	0.002	0.001	Pole MS-1-58	-0.006	-0.003	1.0	90.0	
								Pole MS-1-62	0.005	0.002	0.7	90.0	
Pole MS-1-62	4.160	99.953	0.3	0.000	0.000	0.002	0.001	Pole MS-1-60	-0.005	-0.002	0.7	90.0	
								Pole MS-1-64	0.003	0.002	0.5	90.0	
Pole MS-1-64	4.160	99.953	0.3	0.000	0.000	0.000	0.000	Pole MS-1-62	-0.003	-0.002	0.5	90.0	
								Pole MS-1-66	0.002	0.001	0.2	90.0	
								Pole MS-1-68	0.002	0.001	0.2	90.1	
Pole MS-1-66	4.160	99.953	0.3	0.000	0.000	0.002	0.001	Pole MS-1-64	-0.002	-0.001	0.2	90.0	
Pole MS-1-68	4.160	99.952	0.3	0.000	0.000	0.002	0.001	Pole MS-1-64	-0.002	-0.001	0.2	90.0	
Pole MS-1-70	4.160	99.969	0.3	0.000	0.000	0.002	0.001	Pole MS-1-50	-0.005	-0.002	0.7	90.0	
								Pole MS-1-72	0.003	0.002	0.5	90.0	
Pole MS-1-72	4.160	99.968	0.3	0.000	0.000	0.003	0.002	Pole MS-1-70	-0.003	-0.002	0.5	90.0	
Pole MS-1-73	4.160	99.997	0.4	0.000	0.000	0.002	0.001	Pole MS-1-74	-0.011	-0.005	1.7	90.0	
								Pole MS-1-79	0.009	0.005	1.5	90.0	
Pole MS-1-74	4.160	100.000	0.4	0.000	0.000	0.002	0.001	Pole MS-1-73	0.011	0.005	1.7	90.0	
								Pole MS-1-75	-0.013	-0.006	1.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-1-75	4.160	100.010	0.4	0.000	0.000	0.002	0.001	Pole MS-1-74	0.013	0.006	1.9	90.1	
								Pole MS-1-76	-0.014	-0.007	2.2	90.0	
Pole MS-1-76	4.160	100.015	0.4	0.000	0.000	0.002	0.001	Pole MS-1-75	0.014	0.007	2.2	90.0	
								Pole MS-1-1	-0.016	-0.008	2.4	90.0	
Pole MS-1-79	4.160	99.993	0.4	0.000	0.000	0.000	0.000	Pole MS-1-73	-0.009	-0.005	1.5	90.0	
								Pole MS-1-80	0.003	0.002	0.5	90.0	
								Pole MS-1-84	0.006	0.003	1.0	90.0	
Pole MS-1-80	4.160	99.992	0.4	0.000	0.000	0.002	0.001	Pole MS-1-79	-0.003	-0.002	0.5	90.0	
								Pole MS-1-82	0.002	0.001	0.2	90.0	
Pole MS-1-81	4.160	99.482	-1.2	0.000	0.000	0.000	0.000	Pole HS-3-71	0.016	0.008	2.4	90.0	
								Pole HS-3-79	0.016	0.008	2.4	90.0	
								Pole HS-3-85	-0.031	-0.015	4.8	90.0	
Pole MS-1-82	4.160	99.991	0.4	0.000	0.000	0.002	0.001	Pole MS-1-80	-0.002	-0.001	0.2	90.0	
Pole MS-1-84	4.160	99.991	0.4	0.000	0.000	0.002	0.001	Pole MS-1-79	-0.006	-0.003	1.0	90.0	
								Pole MS-1-86	0.005	0.002	0.7	90.0	
Pole MS-1-86	4.160	99.988	0.4	0.000	0.000	0.002	0.001	Pole MS-1-84	-0.005	-0.002	0.7	90.0	
								Pole MS-1-87	0.003	0.002	0.5	90.0	
Pole MS-1-87	4.160	99.986	0.4	0.000	0.000	0.002	0.001	Pole MS-1-86	-0.003	-0.002	0.5	90.0	
								Pole MS-1-88	0.002	0.001	0.2	90.0	
Pole MS-1-88	4.160	99.986	0.4	0.000	0.000	0.002	0.001	Pole MS-1-87	-0.002	-0.001	0.2	90.0	
Pole MS-2-1	4.160	100.072	0.4	0.000	0.000	0.000	0.000	Pole MS-2-180	-0.011	-0.005	1.7	90.0	
								Pole MS-2-2	0.007	0.004	1.1	90.1	
								SEC_MS-2-8	0.004	0.002	0.6	90.0	
Pole MS-2-2	4.160	100.069	0.4	0.000	0.000	0.000	0.000	Pole MS-2-1	-0.007	-0.004	1.1	90.1	
								Pole MS-2-3	0.004	0.002	0.6	90.1	
								SEC_MS-2-37	0.004	0.002	0.6	90.0	
Pole MS-2-3	4.160	100.066	0.4	0.000	0.000	0.000	0.000	Pole MS-2-2	-0.004	-0.002	0.6	90.1	
								L-SUB-FDR-EQ#16-173~	0.000	0.000	0.0	0.0	
								SEC_MS-2-38	0.004	0.002	0.6	90.0	
Pole MS-2-4	4.160	100.087	0.4	0.000	0.000	0.000	0.000	PRI_PM_8	0.043	0.021	6.6	89.9	
								Pole MS-2-180	0.011	0.005	1.7	90.1	
								Pole MS-2-182	-0.054	-0.026	8.3	90.0	
Pole MS-2-90	4.160	100.126	0.4	0.000	0.000	0.002	0.001	Pole MS-2-182	-0.051	-0.025	7.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-2-91	0.046	0.022	7.1	90.0	
								SEC_MS-2-36	0.004	0.002	0.6	90.0	
Pole MS-2-91	4.160	100.083	0.4	0.000	0.000	0.002	0.001	Pole MS-2-90	-0.046	-0.022	7.1	90.0	
								Pole MS-2-92	0.044	0.021	6.8	90.0	
Pole MS-2-92	4.160	100.071	0.4	0.000	0.000	0.000	0.000	Pole MS-2-91	-0.044	-0.021	6.8	90.0	
								Pole MS-2-93	0.041	0.020	6.2	90.0	
								SEC_MS-2-39	0.004	0.002	0.6	90.0	
Pole MS-2-93	4.160	100.060	0.4	0.000	0.000	0.002	0.001	Pole MS-2-92	-0.041	-0.020	6.2	90.0	
								Pole MS-2-94	0.039	0.019	6.0	90.0	
Pole MS-2-94	4.160	100.051	0.4	0.000	0.000	0.000	0.000	Pole MS-2-93	-0.039	-0.019	6.0	90.0	
								Pole MS-2-95	0.035	0.017	5.4	90.0	
								SEC_MS-2-40	0.004	0.002	0.6	90.0	
Pole MS-2-95	4.160	100.025	0.4	0.000	0.000	0.002	0.001	Pole MS-2-94	-0.035	-0.017	5.4	90.0	
								Pole MS-2-96	0.034	0.016	5.2	90.0	
Pole MS-2-96	4.160	100.006	0.4	0.000	0.000	0.002	0.001	Pole MS-2-95	-0.034	-0.016	5.2	90.0	
								Pole MS-2-98	0.032	0.016	4.9	90.0	
Pole MS-2-98	4.160	99.999	0.4	0.000	0.000	0.002	0.001	Pole MS-2-96	-0.032	-0.016	4.9	90.0	
								Pole MS-2-100	0.030	0.015	4.7	90.0	
Pole MS-2-100	4.160	99.995	0.4	0.000	0.000	0.000	0.000	Pole MS-2-98	-0.030	-0.015	4.7	90.0	
								Pole MS-2-102	0.027	0.013	4.1	90.0	
								SEC_MS-2-41	0.004	0.002	0.6	90.0	
Pole MS-2-102	4.160	99.991	0.4	0.000	0.000	0.000	0.000	Pole MS-2-100	-0.027	-0.013	4.1	90.0	
								Pole MS-2-103	0.027	0.013	4.1	90.0	
Pole MS-2-103	4.160	99.986	0.4	0.000	0.000	0.002	0.001	Pole MS-2-102	-0.027	-0.013	4.1	90.0	
								Pole MS-2-107	0.025	0.012	3.9	90.0	
Pole MS-2-107	4.160	99.973	0.4	0.000	0.000	0.002	0.001	Pole MS-2-103	-0.025	-0.012	3.9	90.0	
								Pole MS-2-108	0.024	0.011	3.6	90.0	
Pole MS-2-108	4.160	99.967	0.4	0.000	0.000	0.002	0.001	Pole MS-2-107	-0.024	-0.011	3.6	90.0	
								Pole MS-2-109	0.022	0.011	3.4	90.0	
Pole MS-2-109	4.160	99.962	0.4	0.000	0.000	0.002	0.001	Pole MS-2-108	-0.022	-0.011	3.4	90.0	
								Pole MS-2-110	0.020	0.010	3.2	90.0	
Pole MS-2-110	4.160	99.956	0.4	0.000	0.000	0.002	0.001	Pole MS-2-109	-0.020	-0.010	3.2	90.0	
								Pole MS-2-111	0.019	0.009	2.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-2-111	4.160	99.950	0.4	0.000	0.000	0.002	0.001	Pole MS-2-110	-0.019	-0.009	2.9	90.0	
								Pole MS-2-112	0.017	0.008	2.7	90.0	
Pole MS-2-112	4.160	99.947	0.4	0.000	0.000	0.002	0.001	Pole MS-2-111	-0.017	-0.008	2.7	90.0	
								Pole MS-2-113	0.016	0.008	2.4	90.0	
Pole MS-2-113	4.160	99.943	0.4	0.000	0.000	0.002	0.001	Pole MS-2-112	-0.016	-0.008	2.4	90.0	
								Pole MS-2-115	0.014	0.007	2.2	90.0	
Pole MS-2-115	4.160	99.939	0.4	0.000	0.000	0.002	0.001	Pole MS-2-113	-0.014	-0.007	2.2	90.0	
								Pole MS-2-116	0.013	0.006	1.9	90.0	
Pole MS-2-116	4.160	99.934	0.4	0.000	0.000	0.002	0.001	Pole MS-2-115	-0.013	-0.006	1.9	90.0	
								Pole MS-2-117	0.011	0.005	1.7	90.0	
Pole MS-2-117	4.160	99.928	0.4	0.000	0.000	0.002	0.001	Pole MS-2-116	-0.011	-0.005	1.7	90.0	
								Pole MS-2-118	0.009	0.005	1.5	90.0	
Pole MS-2-118	4.160	99.922	0.4	0.000	0.000	0.002	0.001	Pole MS-2-117	-0.009	-0.005	1.5	90.0	
								Pole MS-2-120	0.008	0.004	1.2	90.0	
Pole MS-2-120	4.160	99.919	0.4	0.000	0.000	0.002	0.001	Pole MS-2-118	-0.008	-0.004	1.2	90.0	
								Pole MS-2-121	0.006	0.003	1.0	90.0	
Pole MS-2-121	4.160	99.915	0.4	0.000	0.000	0.003	0.002	Pole MS-2-120	-0.006	-0.003	1.0	90.0	
								Pole MS-2-122	0.003	0.002	0.5	90.0	
Pole MS-2-122	4.160	99.914	0.4	0.000	0.000	0.003	0.002	Pole MS-2-121	-0.003	-0.002	0.5	90.0	
								L-SUB-FDR-EQ#16-97~	0.000	0.000	0.0	0.0	
Pole MS-2-180	4.160	100.077	0.4	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.011	-0.005	1.7	90.1	
								Pole MS-2-1	0.011	0.005	1.7	90.0	
								L-SUB-FDR-EQ#12-13~	0.000	0.000	0.0	0.0	
Pole MS-2-182	4.160	100.140	0.4	0.000	0.000	0.000	0.000	Pole MS-2-4	0.054	0.026	8.3	90.0	
								BUS_5KV_LLP_2	-0.105	-0.051	16.2	90.0	
								Pole MS-2-90	0.051	0.025	7.9	90.0	
Pole MS-3-1	4.160	100.160	0.5	0.000	0.000	0.000	0.000	Pole MS-3-2	0.004	0.002	0.6	90.0	
								Pole MS-3-88	-0.072	-0.035	11.0	90.0	
								Pole MS-3-3	0.068	0.033	10.5	90.0	
Pole MS-3-2	4.160	100.160	0.5	0.000	0.000	0.000	0.000	Pole MS-3-1	-0.004	-0.002	0.6	90.0	
								SEC_MS-3-1	0.004	0.002	0.6	90.0	
Pole MS-3-3	4.160	100.122	0.5	0.000	0.000	0.000	0.000	Pole MS-3-4	0.068	0.033	10.5	90.0	
								Pole MS-3-1	-0.068	-0.033	10.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-4	4.160	100.114	0.5	0.000	0.000	0.002	0.001	Pole MS-3-3	-0.068	-0.033	10.5	90.0	
								Pole MS-3-5	0.066	0.032	10.2	90.0	
Pole MS-3-5	4.160	100.107	0.5	0.000	0.000	0.002	0.001	Pole MS-3-4	-0.066	-0.032	10.2	90.0	
								Pole MS-3-6	0.065	0.031	10.0	90.0	
Pole MS-3-6	4.160	100.098	0.5	0.000	0.000	0.000	0.000	Pole MS-3-5	-0.065	-0.031	10.0	90.0	
								Pole MS-3-7	0.061	0.029	9.4	90.0	
								SEC_MS-3-2	0.004	0.002	0.6	90.0	
Pole MS-3-7	4.160	100.074	0.5	0.000	0.000	0.002	0.001	Pole MS-3-6	-0.061	-0.029	9.4	90.0	
								Pole MS-3-8	0.059	0.029	9.2	90.0	
Pole MS-3-8	4.160	100.064	0.5	0.000	0.000	0.000	0.000	Pole MS-3-7	-0.059	-0.029	9.2	90.0	
								Pole MS-3-9	0.056	0.027	8.6	90.1	
								SEC_MS-3-3	0.004	0.002	0.6	90.0	
Pole MS-3-9	4.160	100.054	0.5	0.000	0.000	0.002	0.001	Pole MS-3-8	-0.056	-0.027	8.6	90.0	
								Pole MS-3-10	0.054	0.026	8.3	90.1	
Pole MS-3-10	4.160	100.035	0.5	0.000	0.000	0.002	0.001	Pole MS-3-9	-0.054	-0.026	8.3	90.0	
								Pole MS-3-11	0.053	0.025	8.1	90.1	
Pole MS-3-11	4.160	100.029	0.5	0.000	0.000	0.002	0.001	Pole MS-3-10	-0.053	-0.025	8.1	90.0	
								Pole MS-3-12	0.051	0.025	7.9	90.1	
Pole MS-3-12	4.160	100.023	0.5	0.000	0.000	0.002	0.001	Pole MS-3-11	-0.051	-0.025	7.9	90.1	
								Pole MS-3-13	0.049	0.024	7.6	90.1	
Pole MS-3-13	4.160	100.001	0.5	0.000	0.000	0.002	0.001	Pole MS-3-12	-0.049	-0.024	7.6	90.0	
								Pole MS-3-14	0.048	0.023	7.4	90.1	
Pole MS-3-14	4.160	99.993	0.5	0.000	0.000	0.002	0.001	Pole MS-3-13	-0.048	-0.023	7.4	90.1	
								Pole MS-3-15	0.046	0.022	7.1	90.1	
Pole MS-3-15	4.160	99.973	0.5	0.000	0.000	0.002	0.001	Pole MS-3-14	-0.046	-0.022	7.1	90.0	
								Pole MS-3-16	0.045	0.022	6.9	90.1	
Pole MS-3-16	4.160	99.967	0.5	0.000	0.000	0.002	0.001	Pole MS-3-15	-0.045	-0.022	6.9	90.1	
								Pole MS-3-17	0.043	0.021	6.6	90.1	
Pole MS-3-17	4.160	99.959	0.5	0.000	0.000	0.002	0.001	Pole MS-3-16	-0.043	-0.021	6.6	90.1	
								Pole MS-3-18	0.041	0.020	6.4	90.1	
Pole MS-3-18	4.160	99.951	0.5	0.000	0.000	0.000	0.000	Pole MS-3-17	-0.041	-0.020	6.4	90.1	
								Pole MS-3-19	0.015	0.007	2.3	90.0	
								Pole MS-3-26	0.027	0.013	4.1	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-3-19	4.160	99.948	0.5	0.000	0.000	0.003	0.002	Pole MS-3-18	-0.015	-0.007	2.3	90.0	
								Pole MS-3-20	0.012	0.006	1.8	90.1	
Pole MS-3-20	4.160	99.946	0.5	0.000	0.000	0.002	0.001	Pole MS-3-19	-0.012	-0.006	1.8	90.0	
								Pole MS-3-21	0.010	0.005	1.5	90.1	
Pole MS-3-21	4.160	99.941	0.5	0.000	0.000	0.002	0.001	Pole MS-3-20	-0.010	-0.005	1.5	90.0	
								Pole MS-3-22	0.008	0.004	1.3	90.1	
Pole MS-3-22	4.160	99.938	0.5	0.000	0.000	0.002	0.001	Pole MS-3-21	-0.008	-0.004	1.3	90.0	
								Pole MS-3-23	0.007	0.003	1.1	90.1	
Pole MS-3-23	4.160	99.936	0.5	0.000	0.000	0.002	0.001	Pole MS-3-22	-0.007	-0.003	1.1	90.0	
								Pole MS-3-24	0.005	0.003	0.8	90.1	
Pole MS-3-24	4.160	99.934	0.5	0.000	0.000	0.002	0.001	Pole MS-3-23	-0.005	-0.003	0.8	90.0	
								Pole MS-3-25	0.004	0.002	0.6	90.0	
Pole MS-3-25	4.160	99.933	0.5	0.000	0.000	0.000	0.000	Pole MS-3-24	-0.004	-0.002	0.6	90.0	
								L-SUB-FDR-EQ#16-133~	0.000	0.000	0.0	0.0	
								SEC_MS-3-22	0.004	0.002	0.6	90.0	
Pole MS-3-26	4.160	99.941	0.5	0.000	0.000	0.002	0.001	Pole MS-3-27	0.006	0.003	1.0	90.1	
								Pole MS-3-18	-0.027	-0.013	4.1	90.1	
								Pole MS-3-31	0.019	0.009	2.9	90.1	
Pole MS-3-27	4.160	99.938	0.5	0.000	0.000	0.002	0.001	Pole MS-3-26	-0.006	-0.003	1.0	90.0	
								Pole MS-3-28	0.005	0.002	0.7	90.1	
Pole MS-3-28	4.160	99.937	0.5	0.000	0.000	0.002	0.001	Pole MS-3-27	-0.005	-0.002	0.7	90.0	
								Pole MS-3-29	0.003	0.002	0.5	90.1	
Pole MS-3-29	4.160	99.935	0.5	0.000	0.000	0.002	0.001	Pole MS-3-28	-0.003	-0.002	0.5	90.0	
								Pole MS-3-30	0.002	0.001	0.2	90.0	
Pole MS-3-30	4.160	99.935	0.5	0.000	0.000	0.002	0.001	Pole MS-3-29	-0.002	-0.001	0.2	90.0	
Pole MS-3-31	4.160	99.931	0.5	0.000	0.000	0.002	0.001	Pole MS-3-26	-0.019	-0.009	2.9	90.0	
								Pole MS-3-32	0.017	0.008	2.7	90.1	
Pole MS-3-32	4.160	99.929	0.5	0.000	0.000	0.002	0.001	Pole MS-3-31	-0.017	-0.008	2.7	90.0	
								Pole MS-3-33	0.016	0.008	2.4	90.1	
Pole MS-3-33	4.160	99.926	0.5	0.000	0.000	0.002	0.001	Pole MS-3-32	-0.016	-0.008	2.4	90.1	
								Pole MS-3-34	0.014	0.007	2.2	90.1	
Pole MS-3-34	4.160	99.923	0.5	0.000	0.000	0.002	0.001	Pole MS-3-36	0.011	0.005	1.7	90.1	
								Pole MS-3-33	-0.014	-0.007	2.2	90.1	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-35	0.002	0.001	0.2	90.0	
Pole MS-3-35	4.160	99.923	0.5	0.000	0.000	0.002	0.001	Pole MS-3-34	-0.002	-0.001	0.2	90.0	
Pole MS-3-36	4.160	99.918	0.5	0.000	0.000	0.002	0.001	Pole MS-3-34	-0.011	-0.005	1.7	90.1	
								Pole MS-3-37	0.009	0.005	1.5	90.1	
Pole MS-3-37	4.160	99.914	0.5	0.000	0.000	0.000	0.000	Pole MS-3-36	-0.009	-0.005	1.5	90.1	
								Pole MS-3-39	0.006	0.003	1.0	90.0	
								Pole MS-3-38	0.003	0.002	0.5	90.1	
Pole MS-3-38	4.160	99.913	0.5	0.000	0.000	0.002	0.001	Pole MS-3-37	-0.003	-0.002	0.5	90.1	
								Pole MS-3-43	0.002	0.001	0.2	90.2	
Pole MS-3-39	4.160	99.912	0.5	0.000	0.000	0.002	0.001	Pole MS-3-37	-0.006	-0.003	1.0	90.0	
								Pole MS-3-40	0.005	0.002	0.7	90.0	
Pole MS-3-40	4.160	99.911	0.5	0.000	0.000	0.002	0.001	Pole MS-3-39	-0.005	-0.002	0.7	90.0	
								Pole MS-3-41	0.003	0.002	0.5	90.0	
Pole MS-3-41	4.160	99.911	0.5	0.000	0.000	0.002	0.001	Pole MS-3-40	-0.003	-0.002	0.5	90.0	
								Pole MS-3-42	0.002	0.001	0.2	90.0	
Pole MS-3-42	4.160	99.910	0.5	0.000	0.000	0.002	0.001	Pole MS-3-41	-0.002	-0.001	0.2	90.0	
Pole MS-3-43	4.160	99.913	0.5	0.000	0.000	0.002	0.001	Pole MS-3-38	-0.002	-0.001	0.2	90.0	
								LINE MS-3-11~	0.000	0.000	0.0	0.0	
Pole MS-3-44	4.160	99.824	0.5	0.000	0.000	0.000	0.000	Pole MS-3-46	0.009	0.004	1.4	90.1	
								Pole MS-3-45	0.000	0.000	0.0	0.0	
								Pole MS-3-54	-0.009	-0.004	1.4	90.1	
Pole MS-3-45	4.160	99.824	0.5	0.000	0.000	0.000	0.000	Pole MS-3-44	0.000	0.000	0.0	0.0	
Pole MS-3-46	4.160	99.823	0.5	0.000	0.000	0.000	0.000	Pole MS-3-44	-0.009	-0.004	1.4	90.1	
								Pole MS-3-47	0.009	0.004	1.4	90.1	
Pole MS-3-47	4.160	99.821	0.5	0.000	0.000	0.002	0.001	Pole MS-3-46	-0.009	-0.004	1.4	90.1	
								Pole MS-3-48	0.007	0.003	1.1	90.1	
Pole MS-3-48	4.160	99.818	0.5	0.000	0.000	0.000	0.000	Pole MS-3-47	-0.007	-0.003	1.1	90.1	
								Pole MS-3-51	0.003	0.002	0.5	90.1	
								Pole MS-3-50	0.004	0.002	0.6	90.0	
Pole MS-3-49	4.160	99.817	0.5	0.000	0.000	0.002	0.001	Pole MS-3-50	-0.002	-0.001	0.2	90.0	
Pole MS-3-50	4.160	99.817	0.5	0.000	0.000	0.002	0.001	Pole MS-3-48	-0.004	-0.002	0.6	90.0	
								Pole MS-3-49	0.002	0.001	0.2	90.0	
Pole MS-3-51	4.160	99.816	0.5	0.000	0.000	0.000	0.000	Pole MS-3-48	-0.003	-0.002	0.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-53	0.002	0.001	0.2	90.0	
								Pole MS-3-52	0.002	0.001	0.2	90.1	
Pole MS-3-52	4.160	99.815	0.5	0.000	0.000	0.002	0.001	Pole MS-3-51	-0.002	-0.001	0.2	90.0	
Pole MS-3-53	4.160	99.816	0.5	0.000	0.000	0.002	0.001	Pole MS-3-51	-0.002	-0.001	0.2	90.0	
Pole MS-3-54	4.160	99.829	0.5	0.000	0.000	0.000	0.000	PRI_PM_18	0.053	0.026	8.2	89.9	
								Pole MS-3-57	0.002	0.001	0.2	90.1	
								Pole MS-3-44	0.009	0.004	1.4	90.1	
								Pole MS-3-58	-0.064	-0.031	9.8	89.9	
Pole MS-3-55	4.160	100.066	0.5	0.000	0.000	0.000	0.000	Pole MS-3-90	0.036	0.018	5.6	90.0	
								Pole MS-3-71	0.140	0.068	21.6	89.9	
								Pole MS-3-79	-0.177	-0.086	27.2	90.0	
Pole MS-3-57	4.160	99.828	0.5	0.000	0.000	0.002	0.001	Pole MS-3-54	-0.002	-0.001	0.2	90.0	
Pole MS-3-58	4.160	99.864	0.5	0.000	0.000	0.000	0.000	Pole MS-3-59	0.003	0.002	0.5	90.1	
								Pole MS-3-61	-0.067	-0.033	10.3	89.9	
								Pole MS-3-54	0.064	0.031	9.8	89.9	
Pole MS-3-59	4.160	99.864	0.5	0.000	0.000	0.002	0.001	Pole MS-3-58	-0.003	-0.002	0.5	90.1	
								Pole MS-3-60	0.002	0.001	0.2	90.1	
Pole MS-3-60	4.160	99.863	0.5	0.000	0.000	0.002	0.001	Pole MS-3-59	-0.002	-0.001	0.2	90.0	
Pole MS-3-61	4.160	99.904	0.5	0.000	0.000	0.000	0.000	Pole MS-3-58	0.067	0.033	10.3	89.9	
								Pole MS-3-64	-0.070	-0.034	10.8	89.9	
								Pole MS-3-62	0.003	0.002	0.5	90.0	
Pole MS-3-62	4.160	99.903	0.5	0.000	0.000	0.002	0.001	Pole MS-3-61	-0.003	-0.002	0.5	90.0	
								Pole MS-3-63	0.002	0.001	0.2	90.1	
Pole MS-3-63	4.160	99.903	0.5	0.000	0.000	0.002	0.001	Pole MS-3-62	-0.002	-0.001	0.2	90.0	
Pole MS-3-64	4.160	99.923	0.5	0.000	0.000	0.002	0.001	Pole MS-3-61	0.070	0.034	10.8	89.9	
								Pole MS-3-70	-0.081	-0.039	12.5	89.9	
								Pole MS-3-65	0.009	0.005	1.5	90.0	
Pole MS-3-65	4.160	99.920	0.5	0.000	0.000	0.002	0.001	Pole MS-3-64	-0.009	-0.005	1.5	90.0	
								Pole MS-3-66	0.008	0.004	1.2	90.0	
Pole MS-3-66	4.160	99.918	0.5	0.000	0.000	0.002	0.001	Pole MS-3-65	-0.008	-0.004	1.2	90.0	
								Pole MS-3-67	0.003	0.002	0.5	90.1	
								Pole MS-3-69	0.003	0.002	0.5	90.0	
Pole MS-3-67	4.160	99.917	0.5	0.000	0.000	0.002	0.001	Pole MS-3-66	-0.003	-0.002	0.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-68	0.002	0.001	0.2	90.0	
Pole MS-3-68	4.160	99.916	0.5	0.000	0.000	0.002	0.001	Pole MS-3-67	-0.002	-0.001	0.2	90.0	
Pole MS-3-69	4.160	99.918	0.5	0.000	0.000	0.003	0.002	Pole MS-3-66	-0.003	-0.002	0.5	90.0	
Pole MS-3-70	4.160	99.975	0.5	0.000	0.000	0.000	0.000	Pole MS-3-64	0.081	0.039	12.5	89.9	
								Pole MS-3-71	-0.081	-0.039	12.5	89.9	
								L-SUB-FDR-EQ#16-177~	0.000	0.000	0.0	0.0	
Pole MS-3-71	4.160	100.031	0.5	0.000	0.000	0.000	0.000	Pole MS-3-55	-0.140	-0.068	21.6	89.9	
								Pole MS-3-70	0.081	0.039	12.5	90.0	
								Pole MS-3-72	0.059	0.029	9.1	89.9	
Pole MS-3-72	4.160	100.024	0.5	0.000	0.000	0.002	0.001	Pole MS-3-71	-0.059	-0.029	9.1	89.9	
								Pole MS-3-73	0.058	0.028	8.9	89.9	
Pole MS-3-73	4.160	100.018	0.5	0.000	0.000	0.000	0.000	PRI_PM_7	0.051	0.025	7.9	89.9	
								Pole MS-3-72	-0.058	-0.028	8.9	89.9	
								Pole MS-3-74	0.006	0.003	1.0	90.1	
Pole MS-3-74	4.160	100.017	0.5	0.000	0.000	0.002	0.001	Pole MS-3-73	-0.006	-0.003	1.0	90.1	
								Pole MS-3-75	0.005	0.002	0.7	90.1	
Pole MS-3-75	4.160	100.015	0.5	0.000	0.000	0.002	0.001	Pole MS-3-74	-0.005	-0.002	0.7	90.0	
								Pole MS-3-76	0.003	0.002	0.5	90.1	
Pole MS-3-76	4.160	100.013	0.5	0.000	0.000	0.002	0.001	Pole MS-3-75	-0.003	-0.002	0.5	90.0	
								Pole MS-3-77	0.002	0.001	0.2	90.1	
Pole MS-3-77	4.160	100.013	0.5	0.000	0.000	0.002	0.001	Pole MS-3-76	-0.002	-0.001	0.2	90.0	
Pole MS-3-79	4.160	100.110	0.5	0.000	0.000	0.000	0.000	Pole MS-3-55	0.177	0.086	27.2	90.0	
								Pole MS-3-82	0.012	0.006	1.9	90.0	
								Pole MS-3-87	-0.189	-0.092	29.1	90.0	
Pole MS-3-80	4.160	100.101	0.5	0.000	0.000	0.002	0.001	Pole MS-3-81	-0.009	-0.004	1.4	90.0	
								Pole MS-3-83	0.008	0.004	1.2	90.0	
Pole MS-3-81	4.160	100.105	0.5	0.000	0.000	0.002	0.001	Pole MS-3-80	0.009	0.004	1.4	90.0	
								Pole MS-3-82	-0.011	-0.005	1.7	90.0	
Pole MS-3-82	4.160	100.107	0.5	0.000	0.000	0.002	0.001	Pole MS-3-81	0.011	0.005	1.7	90.0	
								Pole MS-3-79	-0.012	-0.006	1.9	90.0	
Pole MS-3-83	4.160	100.100	0.5	0.000	0.000	0.002	0.001	Pole MS-3-80	-0.008	-0.004	1.2	90.0	
								Pole MS-3-84	0.006	0.003	0.9	90.0	
Pole MS-3-84	4.160	100.099	0.5	0.000	0.000	0.002	0.001	Pole MS-3-83	-0.006	-0.003	0.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-3-85	0.005	0.002	0.7	90.0	
Pole MS-3-85	4.160	100.097	0.5	0.000	0.000	0.002	0.001	Pole MS-3-84	-0.005	-0.002	0.7	90.0	
								Pole MS-3-86	0.002	0.001	0.3	90.0	
Pole MS-3-86	4.160	100.097	0.5	0.000	0.000	0.002	0.001	Pole MS-3-85	-0.002	-0.001	0.3	90.0	
Pole MS-3-87	4.160	100.213	0.5	0.000	0.000	0.000	0.000	Pole MS-3-79	0.189	0.092	29.1	90.0	
								Pole MS-3-88	0.072	0.035	11.0	90.0	
								BUS_5KV_LLP_02	-0.261	-0.126	40.2	90.0	
Pole MS-3-88	4.160	100.174	0.5	0.000	0.000	0.000	0.000	Pole MS-3-87	-0.072	-0.035	11.0	90.0	
								Pole MS-3-1	0.072	0.035	11.0	90.0	
Pole MS-3-90	4.160	100.057	0.5	0.000	0.000	0.005	0.002	Pole MS-3-55	-0.036	-0.018	5.6	90.0	
								Pole MS-3-92	0.032	0.015	4.9	90.0	
Pole MS-3-92	4.160	100.034	0.5	0.000	0.000	0.004	0.002	Pole MS-3-95	0.027	0.013	4.2	90.0	
								Pole MS-3-90	-0.032	-0.015	4.9	90.0	
Pole MS-3-95	4.160	100.025	0.5	0.000	0.000	0.002	0.001	Pole MS-3-96	0.002	0.001	0.3	90.1	
								Pole MS-4-36	0.023	0.011	3.5	90.0	
								Pole MS-3-92	-0.027	-0.013	4.2	90.0	
Pole MS-3-96	4.160	100.024	0.5	0.000	0.000	0.002	0.001	Pole MS-3-95	-0.002	-0.001	0.3	90.0	
Pole MS-3-97	4.160	99.985	0.5	0.000	0.000	0.002	0.001	Pole MS-3-98	0.015	0.007	2.3	90.0	
								Pole MS-4-36	-0.017	-0.008	2.7	90.0	
Pole MS-3-98	4.160	99.981	0.5	0.000	0.000	0.000	0.000	Pole MS-3-99	0.015	0.007	2.3	90.0	
								Pole MS-3-97	-0.015	-0.007	2.3	90.0	
Pole MS-3-99	4.160	99.977	0.5	0.000	0.000	0.000	0.000	Pole MS-3-100	0.005	0.003	0.8	90.0	
								Pole MS-3-101	0.010	0.005	1.5	90.0	
								Pole MS-3-98	-0.015	-0.007	2.3	90.0	
Pole MS-3-100	4.160	99.974	0.5	0.000	0.000	0.000	0.000	Pole MS-3-99	-0.005	-0.003	0.8	90.0	
								SEC_MS-3-49	0.005	0.003	0.8	90.0	
Pole MS-3-101	4.160	99.970	0.5	0.000	0.000	0.000	0.000	Pole MS-3-102	0.005	0.003	0.8	90.0	
								Pole MS-3-103	0.004	0.002	0.7	90.0	
								Pole MS-3-99	-0.010	-0.005	1.5	90.0	
Pole MS-3-102	4.160	99.969	0.5	0.000	0.000	0.000	0.000	Pole MS-3-101	-0.005	-0.003	0.8	90.0	
								SEC_MS-3-65	0.005	0.003	0.8	90.0	
Pole MS-3-103	4.160	99.968	0.5	0.000	0.000	0.004	0.002	Pole MS-3-101	-0.004	-0.002	0.7	90.0	
Pole MS-4-1	4.160	100.244	0.5	0.000	0.000	0.002	0.001	BUS_5KV-LLP_01	-0.081	-0.039	12.4	90.3	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-2	0.013	0.006	2.0	90.0	
								Pole MS-4-7	0.066	0.032	10.2	90.3	
Pole MS-4-2	4.160	100.240	0.5	0.000	0.000	0.002	0.001	Pole MS-4-1	-0.013	-0.006	2.0	90.0	
								Pole MS-4-3	0.011	0.005	1.7	90.0	
Pole MS-4-3	4.160	100.240	0.5	0.000	0.000	0.000	0.000	Pole MS-4-2	-0.011	-0.005	1.7	90.0	
								Pole MS-4-5	0.008	0.004	1.2	90.0	
								SEC_MS-3-73	0.004	0.002	0.6	90.0	
Pole MS-4-5	4.160	100.238	0.5	0.000	0.000	0.004	0.002	Pole MS-4-3	-0.008	-0.004	1.2	90.0	
								Pole MS-4-6	0.004	0.002	0.6	90.0	
Pole MS-4-6	4.160	100.237	0.5	0.000	0.000	0.000	0.000	Pole MS-4-5	-0.004	-0.002	0.6	90.0	
								SEC_MS-3-74	0.004	0.002	0.6	90.0	
Pole MS-4-7	4.160	100.206	0.5	0.000	0.000	0.000	0.000	Pole MS-4-1	-0.066	-0.032	10.2	90.3	
								Pole MS-4-8	0.066	0.032	10.2	90.3	
Pole MS-4-8	4.160	100.134	0.5	0.000	0.000	0.002	0.001	Pole MS-4-7	-0.066	-0.032	10.2	90.3	
								Pole MS-4-9	0.018	0.009	2.8	90.0	
								Pole MS-4-16	0.047	0.022	7.1	90.4	
Pole MS-4-9	4.160	100.129	0.5	0.000	0.000	0.002	0.001	Pole MS-4-8	-0.018	-0.009	2.8	90.0	
								Pole MS-4-10	0.016	0.008	2.4	90.0	
Pole MS-4-10	4.160	100.125	0.5	0.000	0.000	0.000	0.000	Pole MS-4-9	-0.016	-0.008	2.4	90.0	
								Pole MS-4-11	0.012	0.006	1.9	90.0	
								SEC_MS-3-75	0.004	0.002	0.6	90.0	
Pole MS-4-11	4.160	100.119	0.5	0.000	0.000	0.005	0.002	Pole MS-4-10	-0.012	-0.006	1.9	90.0	
								Pole MS-4-12	0.008	0.004	1.2	90.0	
Pole MS-4-12	4.160	100.117	0.5	0.000	0.000	0.002	0.001	Pole MS-4-11	-0.008	-0.004	1.2	90.0	
								Pole MS-4-13	0.006	0.003	0.9	90.0	
Pole MS-4-13	4.160	100.114	0.5	0.000	0.000	0.002	0.001	Pole MS-4-12	-0.006	-0.003	0.9	90.0	
								Pole MS-4-14	0.004	0.002	0.6	90.0	
Pole MS-4-14	4.160	100.114	0.5	0.000	0.000	0.002	0.001	Pole MS-4-13	-0.004	-0.002	0.6	90.0	
								Pole MS-4-15	0.002	0.001	0.2	90.0	
Pole MS-4-15	4.160	100.113	0.5	0.000	0.000	0.002	0.001	Pole MS-4-14	-0.002	-0.001	0.2	90.0	
Pole MS-4-16	4.160	100.083	0.5	0.000	0.000	0.002	0.001	Pole MS-4-17	0.044	0.021	6.8	90.4	
								Pole MS-4-8	-0.047	-0.022	7.1	90.4	
Pole MS-4-17	4.160	100.059	0.5	0.000	0.000	0.000	0.000	Pole MS-4-16	-0.044	-0.021	6.8	90.4	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-18	0.039	0.018	6.0	90.5	
								SEC_MS-3-66	0.005	0.003	0.8	90.0	
Pole MS-4-18	4.160	100.036	0.5	0.000	0.000	0.004	0.002	Pole MS-4-17	-0.039	-0.018	6.0	90.5	
								Pole MS-4-20	0.034	0.016	5.3	90.6	
Pole MS-4-20	4.160	100.023	0.5	0.000	0.000	0.000	0.000	Pole MS-4-18	-0.034	-0.016	5.3	90.6	
								Pole MS-4-21	0.029	0.014	4.5	90.7	
								SEC_MS-3-76	0.005	0.003	0.8	90.0	
Pole MS-4-21	4.160	99.953	0.5	0.000	0.000	0.002	0.001	Pole MS-4-20	-0.029	-0.014	4.5	90.6	
								Pole MS-4-22	0.027	0.012	4.1	90.7	
Pole MS-4-22	4.160	99.929	0.5	0.000	0.000	0.002	0.001	Pole MS-4-21	-0.027	-0.013	4.1	90.7	
								Pole MS-4-23	0.025	0.011	3.8	90.7	
Pole MS-4-23	4.160	99.906	0.5	0.000	0.000	0.002	0.001	Pole MS-4-22	-0.025	-0.011	3.8	90.7	
								Pole MS-4-25	0.022	0.010	3.4	90.8	
Pole MS-4-24	4.160	99.688	0.5	0.000	0.000	0.000	0.000	Pole MS-4-25	-0.020	-0.009	3.1	90.7	
								Pole MS-4-39	0.002	0.001	0.3	90.0	
								Pole MS-4-41	0.018	0.008	2.7	90.8	
Pole MS-4-25	4.160	99.853	0.5	0.000	0.000	0.002	0.001	Pole MS-4-23	-0.022	-0.010	3.4	90.8	
								Pole MS-4-24	0.020	0.009	3.1	90.9	
Pole MS-4-31	4.160	100.239	0.5	0.000	0.000	0.000	0.000	Pole MS-5-1	0.212	0.103	32.7	89.9	
								BUS_5KV-LLP_01	-0.212	-0.103	32.7	89.9	
Pole MS-4-36	4.160	100.006	0.5	0.000	0.000	0.000	0.000	Pole MS-3-97	0.017	0.008	2.7	90.0	
								Pole MS-3-95	-0.023	-0.011	3.5	90.0	
								SEC_MS-3-45	0.005	0.003	0.8	90.0	
Pole MS-4-39	4.160	99.687	0.5	0.000	0.000	0.002	0.001	Pole MS-4-24	-0.002	-0.001	0.3	90.0	
Pole MS-4-40	4.160	99.676	0.5	0.000	0.000	0.002	0.001	Pole MS-4-41	-0.007	-0.003	1.0	90.1	
								Pole MS-4-42	0.004	0.002	0.7	90.2	
Pole MS-4-41	4.160	99.679	0.5	0.000	0.000	0.000	0.000	Pole MS-4-24	-0.018	-0.008	2.7	90.8	
								Pole MS-4-40	0.007	0.003	1.0	90.2	
								Pole MS-4-44	0.011	0.005	1.7	91.1	
Pole MS-4-42	4.160	99.671	0.5	0.000	0.000	0.002	0.001	Pole MS-4-40	-0.004	-0.002	0.7	90.1	
								Pole MS-4-43	0.002	0.001	0.3	90.3	
Pole MS-4-43	4.160	99.667	0.5	0.000	0.000	0.002	0.001	Pole MS-4-42	-0.002	-0.001	0.3	90.0	
Pole MS-4-44	4.160	99.480	0.5	0.000	0.000	0.000	0.000	Pole MS-4-41	-0.011	-0.005	1.7	90.5	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-4-45	0.002	0.001	0.3	90.1	
								Pole MS-4-46	0.009	0.004	1.4	90.6	
Pole MS-4-45	4.160	99.477	0.5	0.000	0.000	0.002	0.001	Pole MS-4-44	-0.002	-0.001	0.3	90.0	
Pole MS-4-46	4.160	99.469	0.5	0.000	0.000	0.000	0.000	Pole MS-4-44	-0.009	-0.004	1.4	90.5	
								Pole MS-4-47	0.002	0.001	0.3	90.0	
								Pole MS-4-48	0.002	0.001	0.3	90.0	
								Pole MS-4-50	0.004	0.002	0.7	91.0	
Pole MS-4-47	4.160	99.469	0.5	0.000	0.000	0.002	0.001	Pole MS-4-46	-0.002	-0.001	0.3	90.0	
Pole MS-4-48	4.160	99.469	0.5	0.000	0.000	0.002	0.001	Pole MS-4-46	-0.002	-0.001	0.3	90.0	
Pole MS-4-49	4.160	99.455	0.5	0.000	0.000	0.002	0.001	Pole MS-4-50	-0.002	-0.001	0.3	90.0	
Pole MS-4-50	4.160	99.456	0.5	0.000	0.000	0.000	0.000	Pole MS-4-46	-0.004	-0.002	0.7	90.7	
								Pole MS-4-49	0.002	0.001	0.3	90.0	
								Pole MS-4-52	0.002	0.001	0.3	91.5	
Pole MS-4-51	4.160	99.448	0.5	0.000	0.000	0.002	0.001	Pole MS-4-52	-0.002	-0.001	0.3	90.0	
Pole MS-4-52	4.160	99.453	0.5	0.000	0.000	0.000	0.000	Pole MS-4-50	-0.002	-0.001	0.3	91.2	
								Pole MS-4-51	0.002	0.001	0.3	90.3	
								LINE MS-4-53~	0.000	0.000	0.0	0.0	
Pole MS-5-1	4.160	99.798	0.4	0.000	0.000	0.002	0.001	Pole MS-4-31	-0.211	-0.103	32.7	90.0	
								Pole MS-5-2	0.209	0.101	32.3	90.0	
Pole MS-5-2	4.160	99.745	0.4	0.000	0.000	0.002	0.001	Pole MS-5-1	-0.209	-0.101	32.3	90.0	
								Pole MS-5-3	0.009	0.004	1.4	90.0	
								Pole MS-5-7	0.198	0.096	30.6	90.0	
Pole MS-5-3	4.160	99.742	0.4	0.000	0.000	0.002	0.001	Pole MS-5-2	-0.009	-0.004	1.4	90.0	
								Pole MS-5-4	0.007	0.003	1.0	90.0	
Pole MS-5-4	4.160	99.739	0.4	0.000	0.000	0.002	0.001	Pole MS-5-3	-0.007	-0.003	1.0	90.0	
								Pole MS-5-5	0.004	0.002	0.7	90.0	
Pole MS-5-5	4.160	99.737	0.4	0.000	0.000	0.002	0.001	Pole MS-5-4	-0.004	-0.002	0.7	90.0	
								Pole MS-5-6	0.002	0.001	0.3	90.0	
Pole MS-5-6	4.160	99.737	0.4	0.000	0.000	0.002	0.001	Pole MS-5-5	-0.002	-0.001	0.3	90.0	
Pole MS-5-7	4.160	99.657	0.3	0.000	0.000	0.000	0.000	Pole MS-5-2	-0.198	-0.096	30.6	90.0	
								Pole MS-5-11	0.032	0.016	5.0	90.0	
								Pole MS-5-24	0.165	0.080	25.6	90.0	
Pole MS-5-8	4.160	99.631	0.3	0.000	0.000	0.002	0.001	Pole MS-5-9	-0.025	-0.012	3.9	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-14	0.023	0.011	3.6	90.0	
Pole MS-5-9	4.160	99.637	0.3	0.000	0.000	0.002	0.001	Pole MS-5-8	0.025	0.012	3.9	90.0	
								Pole MS-5-10	-0.028	-0.013	4.3	90.0	
Pole MS-5-10	4.160	99.645	0.3	0.000	0.000	0.002	0.001	Pole MS-5-9	0.028	0.013	4.3	90.0	
								Pole MS-5-11	-0.030	-0.014	4.6	90.0	
Pole MS-5-11	4.160	99.653	0.3	0.000	0.000	0.002	0.001	Pole MS-5-7	-0.032	-0.016	5.0	90.0	
								Pole MS-5-10	0.030	0.014	4.6	90.0	
Pole MS-5-12	4.160	99.610	0.3	0.000	0.000	0.002	0.001	Pole MS-5-13	-0.019	-0.009	2.9	90.0	
								Pole MS-5-16	0.016	0.008	2.6	90.0	
Pole MS-5-13	4.160	99.623	0.3	0.000	0.000	0.002	0.001	Pole MS-5-12	0.019	0.009	2.9	90.0	
								Pole MS-5-14	-0.021	-0.010	3.2	90.0	
Pole MS-5-14	4.160	99.626	0.3	0.000	0.000	0.002	0.001	Pole MS-5-8	-0.023	-0.011	3.6	90.0	
								Pole MS-5-13	0.021	0.010	3.2	90.0	
Pole MS-5-15	4.160	99.605	0.3	0.000	0.000	0.002	0.001	Pole MS-5-16	-0.013	-0.006	2.0	90.0	
								Pole MS-5-17	0.011	0.005	1.6	90.0	
Pole MS-5-16	4.160	99.607	0.3	0.000	0.000	0.000	0.000	Pole MS-5-15	0.013	0.006	2.0	90.0	
								Pole MS-5-12	-0.016	-0.008	2.6	90.0	
								SEC_MS-5-15	0.004	0.002	0.6	90.0	
Pole MS-5-17	4.160	99.603	0.3	0.000	0.000	0.000	0.000	Pole MS-5-15	-0.011	-0.005	1.6	90.0	
								Pole MS-5-18	0.005	0.003	0.8	90.0	
								SEC_MS-5-16	0.005	0.003	0.8	90.0	
Pole MS-5-18	4.160	99.603	0.3	0.000	0.000	0.000	0.000	Pole MS-5-17	-0.005	-0.003	0.8	90.0	
								Pole MS-5-19	0.000	0.000	0.0	0.0	
								SEC_MS-5-17	0.005	0.003	0.8	90.0	
Pole MS-5-19	4.160	99.603	0.3	0.000	0.000	0.000	0.000	Pole MS-5-18	0.000	0.000	0.0	0.0	
Pole MS-5-24	4.160	99.582	0.3	0.000	0.000	0.000	0.000	Pole MS-5-7	-0.165	-0.080	25.6	90.0	
								Pole MS-5-25	0.009	0.004	1.4	90.0	
								Pole MS-5-29	0.028	0.013	4.3	90.0	
								Pole MS-5-41	0.129	0.062	19.9	90.0	
Pole MS-5-25	4.160	99.581	0.3	0.000	0.000	0.002	0.001	Pole MS-5-24	-0.009	-0.004	1.4	90.0	
								Pole MS-5-26	0.007	0.004	1.1	90.0	
Pole MS-5-26	4.160	99.579	0.3	0.000	0.000	0.000	0.000	Pole MS-5-25	-0.007	-0.004	1.1	90.0	
								Pole MS-5-28	0.004	0.002	0.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_MS-5-23	0.004	0.002	0.6	90.0	
Pole MS-5-27	4.160	99.547	0.3	0.000	0.000	0.002	0.001	Pole MS-5-41	-0.126	-0.061	19.6	90.0	
								Pole MS-5-151	0.125	0.060	19.3	90.0	
Pole MS-5-28	4.160	99.577	0.3	0.000	0.000	0.000	0.000	Pole MS-5-26	-0.004	-0.002	0.6	90.0	
								SEC_MS-5-25	0.004	0.002	0.6	90.0	
Pole MS-5-29	4.160	99.577	0.3	0.000	0.000	0.000	0.000	Pole MS-5-24	-0.028	-0.013	4.3	90.0	
								Pole MS-5-30	0.022	0.011	3.5	90.0	
								SEC_MS-5-26	0.005	0.003	0.8	90.0	
Pole MS-5-30	4.160	99.566	0.3	0.000	0.000	0.002	0.001	Pole MS-5-29	-0.022	-0.011	3.5	90.0	
								Pole MS-5-31	0.021	0.010	3.2	90.0	
Pole MS-5-31	4.160	99.558	0.3	0.000	0.000	0.002	0.001	Pole MS-5-30	-0.021	-0.010	3.2	90.0	
								Pole MS-5-32	0.019	0.009	2.9	90.0	
Pole MS-5-32	4.160	99.553	0.3	0.000	0.000	0.000	0.000	Pole MS-5-31	-0.019	-0.009	2.9	90.0	
								Pole MS-5-33	0.015	0.007	2.3	90.0	
								SEC_MS-5-29	0.004	0.002	0.6	90.0	
Pole MS-5-33	4.160	99.550	0.3	0.000	0.000	0.000	0.000	Pole MS-5-32	-0.015	-0.007	2.3	90.0	
								Pole MS-5-34	0.010	0.005	1.5	90.0	
								SEC_MS-5-30	0.005	0.003	0.8	90.0	
Pole MS-5-34	4.160	99.548	0.3	0.000	0.000	0.002	0.001	Pole MS-5-33	-0.010	-0.005	1.5	90.0	
								Pole MS-5-35	0.008	0.004	1.3	90.0	
Pole MS-5-35	4.160	99.546	0.3	0.000	0.000	0.000	0.000	Pole MS-5-34	-0.008	-0.004	1.3	90.0	
								Pole MS-5-36	0.004	0.002	0.7	90.1	
								SEC_MS-5-32	0.004	0.002	0.6	90.0	
Pole MS-5-36	4.160	99.544	0.3	0.000	0.000	0.000	0.000	Pole MS-5-35	-0.004	-0.002	0.7	90.0	
								Pole MS-5-37	0.004	0.002	0.7	90.0	
Pole MS-5-37	4.160	99.543	0.3	0.000	0.000	0.002	0.001	Pole MS-5-36	-0.004	-0.002	0.7	90.0	
								Pole MS-5-38	0.002	0.001	0.3	90.0	
Pole MS-5-38	4.160	99.542	0.3	0.000	0.000	0.002	0.001	Pole MS-5-37	-0.002	-0.001	0.3	90.0	
								Pole MS-5-39	0.000	0.000	0.0	0.0	
Pole MS-5-39	4.160	99.542	0.3	0.000	0.000	0.000	0.000	Pole MS-5-38	0.000	0.000	0.0	0.0	
Pole MS-5-40	4.160	99.465	0.3	0.000	0.000	0.002	0.001	Pole MS-5-151	-0.125	-0.060	19.3	90.0	
								Pole MS-5-42	0.002	0.001	0.2	90.0	
								Pole MS-5-44	0.024	0.012	3.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-55	0.097	0.047	15.0	90.0	
Pole MS-5-41	4.160	99.555	0.3	0.000	0.000	0.002	0.001	Pole MS-5-27	0.126	0.061	19.6	90.0	
								Pole MS-5-24	-0.129	-0.062	19.9	90.0	
Pole MS-5-42	4.160	99.464	0.3	0.000	0.000	0.002	0.001	Pole MS-5-40	-0.002	-0.001	0.2	90.0	
Pole MS-5-43	4.160	99.457	0.3	0.000	0.000	0.002	0.001	Pole MS-5-44	-0.022	-0.010	3.4	90.0	
								Pole MS-5-45	0.019	0.009	3.0	90.0	
Pole MS-5-44	4.160	99.461	0.3	0.000	0.000	0.002	0.001	Pole MS-5-40	-0.024	-0.012	3.7	90.0	
								Pole MS-5-43	0.022	0.010	3.4	90.0	
Pole MS-5-45	4.160	99.454	0.3	0.000	0.000	0.000	0.000	Pole MS-5-43	-0.019	-0.009	3.0	90.0	
								Pole MS-5-46	0.016	0.008	2.4	90.0	
								SEC_MS-5-40	0.004	0.002	0.6	90.0	
Pole MS-5-46	4.160	99.450	0.3	0.000	0.000	0.002	0.001	Pole MS-5-45	-0.016	-0.008	2.4	90.0	
								Pole MS-5-47	0.014	0.007	2.2	90.0	
Pole MS-5-47	4.160	99.447	0.3	0.000	0.000	0.002	0.001	Pole MS-5-46	-0.014	-0.007	2.2	90.0	
								Pole MS-5-48	0.012	0.006	1.8	90.0	
Pole MS-5-48	4.160	99.443	0.3	0.000	0.000	0.002	0.001	Pole MS-5-47	-0.012	-0.006	1.8	90.0	
								Pole MS-5-49	0.010	0.005	1.5	90.0	
Pole MS-5-49	4.160	99.440	0.3	0.000	0.000	0.002	0.001	Pole MS-5-48	-0.010	-0.005	1.5	90.0	
								Pole MS-5-50	0.007	0.004	1.2	90.0	
Pole MS-5-50	4.160	99.437	0.3	0.000	0.000	0.000	0.000	Pole MS-5-49	-0.007	-0.004	1.2	90.0	
								Pole MS-5-51	0.004	0.002	0.6	90.1	
								SEC_MS-5-45	0.004	0.002	0.6	90.0	
Pole MS-5-51	4.160	99.436	0.3	0.000	0.000	0.002	0.001	Pole MS-5-50	-0.004	-0.002	0.6	90.1	
								Pole MS-5-52	0.002	0.001	0.3	90.1	
Pole MS-5-52	4.160	99.435	0.3	0.000	0.000	0.002	0.001	Pole MS-5-51	-0.002	-0.001	0.3	90.0	
								Pole MS-5-149	0.000	0.000	0.0	0.0	
Pole MS-5-55	4.160	99.441	0.3	0.000	0.000	0.002	0.001	Pole MS-5-40	-0.097	-0.047	15.0	90.0	
								Pole MS-5-68	0.095	0.046	14.7	90.0	
Pole MS-5-56	4.160	99.377	0.3	0.000	0.000	0.002	0.001	Pole MS-5-68	-0.093	-0.045	14.4	90.0	
								Pole MS-5-57	0.018	0.009	2.8	90.0	
								Pole MS-5-64	0.007	0.003	1.0	90.1	
								Pole MS-5-67	0.066	0.032	10.2	90.0	
Pole MS-5-57	4.160	99.373	0.3	0.000	0.000	0.002	0.001	Pole MS-5-56	-0.018	-0.009	2.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-58	0.016	0.008	2.4	90.0	
Pole MS-5-58	4.160	99.368	0.3	0.000	0.000	0.002	0.001	Pole MS-5-57	-0.016	-0.008	2.4	90.0	
								Pole MS-5-59	0.013	0.006	2.1	90.0	
Pole MS-5-59	4.160	99.365	0.3	0.000	0.000	0.002	0.001	Pole MS-5-58	-0.013	-0.006	2.1	90.0	
								Pole MS-5-60	0.011	0.005	1.7	90.0	
Pole MS-5-60	4.160	99.362	0.3	0.000	0.000	0.002	0.001	Pole MS-5-59	-0.011	-0.005	1.7	90.0	
								Pole MS-5-61	0.009	0.004	1.4	90.0	
Pole MS-5-61	4.160	99.361	0.3	0.000	0.000	0.004	0.002	Pole MS-5-60	-0.009	-0.004	1.4	90.0	
								Pole MS-5-62	0.004	0.002	0.7	90.0	
Pole MS-5-62	4.160	99.360	0.3	0.000	0.000	0.002	0.001	Pole MS-5-61	-0.004	-0.002	0.7	90.0	
								Pole MS-5-63	0.002	0.001	0.3	90.0	
Pole MS-5-63	4.160	99.360	0.3	0.000	0.000	0.002	0.001	Pole MS-5-62	-0.002	-0.001	0.3	90.0	
Pole MS-5-64	4.160	99.376	0.3	0.000	0.000	0.002	0.001	Pole MS-5-56	-0.007	-0.003	1.0	90.0	
								Pole MS-5-65	0.004	0.002	0.7	90.1	
Pole MS-5-65	4.160	99.375	0.3	0.000	0.000	0.002	0.001	Pole MS-5-64	-0.004	-0.002	0.7	90.1	
								Pole MS-5-66	0.002	0.001	0.3	90.2	
Pole MS-5-66	4.160	99.373	0.3	0.000	0.000	0.002	0.001	Pole MS-5-65	-0.002	-0.001	0.3	90.0	
Pole MS-5-67	4.160	99.348	0.3	0.000	0.000	0.000	0.000	Pole MS-5-56	-0.066	-0.032	10.2	90.0	
								Pole MS-5-69	0.016	0.008	2.6	90.0	
								Pole MS-5-78	0.015	0.007	2.4	90.0	
								Pole MS-5-86	0.034	0.016	5.3	90.0	
Pole MS-5-68	4.160	99.400	0.3	0.000	0.000	0.002	0.001	Pole MS-5-56	0.093	0.045	14.4	90.0	
								Pole MS-5-55	-0.095	-0.046	14.7	90.0	
Pole MS-5-69	4.160	99.344	0.3	0.000	0.000	0.002	0.001	Pole MS-5-67	-0.016	-0.008	2.6	90.0	
								Pole MS-5-70	0.014	0.007	2.2	90.0	
Pole MS-5-70	4.160	99.338	0.3	0.000	0.000	0.002	0.001	Pole MS-5-69	-0.014	-0.007	2.2	90.0	
								Pole MS-5-71	0.012	0.006	1.9	90.0	
Pole MS-5-71	4.160	99.337	0.3	0.000	0.000	0.002	0.001	Pole MS-5-70	-0.012	-0.006	1.9	90.0	
								Pole MS-5-72	0.010	0.005	1.5	90.0	
Pole MS-5-72	4.160	99.336	0.3	0.000	0.000	0.002	0.001	Pole MS-5-71	-0.010	-0.005	1.5	90.0	
								Pole MS-5-73	0.008	0.004	1.2	90.0	
Pole MS-5-73	4.160	99.334	0.3	0.000	0.000	0.002	0.001	Pole MS-5-72	-0.008	-0.004	1.2	90.0	
								Pole MS-5-74	0.005	0.003	0.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-5-74	4.160	99.333	0.3	0.000	0.000	0.002	0.001	Pole MS-5-73	-0.005	-0.003	0.8	90.0	
								Pole MS-5-75	0.003	0.002	0.5	90.1	
Pole MS-5-75	4.160	99.332	0.3	0.000	0.000	0.002	0.001	Pole MS-5-74	-0.003	-0.002	0.5	90.0	
								Pole MS-5-76	0.002	0.001	0.2	90.1	
Pole MS-5-76	4.160	99.332	0.3	0.000	0.000	0.002	0.001	Pole MS-5-75	-0.002	-0.001	0.2	90.1	
								Line MS-5-79~	0.000	0.000	0.0	0.0	
Pole MS-5-77	4.160	99.341	0.3	0.000	0.000	0.002	0.001	Pole MS-5-78	-0.014	-0.007	2.1	90.0	
								Pole MS-5-79	0.012	0.006	1.9	90.1	
Pole MS-5-78	4.160	99.344	0.3	0.000	0.000	0.002	0.001	Pole MS-5-67	-0.015	-0.007	2.4	90.0	
								Pole MS-5-77	0.014	0.007	2.1	90.0	
Pole MS-5-79	4.160	99.340	0.3	0.000	0.000	0.002	0.001	Pole MS-5-77	-0.012	-0.006	1.9	90.0	
								Pole MS-5-80	0.011	0.005	1.7	90.1	
Pole MS-5-80	4.160	99.336	0.3	0.000	0.000	0.002	0.001	Pole MS-5-79	-0.011	-0.005	1.7	90.0	
								Pole MS-5-81	0.009	0.004	1.4	90.1	
Pole MS-5-81	4.160	99.333	0.3	0.000	0.000	0.002	0.001	Pole MS-5-80	-0.009	-0.004	1.4	90.0	
								Pole MS-5-82	0.008	0.004	1.2	90.1	
Pole MS-5-82	4.160	99.333	0.3	0.000	0.000	0.002	0.001	Pole MS-5-81	-0.008	-0.004	1.2	90.1	
								Pole MS-5-83	0.006	0.003	0.9	90.1	
Pole MS-5-83	4.160	99.332	0.3	0.000	0.000	0.002	0.001	Pole MS-5-82	-0.006	-0.003	0.9	90.1	
								Pole MS-5-84	0.004	0.002	0.6	90.1	
Pole MS-5-84	4.160	99.331	0.3	0.000	0.000	0.002	0.001	Pole MS-5-83	-0.004	-0.002	0.6	90.1	
								Pole MS-5-85	0.002	0.001	0.2	90.3	
Pole MS-5-85	4.160	99.329	0.3	0.000	0.000	0.002	0.001	Pole MS-5-84	-0.002	-0.001	0.2	90.0	
Pole MS-5-86	4.160	99.332	0.3	0.000	0.000	0.000	0.000	Pole MS-5-67	-0.034	-0.016	5.3	90.0	
								Pole MS-5-89	0.005	0.002	0.7	90.0	
								Pole MS-5-90	0.011	0.005	1.7	90.0	
								Pole MS-5-96	0.019	0.009	2.9	90.0	
Pole MS-5-87	4.160	99.330	0.3	0.000	0.000	0.002	0.001	Pole MS-5-88	-0.002	-0.001	0.2	90.0	
Pole MS-5-88	4.160	99.330	0.3	0.000	0.000	0.002	0.001	Pole MS-5-87	0.002	0.001	0.2	90.0	
								Pole MS-5-89	-0.003	-0.002	0.5	90.0	
Pole MS-5-89	4.160	99.331	0.3	0.000	0.000	0.002	0.001	Pole MS-5-86	-0.005	-0.002	0.7	90.0	
								Pole MS-5-88	0.003	0.002	0.5	90.0	
Pole MS-5-90	4.160	99.329	0.3	0.000	0.000	0.002	0.001	Pole MS-5-86	-0.011	-0.005	1.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-5-91	0.009	0.004	1.4	90.0	
Pole MS-5-91	4.160	99.327	0.3	0.000	0.000	0.002	0.001	Pole MS-5-90	-0.009	-0.004	1.4	90.0	
								Pole MS-5-92	0.008	0.004	1.2	90.0	
Pole MS-5-92	4.160	99.324	0.3	0.000	0.000	0.002	0.001	Pole MS-5-91	-0.008	-0.004	1.2	90.0	
								Pole MS-5-93	0.006	0.003	0.9	90.0	
Pole MS-5-93	4.160	99.323	0.3	0.000	0.000	0.002	0.001	Pole MS-5-92	-0.006	-0.003	0.9	90.0	
								Pole MS-5-94	0.004	0.002	0.6	90.0	
Pole MS-5-94	4.160	99.322	0.3	0.000	0.000	0.002	0.001	Pole MS-5-93	-0.004	-0.002	0.6	90.0	
								Pole MS-5-95	0.002	0.001	0.2	90.0	
Pole MS-5-95	4.160	99.322	0.3	0.000	0.000	0.002	0.001	Pole MS-5-94	-0.002	-0.001	0.2	90.0	
Pole MS-5-96	4.160	99.325	0.3	0.000	0.000	0.000	0.000	Pole MS-5-86	-0.019	-0.009	2.9	90.0	
								Pole MS-5-111	0.019	0.009	2.9	90.0	
Pole MS-5-106	4.160	99.972	0.4	0.000	0.000	0.017	0.008	Pole MS-5-108	-0.064	-0.031	9.8	90.0	
								Pole MS-5-122	0.047	0.023	7.2	90.0	
Pole MS-5-107	4.160	100.010	0.4	0.000	0.000	0.002	0.001	Pole MS-5-108	-0.007	-0.003	1.1	90.0	
								Pole MS-5-109	0.005	0.003	0.8	90.0	
Pole MS-5-108	4.160	100.011	0.4	0.000	0.000	0.000	0.000	Pole MS-5-107	0.007	0.003	1.1	90.0	
								Pole MS-5-106	0.064	0.031	9.8	90.0	
								SF-2-30	-0.071	-0.034	10.9	90.0	
Pole MS-5-109	4.160	100.008	0.4	0.000	0.000	0.002	0.001	Pole MS-5-107	-0.005	-0.003	0.8	90.0	
								Pole MS-5-110	0.004	0.002	0.6	90.0	
Pole MS-5-110	4.160	100.007	0.4	0.000	0.000	0.000	0.000	Pole MS-5-109	-0.004	-0.002	0.6	90.0	
								SEC_MS-5-99	0.004	0.002	0.6	90.0	
Pole MS-5-111	4.160	99.317	0.3	0.000	0.000	0.000	0.000	Pole MS-5-96	-0.019	-0.009	2.9	90.0	
								Pole MS-5-124	0.019	0.009	2.9	90.0	
Pole MS-5-122	4.160	99.940	0.4	0.000	0.000	0.021	0.010	Pole MS-5-106	-0.047	-0.023	7.2	90.0	
								Pole MS-5-123	0.026	0.012	4.0	90.1	
Pole MS-5-123	4.160	99.923	0.4	0.000	0.000	0.000	0.000	Pole MS-5-122	-0.026	-0.012	4.0	90.0	
								Pole MS-5-134	0.021	0.010	3.3	90.0	
								Pole MS-5-135	0.004	0.002	0.7	90.1	
Pole MS-5-124	4.160	99.310	0.2	0.000	0.000	0.000	0.000	Pole MS-5-111	-0.019	-0.009	2.9	90.0	
								Pole MS-5-139	0.019	0.009	2.9	90.0	
Pole MS-5-125	4.160	99.883	0.4	0.000	0.000	0.002	0.001	Pole MS-5-126	-0.002	-0.001	0.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Line MS-5-129~	0.000	0.000	0.0	0.0	
Pole MS-5-126	4.160	99.883	0.4	0.000	0.000	0.002	0.001	Pole MS-5-125	0.002	0.001	0.2	90.1	
								Pole MS-5-127	-0.004	-0.002	0.6	90.0	
Pole MS-5-127	4.160	99.884	0.4	0.000	0.000	0.002	0.001	Pole MS-5-126	0.004	0.002	0.6	90.0	
								Pole MS-5-128	-0.006	-0.003	0.9	90.0	
Pole MS-5-128	4.160	99.886	0.4	0.000	0.000	0.002	0.001	Pole MS-5-127	0.006	0.003	0.9	90.0	
								Pole MS-5-129	-0.008	-0.004	1.3	90.0	
Pole MS-5-129	4.160	99.889	0.4	0.000	0.000	0.002	0.001	Pole MS-5-128	0.008	0.004	1.3	90.0	
								Pole MS-5-130	-0.011	-0.005	1.6	90.0	
Pole MS-5-130	4.160	99.891	0.4	0.000	0.000	0.002	0.001	Pole MS-5-129	0.011	0.005	1.6	90.0	
								Pole MS-5-131	-0.012	-0.006	1.9	90.0	
Pole MS-5-131	4.160	99.897	0.4	0.000	0.000	0.002	0.001	Pole MS-5-130	0.012	0.006	1.9	90.0	
								Pole MS-5-132	-0.014	-0.007	2.1	90.0	
Pole MS-5-132	4.160	99.900	0.4	0.000	0.000	0.002	0.001	Pole MS-5-131	0.014	0.007	2.1	90.0	
								Pole MS-5-137	-0.015	-0.007	2.4	90.0	
Pole MS-5-133	4.160	99.915	0.4	0.000	0.000	0.002	0.001	Pole MS-5-137	0.018	0.008	2.7	90.0	
								Pole MS-5-134	-0.019	-0.009	2.9	90.0	
Pole MS-5-134	4.160	99.919	0.4	0.000	0.000	0.002	0.001	Pole MS-5-133	0.019	0.009	2.9	90.0	
								Pole MS-5-123	-0.021	-0.010	3.3	90.0	
Pole MS-5-135	4.160	99.919	0.4	0.000	0.000	0.002	0.001	Pole MS-5-123	-0.004	-0.002	0.7	90.0	
								Pole MS-5-136	0.002	0.001	0.3	90.1	
Pole MS-5-136	4.160	99.917	0.4	0.000	0.000	0.002	0.001	Pole MS-5-135	-0.002	-0.001	0.3	90.0	
Pole MS-5-137	4.160	99.907	0.4	0.000	0.000	0.002	0.001	Pole MS-5-133	-0.018	-0.008	2.7	90.0	
								Pole MS-5-132	0.015	0.007	2.4	90.0	
Pole MS-5-139	4.160	99.306	0.2	0.000	0.000	0.019	0.009	Pole MS-5-124	-0.019	-0.009	2.9	90.0	
Pole MS-5-149	4.160	99.435	0.3	0.000	0.000	0.000	0.000	Pole MS-5-52	0.000	0.000	0.0	0.0	
Pole MS-5-151	4.160	99.521	0.3	0.000	0.000	0.000	0.000	Pole MS-5-40	0.125	0.060	19.3	90.0	
								Pole MS-5-27	-0.125	-0.060	19.3	90.0	
Pole MS-7-16	24.940	101.081	2.7	0.000	0.000	0.000	0.000	Pole MS-7-18	-0.009	-0.004	0.2	90.0	
								SEC_MS-7-9	0.009	0.004	0.2	90.0	
Pole MS-7-17	24.940	101.082	2.7	0.000	0.000	0.000	0.000	BUS_25_LLP_SE_04	-0.025	-0.009	0.6	93.8	
								Pole MS-7-18	0.025	0.009	0.6	93.8	
Pole MS-7-18	24.940	101.081	2.7	0.000	0.000	0.000	0.000	Pole MS-7-19	0.015	0.006	0.4	93.6	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-7-16	0.009	0.004	0.2	90.4	
								Pole MS-7-17	-0.025	-0.010	0.6	92.5	
Pole MS-7-19	24.940	101.081	2.7	0.000	0.000	0.015	0.008	Pole MS-7-18	-0.015	-0.008	0.4	89.6	
Pole MS-8-1	4.160	100.229	0.5	0.000	0.000	0.000	0.000	BUS_5KV_LLP_01	-0.074	-0.036	11.3	89.9	
								Pole MS-8-2	0.074	0.036	11.3	89.9	
Pole MS-8-2	4.160	100.180	0.5	0.000	0.000	0.002	0.001	Pole MS-8-1	-0.074	-0.036	11.3	90.0	
								Pole MS-8-3	0.072	0.035	11.1	90.0	
Pole MS-8-3	4.160	100.163	0.5	0.000	0.000	0.002	0.001	Pole MS-8-2	-0.072	-0.035	11.1	90.0	
								Pole MS-8-4	0.070	0.034	10.9	90.0	
Pole MS-8-4	4.160	100.156	0.5	0.000	0.000	0.000	0.000	Pole MS-8-3	-0.070	-0.034	10.9	90.0	
								Pole MS-8-5	0.063	0.031	9.7	90.0	
								SEC_MS-8-3	0.007	0.004	1.1	90.0	
Pole MS-8-5	4.160	100.147	0.5	0.000	0.000	0.002	0.001	Pole MS-8-4	-0.063	-0.031	9.7	90.0	
								Pole MS-8-6	0.061	0.030	9.5	90.0	
Pole MS-8-6	4.160	100.133	0.4	0.000	0.000	0.002	0.001	Pole MS-8-5	-0.061	-0.030	9.5	90.0	
								Pole MS-8-7	0.060	0.029	9.2	90.0	
Pole MS-8-7	4.160	100.126	0.4	0.000	0.000	0.003	0.002	Pole MS-8-6	-0.060	-0.029	9.2	90.0	
								Pole MS-8-8	0.057	0.028	8.7	89.9	
Pole MS-8-8	4.160	100.120	0.4	0.000	0.000	0.000	0.000	Pole MS-8-7	-0.057	-0.028	8.7	89.9	
								Pole MS-8-9	0.011	0.005	1.6	90.0	
								Pole MS-8-10	0.046	0.022	7.1	89.9	
Pole MS-8-9	4.160	100.118	0.4	0.000	0.000	0.000	0.000	Pole MS-8-8	-0.011	-0.005	1.6	89.9	
								SEC_MS-8-8	0.011	0.005	1.6	89.9	
Pole MS-8-10	4.160	100.108	0.4	0.000	0.000	0.002	0.001	Pole MS-8-8	-0.046	-0.022	7.1	89.9	
								Pole MS-8-11	0.044	0.022	6.9	89.9	
Pole MS-8-11	4.160	100.096	0.4	0.000	0.000	0.002	0.001	Pole MS-8-10	-0.044	-0.022	6.9	89.9	
								Pole MS-8-12	0.042	0.021	6.5	89.9	
Pole MS-8-12	4.160	100.086	0.4	0.000	0.000	0.002	0.001	Pole MS-8-11	-0.042	-0.021	6.5	89.9	
								Pole MS-8-13	0.040	0.019	6.2	89.9	
Pole MS-8-13	4.160	100.084	0.4	0.000	0.000	0.002	0.001	Pole MS-8-12	-0.040	-0.019	6.2	89.9	
								Pole MS-8-14	0.038	0.018	5.8	89.9	
Pole MS-8-14	4.160	100.078	0.4	0.000	0.000	0.002	0.001	Pole MS-8-15	0.035	0.017	5.5	89.9	
								Pole MS-8-13	-0.038	-0.018	5.8	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-8-15	4.160	100.073	0.4	0.000	0.000	0.000	0.000	PRI_PM_9	0.035	0.017	5.5	89.9	
								Pole MS-8-14	-0.035	-0.017	5.5	89.9	
Pole MS-9-1	4.160	100.238	0.5	0.000	0.000	0.002	0.001	BUS_5KV-LLP_01	-0.167	-0.081	25.7	89.9	
								Pole MS-9-2	0.164	0.080	25.3	89.9	
Pole MS-9-2	4.160	100.202	0.5	0.000	0.000	0.000	0.000	Pole MS-9-1	-0.164	-0.080	25.3	89.9	
								Pole MS-9-12	0.164	0.080	25.3	89.9	
Pole MS-9-12	4.160	100.136	0.4	0.000	0.000	0.000	0.000	Pole MS-9-2	-0.164	-0.080	25.3	89.9	
								Pole MS-9-13	0.164	0.080	25.3	89.9	
Pole MS-9-13	4.160	100.125	0.4	0.000	0.000	0.000	0.000	Pole MS-9-12	-0.164	-0.080	25.3	89.9	
								Pole MS-9-14	0.164	0.080	25.3	89.9	
Pole MS-9-14	4.160	100.105	0.4	0.000	0.000	0.002	0.001	Pole MS-9-13	-0.164	-0.080	25.3	89.9	
								Pole MS-9-15	0.163	0.079	25.1	89.9	
Pole MS-9-15	4.160	100.075	0.4	0.000	0.000	0.000	0.000	Pole MS-9-14	-0.163	-0.079	25.1	90.0	
								Pole MS-9-16	0.155	0.075	23.9	90.0	
								SEC_MS-9-12	0.007	0.004	1.1	90.0	
Pole MS-9-16	4.160	100.043	0.4	0.000	0.000	0.002	0.001	Pole MS-9-15	-0.155	-0.075	23.9	90.0	
								Pole MS-9-17	0.154	0.075	23.7	90.0	
Pole MS-9-17	4.160	100.022	0.4	0.000	0.000	0.000	0.000	Pole MS-9-16	-0.154	-0.075	23.7	90.0	
								Pole MS-9-18	0.043	0.021	6.7	90.0	
								Pole MS-9-33	0.110	0.053	17.0	89.9	
Pole MS-9-18	4.160	100.020	0.4	0.000	0.000	0.000	0.000	Pole MS-9-17	-0.043	-0.021	6.7	90.0	
								Pole MS-9-19	0.036	0.017	5.6	90.0	
								SEC_MS-9-14	0.007	0.004	1.1	90.0	
Pole MS-9-19	4.160	100.014	0.4	0.000	0.000	0.002	0.001	Pole MS-9-18	-0.036	-0.017	5.6	90.0	
								Pole MS-9-20	0.034	0.017	5.3	90.0	
Pole MS-9-20	4.160	100.004	0.4	0.000	0.000	0.002	0.001	Pole MS-9-19	-0.034	-0.017	5.3	90.0	
								Pole MS-9-21	0.032	0.016	5.0	90.0	
Pole MS-9-21	4.160	99.997	0.4	0.000	0.000	0.000	0.000	Pole MS-9-20	-0.032	-0.016	5.0	90.0	
								Pole MS-9-23	0.025	0.012	3.8	90.0	
								SEC_MS-9-17	0.007	0.004	1.1	90.0	
Pole MS-9-22	4.160	99.893	0.4	0.000	0.000	0.000	0.000	Pole MS-9-42	-0.079	-0.038	12.2	90.0	
								Pole MS-9-43	0.011	0.005	1.7	90.0	
								Pole MS-9-47	0.068	0.033	10.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
Pole MS-9-23	4.160	99.995	0.4	0.000	0.000	0.002	0.001	Pole MS-9-21	-0.025	-0.012	3.8	90.0	
								Pole MS-9-24	0.023	0.011	3.5	90.0	
Pole MS-9-24	4.160	99.992	0.4	0.000	0.000	0.004	0.002	Pole MS-9-23	-0.023	-0.011	3.5	90.0	
								Pole MS-9-25	0.018	0.009	2.8	90.0	
Pole MS-9-25	4.160	99.991	0.4	0.000	0.000	0.000	0.000	Pole MS-9-24	-0.018	-0.009	2.8	90.0	
								Pole MS-9-26	0.007	0.004	1.1	90.0	
								Pole MS-9-28	0.011	0.005	1.6	90.0	
Pole MS-9-26	4.160	99.988	0.4	0.000	0.000	0.000	0.000	Pole MS-9-27	0.000	0.000	0.0	0.0	
								Pole MS-9-25	-0.007	-0.004	1.1	90.0	
								SEC_MS-9-22	0.007	0.004	1.1	90.0	
Pole MS-9-27	4.160	99.988	0.4	0.000	0.000	0.000	0.000	Pole MS-9-26	0.000	0.000	0.0	0.0	
Pole MS-9-28	4.160	99.989	0.4	0.000	0.000	0.002	0.001	Pole MS-9-25	-0.011	-0.005	1.6	90.0	
								Pole MS-9-29	0.009	0.004	1.4	90.0	
Pole MS-9-29	4.160	99.987	0.4	0.000	0.000	0.002	0.001	Pole MS-9-28	-0.009	-0.004	1.4	90.0	
								Pole MS-9-30	0.007	0.003	1.0	90.0	
Pole MS-9-30	4.160	99.986	0.4	0.000	0.000	0.002	0.001	Pole MS-9-29	-0.007	-0.003	1.0	90.0	
								Pole MS-9-31	0.004	0.002	0.7	90.0	
Pole MS-9-31	4.160	99.986	0.4	0.000	0.000	0.002	0.001	Pole MS-9-30	-0.004	-0.002	0.7	90.0	
								Pole MS-9-32	0.002	0.001	0.3	90.0	
Pole MS-9-32	4.160	99.985	0.4	0.000	0.000	0.002	0.001	Pole MS-9-31	-0.002	-0.001	0.3	90.0	
Pole MS-9-33	4.160	100.002	0.4	0.000	0.000	0.002	0.001	Pole MS-9-17	-0.110	-0.053	17.0	90.0	
								Pole MS-9-34	0.108	0.052	16.6	90.0	
Pole MS-9-34	4.160	99.985	0.4	0.000	0.000	0.002	0.001	Pole MS-9-33	-0.108	-0.052	16.6	90.0	
								Pole MS-9-35	0.106	0.051	16.3	90.0	
Pole MS-9-35	4.160	99.972	0.4	0.000	0.000	0.000	0.000	Pole MS-9-34	-0.106	-0.051	16.3	90.0	
								Pole MS-9-36	0.002	0.001	0.3	90.0	
								Pole MS-9-37	0.103	0.050	15.9	90.0	
Pole MS-9-36	4.160	99.972	0.4	0.000	0.000	0.002	0.001	Pole MS-9-35	-0.002	-0.001	0.3	90.0	
Pole MS-9-37	4.160	99.967	0.4	0.000	0.000	0.000	0.000	Pole MS-9-35	-0.103	-0.050	15.9	90.0	
								Pole MS-9-38	0.096	0.047	14.8	90.0	
								SEC_MS-9-31	0.007	0.004	1.1	90.0	
Pole MS-9-38	4.160	99.955	0.4	0.000	0.000	0.000	0.000	Pole MS-9-37	-0.096	-0.047	14.8	90.0	
								Pole MS-9-39	0.085	0.041	13.2	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_MS-9-32	0.011	0.005	1.6	89.9	
Pole MS-9-39	4.160	99.932	0.4	0.000	0.000	0.000	0.000	Pole MS-9-38	-0.085	-0.041	13.2	90.0	
								Pole MS-9-40	0.002	0.001	0.2	90.0	
								Pole MS-9-41	0.084	0.041	12.9	90.0	
Pole MS-9-40	4.160	99.931	0.4	0.000	0.000	0.002	0.001	Pole MS-9-39	-0.002	-0.001	0.2	90.0	
Pole MS-9-41	4.160	99.921	0.4	0.000	0.000	0.002	0.001	Pole MS-9-39	-0.084	-0.041	12.9	90.0	
								Pole MS-9-42	0.081	0.040	12.6	90.0	
Pole MS-9-42	4.160	99.901	0.4	0.000	0.000	0.002	0.001	Pole MS-9-22	0.079	0.038	12.2	90.0	
								Pole MS-9-41	-0.081	-0.039	12.6	90.0	
Pole MS-9-43	4.160	99.892	0.4	0.000	0.000	0.002	0.001	Pole MS-9-22	-0.011	-0.005	1.7	90.0	
								Pole MS-9-44	0.010	0.005	1.5	90.0	
Pole MS-9-44	4.160	99.890	0.4	0.000	0.000	0.000	0.000	Pole MS-9-43	-0.010	-0.005	1.5	90.0	
								Pole MS-9-45	0.002	0.001	0.3	90.0	
								Pole MS-9-46	0.007	0.004	1.1	90.0	
Pole MS-9-45	4.160	99.890	0.4	0.000	0.000	0.002	0.001	Pole MS-9-44	-0.002	-0.001	0.3	90.0	
Pole MS-9-46	4.160	99.888	0.4	0.000	0.000	0.000	0.000	Pole MS-9-44	-0.007	-0.004	1.1	90.0	
								SEC_MS-9-37	0.007	0.004	1.1	90.0	
Pole MS-9-47	4.160	99.885	0.4	0.000	0.000	0.000	0.000	Pole MS-9-22	-0.068	-0.033	10.5	90.0	
								Pole MS-9-48	0.060	0.029	9.3	90.0	
								SEC_MS-9-38	0.007	0.004	1.1	90.0	
Pole MS-9-48	4.160	99.876	0.4	0.000	0.000	0.000	0.000	Pole MS-9-47	-0.060	-0.029	9.3	90.0	
								Pole MS-9-49	0.050	0.024	7.7	90.0	
								SEC_MS-9-39	0.011	0.005	1.6	89.9	
Pole MS-9-49	4.160	99.863	0.4	0.000	0.000	0.000	0.000	Pole MS-9-48	-0.050	-0.024	7.7	90.0	
								Pole MS-9-50	0.039	0.019	6.1	90.0	
								SEC_MS-9-40	0.011	0.005	1.6	89.9	
Pole MS-9-50	4.160	99.857	0.4	0.000	0.000	0.000	0.000	Pole MS-9-49	-0.039	-0.019	6.1	90.0	
								Pole MS-9-51	0.029	0.014	4.4	90.0	
								SEC_MS-9-41	0.011	0.005	1.6	89.9	
Pole MS-9-51	4.160	99.853	0.4	0.000	0.000	0.000	0.000	Pole MS-9-50	-0.029	-0.014	4.4	90.0	
								Pole MS-9-52	0.018	0.009	2.8	90.0	
								SEC_MS-9-42	0.011	0.005	1.6	89.9	
Pole MS-9-52	4.160	99.848	0.4	0.000	0.000	0.000	0.000	Pole MS-9-51	-0.018	-0.009	2.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								Pole MS-9-53	0.007	0.004	1.1	90.0	
								SEC_MS-9-43	0.011	0.005	1.6	89.9	
Pole MS-9-53	4.160	99.847	0.4	0.000	0.000	0.000	0.000	Pole MS-9-52	-0.007	-0.004	1.1	90.0	
								Pole MS-9-54	0.000	0.000	0.0	0.0	
								SEC_MS-9-44	0.007	0.004	1.1	90.0	
Pole MS-9-54	4.160	99.847	0.4	0.000	0.000	0.000	0.000	Pole MS-9-53	0.000	0.000	0.0	0.0	
PRI_PM_1	4.160	99.413	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-0.017	-0.008	2.7	89.9	
								SEC_PM_1	0.017	0.008	2.7	89.9	
PRI_PM_1-1	4.160	98.396	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-27	-0.017	-0.008	2.7	89.9	
								SEC_PM_1-1	0.017	0.008	2.7	89.9	
PRI_PM_2	4.160	99.223	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-0.017	-0.008	2.7	89.9	
								SEC_PM_2	0.017	0.008	2.7	89.9	
PRI_PM_3	4.160	99.065	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-3	-0.017	-0.008	2.7	89.9	
								SEC_PM_3	0.017	0.008	2.7	89.9	
PRI_PM_4	4.160	98.598	0.1	0.000	0.000	0.000	0.000	SF-1-60	-0.069	-0.034	10.8	89.8	
								SEC_PM_4	0.069	0.034	10.8	89.8	
PRI_PM_5	4.160	98.930	-1.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-5	-0.017	-0.008	2.7	89.9	
								SEC_PM_5	0.017	0.008	2.7	89.9	
PRI_PM_6	4.160	98.803	-1.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-6	-0.017	-0.008	2.7	89.9	
								SEC_PM_6	0.017	0.008	2.7	89.9	
PRI_PM_7	4.160	100.011	0.5	0.000	0.000	0.000	0.000	Pole MS-3-73	-0.051	-0.025	7.9	89.8	
								SEC_PM_7	0.051	0.025	7.9	89.8	
PRI_PM_8	4.160	100.082	0.4	0.000	0.000	0.000	0.000	Pole MS-2-4	-0.042	-0.021	6.6	89.9	
								SEC_PM_8	0.042	0.021	6.6	89.9	
PRI_PM_9	4.160	100.068	0.4	0.000	0.000	0.000	0.000	Pole MS-8-15	-0.035	-0.017	5.5	89.9	
								SEC_PM_9	0.035	0.017	5.5	89.9	
PRI_PM_10	4.160	99.540	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-86	-0.077	-0.038	12.0	89.9	
								PRI_PM_28	0.039	0.019	6.0	89.9	
								SEC_PM_10	0.039	0.019	6.0	89.9	
PRI_PM_11	4.160	99.520	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-11	-0.035	-0.017	5.5	89.9	
								SEC_PM_11	0.035	0.017	5.5	89.9	
PRI_PM_12	4.160	98.635	0.1	0.000	0.000	0.000	0.000	SF-1-59	-0.069	-0.034	10.8	89.8	
								SEC_PM_12	0.069	0.034	10.8	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
PRI_PM_13	4.160	98.294	0.2	0.000	0.000	0.000	0.000	SF-1-40	-0.131	-0.064	20.5	89.8	
								SEC_PM_13	0.131	0.064	20.5	89.8	
PRI_PM_14	4.160	98.501	0.2	0.000	0.000	0.000	0.000	SF-1-17	-0.104	-0.051	16.2	89.8	
								SEC_PM_14	0.104	0.051	16.2	89.8	
PRI_PM_15	4.160	99.609	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-16	-0.070	-0.034	10.9	89.9	
								SEC_PM_15	0.070	0.034	10.9	89.9	
PRI_PM_16	4.160	99.476	-1.3	0.000	0.000	0.000	0.000	Pole CS-1-2	-0.039	-0.019	6.0	89.9	
								SEC_PM_16	0.039	0.019	6.0	89.9	
PRI_PM_17	4.160	99.130	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-9	-0.035	-0.017	5.4	89.9	
								SEC_PM_17	0.035	0.017	5.4	89.9	
PRI_PM_18	4.160	99.822	0.5	0.000	0.000	0.000	0.000	Pole MS-3-54	-0.053	-0.026	8.2	89.8	
								SEC_PM_18	0.053	0.026	8.2	89.8	
PRI_PM_19	4.160	98.310	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-37	-0.038	-0.018	6.0	89.9	
								SEC_PM_19	0.038	0.018	6.0	89.9	
PRI_PM_20	4.160	98.475	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-21	-0.035	-0.017	5.4	89.9	
								SEC_PM_20	0.035	0.017	5.4	89.9	
PRI_PM_21	4.160	98.555	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-20	-0.035	-0.017	5.4	89.9	
								SEC_PM_21	0.035	0.017	5.4	89.9	
PRI_PM_22	4.160	99.315	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-6	-0.039	-0.019	6.0	89.9	
								SEC_PM_22	0.039	0.019	6.0	89.9	
PRI_PM_23	4.160	98.571	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-20	-0.038	-0.019	6.0	89.9	
								SEC_PM_23	0.038	0.019	6.0	89.9	
PRI_PM_24	4.160	98.531	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-22	-0.038	-0.019	6.0	89.9	
								SEC_PM_24	0.038	0.019	6.0	89.9	
PRI_PM_25	4.160	99.474	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-22	-0.018	-0.009	2.7	89.9	
								SEC_PM_25	0.018	0.009	2.7	89.9	
PRI_PM_26	4.160	99.292	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-31	-0.019	-0.009	3.0	89.9	
								SEC_PM_26	0.019	0.009	3.0	89.9	
PRI_PM_28	4.160	99.535	-1.2	0.000	0.000	0.000	0.000	PRI_PM_10	-0.039	-0.019	6.0	89.9	
								SEC_PM_28	0.039	0.019	6.0	89.9	
PV-Collector1	0.480	103.267	7.9	0.000	0.000	0.000	0.000	PV-Module_01	-0.197	0.002	229.8	100.0	
								PV-Module_2	-0.197	0.002	229.8	100.0	
								PV-Module_3	-0.197	0.002	229.8	100.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								PV-Module_4	-0.197	0.002	229.8	100.0	
								PV-Module_5	-0.197	0.002	229.8	100.0	
								PV-Module_6	-0.197	0.002	229.8	100.0	
								PV-Module_7	-0.197	0.002	229.8	100.0	
								PV-Module_8	-0.197	0.002	229.8	100.0	
								PV-Module_9	-0.197	0.002	229.8	100.0	
								PV-Module_10	-0.197	0.002	229.8	100.0	
								PV-Module_11	-0.197	0.002	229.8	100.0	
								PV-Module_12	-0.197	0.002	229.8	100.0	
								PVT1_Pri	2.367	-0.026	2757.3	100.0	
PV-Collector2	0.480	103.267	7.9	0.000	0.000	0.000	0.000	PV-Module_13	-0.197	0.002	229.8	100.0	
								PV-Module_14	-0.197	0.002	229.8	100.0	
								PV-Module_15	-0.197	0.002	229.8	100.0	
								PV-Module_16	-0.197	0.002	229.8	100.0	
								PV-Module_17	-0.197	0.002	229.8	100.0	
								PV-Module_18	-0.197	0.002	229.8	100.0	
								PV-Module_19	-0.197	0.002	229.8	100.0	
								PV-Module_20	-0.197	0.002	229.8	100.0	
								PV-Module_21	-0.197	0.002	229.8	100.0	
								PV-Module_22	-0.197	0.002	229.8	100.0	
								PV-Module_23	-0.197	0.002	229.8	100.0	
								PV-Module_24	-0.197	0.002	229.8	100.0	
								PVT1_Pri2	2.367	-0.026	2757.3	100.0	
PV-Module_01	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	229.8	100.0	
PV-Module_2	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	229.8	100.0	
PV-Module_3	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	229.8	100.0	
PV-Module_4	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	229.8	100.0	
PV-Module_5	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	229.8	100.0	
PV-Module_6	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	229.8	100.0	
PV-Module_7	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	229.8	100.0	
PV-Module_8	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	229.8	100.0	
PV-Module_9	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	229.8	100.0	
PV-Module_10	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	229.8	100.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
PV-Module_11	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	229.8	100.0	
PV-Module_12	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector1	0.199	0.000	229.8	100.0	
PV-Module_13	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	229.8	100.0	
PV-Module_14	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	229.8	100.0	
PV-Module_15	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	229.8	100.0	
PV-Module_16	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	229.8	100.0	
PV-Module_17	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	229.8	100.0	
PV-Module_18	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	229.8	100.0	
PV-Module_19	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	229.8	100.0	
PV-Module_20	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	229.8	100.0	
PV-Module_21	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	229.8	100.0	
PV-Module_22	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	229.8	100.0	
PV-Module_23	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	229.8	100.0	
PV-Module_24	0.480	104.274	8.6	0.199	0.000	0.000	0.000	PV-Collector2	0.199	0.000	229.8	100.0	
PV-PMS-Pri	24.900	102.689	4.8	0.000	0.000	0.000	0.000	P_526_2	4.698	-0.308	106.3	-99.8	
								PV-PMS-Sec	-4.698	0.308	106.3	-99.8	
PV-PMS-Sec	24.900	102.689	4.8	0.000	0.000	0.000	0.000	PVT1_Pri	-2.349	0.154	53.2	-99.8	
								PVT1_Pri2	-2.349	0.154	53.2	-99.8	
								PV-PMS-Pri	4.698	-0.308	106.3	-99.8	
PVT1_Pri	24.900	102.693	4.8	0.000	0.000	0.000	0.000	PV-PMS-Sec	2.349	-0.155	53.2	-99.8	
								PV-Collector1	-2.349	0.155	53.2	-99.8	
PVT1_Pri2	24.900	102.693	4.8	0.000	0.000	0.000	0.000	PV-PMS-Sec	2.349	-0.155	53.2	-99.8	
								PV-Collector2	-2.349	0.155	53.2	-99.8	
P_526_2	24.900	102.682	4.8	0.000	0.000	0.000	0.000	PV-PMS-Pri	-4.697	0.307	106.3	-99.8	
								BUS_WTG6	4.697	-0.307	106.3	-99.8	
SEC_6M-1-1	0.208	99.661	-0.8	0.000	0.000	0.005	0.002	Pole 6M-1-1	-0.005	-0.002	14.7	90.0	
SEC_6M-1-2	0.208	99.604	-0.8	0.000	0.000	0.005	0.002	Pole 6M-1-3	-0.005	-0.002	14.7	90.0	
SEC_6M-1-12	0.208	99.368	-0.8	0.000	0.000	0.005	0.002	Pole 6M-1-19	-0.005	-0.002	14.7	90.0	
SEC_6M-E-1	0.208	98.246	-0.7	0.000	0.000	0.007	0.004	Pole 6M-E-5	-0.007	-0.004	22.7	90.0	
SEC_6M-E-2	0.208	98.591	-0.7	0.000	0.000	0.007	0.004	Pole 6M-E-2	-0.007	-0.004	22.8	90.0	
SEC_6M-E-3	0.208	98.366	-0.7	0.000	0.000	0.007	0.004	Pole 6M-E-3	-0.007	-0.004	22.7	90.0	
SEC_6M-E-4	0.208	98.128	-0.7	0.000	0.000	0.007	0.004	Pole 6M-E-6	-0.007	-0.004	22.7	90.0	
SEC_6M-E-5	0.208	97.940	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-8	-0.007	-0.003	22.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_6M-E-6	0.208	97.598	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-10	-0.007	-0.003	22.6	90.0	
SEC_6M-E-7	0.208	97.573	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-11	-0.007	-0.003	22.6	90.0	
SEC_6M-E-8	0.208	97.540	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-14	-0.007	-0.003	22.6	90.0	
SEC_6M-E-10	0.208	97.503	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-19	-0.007	-0.003	22.6	90.0	
SEC_6M-E-11	0.208	97.494	-0.7	0.000	0.000	0.007	0.003	Pole 6M-E-20	-0.007	-0.003	22.6	90.0	
SEC_6M-E-13	0.208	98.497	-0.7	0.000	0.000	0.007	0.004	Pole 6M-E-29	-0.007	-0.004	22.8	90.0	
SEC_CS-1-1	0.208	114.337	-1.4	0.000	0.000	0.007	0.003	Pole CS-1-4	-0.007	-0.003	17.9	90.0	
SEC_CS-1-2	0.208	114.339	-1.4	0.000	0.000	0.007	0.003	Pole CS-1-5	-0.007	-0.003	17.9	90.0	
SEC_CS-1-7	0.208	113.997	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-13	-0.007	-0.003	17.9	90.0	
SEC_CS-1-9	0.208	113.936	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-15	-0.007	-0.003	17.9	90.0	
SEC_CS-1-10	0.208	113.947	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-18	-0.007	-0.003	17.9	90.0	
SEC_CS-1-11	0.208	113.945	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-19	-0.007	-0.003	17.9	90.0	
SEC_CS-1-12	0.208	113.948	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-20	-0.007	-0.003	17.9	90.0	
SEC_CS-1-15	0.208	113.883	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-23	-0.007	-0.003	17.9	90.0	
SEC_CS-1-16	0.208	113.855	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-24	-0.007	-0.003	17.9	90.0	
SEC_CS-1-29	0.208	113.690	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-40	-0.007	-0.003	17.9	90.0	
SEC_CS-1-32	0.208	113.697	-1.5	0.000	0.000	0.007	0.003	Pole CS-1-43	-0.007	-0.003	17.9	90.0	
SEC_CS-1-46	0.208	113.749	-1.6	0.000	0.000	0.007	0.003	Pole CS-1-59	-0.007	-0.003	17.9	90.0	
SEC_CS-1-53	0.208	113.693	-1.6	0.000	0.000	0.007	0.003	Pole CS-1-68	-0.007	-0.003	17.9	90.0	
SEC_CS-2-5	0.208	113.553	-1.3	0.000	0.000	0.007	0.003	Pole CS-2-8	-0.007	-0.003	17.8	90.0	
SEC_CS-2-7	0.208	113.549	-1.3	0.000	0.000	0.007	0.003	Pole CS-2-10	-0.007	-0.003	17.8	90.0	
SEC_CS-2-8	0.208	113.546	-1.3	0.000	0.000	0.007	0.003	Pole CS-2-11	-0.007	-0.003	17.8	90.0	
SEC_CS-2-10	0.208	113.489	-1.3	0.000	0.000	0.007	0.003	Pole CS-2-15	-0.007	-0.003	17.8	90.0	
SEC_CS-2-46	0.208	114.613	-1.4	0.000	0.000	0.007	0.003	Pole CS-2-66	-0.007	-0.003	18.0	90.0	
SEC_CS-2-47	0.208	114.364	-1.4	0.000	0.000	0.007	0.003	Pole CS-3-29	-0.007	-0.003	17.9	90.0	
SEC_CS-2-48	0.208	114.216	-1.4	0.000	0.000	0.007	0.003	Pole CS-3-33	-0.007	-0.003	17.9	90.0	
SEC_CS-2-49	0.208	114.057	-1.4	0.000	0.000	0.007	0.003	Pole CS-2-73	-0.007	-0.003	17.9	90.0	
SEC_CS-4-8	0.208	114.228	-1.3	0.000	0.000	0.007	0.003	Pole CS-4-12	-0.007	-0.003	17.9	90.0	
SEC_CS-5-10	0.240	98.607	-1.0	0.000	0.000	0.026	0.013	UG-JUNC-CS-5-8	-0.026	-0.013	71.5	90.0	
SEC_CS-5-12	0.240	99.034	-0.8	0.000	0.000	0.027	0.013	UG-JUNC-CS-5-9	-0.027	-0.013	71.7	90.0	
SEC_HS-2-4	0.208	115.145	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-4	-0.007	-0.003	18.0	90.0	
SEC_HS-2-5	0.208	115.058	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-5	-0.007	-0.003	18.0	90.0	
SEC_HS-2-6	0.208	114.984	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-6	-0.007	-0.003	18.0	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_HS-2-7	0.208	114.903	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-7	-0.007	-0.003	18.0	90.0	
SEC_HS-2-10	0.208	114.671	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-11	-0.007	-0.003	18.0	90.0	
SEC_HS-2-23	0.208	114.525	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-26	-0.007	-0.003	17.9	90.0	
SEC_HS-2-25	0.208	114.455	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-30	-0.007	-0.003	17.9	90.0	
SEC_HS-2-36	0.208	114.428	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-43	-0.007	-0.003	17.9	90.0	
SEC_HS-2-67	0.208	114.673	-1.3	0.000	0.000	0.007	0.003	Pole HS-2-77	-0.007	-0.003	18.0	90.0	
SEC_HS-3-55	0.208	114.487	-1.3	0.000	0.000	0.007	0.003	Pole HS-3-59	-0.007	-0.003	17.9	90.0	
SEC_HS-3-57	0.208	114.470	-1.3	0.000	0.000	0.007	0.003	Pole HS-3-61	-0.007	-0.003	17.9	90.0	
SEC_HS-3-59	0.208	114.461	-1.3	0.000	0.000	0.007	0.003	Pole HS-3-63	-0.007	-0.003	17.9	90.0	
SEC_HS-4-7	0.208	115.151	-1.4	0.000	0.000	0.007	0.004	Pole HS-4-10	-0.007	-0.004	19.8	90.0	
SEC_HS-4-13	0.208	115.035	-1.3	0.000	0.000	0.007	0.004	Pole HS-4-17	-0.007	-0.004	19.8	90.0	
SEC_HS-4-21	0.208	114.853	-1.3	0.000	0.000	0.007	0.004	Pole HS-4-26	-0.007	-0.004	19.8	90.0	
SEC_HS-4-32	0.208	115.163	-1.4	0.000	0.000	0.007	0.004	Pole HS-4-39	-0.007	-0.004	19.8	90.0	
SEC_HS-4-44	0.208	115.164	-1.4	0.000	0.000	0.007	0.004	Pole HS-4-48	-0.007	-0.004	19.8	90.0	
SEC_MS-1-17	0.208	99.946	0.3	0.000	0.000	0.001	0.001	Pole MS-1-10	-0.001	-0.001	3.8	90.0	
SEC_MS-2-8	0.208	99.946	0.4	0.000	0.000	0.004	0.002	Pole MS-2-1	-0.004	-0.002	11.5	90.0	
SEC_MS-2-36	0.208	100.001	0.4	0.000	0.000	0.004	0.002	Pole MS-2-90	-0.004	-0.002	11.5	90.0	
SEC_MS-2-37	0.208	99.943	0.4	0.000	0.000	0.004	0.002	Pole MS-2-2	-0.004	-0.002	11.5	90.0	
SEC_MS-2-38	0.208	99.940	0.4	0.000	0.000	0.004	0.002	Pole MS-2-3	-0.004	-0.002	11.5	90.0	
SEC_MS-2-39	0.208	99.945	0.4	0.000	0.000	0.004	0.002	Pole MS-2-92	-0.004	-0.002	11.5	90.0	
SEC_MS-2-40	0.208	99.925	0.4	0.000	0.000	0.004	0.002	Pole MS-2-94	-0.004	-0.002	11.5	90.0	
SEC_MS-2-41	0.208	99.869	0.4	0.000	0.000	0.004	0.002	Pole MS-2-100	-0.004	-0.002	11.5	90.0	
SEC_MS-3-1	0.208	100.034	0.4	0.000	0.000	0.004	0.002	Pole MS-3-2	-0.004	-0.002	11.5	90.0	
SEC_MS-3-2	0.208	99.972	0.4	0.000	0.000	0.004	0.002	Pole MS-3-6	-0.004	-0.002	11.5	90.0	
SEC_MS-3-3	0.208	99.938	0.4	0.000	0.000	0.004	0.002	Pole MS-3-8	-0.004	-0.002	11.5	90.0	
SEC_MS-3-22	0.208	99.807	0.5	0.000	0.000	0.004	0.002	Pole MS-3-25	-0.004	-0.002	11.5	90.0	
SEC_MS-3-45	0.208	99.826	0.4	0.000	0.000	0.005	0.003	Pole MS-4-36	-0.005	-0.003	16.4	90.0	
SEC_MS-3-49	0.208	99.794	0.4	0.000	0.000	0.005	0.003	Pole MS-3-100	-0.005	-0.003	16.4	90.0	
SEC_MS-3-65	0.208	99.789	0.4	0.000	0.000	0.005	0.003	Pole MS-3-102	-0.005	-0.003	16.4	90.0	
SEC_MS-3-66	0.208	99.879	0.4	0.000	0.000	0.005	0.003	Pole MS-4-17	-0.005	-0.003	16.4	90.0	
SEC_MS-3-73	0.208	100.114	0.4	0.000	0.000	0.004	0.002	Pole MS-4-3	-0.004	-0.002	11.5	90.0	
SEC_MS-3-74	0.208	100.111	0.4	0.000	0.000	0.004	0.002	Pole MS-4-6	-0.004	-0.002	11.5	90.0	
SEC_MS-3-75	0.208	99.999	0.5	0.000	0.000	0.004	0.002	Pole MS-4-10	-0.004	-0.002	11.5	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_MS-3-76	0.208	99.843	0.4	0.000	0.000	0.005	0.003	Pole MS-4-20	-0.005	-0.003	16.4	90.0	
SEC_MS-5-15	0.208	99.481	0.3	0.000	0.000	0.004	0.002	Pole MS-5-16	-0.004	-0.002	11.5	90.0	
SEC_MS-5-16	0.208	99.424	0.3	0.000	0.000	0.005	0.003	Pole MS-5-17	-0.005	-0.003	16.4	90.0	
SEC_MS-5-17	0.208	99.424	0.3	0.000	0.000	0.005	0.003	Pole MS-5-18	-0.005	-0.003	16.4	90.0	
SEC_MS-5-23	0.208	99.454	0.3	0.000	0.000	0.004	0.002	Pole MS-5-26	-0.004	-0.002	11.5	90.0	
SEC_MS-5-25	0.208	99.452	0.3	0.000	0.000	0.004	0.002	Pole MS-5-28	-0.004	-0.002	11.5	90.0	
SEC_MS-5-26	0.208	99.398	0.3	0.000	0.000	0.005	0.003	Pole MS-5-29	-0.005	-0.003	16.4	90.0	
SEC_MS-5-29	0.208	99.428	0.3	0.000	0.000	0.004	0.002	Pole MS-5-32	-0.004	-0.002	11.4	90.0	
SEC_MS-5-30	0.208	99.371	0.3	0.000	0.000	0.005	0.003	Pole MS-5-33	-0.005	-0.003	16.3	90.0	
SEC_MS-5-32	0.208	99.421	0.3	0.000	0.000	0.004	0.002	Pole MS-5-35	-0.004	-0.002	11.4	90.0	
SEC_MS-5-40	0.208	99.328	0.3	0.000	0.000	0.004	0.002	Pole MS-5-45	-0.004	-0.002	11.4	90.0	
SEC_MS-5-45	0.208	99.311	0.3	0.000	0.000	0.004	0.002	Pole MS-5-50	-0.004	-0.002	11.4	90.0	
SEC_MS-5-99	0.208	99.882	0.3	0.000	0.000	0.004	0.002	Pole MS-5-110	-0.004	-0.002	11.5	90.0	
SEC_MS-7-9	0.208	101.050	2.7	0.000	0.000	0.009	0.004	Pole MS-7-16	-0.009	-0.004	28.1	90.0	
SEC_MS-8-3	0.208	100.027	0.4	0.000	0.000	0.007	0.004	Pole MS-8-4	-0.007	-0.004	23.0	90.0	
SEC_MS-8-8	0.208	99.934	0.4	0.000	0.000	0.011	0.005	Pole MS-8-9	-0.011	-0.005	32.8	90.0	
SEC_MS-9-12	0.208	99.947	0.4	0.000	0.000	0.007	0.004	Pole MS-9-15	-0.007	-0.004	23.0	90.0	
SEC_MS-9-14	0.208	99.892	0.4	0.000	0.000	0.007	0.004	Pole MS-9-18	-0.007	-0.004	23.0	90.0	
SEC_MS-9-17	0.208	99.868	0.4	0.000	0.000	0.007	0.004	Pole MS-9-21	-0.007	-0.004	23.0	90.0	
SEC_MS-9-22	0.208	99.859	0.4	0.000	0.000	0.007	0.004	Pole MS-9-26	-0.007	-0.004	23.0	90.0	
SEC_MS-9-31	0.208	99.839	0.4	0.000	0.000	0.007	0.004	Pole MS-9-37	-0.007	-0.004	23.0	90.0	
SEC_MS-9-32	0.208	99.772	0.3	0.000	0.000	0.011	0.005	Pole MS-9-38	-0.011	-0.005	32.8	90.0	
SEC_MS-9-37	0.208	99.760	0.3	0.000	0.000	0.007	0.004	Pole MS-9-46	-0.007	-0.004	22.9	90.0	
SEC_MS-9-38	0.208	99.757	0.3	0.000	0.000	0.007	0.004	Pole MS-9-47	-0.007	-0.004	22.9	90.0	
SEC_MS-9-39	0.208	99.693	0.3	0.000	0.000	0.011	0.005	Pole MS-9-48	-0.011	-0.005	32.8	90.0	
SEC_MS-9-40	0.208	99.680	0.3	0.000	0.000	0.011	0.005	Pole MS-9-49	-0.011	-0.005	32.8	90.0	
SEC_MS-9-41	0.208	99.674	0.3	0.000	0.000	0.011	0.005	Pole MS-9-50	-0.011	-0.005	32.8	90.0	
SEC_MS-9-42	0.208	99.670	0.3	0.000	0.000	0.011	0.005	Pole MS-9-51	-0.011	-0.005	32.8	90.0	
SEC_MS-9-43	0.208	99.665	0.3	0.000	0.000	0.011	0.005	Pole MS-9-52	-0.011	-0.005	32.8	90.0	
SEC_MS-9-44	0.208	99.719	0.3	0.000	0.000	0.007	0.004	Pole MS-9-53	-0.007	-0.004	22.9	90.0	
SEC_PM_1	0.208	99.236	-1.5	0.000	0.000	0.017	0.008	PRI_PM_1	-0.017	-0.008	53.9	90.0	
SEC_PM_1-1	0.208	98.220	-1.4	0.000	0.000	0.017	0.008	PRI_PM_1-1	-0.017	-0.008	53.6	90.0	
SEC_PM_2	0.208	99.046	-1.4	0.000	0.000	0.017	0.008	PRI_PM_2	-0.017	-0.008	53.8	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_PM_3	0.208	98.888	-1.4	0.000	0.000	0.017	0.008	PRI_PM_3	-0.017	-0.008	53.8	90.0	
SEC_PM_4	0.208	98.148	-0.1	0.000	0.000	0.069	0.033	PRI_PM_4	-0.069	-0.033	216.4	90.0	
SEC_PM_5	0.208	98.753	-1.4	0.000	0.000	0.017	0.008	PRI_PM_5	-0.017	-0.008	53.7	90.0	
SEC_PM_6	0.208	98.627	-1.4	0.000	0.000	0.017	0.008	PRI_PM_6	-0.017	-0.008	53.7	90.0	
SEC_PM_7	0.208	99.682	0.3	0.000	0.000	0.051	0.025	PRI_PM_7	-0.051	-0.025	158.4	90.0	
SEC_PM_8	0.208	99.809	0.3	0.000	0.000	0.042	0.021	PRI_PM_8	-0.042	-0.021	131.2	90.0	
SEC_PM_9	0.208	99.841	0.3	0.000	0.000	0.035	0.017	PRI_PM_9	-0.035	-0.017	109.3	90.0	
SEC_PM_10	0.208	99.291	-1.4	0.000	0.000	0.039	0.019	PRI_PM_10	-0.039	-0.019	119.8	90.0	
SEC_PM_11	0.208	99.367	-1.4	0.000	0.000	0.035	0.017	PRI_PM_11	-0.035	-0.017	109.0	90.0	
SEC_PM_12	0.208	98.258	-0.1	0.000	0.000	0.069	0.033	PRI_PM_12	-0.069	-0.033	216.5	90.0	
SEC_PM_13	0.208	97.940	-0.1	0.000	0.000	0.130	0.063	PRI_PM_13	-0.130	-0.063	410.5	90.0	
SEC_PM_14	0.208	98.237	0.0	0.000	0.000	0.103	0.050	PRI_PM_14	-0.103	-0.050	324.7	90.0	
SEC_PM_15	0.208	99.457	-1.4	0.000	0.000	0.070	0.034	PRI_PM_15	-0.070	-0.034	218.1	90.0	
SEC_PM_16	0.208	99.301	-1.5	0.000	0.000	0.039	0.019	PRI_PM_16	-0.039	-0.019	119.8	90.0	
SEC_PM_17	0.208	98.977	-1.6	0.000	0.000	0.035	0.017	PRI_PM_17	-0.035	-0.017	108.7	90.0	
SEC_PM_18	0.208	99.556	0.3	0.000	0.000	0.053	0.026	PRI_PM_18	-0.053	-0.026	163.7	90.0	
SEC_PM_19	0.208	98.135	-1.4	0.000	0.000	0.038	0.018	PRI_PM_19	-0.038	-0.018	119.0	90.0	
SEC_PM_20	0.208	98.324	-1.4	0.000	0.000	0.035	0.017	PRI_PM_20	-0.035	-0.017	108.3	90.0	
SEC_PM_21	0.208	98.403	-1.4	0.000	0.000	0.035	0.017	PRI_PM_21	-0.035	-0.017	108.3	90.0	
SEC_PM_22	0.208	99.140	-1.5	0.000	0.000	0.038	0.019	PRI_PM_22	-0.038	-0.019	119.7	90.0	
SEC_PM_23	0.208	98.397	-1.4	0.000	0.000	0.038	0.018	PRI_PM_23	-0.038	-0.018	119.2	90.0	
SEC_PM_24	0.208	98.357	-1.4	0.000	0.000	0.038	0.018	PRI_PM_24	-0.038	-0.018	119.1	90.0	
SEC_PM_25	0.208	99.322	-1.4	0.000	0.000	0.018	0.008	PRI_PM_25	-0.018	-0.008	54.5	90.0	
SEC_PM_26	0.208	99.117	-1.5	0.000	0.000	0.019	0.009	PRI_PM_26	-0.019	-0.009	59.9	90.0	
SEC_PM_28	0.208	99.286	-1.4	0.000	0.000	0.039	0.019	PRI_PM_28	-0.039	-0.019	119.8	90.0	
SEC_SF-1-26	0.208	98.698	0.1	0.000	0.000	0.009	0.004	SF-1-11	-0.009	-0.004	27.7	90.0	
SEC_SF-1-47	0.208	98.512	0.1	0.000	0.000	0.009	0.004	SF-1-14	-0.009	-0.004	27.6	90.0	
SEC_SF-1-49	0.208	98.814	0.0	0.000	0.000	0.009	0.004	SF-1-28	-0.009	-0.004	27.7	90.0	
SEC_SF-1-51	0.208	98.730	0.0	0.000	0.000	0.009	0.004	SF-1-29	-0.009	-0.004	27.7	90.0	
SEC_SF-1-55	0.208	98.557	0.0	0.000	0.000	0.009	0.004	SF-1-31	-0.009	-0.004	27.7	90.0	
SEC_SF-1-57	0.208	98.487	0.0	0.000	0.000	0.009	0.004	SF-1-32	-0.009	-0.004	27.6	90.0	
SEC_SF-1-59	0.208	98.336	0.0	0.000	0.000	0.009	0.004	SF-1-18	-0.009	-0.004	27.6	90.0	
SEC_SF-1-61	0.208	98.243	0.0	0.000	0.000	0.009	0.004	SF-1-27	-0.009	-0.004	27.6	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SEC_SF-1-63	0.208	98.062	0.1	0.000	0.000	0.009	0.004	SF-1-39	-0.009	-0.004	27.6	90.0	
SEC_SF-1-65	0.208	98.282	0.0	0.000	0.000	0.009	0.004	SF-1-62	-0.009	-0.004	27.6	90.0	
SEC_SF-1-67	0.208	97.960	0.1	0.000	0.000	0.009	0.004	SF-1-50	-0.009	-0.004	27.6	90.0	
SEC_SF-1-69	0.208	98.399	0.0	0.000	0.000	0.009	0.004	SF-1-58	-0.009	-0.004	27.6	90.0	
SEC_SF-1-71	0.208	98.554	0.0	0.000	0.000	0.009	0.004	SF-1-56	-0.009	-0.004	27.7	90.0	
SEC_SF-1-73	0.208	98.646	0.0	0.000	0.000	0.009	0.004	SF-1-54	-0.009	-0.004	27.7	90.0	
SEC_SF-1-75	0.208	98.715	0.0	0.000	0.000	0.009	0.004	SF-1-55	-0.009	-0.004	27.7	90.0	
SEC_SF-2-7	0.208	99.374	0.3	0.000	0.000	0.009	0.004	SF-2-12	-0.009	-0.004	27.8	90.0	
SEC_SF-2-11	0.208	99.359	0.3	0.000	0.000	0.009	0.004	SF-2-25	-0.009	-0.004	27.8	90.0	
SEC_SF-2-15	0.208	99.325	0.3	0.000	0.000	0.009	0.004	SF-2-17	-0.009	-0.004	27.8	90.0	
SEC_SF-2-18	0.208	99.320	0.3	0.000	0.000	0.009	0.004	SF-2-20	-0.009	-0.004	27.8	90.0	
SEC_SF-2-19	0.208	99.378	0.3	0.000	0.000	0.009	0.004	SF-2-22	-0.009	-0.004	27.8	90.0	
SEC_SF-2-20	0.208	99.376	0.3	0.000	0.000	0.009	0.004	SF-2-23	-0.009	-0.004	27.8	90.0	
SEC_SF-4-01	0.208	99.645	0.2	0.000	0.000	0.009	0.004	SF-2-46	-0.009	-0.004	27.8	90.0	
SEC_SF-4-2	0.208	99.808	0.3	0.000	0.000	0.004	0.002	SF-2-47	-0.004	-0.002	13.1	90.0	
SEC_SF-4-3	0.208	99.807	0.3	0.000	0.000	0.004	0.002	SF-2-48	-0.004	-0.002	13.1	90.0	
SEC_SUB_FDR_XFMR#25-49	0.208	98.594	0.1	0.000	0.000	0.005	0.003	SF-1-57	-0.005	-0.003	16.3	90.0	
SF-1-1	4.160	99.758	0.3	0.000	0.000	0.004	0.002	BUS_SAF_4kV	-0.652	-0.320	101.0	89.8	
								SF-1-2	0.648	0.318	100.4	89.8	
SF-1-2	4.160	99.556	0.2	0.000	0.000	0.000	0.000	SF-1-4	0.011	0.006	1.8	89.9	
								SF-1-1	-0.647	-0.317	100.4	89.8	
								SF-1-3	0.635	0.311	98.6	89.8	
SF-1-3	4.160	99.463	0.2	0.000	0.000	0.004	0.002	SF-1-2	-0.635	-0.311	98.6	89.8	
								SF-1-7	0.631	0.309	98.1	89.8	
SF-1-4	4.160	99.550	0.2	0.000	0.000	0.004	0.002	SF-1-2	-0.011	-0.006	1.8	89.9	
								SF-1-5	0.008	0.004	1.2	89.9	
SF-1-5	4.160	99.545	0.2	0.000	0.000	0.004	0.002	SF-1-4	-0.008	-0.004	1.2	89.9	
								SF-1-6	0.004	0.002	0.6	89.9	
SF-1-6	4.160	99.544	0.2	0.000	0.000	0.004	0.002	SF-1-5	-0.004	-0.002	0.6	89.9	
SF-1-7	4.160	99.266	0.2	0.000	0.000	0.000	0.000	SF-1-8	0.171	0.083	26.6	89.9	
								SF-1-3	-0.630	-0.308	98.1	89.8	
								SF-1-26	0.459	0.225	71.5	89.8	
SF-1-8	4.160	99.187	0.2	0.000	0.000	0.008	0.004	SF-1-7	-0.171	-0.083	26.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-1-9	0.163	0.080	25.4	89.9	
SF-1-9	4.160	99.147	0.2	0.000	0.000	0.004	0.002	SF-1-8	-0.163	-0.080	25.4	89.9	
								SF-1-10	0.160	0.078	24.8	89.9	
SF-1-10	4.160	99.097	0.2	0.000	0.000	0.004	0.002	SF-1-9	-0.159	-0.078	24.8	89.9	
								SF-1-11	0.156	0.076	24.3	89.9	
SF-1-11	4.160	99.008	0.2	0.000	0.000	0.000	0.000	SF-1-10	-0.156	-0.076	24.3	89.9	
								SF-1-12	0.147	0.072	22.9	89.9	
								SEC_SF-1-26	0.009	0.004	1.4	89.9	
SF-1-12	4.160	98.909	0.2	0.000	0.000	0.004	0.002	SF-1-11	-0.147	-0.071	22.9	89.9	
								SF-1-13	0.143	0.070	22.3	89.9	
SF-1-13	4.160	98.878	0.2	0.000	0.000	0.004	0.002	SF-1-12	-0.143	-0.070	22.3	89.9	
								SF-1-14	0.139	0.068	21.7	89.9	
SF-1-14	4.160	98.822	0.2	0.000	0.000	0.000	0.000	SF-1-13	-0.139	-0.068	21.7	89.9	
								SF-1-15	0.130	0.063	20.3	89.9	
								SEC_SF-1-47	0.009	0.004	1.4	89.9	
SF-1-15	4.160	98.740	0.2	0.000	0.000	0.004	0.002	SF-1-14	-0.130	-0.063	20.3	89.9	
								SF-1-16	0.126	0.062	19.7	89.9	
SF-1-16	4.160	98.606	0.2	0.000	0.000	0.004	0.002	SF-1-15	-0.126	-0.062	19.7	89.9	
								SF-1-17	0.122	0.060	19.2	89.9	
SF-1-17	4.160	98.515	0.2	0.000	0.000	0.000	0.000	PRI_PM_14	0.104	0.051	16.2	89.8	
								SF-1-16	-0.122	-0.060	19.2	89.9	
								SF-1-19	0.019	0.009	2.9	89.9	
SF-1-18	4.160	98.646	0.2	0.000	0.000	0.000	0.000	SF-1-34	-0.196	-0.096	30.7	89.8	
								SF-1-25	0.187	0.092	29.3	89.8	
								SEC_SF-1-59	0.009	0.004	1.4	89.9	
SF-1-19	4.160	98.507	0.2	0.000	0.000	0.000	0.000	SF-1-17	-0.019	-0.009	2.9	89.9	
								SF-1-20	0.011	0.005	1.7	89.9	
								SF-1-23	0.007	0.004	1.2	89.9	
SF-1-20	4.160	98.505	0.2	0.000	0.000	0.004	0.002	SF-1-21	0.007	0.004	1.2	89.9	
								SF-1-19	-0.011	-0.005	1.7	89.9	
SF-1-21	4.160	98.503	0.2	0.000	0.000	0.004	0.002	SF-1-20	-0.007	-0.004	1.2	89.9	
								SF-1-22	0.004	0.002	0.6	89.9	
SF-1-22	4.160	98.502	0.2	0.000	0.000	0.004	0.002	SF-1-21	-0.004	-0.002	0.6	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-23	4.160	98.496	0.2	0.000	0.000	0.004	0.002	SF-1-19	-0.007	-0.004	1.2	89.9	
								SF-1-24	0.004	0.002	0.6	89.9	
SF-1-24	4.160	98.495	0.2	0.000	0.000	0.004	0.002	SF-1-23	-0.004	-0.002	0.6	89.9	
SF-1-25	4.160	98.600	0.2	0.000	0.000	0.004	0.002	SF-1-18	-0.187	-0.092	29.3	89.8	
								SF-1-27	0.183	0.090	28.8	89.8	
SF-1-26	4.160	99.198	0.2	0.000	0.000	0.004	0.002	SF-1-28	0.244	0.119	38.0	89.9	
								SF-1-53	0.211	0.103	32.9	89.8	
								SF-1-7	-0.459	-0.224	71.5	89.8	
SF-1-27	4.160	98.552	0.2	0.000	0.000	0.000	0.000	SF-1-25	-0.183	-0.090	28.8	89.8	
								SF-1-35	0.175	0.085	27.4	89.8	
								SEC_SF-1-61	0.009	0.004	1.4	89.9	
SF-1-28	4.160	99.124	0.2	0.000	0.000	0.000	0.000	SF-1-26	-0.244	-0.119	38.0	89.9	
								SF-1-29	0.235	0.115	36.6	89.9	
								SEC_SF-1-49	0.009	0.004	1.4	89.9	
SF-1-29	4.160	99.040	0.2	0.000	0.000	0.000	0.000	SF-1-28	-0.235	-0.115	36.6	89.9	
								SF-1-30	0.226	0.110	35.2	89.9	
								SEC_SF-1-51	0.009	0.004	1.4	89.9	
SF-1-30	4.160	98.984	0.2	0.000	0.000	0.004	0.002	SF-1-29	-0.226	-0.110	35.2	89.9	
								SF-1-31	0.222	0.108	34.6	89.9	
SF-1-31	4.160	98.866	0.2	0.000	0.000	0.000	0.000	SF-1-30	-0.222	-0.108	34.6	89.9	
								SF-1-33	0.213	0.104	33.3	89.8	
								SEC_SF-1-55	0.009	0.004	1.4	89.9	
SF-1-32	4.160	98.797	0.2	0.000	0.000	0.000	0.000	SF-1-33	-0.209	-0.102	32.7	89.8	
								SF-1-34	0.200	0.098	31.3	89.8	
								SEC_SF-1-57	0.009	0.004	1.4	89.9	
SF-1-33	4.160	98.820	0.2	0.000	0.000	0.004	0.002	SF-1-32	0.209	0.102	32.7	89.8	
								SF-1-31	-0.213	-0.104	33.3	89.8	
SF-1-34	4.160	98.697	0.2	0.000	0.000	0.004	0.002	SF-1-18	0.196	0.096	30.7	89.8	
								SF-1-32	-0.200	-0.098	31.3	89.8	
SF-1-35	4.160	98.513	0.2	0.000	0.000	0.004	0.002	SF-1-27	-0.175	-0.085	27.4	89.8	
								SF-1-36	0.171	0.084	26.8	89.8	
SF-1-36	4.160	98.469	0.2	0.000	0.000	0.004	0.002	SF-1-35	-0.171	-0.084	26.8	89.8	
								SF-1-37	0.167	0.082	26.2	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-1-37	4.160	98.420	0.2	0.000	0.000	0.004	0.002	SF-1-36	-0.167	-0.082	26.2	89.8	
								SF-1-38	0.163	0.080	25.6	89.8	
SF-1-38	4.160	98.372	0.2	0.000	0.000	0.000	0.000	SF-1-37	-0.163	-0.080	25.6	89.8	
								SF-1-39	0.009	0.004	1.4	89.9	
								SF-1-40	0.154	0.076	24.2	89.8	
SF-1-39	4.160	98.371	0.2	0.000	0.000	0.000	0.000	SF-1-38	-0.009	-0.004	1.4	89.9	
								SEC_SF-1-63	0.009	0.004	1.4	89.9	
SF-1-40	4.160	98.312	0.2	0.000	0.000	0.000	0.000	PRI_PM_13	0.131	0.064	20.5	89.8	
								SF-1-38	-0.154	-0.075	24.2	89.8	
								SF-1-42	0.024	0.011	3.7	89.9	
SF-1-42	4.160	98.297	0.2	0.000	0.000	0.000	0.000	SF-1-40	-0.024	-0.011	3.7	89.9	
								SF-1-44	0.024	0.011	3.7	89.9	
SF-1-44	4.160	98.281	0.2	0.000	0.000	0.004	0.002	SF-1-42	-0.024	-0.011	3.7	89.9	
								SF-1-45	0.020	0.010	3.1	89.9	
SF-1-45	4.160	98.274	0.2	0.000	0.000	0.000	0.000	SF-1-44	-0.020	-0.010	3.1	89.9	
								SF-1-47	0.020	0.010	3.1	89.9	
								L-SUB-FDR-EQ#16-1-38~	0.000	0.000	0.0	0.0	
SF-1-47	4.160	98.271	0.2	0.000	0.000	0.004	0.002	SF-1-45	-0.020	-0.010	3.1	89.9	
								SF-1-50	0.016	0.008	2.5	89.9	
SF-1-50	4.160	98.268	0.2	0.000	0.000	0.000	0.000	SF-1-47	-0.016	-0.008	2.5	89.9	
								SF-1-52	0.007	0.004	1.2	89.9	
								SEC_SF-1-67	0.009	0.004	1.4	89.9	
SF-1-52	4.160	98.267	0.2	0.000	0.000	0.007	0.004	SF-1-50	-0.007	-0.004	1.2	89.9	
SF-1-53	4.160	99.104	0.1	0.000	0.000	0.000	0.000	SF-1-55	0.211	0.103	32.9	89.8	
								SF-1-26	-0.211	-0.103	32.9	89.8	
SF-1-54	4.160	98.955	0.1	0.000	0.000	0.000	0.000	SF-1-55	-0.202	-0.099	31.5	89.8	
								SF-1-56	0.193	0.094	30.1	89.8	
								SEC_SF-1-73	0.009	0.004	1.4	89.9	
SF-1-55	4.160	99.025	0.1	0.000	0.000	0.000	0.000	SF-1-53	-0.211	-0.103	32.9	89.8	
								SF-1-54	0.202	0.099	31.5	89.8	
								SEC_SF-1-75	0.009	0.004	1.4	89.9	
SF-1-56	4.160	98.864	0.1	0.000	0.000	0.000	0.000	SF-1-54	-0.193	-0.094	30.1	89.8	
								SF-1-57	0.184	0.090	28.7	89.8	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SEC_SF-1-71	0.009	0.004	1.4	89.9	
SF-1-57	4.160	98.777	0.1	0.000	0.000	0.004	0.002	SF-1-56	-0.184	-0.090	28.7	89.8	
								SF-1-58	0.175	0.085	27.3	89.8	
								SEC_SUB_FDR_XFMR#25-49	0.005	0.003	0.8	89.9	
SF-1-58	4.160	98.709	0.1	0.000	0.000	0.000	0.000	SF-1-57	-0.175	-0.085	27.3	89.8	
								SF-1-59	0.166	0.081	25.9	89.8	
								SEC_SF-1-69	0.009	0.004	1.4	89.9	
SF-1-59	4.160	98.645	0.1	0.000	0.000	0.000	0.000	PRI_PM_12	0.069	0.034	10.8	89.8	
								SF-1-58	-0.166	-0.081	25.9	89.8	
								SF-1-60	0.096	0.047	15.1	89.8	
SF-1-60	4.160	98.607	0.1	0.000	0.000	0.000	0.000	PRI_PM_4	0.069	0.034	10.8	89.8	
								SF-1-59	-0.096	-0.047	15.1	89.8	
								SF-1-61	0.027	0.013	4.3	89.9	
SF-1-61	4.160	98.598	0.1	0.000	0.000	0.004	0.002	SF-1-60	-0.027	-0.013	4.3	89.9	
								SF-1-62	0.024	0.012	3.7	89.9	
SF-1-62	4.160	98.591	0.1	0.000	0.000	0.000	0.000	SF-1-61	-0.024	-0.012	3.7	89.9	
								SF-1-63	0.015	0.007	2.3	89.9	
								SEC_SF-1-65	0.009	0.004	1.4	89.9	
SF-1-63	4.160	98.585	0.1	0.000	0.000	0.004	0.002	SF-1-62	-0.015	-0.007	2.3	89.9	
								SF-1-64	0.011	0.005	1.7	89.9	
SF-1-64	4.160	98.581	0.1	0.000	0.000	0.004	0.002	SF-1-63	-0.011	-0.005	1.7	89.9	
								SF-1-65	0.007	0.004	1.2	89.9	
SF-1-65	4.160	98.578	0.1	0.000	0.000	0.004	0.002	SF-1-64	-0.007	-0.004	1.2	89.9	
								SF-1-66	0.004	0.002	0.6	89.9	
SF-1-66	4.160	98.577	0.1	0.000	0.000	0.004	0.002	SF-1-65	-0.004	-0.002	0.6	89.9	
SF-2-1	4.160	99.990	0.4	0.000	0.000	0.004	0.002	BUS_SAF_4kV	-0.115	-0.056	17.7	89.9	
								SF-2-2	0.111	0.054	17.1	89.9	
SF-2-2	4.160	99.954	0.4	0.000	0.000	0.000	0.000	SF-2-1	-0.111	-0.054	17.1	89.9	
								SF-2-3	0.004	0.002	0.6	89.9	
								SF-2-5	0.107	0.052	16.6	89.9	
SF-2-3	4.160	99.953	0.4	0.000	0.000	0.004	0.002	SF-2-2	-0.004	-0.002	0.6	89.9	
								SF-2-4	0.000	0.000	0.0	0.0	
SF-2-4	4.160	99.953	0.4	0.000	0.000	0.000	0.000	SF-2-3	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
SF-2-5	4.160	99.935	0.4	0.000	0.000	0.000	0.000	SF-2-2	-0.107	-0.052	16.6	89.9	
								SF-2-7	0.008	0.004	1.2	89.9	
								SF-2-9	0.004	0.002	0.6	89.9	
								SF-2-10	0.096	0.047	14.8	89.9	
SF-2-7	4.160	99.934	0.4	0.000	0.000	0.004	0.002	SF-2-5	-0.008	-0.004	1.2	89.9	
								SF-2-8	0.004	0.002	0.6	89.9	
SF-2-8	4.160	99.934	0.4	0.000	0.000	0.004	0.002	SF-2-7	-0.004	-0.002	0.6	89.9	
SF-2-9	4.160	99.934	0.4	0.000	0.000	0.004	0.002	SF-2-5	-0.004	-0.002	0.6	89.9	
SF-2-10	4.160	99.812	0.4	0.000	0.000	0.004	0.002	SF-2-5	-0.096	-0.047	14.8	89.9	
								SF-2-11	0.092	0.045	14.2	89.9	
SF-2-11	4.160	99.694	0.4	0.000	0.000	0.000	0.000	SF-2-10	-0.092	-0.045	14.2	89.9	
								SF-2-12	0.053	0.026	8.3	89.9	
								SF-2-14	0.020	0.010	3.2	90.0	
								SF-2-22	0.018	0.009	2.8	89.9	
SF-2-12	4.160	99.685	0.4	0.000	0.000	0.000	0.000	SF-2-11	-0.053	-0.026	8.3	89.9	
								SF-2-13	0.044	0.022	6.9	89.9	
								SEC_SF-2-7	0.009	0.004	1.4	89.9	
SF-2-13	4.160	99.678	0.4	0.000	0.000	0.008	0.004	SF-2-12	-0.044	-0.022	6.9	89.9	
								SF-2-15	0.037	0.018	5.7	89.9	
SF-2-14	4.160	99.685	0.4	0.000	0.000	0.004	0.002	SF-2-11	-0.020	-0.010	3.2	90.0	
								SF-2-26	0.017	0.008	2.6	90.0	
SF-2-15	4.160	99.658	0.4	0.000	0.000	0.008	0.004	SF-2-13	-0.037	-0.018	5.7	89.9	
								SF-2-16	0.029	0.014	4.5	89.9	
SF-2-16	4.160	99.642	0.4	0.000	0.000	0.004	0.002	SF-2-15	-0.029	-0.014	4.5	89.9	
								SF-2-17	0.026	0.012	4.0	89.9	
SF-2-17	4.160	99.637	0.4	0.000	0.000	0.000	0.000	SF-2-16	-0.026	-0.012	4.0	89.9	
								SF-2-18	0.017	0.008	2.6	89.9	
								SEC_SF-2-15	0.009	0.004	1.4	89.9	
SF-2-18	4.160	99.636	0.4	0.000	0.000	0.004	0.002	SF-2-17	-0.017	-0.008	2.6	89.9	
								SF-2-19	0.013	0.006	2.0	89.9	
SF-2-19	4.160	99.634	0.4	0.000	0.000	0.004	0.002	SF-2-18	-0.013	-0.006	2.0	89.9	
								SF-2-20	0.009	0.004	1.4	89.9	
SF-2-20	4.160	99.632	0.4	0.000	0.000	0.000	0.000	SF-2-19	-0.009	-0.004	1.4	89.9	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-2-21	0.000	0.000	0.0	0.0	
								SEC_SF-2-18	0.009	0.004	1.4	89.9	
SF-2-21	4.160	99.632	0.4	0.000	0.000	0.000	0.000	SF-2-20	0.000	0.000	0.0	0.0	
SF-2-22	4.160	99.689	0.4	0.000	0.000	0.000	0.000	SF-2-11	-0.018	-0.009	2.8	89.9	
								SF-2-23	0.009	0.004	1.4	89.9	
								SEC_SF-2-19	0.009	0.004	1.4	89.9	
SF-2-23	4.160	99.687	0.4	0.000	0.000	0.000	0.000	SF-2-22	-0.009	-0.004	1.4	89.9	
								SF-2-24	0.000	0.000	0.0	0.0	
								SEC_SF-2-20	0.009	0.004	1.4	89.9	
SF-2-24	4.160	99.687	0.4	0.000	0.000	0.000	0.000	SF-2-23	0.000	0.000	0.0	0.0	
SF-2-25	4.160	99.670	0.4	0.000	0.000	0.000	0.000	SF-2-26	-0.017	-0.008	2.6	89.9	
								SF-2-27	0.008	0.004	1.2	90.0	
								SEC_SF-2-11	0.009	0.004	1.4	89.9	
SF-2-26	4.160	99.681	0.4	0.000	0.000	0.000	0.000	SF-2-25	0.017	0.008	2.6	90.0	
								SF-2-14	-0.017	-0.008	2.6	90.0	
SF-2-27	4.160	99.661	0.4	0.000	0.000	0.004	0.002	SF-2-25	-0.008	-0.004	1.2	89.9	
								SF-2-28	0.004	0.002	0.6	90.0	
SF-2-28	4.160	99.659	0.4	0.000	0.000	0.004	0.002	SF-2-27	-0.004	-0.002	0.6	89.9	
								SF-2-29	0.000	0.000	0.0	0.0	
SF-2-29	4.160	99.659	0.4	0.000	0.000	0.000	0.000	SF-2-28	0.000	0.000	0.0	0.0	
SF-2-30	4.160	100.026	0.4	0.000	0.000	0.000	0.000	BUS_SAF_4kV	-0.088	-0.043	13.6	90.0	
								Pole MS-5-108	0.071	0.034	10.9	90.0	
								SF-2-33	0.018	0.008	2.7	90.1	
SF-2-33	4.160	99.994	0.4	0.000	0.000	0.000	0.000	SF-2-37	0.018	0.008	2.7	90.0	
								SF-2-30	-0.018	-0.008	2.7	90.0	
								Line SF-2-45~	0.000	0.000	0.0	0.0	
SF-2-37	4.160	99.983	0.4	0.000	0.000	0.000	0.000	SF-2-33	-0.018	-0.008	2.7	90.0	
								SF-2-42	0.018	0.008	2.7	90.0	
								Line SF-2-37~	0.000	0.000	0.0	0.0	
SF-2-42	4.160	99.971	0.4	0.000	0.000	0.000	0.000	SF-2-37	-0.018	-0.008	2.7	90.0	
								SF-2-44	0.018	0.008	2.7	90.0	
								Line SF-2-49~	0.000	0.000	0.0	0.0	
SF-2-44	4.160	99.959	0.4	0.000	0.000	0.000	0.000	SF-2-42	-0.018	-0.008	2.7	90.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								SF-2-46	0.018	0.008	2.7	90.0	
								Line SF-2-53~	0.000	0.000	0.0	0.0	
SF-2-46	4.160	99.957	0.4	0.000	0.000	0.000	0.000	SF-2-44	-0.018	-0.008	2.7	90.0	
								SF-2-47	0.008	0.004	1.3	90.1	
								SEC_SF-4-01	0.009	0.004	1.4	89.9	
SF-2-47	4.160	99.955	0.4	0.000	0.000	0.000	0.000	SF-2-46	-0.008	-0.004	1.3	90.0	
								SF-2-48	0.004	0.002	0.7	90.1	
								SEC_SF-4-2	0.004	0.002	0.7	90.0	
SF-2-48	4.160	99.954	0.4	0.000	0.000	0.000	0.000	SF-2-47	-0.004	-0.002	0.7	90.1	
								SF-2-50	0.000	0.000	0.0	0.0	
								SEC_SF-4-3	0.004	0.002	0.7	90.0	
SF-2-50	4.160	99.954	0.4	0.000	0.000	0.000	0.000	SF-2-48	0.000	0.000	0.0	0.0	
								Line SF-2-61~	0.000	0.000	0.0	0.0	
UG-JUNC-CS-5-8	24.900	99.141	-0.7	0.000	0.000	0.000	0.000	Pole CS-5-20	-0.026	-0.013	0.7	89.8	
								SEC_CS-5-10	0.026	0.013	0.7	89.8	
UG-JUNC-CS-5-9	24.900	99.141	-0.7	0.000	0.000	0.000	0.000	Pole CS-5-19	-0.027	-0.013	0.7	90.0	
								SEC_CS-5-12	0.027	0.013	0.7	90.0	
UG_JUNC-CS-1	4.160	99.415	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	0.303	0.146	46.9	90.1	
								Pole CS-2-5	-0.320	-0.154	49.6	90.1	
								PRI_PM_1	0.017	0.008	2.7	90.0	
UG_JUNC-CS-2	4.160	99.226	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-1	-0.302	-0.146	47.0	90.1	
								UG_JUNC-CS-3	0.285	0.137	44.3	90.1	
								PRI_PM_2	0.017	0.008	2.7	90.0	
UG_JUNC-CS-3	4.160	99.068	-1.3	0.000	0.000	0.000	0.000	UG_JUNC-CS-2	-0.285	-0.137	44.3	90.1	
								PRI_PM_3	0.017	0.008	2.7	90.0	
								UG_JUNC-CS-5	0.267	0.129	41.6	90.1	
UG_JUNC-CS-5	4.160	98.932	-1.2	0.000	0.000	0.000	0.000	PRI_PM_5	0.017	0.008	2.7	90.0	
								UG_JUNC-CS-3	-0.267	-0.129	41.6	90.0	
								UG_JUNC-CS-6	0.250	0.121	38.9	90.0	
UG_JUNC-CS-6	4.160	98.806	-1.2	0.000	0.000	0.000	0.000	PRI_PM_6	0.017	0.008	2.7	90.0	
								UG_JUNC-CS-5	-0.249	-0.121	38.9	90.0	
								Pole CS-2-7	0.232	0.112	36.2	90.0	
UG_JUNC-CS-7	4.160	98.583	-1.2	0.000	0.000	0.000	0.000	Pole CS-2-17	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
								C_SUB-FDR-EQ#7-3-8~	0.000	0.000	0.0	0.0	
C_SUB-FDR-EQ#7-3-8~	4.160	98.583	-1.2	0.000	0.000	0.000	0.000	UG_JUNC-CS-7	0.000	0.000	0.0	0.0	
LINE 6M-26~	4.160	99.520	-0.7	0.000	0.000	0.000	0.000	Pole 6M-1-23	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-173~	4.160	98.823	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-57	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-84~	4.160	99.062	-1.4	0.000	0.000	0.000	0.000	Pole CS-1-10	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-86~	4.160	98.737	-1.5	0.000	0.000	0.000	0.000	Pole CS-1-54	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-237~	4.160	99.558	-1.3	0.000	0.000	0.000	0.000	Pole CS-2-66	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-246~	4.160	98.835	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-36	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-276~	4.160	98.876	-1.3	0.000	0.000	0.000	0.000	Pole CS-3-74	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-283~	4.160	99.652	-1.3	0.000	0.000	0.000	0.000	Pole CS-4-4	0.000	0.000	0.0	0.0	
LINE MS-4-53~	4.160	99.453	0.5	0.000	0.000	0.000	0.000	Pole MS-4-52	0.000	0.000	0.0	0.0	
Line MS-5-79~	4.160	99.332	0.3	0.000	0.000	0.000	0.000	Pole MS-5-76	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-97~	4.160	99.914	0.4	0.000	0.000	0.000	0.000	Pole MS-2-122	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-173~	4.160	100.066	0.4	0.000	0.000	0.000	0.000	Pole MS-2-3	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-13~	4.160	100.077	0.4	0.000	0.000	0.000	0.000	Pole MS-2-180	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-133~	4.160	99.933	0.5	0.000	0.000	0.000	0.000	Pole MS-3-25	0.000	0.000	0.0	0.0	
LINE MS-3-11~	4.160	99.913	0.5	0.000	0.000	0.000	0.000	Pole MS-3-43	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-177~	4.160	99.975	0.5	0.000	0.000	0.000	0.000	Pole MS-3-70	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-1-38~	4.160	98.274	0.2	0.000	0.000	0.000	0.000	SF-1-45	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#16-12~	4.160	99.988	0.3	0.000	0.000	0.000	0.000	Pole MS-1-19	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#12-9~	4.160	100.020	0.4	0.000	0.000	0.000	0.000	Pole MS-1-1	0.000	0.000	0.0	0.0	
Line MS-5-129~	4.160	99.883	0.4	0.000	0.000	0.000	0.000	Pole MS-5-125	0.000	0.000	0.0	0.0	
Line SF-2-37~	4.160	99.983	0.4	0.000	0.000	0.000	0.000	SF-2-37	0.000	0.000	0.0	0.0	
Line SF-2-45~	4.160	99.994	0.4	0.000	0.000	0.000	0.000	SF-2-33	0.000	0.000	0.0	0.0	
Line SF-2-49~	4.160	99.971	0.4	0.000	0.000	0.000	0.000	SF-2-42	0.000	0.000	0.0	0.0	
Line SF-2-53~	4.160	99.959	0.4	0.000	0.000	0.000	0.000	SF-2-44	0.000	0.000	0.0	0.0	
Line SF-2-61~	4.160	99.954	0.4	0.000	0.000	0.000	0.000	SF-2-50	0.000	0.000	0.0	0.0	
HS-4-33~	4.160	100.058	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-47	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-90~	4.160	99.624	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-67	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#20-1-96~	4.160	99.626	-1.3	0.000	0.000	0.000	0.000	Pole HS-4-33	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-278~	4.160	99.400	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-49	0.000	0.000	0.0	0.0	
L-SUB-FDR-EQ#18-1-301~	4.160	99.615	-1.2	0.000	0.000	0.000	0.000	Pole HS-2-66	0.000	0.000	0.0	0.0	
L-25-LAM-L1-02~	24.900	100.195	-0.5	0.000	0.000	0.000	0.000	BUS_6M_25kV	0.000	0.000	0.0	0.0	

Bus		Voltage		Generation		Load		Load Flow					XFMR
ID	kV	% Mag.	Ang.	MW	Mvar	MW	Mvar	ID	MW	Mvar	Amp	%PF	%Tap
L-25-LLP-SW-03~	24.900	100.107	1.0	0.000	0.000	0.000	0.000	BUS_SAF_25kV	0.000	0.000	0.0	0.0	
L-25-XFMR-03~	24.900	100.224	1.0	0.000	0.000	0.000	0.000	BUS_25kV_03	0.000	0.000	0.0	0.0	
Line51~	69.000	99.954	0.1	0.000	0.000	0.000	0.000	BUS_LLP_69kV_02	0.000	0.000	0.0	0.0	
L-25-LLP-E-06~	24.900	99.205	0.8	0.000	0.000	0.000	0.000	BUS_25kV_E-04	0.000	0.000	0.0	0.0	
Line15~	24.900	100.133	1.0	0.000	0.000	0.000	0.000	BUS_25kV_W-02	0.000	0.000	0.0	0.0	
L-25-LLP-W-03~	24.900	99.919	1.0	0.000	0.000	0.000	0.000	BUS_25kV_W-03	0.000	0.000	0.0	0.0	

* Indicates a voltage regulated bus (voltage controlled or swing type machine connected to it)

# Indicates a bus with a load mismatch of more than 0.1 MVA

APPENDIX D: Short Circuit ETAP Results

SHORT- CIRCUIT REPORT

Fault at bus: **BUS_25kV_SUB_01**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_25kV_SUB_01	Total	0.00	5.106	0.00	105.38	104.04	4.653	4.653	5.08E+000	4.09E+001	5.36E+000	5.29E+001
BUS_LLP_69kV_01	BUS_25kV_SUB_01	59.99	2.752	58.32	97.78	97.69	2.675	3.010	6.75E+000	7.61E+001	7.75E+000	8.19E+001
BUS_LLP_69kV_01	BUS_25kV_SUB_01	59.99	1.394	58.32	97.78	97.69	1.356	1.525	1.33E+001	1.50E+002	1.53E+001	1.62E+002
L-25-XFMR-03~	BUS_25kV_03	0.00	0.000	0.00	100.37	99.09	0.000	0.000				
BUS_5KV_XFMR_02	BUS_25kV_SUB_02	4.09	0.119	3.41	107.57	106.14	0.100	0.082	5.34E+002	1.68E+003	9.64E+002	2.88E+003
BUS_25kV_W-02	BUS_25kV_W-01	1.17	0.507	0.71	105.43	104.35	0.308	0.000	1.08E+002	4.01E+002		
BUS_25kV_W-2	BUS_25kV_SW_01	0.19	0.059	0.23	105.34	104.01	0.049	0.040	1.41E+003	3.28E+003	2.38E+003	5.70E+003
BUS_25_LLP_SE_02	BUS_25_LLP_SE_01	0.36	0.056	0.22	105.39	104.14	0.034	0.000	5.83E+002	3.73E+003		
BUS_25kV_E-02	BUS_25kV_E_01	0.30	0.233	0.18	105.40	104.12	0.141	0.000	2.45E+002	8.70E+002		

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_LAMSO_25kV**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 97.56 % of base kV (25.522 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_LAMSO_25kV	Total	0.00	5.267	0.00	100.63	100.25	5.221	5.221	2.86E+000	4.18E+001	2.65E+000	4.29E+001
BUS_LAMSO_115kV	BUS_LAMSO_25kV	77.32	5.022	77.32	97.68	97.62	5.022	5.110	2.38E+000	4.39E+001	2.38E+000	4.39E+001
BUS_ATT	BUS_L3_SEC	0.82	0.015	0.54	100.62	100.49	0.010	0.000	2.28E+003	1.47E+004		
BUS_CLG_25kV	BUS_L2_SEC	4.53	0.221	4.83	100.09	100.31	0.181	0.103	3.45E+002	9.35E+002	8.41E+002	2.02E+003
BUS_6M_25kV	BUS_L1_01	0.03	0.020	0.03	100.63	100.25	0.018	0.015	4.86E+003	9.70E+003	6.17E+003	1.35E+004

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_LAMSO_115kV**

Prefault voltage = 115.000 kV = 100.00 % of nominal bus kV (115.000 kV)
= 100.00 % of base kV (115.000 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_LAMSO_115kV	Total	0.00	5.555	0.00	100.12	100.06	5.545	5.545	9.21E-001	8.99E+000	9.16E-001	9.04E+000
BUS_LAMSO_25kV	BUS_LAMSO_115kV	3.99	0.056	3.27	103.12	102.76	0.046	0.026	2.98E+002	8.44E+002	7.42E+002	1.79E+003
WILLOW CREEK 115KV	BUS_LAMSO_115kV	100.00	5.500	100.00	100.00	100.00	5.500	5.520	9.08E-001	9.08E+000	9.08E-001	9.08E+000

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_LLP_69kV_03**

Prefault voltage = 69.000 kV = 100.00 % of nominal bus kV (69.000 kV)
= 100.00 % of base kV (69.000 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_LLP_69kV_03	Total	0.00	4.782	0.00	104.61	104.57	4.368	4.368	2.69E+000	1.73E+001	3.44E+000	2.22E+001
BUS_WC_69KV_01	BUS_LLP_69kV_03	15.66	4.445	29.50	96.43	97.00	4.148	4.322	2.76E+000	1.86E+001	3.43E+000	2.24E+001
Line51~	BUS_LLP_69kV_02	0.00	0.000	0.00	104.61	104.57	0.000	0.000				
BUS_25kV_SUB_01	BUS_LLP_69kV_01	13.55	0.224	8.89	112.30	111.27	0.147	0.032	9.07E+001	3.62E+002	1.05E+003	2.93E+003
BUS_25kV_SUB_01	BUS_LLP_69kV_01	13.55	0.114	8.89	112.30	111.27	0.075	0.016	1.79E+002	7.14E+002	2.07E+003	5.79E+003

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_SW_8.5EES23**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_SW_8.5EES23	Total	0.00	2.110	0.00	119.17	114.83	1.506	1.506	4.65E+001	8.82E+001	8.69E+001	2.02E+002
BUS_WTG_SOL	BUS_SW_8.5EES23	2.70	2.110	2.99	118.39	114.13	1.506	1.506	4.65E+001	8.82E+001	8.69E+001	2.02E+002

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_WTG1**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_WTG1	Total	0.00	0.978	0.00	125.37	116.21	0.648	0.648	1.25E+002	1.75E+002	2.37E+002	4.94E+002
BUS_WTG2	BUS_WTG1	0.72	0.978	1.13	124.58	115.97	0.648	0.648	1.25E+002	1.75E+002	2.37E+002	4.94E+002

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_WTG5**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_WTG5	Total	0.00	0.997	0.00	123.97	116.04	0.670	0.670	1.21E+002	1.73E+002	2.32E+002	4.67E+002
BUS_WTG3	BUS_WTG5	0.00	0.000	0.00	123.97	116.04	0.000	0.000				
BUS_WTG6	BUS_WTG5	53.61	0.997	55.97	108.73	104.92	0.670	0.670	1.21E+002	1.73E+002	2.32E+002	4.67E+002

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_WTG_SOL**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_WTG_SOL	Total	0.00	2.166	0.00	118.92	114.75	1.552	1.552	4.47E+001	8.62E+001	8.34E+001	1.96E+002
BUS_25_LLP_SE_04	BUS_WTG_SOL	33.00	2.166	36.72	109.75	106.64	1.552	1.552	4.47E+001	8.62E+001	8.34E+001	1.96E+002
BUS_SW_8.5EES23	BUS_WTG_SOL	0.00	0.000	0.00	118.92	114.75	0.000	0.000				
BUS_WTG6	BUS_WTG_SOL	0.00	0.000	0.00	118.92	114.75	0.000	0.000				

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **PV-PMS-Pri**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
PV-PMS-Pri	Total	0.00	2.083	0.00	119.52	114.87	1.481	1.481	4.74E+001	8.92E+001	8.82E+001	2.06E+002
P_526_2	PV-PMS-Pri	0.15	2.083	0.21	119.39	114.82	1.481	1.481	4.74E+001	8.92E+001	8.82E+001	2.06E+002

# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

SHORT- CIRCUIT REPORT

Fault at bus: **BUS_25kV_SUB_01**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_25kV_SUB_01	Total	0.00	3.868	0.00	101.29	101.64	3.757	3.757	4.80E+000	5.42E+001	5.57E+000	5.89E+001
BUS_LLP_69kV_01	BUS_25kV_SUB_01	61.85	2.567	60.08	96.46	96.80	2.494	2.494	7.22E+000	8.16E+001	8.40E+000	8.88E+001
BUS_LLP_69kV_01	BUS_25kV_SUB_01	61.85	1.301	60.08	96.46	96.80	1.264	1.264	1.43E+001	1.61E+002	1.66E+001	1.75E+002
L-25-XFMR-03~	BUS_25kV_03	0.00	0.000	0.00	96.46	96.80	0.000	0.000				
BUS_5KV_XFMR_02	BUS_25kV_SUB_02	0.00	0.000	0.00	103.18	103.54	0.000	0.000				
BUS_25kV_W-02	BUS_25kV_W-01	0.00	0.000	0.00	101.29	101.64	0.000	0.000				
BUS_25kV_W-2	BUS_25kV_SW_01	0.00	0.000	0.00	101.29	101.64	0.000	0.000				
BUS_25_LLP_SE_02	BUS_25_LLP_SE_01	0.00	0.000	0.00	101.29	101.64	0.000	0.000				
BUS_25kV_E-02	BUS_25kV_E_01	0.00	0.000	0.00	101.29	101.64	0.000	0.000				

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_LAMSO_25kV**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 97.56 % of base kV (25.522 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_LAMSO_25kV	Total	0.00	4.635	0.00	100.00	100.00	4.635	4.635	2.53E+000	4.75E+001	2.53E+000	4.75E+001
BUS_LAMSO_115kV	BUS_LAMSO_25kV	78.88	4.635	78.88	97.56	97.56	4.635	4.635	2.53E+000	4.75E+001	2.53E+000	4.75E+001
BUS_ATT	BUS_L3_SEC	0.00	0.000	0.00	100.00	100.00	0.000	0.000				
BUS_CLG_25kV	BUS_L2_SEC	0.00	0.000	0.00	100.00	100.00	0.000	0.000				
BUS_6M_25kV	BUS_L1_01	0.00	0.000	0.00	100.00	100.00	0.000	0.000				

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_LAMSO_115kV**

Prefault voltage = 115.000 kV = 100.00 % of nominal bus kV (115.000 kV)
= 100.00 % of base kV (115.000 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_LAMSO_115kV	Total	0.00	5.500	0.00	100.00	100.00	5.500	5.500	9.08E-001	9.08E+000	9.08E-001	9.08E+000
BUS_LAMSO_25kV	BUS_LAMSO_115kV	0.00	0.000	0.00	102.50	102.50	0.000	0.000				
WILLOW CREEK 115KV	BUS_LAMSO_115kV	100.00	5.500	100.00	100.00	100.00	5.500	5.500	9.08E-001	9.08E+000	9.08E-001	9.08E+000

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_LLP_69kV_03**

Prefault voltage = 69.000 kV = 100.00 % of nominal bus kV (69.000 kV)
= 100.00 % of base kV (69.000 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_LLP_69kV_03	Total	0.00	4.376	0.00	104.03	104.15	4.037	4.037	2.90E+000	1.89E+001	3.68E+000	2.37E+001
BUS_WC_69KV_01	BUS_LLP_69kV_03	17.04	4.376	31.09	95.77	96.70	4.037	4.037	2.90E+000	1.89E+001	3.68E+000	2.37E+001
Line51~	BUS_LLP_69kV_02	0.00	0.000	0.00	104.03	104.15	0.000	0.000				
BUS_25kV_SUB_01	BUS_LLP_69kV_01	0.00	0.000	0.00	109.23	109.36	0.000	0.000				
BUS_25kV_SUB_01	BUS_LLP_69kV_01	0.00	0.000	0.00	109.23	109.36	0.000	0.000				

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_SW_8.5EES23**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_SW_8.5EES23	Total	0.00	1.779	0.00	116.37	114.14	1.316	1.316	5.08E+001	1.07E+002	9.57E+001	2.24E+002
BUS_WTG_SOL	BUS_SW_8.5EES23	2.52	1.779	2.89	115.64	113.47	1.316	1.316	5.08E+001	1.07E+002	9.57E+001	2.24E+002

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_WTG1**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_WTG1	Total	0.00	0.859	0.00	124.00	115.98	0.578	0.578	1.37E+002	2.03E+002	2.61E+002	5.46E+002
BUS_WTG2	BUS_WTG1	0.70	0.859	1.11	123.22	115.74	0.578	0.578	1.37E+002	2.03E+002	2.61E+002	5.46E+002

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_WTG5**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_WTG5	Total	0.00	0.875	0.00	122.57	115.82	0.598	0.598	1.33E+002	2.00E+002	2.56E+002	5.17E+002
BUS_WTG3	BUS_WTG5	0.00	0.000	0.00	122.57	115.82	0.000	0.000				
BUS_WTG6	BUS_WTG5	51.97	0.875	55.14	107.74	104.87	0.598	0.598	1.33E+002	2.00E+002	2.56E+002	5.17E+002

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_WTG_SOL**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_WTG_SOL	Total	0.00	1.823	0.00	116.05	114.02	1.355	1.355	4.88E+001	1.05E+002	9.18E+001	2.16E+002
BUS_25_LLP_SE_04	BUS_WTG_SOL	30.70	1.823	35.41	107.51	106.25	1.355	1.355	4.88E+001	1.05E+002	9.18E+001	2.16E+002
BUS_SW_8.5EES23	BUS_WTG_SOL	0.00	0.000	0.00	116.05	114.02	0.000	0.000				
BUS_WTG6	BUS_WTG_SOL	0.00	0.000	0.00	116.05	114.02	0.000	0.000				

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **PV-PMS-Pri**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
PV-PMS-Pri	Total	0.00	1.758	0.00	116.76	114.18	1.295	1.295	5.18E+001	1.08E+002	9.71E+001	2.28E+002
P_526_2	PV-PMS-Pri	0.14	1.758	0.21	116.63	114.14	1.295	1.295	5.18E+001	1.08E+002	9.71E+001	2.28E+002

# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

SHORT- CIRCUIT REPORT

Fault at bus: **BUS_25kV_SUB_01**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_25kV_SUB_01	Total	0.00	5.601	0.00	108.55	106.41	4.934	4.934	5.18E+000	3.77E+001	5.36E+000	5.29E+001
BUS_LLP_69kV_01	BUS_25kV_SUB_01	59.99	2.752	58.21	98.99	98.56	2.671	3.192	6.75E+000	7.61E+001	7.75E+000	8.19E+001
BUS_LLP_69kV_01	BUS_25kV_SUB_01	59.99	1.394	58.21	98.99	98.56	1.353	1.617	1.33E+001	1.50E+002	1.53E+001	1.62E+002
L-25-XFMR-03~	BUS_25kV_03	0.00	0.000	0.00	103.38	101.34	0.000	0.000				
BUS_5KV_XFMR_02	BUS_25kV_SUB_02	4.09	0.119	3.37	110.71	108.51	0.099	0.087	5.34E+002	1.68E+003	9.64E+002	2.88E+003
BUS_25kV_W-02	BUS_25kV_W-01	1.17	0.507	0.68	108.58	106.69	0.296	0.000	1.08E+002	4.01E+002		
BUS_25kV_W-2	BUS_25kV_SW_01	0.19	0.059	0.23	108.50	106.37	0.049	0.042	1.41E+003	3.28E+003	2.38E+003	5.70E+003
BUS_25_LLP_SE_02	BUS_25_LLP_SE_01	3.58	0.551	2.40	109.33	107.93	0.369	0.000	5.43E+001	3.78E+002		
BUS_25kV_E-02	BUS_25kV_E_01	0.30	0.233	0.17	108.56	106.48	0.136	0.000	2.45E+002	8.70E+002		

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_LAMSO_25kV**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 97.56 % of base kV (25.522 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_LAMSO_25kV	Total	0.00	5.267	0.00	100.63	100.25	5.221	5.221	2.86E+000	4.18E+001	2.65E+000	4.29E+001
BUS_LAMSO_115kV	BUS_LAMSO_25kV	77.32	5.022	77.32	97.68	97.62	5.022	5.110	2.38E+000	4.39E+001	2.38E+000	4.39E+001
BUS_ATT	BUS_L3_SEC	0.82	0.015	0.54	100.62	100.49	0.010	0.000	2.28E+003	1.47E+004		
BUS_CLG_25kV	BUS_L2_SEC	4.53	0.221	4.83	100.09	100.31	0.181	0.103	3.45E+002	9.35E+002	8.41E+002	2.02E+003
BUS_6M_25kV	BUS_L1_01	0.03	0.020	0.03	100.63	100.25	0.018	0.015	4.86E+003	9.70E+003	6.17E+003	1.35E+004

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_LAMSO_115kV**

Prefault voltage = 115.000 kV = 100.00 % of nominal bus kV (115.000 kV)
= 100.00 % of base kV (115.000 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_LAMSO_115kV	Total	0.00	5.555	0.00	100.12	100.06	5.545	5.545	9.21E-001	8.99E+000	9.16E-001	9.04E+000
BUS_LAMSO_25kV	BUS_LAMSO_115kV	3.99	0.056	3.27	103.12	102.76	0.046	0.026	2.98E+002	8.44E+002	7.42E+002	1.79E+003
WILLOW CREEK 115KV	BUS_LAMSO_115kV	100.00	5.500	100.00	100.00	100.00	5.500	5.520	9.08E-001	9.08E+000	9.08E-001	9.08E+000

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_LLP_69kV_03**

Prefault voltage = 69.000 kV = 100.00 % of nominal bus kV (69.000 kV)
= 100.00 % of base kV (69.000 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_LLP_69kV_03	Total	0.00	4.939	0.00	105.49	105.33	4.450	4.450	2.65E+000	1.68E+001	3.44E+000	2.22E+001
BUS_WC_69KV_01	BUS_LLP_69kV_03	15.66	4.445	29.74	96.94	97.40	4.142	4.402	2.76E+000	1.86E+001	3.43E+000	2.24E+001
Line51~	BUS_LLP_69kV_02	0.00	0.000	0.00	105.49	105.33	0.000	0.000				
BUS_25kV_SUB_01	BUS_LLP_69kV_01	19.83	0.328	12.53	114.56	113.32	0.208	0.032	5.34E+001	2.49E+002	1.05E+003	2.93E+003
BUS_25kV_SUB_01	BUS_LLP_69kV_01	19.83	0.166	12.53	114.56	113.32	0.105	0.016	1.05E+002	4.92E+002	2.07E+003	5.79E+003

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_SW_8.5EES23**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_SW_8.5EES23	Total	0.00	2.644	0.00	127.21	125.27	1.701	1.701	3.51E+001	7.42E+001	8.69E+001	2.02E+002
BUS_WTG_SOL	BUS_SW_8.5EES23	3.38	2.644	3.38	126.29	124.43	1.701	1.701	3.30E+001	7.24E+001	8.69E+001	2.02E+002

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_WTG1**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_WTG1	Total	0.00	1.609	0.00	132.86	134.47	0.777	0.777	5.43E+001	1.25E+002	2.37E+002	4.94E+002
BUS_WTG2	BUS_WTG1	1.07	1.462	1.34	131.90	134.04	0.730	0.777	6.53E+001	1.28E+002	2.37E+002	4.94E+002
BUS_T_WTG1_SEC	BUS_WTG1	31.61	0.159	84.78	83.13	100.55	0.052	0.000	8.44E+001	1.32E+003		

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_WTG5**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_WTG5	Total	0.00	1.641	0.00	131.60	134.33	0.808	0.808	5.20E+001	1.23E+002	2.32E+002	4.67E+002
BUS_WTG3	BUS_WTG5	0.35	0.475	0.12	131.58	134.38	0.158	0.000	3.03E+001	4.42E+002		
BUS_WTG6	BUS_WTG5	57.46	1.069	58.09	112.85	113.61	0.622	0.808	1.15E+002	1.60E+002	2.32E+002	4.67E+002
BUS_T_WTG4_SEC	BUS_WTG5	31.61	0.159	84.72	82.64	100.56	0.053	0.000	8.44E+001	1.32E+003		

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_WTG_SOL**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_WTG_SOL	Total	0.00	2.726	0.00	127.09	125.49	1.759	1.759	3.34E+001	7.22E+001	8.34E+001	1.96E+002
BUS_25_LLP_SE_04	BUS_WTG_SOL	33.00	2.166	37.19	114.78	112.49	1.472	1.759	4.47E+001	8.62E+001	8.34E+001	1.96E+002
BUS_SW_8.5EES23	BUS_WTG_SOL	0.00	0.000	0.00	127.09	125.49	0.000	0.000				
BUS_WTG6	BUS_WTG_SOL	0.63	0.578	0.32	127.21	125.72	0.290	0.000	7.08E+001	3.57E+002		

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **PV-Collector1**

Prefault voltage = 0.480 kV = 100.00 % of nominal bus kV (0.480 kV)
= 95.24 % of base kV (0.504 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
PV-Collector1	Total	0.00	42.140	0.00	106.71	101.55	47.510	47.510	6.32E+001	2.71E+002	2.76E+001	1.96E+002
PV-Module_01	PV-Collector1	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_2	PV-Collector1	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_3	PV-Collector1	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_4	PV-Collector1	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_5	PV-Collector1	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_6	PV-Collector1	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_7	PV-Collector1	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_8	PV-Collector1	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_9	PV-Collector1	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_10	PV-Collector1	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_11	PV-Collector1	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_12	PV-Collector1	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PVT1_Pri	PV-Collector1	72.68	40.008	89.12	103.81	84.43	44.226	47.510 *	6.81E+001	2.64E+002	2.76E+001	1.96E+002

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **PV-Collector2**

Prefault voltage = 0.480 kV = 100.00 % of nominal bus kV (0.480 kV)
= 95.24 % of base kV (0.504 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
PV-Collector2	Total	0.00	42.140	0.00	106.71	101.55	47.510	47.510	6.32E+001	2.71E+002	2.76E+001	1.96E+002
PV-Module_13	PV-Collector2	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_14	PV-Collector2	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_15	PV-Collector2	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_16	PV-Collector2	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_17	PV-Collector2	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_18	PV-Collector2	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_19	PV-Collector2	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_20	PV-Collector2	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_21	PV-Collector2	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_22	PV-Collector2	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_23	PV-Collector2	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PV-Module_24	PV-Collector2	1.11	0.183	2.14	108.84	103.63	0.352	0.000	5.87E-003	5.96E+004		
PVT1_Pri2	PV-Collector2	72.68	40.008	89.12	103.81	84.43	44.226	47.510 *	6.81E+001	2.64E+002	2.76E+001	1.96E+002

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **PV-PMS-Pri**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
PV-PMS-Pri	Total	0.00	2.626	0.00	127.98	125.92	1.681	1.681	3.54E+001	7.47E+001	8.82E+001	2.06E+002
P_526_2	PV-PMS-Pri	0.19	2.545	0.23	127.82	125.85	1.588	1.681	3.54E+001	7.47E+001	8.82E+001	2.06E+002
PVT1_Pri	PV-PMS-Sec	0.00	0.045	0.00	127.99	125.92	0.068	0.000	4.24E-004	4.71E+003		
PVT1_Pri2	PV-PMS-Sec	0.00	0.045	0.00	127.99	125.92	0.068	0.000	4.24E-004	4.71E+003		

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

SHORT- CIRCUIT REPORT

Fault at bus: **BUS_25kV_SUB_01**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_25kV_SUB_01	Total	0.00	3.868	0.00	103.33	103.69	3.833	3.833	4.80E+000	5.42E+001	5.57E+000	5.89E+001
BUS_LLP_69kV_01	BUS_25kV_SUB_01	61.85	2.567	60.04	97.28	97.51	2.492	2.544	7.22E+000	8.16E+001	8.40E+000	8.88E+001
BUS_LLP_69kV_01	BUS_25kV_SUB_01	61.85	1.301	60.04	97.28	97.51	1.263	1.289	1.43E+001	1.61E+002	1.66E+001	1.75E+002
L-25-XFMR-03~	BUS_25kV_03	0.00	0.000	0.00	98.41	98.75	0.000	0.000				
BUS_5KV_XFMR_02	BUS_25kV_SUB_02	0.00	0.000	0.00	105.27	105.64	0.000	0.000				
BUS_25kV_W-02	BUS_25kV_W-01	0.00	0.000	0.00	103.33	103.69	0.000	0.000				
BUS_25kV_W-2	BUS_25kV_SW_01	0.00	0.000	0.00	103.33	103.69	0.000	0.000				
BUS_25_LLP_SE_02	BUS_25_LLP_SE_01	0.00	0.000	1.09	104.33	104.71	0.151	0.000				
BUS_25kV_E-02	BUS_25kV_E_01	0.00	0.000	0.00	103.33	103.69	0.000	0.000				

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_LAMSO_25kV**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 97.56 % of base kV (25.522 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_LAMSO_25kV	Total	0.00	4.635	0.00	100.00	100.00	4.635	4.635	2.53E+000	4.75E+001	2.53E+000	4.75E+001
BUS_LAMSO_115kV	BUS_LAMSO_25kV	78.88	4.635	78.88	97.56	97.56	4.635	4.635	2.53E+000	4.75E+001	2.53E+000	4.75E+001
BUS_ATT	BUS_L3_SEC	0.00	0.000	0.00	100.00	100.00	0.000	0.000				
BUS_CLG_25kV	BUS_L2_SEC	0.00	0.000	0.00	100.00	100.00	0.000	0.000				
BUS_6M_25kV	BUS_L1_01	0.00	0.000	0.00	100.00	100.00	0.000	0.000				

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_LAMSO_115kV**

Prefault voltage = 115.000 kV = 100.00 % of nominal bus kV (115.000 kV)
= 100.00 % of base kV (115.000 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_LAMSO_115kV	Total	0.00	5.500	0.00	100.00	100.00	5.500	5.500	9.08E-001	9.08E+000	9.08E-001	9.08E+000
BUS_LAMSO_25kV	BUS_LAMSO_115kV	0.00	0.000	0.00	102.50	102.50	0.000	0.000				
WILLOW CREEK 115KV	BUS_LAMSO_115kV	100.00	5.500	100.00	100.00	100.00	5.500	5.500	9.08E-001	9.08E+000	9.08E-001	9.08E+000

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_LLP_69kV_03**

Prefault voltage = 69.000 kV = 100.00 % of nominal bus kV (69.000 kV)
= 100.00 % of base kV (69.000 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_LLP_69kV_03	Total	0.00	4.376	0.00	104.67	104.79	4.062	4.062	2.90E+000	1.89E+001	3.68E+000	2.37E+001
BUS_WC_69KV_01	BUS_LLP_69kV_03	17.04	4.376	31.15	96.20	97.16	4.035	4.062	2.90E+000	1.89E+001	3.68E+000	2.37E+001
Line51~	BUS_LLP_69kV_02	0.00	0.000	0.00	104.67	104.79	0.000	0.000				
BUS_25kV_SUB_01	BUS_LLP_69kV_01	0.00	0.000	2.36	110.79	111.19	0.035	0.000				
BUS_25kV_SUB_01	BUS_LLP_69kV_01	0.00	0.000	2.36	110.79	111.19	0.018	0.000				

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_SW_8.5EES23**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_SW_8.5EES23	Total	0.00	1.779	0.00	122.68	120.33	1.387	1.387	5.08E+001	1.07E+002	9.57E+001	2.24E+002
BUS_WTG_SOL	BUS_SW_8.5EES23	2.52	1.779	3.05	121.91	119.62	1.387	1.387	5.08E+001	1.07E+002	9.57E+001	2.24E+002

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_WTG1**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_WTG1	Total	0.00	0.931	0.00	127.49	119.25	0.594	0.594	1.37E+002	2.03E+002	2.61E+002	5.46E+002
BUS_WTG2	BUS_WTG1	0.76	0.931	1.15	126.69	119.00	0.594	0.594	1.31E+002	1.84E+002	2.61E+002	5.46E+002
BUS_T_WTG1_SEC	BUS_WTG1	0.00	0.000	68.85	73.60	102.81	0.000	0.000				

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_WTG5**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_WTG5	Total	0.00	0.949	0.00	126.02	119.08	0.614	0.614	1.33E+002	2.00E+002	2.56E+002	5.17E+002
BUS_WTG3	BUS_WTG5	0.00	0.000	0.00	126.02	119.08	0.000	0.000				
BUS_WTG6	BUS_WTG5	56.38	0.949	56.69	110.77	107.82	0.614	0.614	1.26E+002	1.82E+002	2.56E+002	5.17E+002
BUS_T_WTG4_SEC	BUS_WTG5	0.00	0.000	68.75	72.75	102.81	0.000	0.000				

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **BUS_WTG_SOL**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
BUS_WTG_SOL	Total	0.00	1.823	0.00	122.49	120.34	1.430	1.430	4.88E+001	1.05E+002	9.18E+001	2.16E+002
BUS_25_LLP_SE_04	BUS_WTG_SOL	30.70	1.823	35.51	111.48	109.95	1.331	1.430	4.88E+001	1.05E+002	9.18E+001	2.16E+002
BUS_SW_8.5EES23	BUS_WTG_SOL	0.00	0.000	0.00	122.49	120.34	0.000	0.000				
BUS_WTG6	BUS_WTG_SOL	0.00	0.000	0.17	122.62	120.51	0.138	0.000				

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **PV-Collector1**

Prefault voltage = 0.480 kV = 100.00 % of nominal bus kV (0.480 kV)
= 95.24 % of base kV (0.504 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
PV-Collector1	Total	0.00	33.596	0.00	108.36	102.12	41.192	41.192	8.25E+001	3.25E+002	3.06E+001	2.17E+002
PV-Module_01	PV-Collector1	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_2	PV-Collector1	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_3	PV-Collector1	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_4	PV-Collector1	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_5	PV-Collector1	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_6	PV-Collector1	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_7	PV-Collector1	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_8	PV-Collector1	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_9	PV-Collector1	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_10	PV-Collector1	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_11	PV-Collector1	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_12	PV-Collector1	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PVT1_Pri	PV-Collector1	67.45	33.596	87.16	105.55	81.52	37.869	41.192 *	9.08E+001	3.12E+002	3.06E+001	2.17E+002

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **PV-Collector2**

Prefault voltage = 0.480 kV = 100.00 % of nominal bus kV (0.480 kV)
= 95.24 % of base kV (0.504 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
PV-Collector2	Total	0.00	33.596	0.00	108.36	102.12	41.192	41.192	8.25E+001	3.25E+002	3.06E+001	2.17E+002
PV-Module_13	PV-Collector2	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_14	PV-Collector2	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_15	PV-Collector2	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_16	PV-Collector2	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_17	PV-Collector2	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_18	PV-Collector2	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_19	PV-Collector2	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_20	PV-Collector2	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_21	PV-Collector2	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_22	PV-Collector2	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_23	PV-Collector2	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PV-Module_24	PV-Collector2	0.00	0.000	2.37	110.73	104.42	0.354	0.000				
PVT1_Pri2	PV-Collector2	67.45	33.596	87.16	105.55	81.52	37.869	41.192 *	9.08E+001	3.12E+002	3.06E+001	2.17E+002

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

Fault at bus: **PV-PMS-Pri**

Prefault voltage = 24.900 kV = 100.00 % of nominal bus kV (24.900 kV)
= 95.24 % of base kV (26.145 kV)

Contribution		3-Phase Fault		Line-To-Ground Fault					Positive & Zero Sequence Impedances Looking into "From Bus"			
From Bus ID	To Bus ID	% V From Bus	kA Symm. rms	% Voltage at From Bus Va	Vb	Vc	kA Symm. rms Ia	3I0	% Impedance on 100 MVA base R1	X1	R0	X0
PV-PMS-Pri	Total	0.00	1.758	0.00	123.51	120.79	1.370	1.370	5.18E+001	1.08E+002	9.71E+001	2.28E+002
P_526_2	PV-PMS-Pri	0.14	1.758	0.21	123.37	120.73	1.271	1.370	5.18E+001	1.08E+002	9.71E+001	2.28E+002
PVT1_Pri	PV-PMS-Sec	0.00	0.000	0.01	123.52	120.79	0.069	0.000				
PVT1_Pri2	PV-PMS-Sec	0.00	0.000	0.01	123.52	120.79	0.069	0.000				

\# Indicates fault current contribution is from three-winding transformers
* Indicates a zero sequence fault current contribution (3I0) from a grounded Delta-Y transformer

EXHIBIT T - MV LINE INFRASTRUCTURE MEMO

Sandhills ENERGY

Prowers County Land Use Department
301 South Main, Suite 215
Lamar, CO 81052

April 29, 2026

Re: Lamar Solar Project Medium Voltage Interconnection Infrastructure

Dear Prowers County Land Use Department,

Sandhills Energy is the Owner and Developer of the Lamar Solar Project, a 4.75 MWac / 5.85 MWdc photovoltaic generating facility currently under development in Prowers County at approximately 38.0237°N, 102.3534°W (Lamar, CO 81052). We are writing to provide additional detail regarding the project's medium voltage (MV) electrical interconnection infrastructure, as described below.

Project Overview

The Lamar Solar Project will interconnect to the existing local overhead utility distribution line via a short MV electrical collection line. The interconnection infrastructure consists of the following:

- Total MV line length: approximately 550 linear feet
- Underground segment: approximately 500 linear feet (91% of total)
- Overhead segment: approximately 50 linear feet (9% of total)
- Operating voltage: 25 kV (distribution class)
- New poles to be installed: 2 (customer-owned riser pole and interconnection pole)
- Connection point: existing utility overhead distribution line

Sandhills Energy respectfully submits that the proposed interconnection infrastructure does not constitute a "major facility of a public utility" as contemplated by Colorado Revised Statute §24-65.1 and Prowers County's adopted 1041 Regulations, for the following reasons:

1. Distribution-Level Voltage. The interconnection line operates at 25 kV, which is a standard distribution voltage. Prowers County's prior 1041 review experience has involved high-voltage transmission infrastructure, including the Tri-State Burlington-Lamar 230 kV Transmission Project. The proposed line is not transmission infrastructure and does not establish a new transmission corridor. It is a short distribution-level tie between a private generating facility and an existing utility line.

2. Predominantly Underground Installation. Approximately 500 of the 550 total linear feet (91%) of the MV line will be installed underground via direct burial or conduit inside the project property. Underground installation results in minimal surface disturbance, no permanent visual impact, and no long-term alteration of the land surface. The temporary ground disturbance associated with trenching will be fully restored upon project completion.

1403 Harney Street, Suite 200
Omaha, Nebraska 68102
sandhillsenergy.com

3. No New Overhead Corridor. The 50-foot overhead segment does not establish a new overhead line corridor. It connects directly to an existing utility overhead distribution line using two new poles sited immediately adjacent to the existing utility infrastructure. No new right-of-way, easement corridor, or overhead line route is being established across undeveloped land.

4. Limited Physical Footprint. The installation of two new distribution poles — a customer-owned riser pole and an interconnection pole — represents minimal new physical infrastructure. Both poles are located at the project boundary and are functionally required for the physical transition from underground to overhead at the point of interconnection with the existing utility line.

5. No Statewide Impact. This interconnection line serves a single generating facility and connects to an existing local distribution line. It does not cross multiple jurisdictions, does not affect regional transmission capacity, and does not involve land uses or corridors of statewide significance.

We welcome the opportunity to meet with County staff at your earliest convenience to discuss this request and provide any additional information needed to support your determination. Please feel free to contact me directly at the information below.

Respectfully submitted,

Haime Dias
SVP of Engineering and Construction
Sandhills Energy
402-618-1495
hdias@sandhillsenergy.com

EXHIBIT U - EMERGENCY RESPONSE RESOURCE CONFIRMATION

Outlook

Fwd: Sandhills Energy Information On Proposed Solar Site Outside of Lamar CO

From Sam Zordel <szordel@prowerscounty.net>
Date Tue 5/5/2026 3:11 PM
To Kyle Gorsuch <kyle@sandhillsenergy.com>; Michelle Hiigel <mhiigel@prowerscounty.net>; Marco Giannakouros <marco@sandhillsenergy.com>

Caution: External (szordel@prowerscounty.net)
First-Time Sender Details

Safe Spam Phish More... FAQ Protection by INKY

Kyle,

I'm copying in Michelle Higel as well...

I see no need for additional resources for this project.

Thanks

Sheriff Sam Zordel - Prowers County Sheriff's Office
103 East Oak Street, Lamar, CO 81052 szordel@prowerscounty.net
719-336-8050 719-336-7900 fax www.prowerscounty.net/departments/sheriff

Forwarded Conversation

Subject: Sandhills Energy Information On Proposed Solar Site Outside of Lamar CO

From: **Kyle Gorsuch** <kyle@sandhillsenergy.com>
Date: Mon, Apr 20, 2026 at 10:55 AM
To: mpage@prowerscounty.net <mpage@prowerscounty.net>, szordel@prowerscounty.net <szordel@prowerscounty.net>
Cc: Marco Giannakouros <marco@sandhillsenergy.com>

Hello Prowers CO,

Thank you for taking my call earlier. As working with Prowers County, we have been notified that we need to get a sign off from Sheriff Zordel in regard to the 1041 Permit, for reference we have been working with Michelle Higel.

I have attached the site location that has been shared with me. I can share any ERP Information that you need. As it was explained to me, we just need a sign off from the Sherrif's department notifying that with the solar site there would not be any additional services needed or added manpower from the Sherrif's Department. We will have installed at a minimum a 7ft game fence surrounding the solar field, and the Operations team would only be on site for Corrective Maintenance, Preventative maintenance or any other needs that the site or the utility would require.
Sandhills Energy currently has sites operating in Yuma, Wray, Fort Morgan and Delta Colorado along with multiple sites operating in Nebraska and Iowa.

Please let me know if you have any questions or concerns.



EXHIBIT V - PD10 SOUND STUDY

Decibel readings were completed on an active site in Waverly, IA on Friday, 8/22/25:

*All active equipment and personnel were instructed to stand down during the test to isolate the readings to the active machine being tested.

*Weather conditions noted at the time of the dB readings:

Time	Cloud Cover	Ambient Temp.	Wind Speed	Humidity	Barometric Pressure	Visibility
10:54am	Passing Clouds	77 °F	7 mph ↑	64%	30.09 "Hg	10 mi

Distance from Machine	PD10 dB	Solar Pro Attachment dB
0'	110	105
25'	94	92
50'	85	84
75'	80	80
100'	75	75