

Definitive Interconnection
System Impact Study for
Generation Interconnection
Requests

(DISIS-2014-002-6)

Group 6 Restudy

(Cost Allocation for All Groups included)

March 2016

Generator Interconnection



Revision History

Date	Author	Change Description
01/30/2015	SPP	Report Issued (DISIS-2014-002)
05/18/2015	SPP	Account for Withdrawn Projects, Report Re-Posted (DISIS-2014-002-1)
05/27/2015	SPP	Corrected errors from 5/18/2015 posting. Added reference in Group 13 power flow and stability sections.
07/10/2015	SPP	Analysis for Group 6 only. Cost allocation for all projects. To account for Withdrawn Projects, Report Re-Posted (DISIS-2014-002-2)
09/11/2015	SPP	Analysis for Group 3 only. Cost allocation for all projects. To account for Withdrawn Projects, Report Re-Posted (DISIS-2014-002-3)
11/02/2015	SPP	Analysis for Group 6 only. Cost allocation for all projects. To account for Withdrawn Projects, Report Re-Posted (DISIS-2014-002-4)
02/02/2016	SPP	Analysis for Group 6 only. Cost allocation for all projects. To account for Withdrawn Projects, Report Re-Posted (DISIS-2014-002-5)
03/11/2016	SPP	Analysis for Group 6 only. Cost allocation for all projects. To account for Withdrawn Projects, Report Re-Posted (DISIS-2014-002-6)

Executive Summary

Pursuant to the Generator Interconnection Procedures (GIP) of the Southwest Power Pool (SPP) Open Access Transmission Tariff (OATT), SPP has conducted this Definitive Interconnection System Impact Study (DISIS). The Interconnection Customers' requests have been clustered together for the following System Impact Cluster Study window which closed September 30, 2014. The customers will be referred to in this study as the DISIS-2014-002 Interconnection Customers. This System Impact Study analyzes the interconnecting of multiple generation interconnection requests associated with new generation totaling approximately 2,261.8 MW of new generation which would be located within the transmission systems of American Electric Power – Western (AEPW), Empire District Electric Company (EMDE), Kansas City Power and Light Company – Greater Missouri Operations Company (KCPL-GMO), Grand River Dam Authority (GRDA), Midwest Energy, Inc. (MIDW), Nebraska Public Power District (NPPD), Oklahoma Gas and Electric (OKGE), Southwestern Public Service (SPS) and Sunflower Electric Power Corporation\Mid-Kansas Electric Company, LLC (SUNC\MKEC). The various generation interconnection requests have differing proposed in-service dates¹. The generation interconnection requests included in this System Impact Cluster Study are listed in Appendix A by their queue number, amount, requested interconnection service, area, requested interconnection point, proposed interconnection point, and the requested in-service date. This analysis represents a restudy of the "Stand-Alone" analysis for each Interconnection Request to account for all Interconnection Requests that have met the requirements for an Interconnection Facilities Study that was performed in the original DISIS-2014-002 study. This analysis also includes an analysis of Limited Operation that determines available Interconnection Service assuming all DISIS-2014-002 Customers move forward.

This study, DISIS-2014-002-6, is being performed due to the withdrawal of certain Affected Interconnection Requests in Group 6. The Interconnection Requests that withdrew were ASGI-2014-002, ASGI-2014-005, ASGI-2014-008, ASGI-2014-010, and ASGI-2014-012. This study includes a restudy of power flow for Group 6 Interconnection Requests only. GEN-2014-026 has withdrawn from Group 2, but Group 2 was not restudied since no further Group 2 requests remain in DISIS-2014-002. Cost Allocation for the remaining Interconnection Requests in DISIS-2014-002 are also included.

Power flow analysis has indicated that for the power flow cases studied, 2,261.8 MW of nameplate generation may be interconnected with transmission system reinforcements within the SPP transmission system. Dynamic stability and power factor analysis has determined the need for reactive compensation in accordance with SPP stability and voltage recovery requirements and FERC Order #661A for wind farm interconnection requests and those requirements are listed for

¹ The generation interconnection requests in-service dates may need to be deferred based on the required lead time for the Network Upgrades necessary. The Interconnection Customers that proceed to the Facility Study will be provided a new in-service date based on the Facility Study's time for completion of the Network Upgrades necessary or as otherwise provided for in the GIP.

each interconnection request within the contents of this report. Dynamic stability analysis has determined that the transmission system will remain stable with the assigned Network Upgrades and necessary reactive compensation requirements. A short circuit analysis has been performed with available short circuit values given in the stability study for each group in the appendices of this report.

In no way does this study guarantee operation for all periods of time. This interconnection study identifies and assigns transmission reinforcements for Energy Resource (ER) interconnection injection constraints (defined as a 20% distribution factor impact for outage based constraints and 3% distribution factor for system intact constraints) and Network Resource (NR) constraints (defined as 3% distribution factor impact), if requested by the Customer. These constraints are listed in Appendix G. This interconnection study does not assign transmission reinforcements for all potential transmission constraints. It should be noted that although this study analyzed many of the most probable contingencies, it is not an all-inclusive list and cannot account for every operational situation. Because of this, it is likely that the Customer(s) may be required to reduce their generation output to 0 MW, also known as curtailment, under certain system conditions to allow system operators to maintain the reliability of the transmission network.

The total estimated minimum cost for interconnecting the DISIS-2014-002 Interconnection Customers is estimated at \$98,552,250. These costs are shown in Appendix E and F. Interconnection Service to DISIS-2014-002 Interconnection Customers is also contingent upon higher queued customers paying for certain required network upgrades. **The in-service date for the DISIS customers will be deferred until the construction of these network upgrades can be completed.**

These costs do not include the Interconnection Customer Interconnection Facilities as defined by the SPP Open Access Transmission Tariff (OATT). This cost does not include additional network constraints in the SPP transmission system identified and shown in Appendix H.

Additional network constraints listed in Appendix H are in the local area of the new generation when this generation is injected throughout the SPP footprint for Energy Resource Interconnection Service (ERIS) requests. Certain Interconnection Requests were also studied for Network Resource Interconnection Service (NRIS). Those constraints are also listed in Appendix H. Constraints listed in Appendix H do not require transmission reinforcement for Interconnection Service. Additional network constraints will have to be verified with a Transmission Service Request (TSR) and associated studies. With a defined source and sink in a TSR, this list of Network Constraints will be refined and expanded to account for all Network Upgrade requirements.

The required interconnection costs listed in Appendix E and F do not include all costs associated with the deliverability of the energy to final customers. These costs are determined by separate studies if the Customer submits a Transmission Service Request through SPP's Open Access Same Time Information System (OASIS) as required by Attachment Z1 of the SPP OATT.

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Introduction

Pursuant to the Southwest Power Pool (SPP) Open Access Transmission Tariff (OATT), SPP has conducted this Definitive Interconnection System Impact Study (DISIS) for certain generation interconnection requests in the SPP Generation Interconnection Queue. These interconnection requests have been clustered together for the following System Impact Study window which closed September 30, 2014. The customers will be referred to in this study as the DISIS-2014-002 Interconnection Customers. This DISIS analyzes the interconnecting of multiple generation interconnection requests associated with new generation totaling 2,261.8 MW of new generation which would be located within the transmission systems of American Electric Power –Western (AEPW), Empire District Electric Company (EMDE), Kansas City Power and Light Company – Greater Missouri Operations Company (KCPL-GMO), Grand River Dam Authority (GRDA), Midwest Energy, Inc. (MIDW), Nebraska Public Power District (NPPD), Oklahoma Gas and Electric (OKGE), Southwestern Public Service (SPS) and Sunflower Electric Power Corporation\Mid-Kansas Electric Company, LLC (SUNC\MKEC). The various generation interconnection requests have differing proposed in-service dates². The generation interconnection requests included in this System Impact Study are listed in Appendix A by their queue number, amount, requested interconnection service, area, requested interconnection point, proposed interconnection point, and the requested in-service date. This analysis represents a restudy of the "Stand-Alone" analysis for each Interconnection Request to account for all Interconnection Requests that have met the requirements for an Interconnection Facilities Study that was performed in the original DISIS-2014-002 study. This analysis also includes an analysis of Limited Operation that determines available Interconnection Service assuming all DISIS-2014-002 Customers move forward.

This study, DISIS-2014-002-6, is being performed due to the withdrawal of certain Affected Interconnection Requests in Group 6. The Interconnection Requests that withdrew were ASGI-2014-002, ASGI-2014-005, ASGI-2014-008, ASGI-2014-010, and ASGI-2014-012. This study includes a restudy of power flow for Group 6 Interconnection Requests only. Cost Allocation for the remaining Interconnection Requests in DISIS-2014-002 are also included.

The primary objective of this DISIS is to identify the system constraints associated with connecting the generation to the area transmission system. The Impact Study and other subsequent Interconnection Studies are designed to identify required interconnection facilities, Network Upgrades and other Direct Assignment Facilities needed to accept power into the grid at each specific interconnection receipt point.

² The generation interconnection requests in-service dates may need to be deferred based on the required lead time for the Network Upgrades necessary. The Interconnection Customers that proceed to the Facility Study will be provided a new in-service date based on the completion of the Facility Study or as otherwise provided for in the GIP.

Model Development

Interconnection Requests Included in the Cluster

SPP included all interconnection requests that submitted a Definitive Interconnection System Impact Study Agreement no later than September 30, 2014 and were subsequently accepted by Southwest Power Pool under the terms of the Generator Interconnection Procedures (GIP) that were in effect at the time this study commenced on October 1, 2014. The interconnection requests that are included in this study are listed in Appendix A.

Affected System Interconnection Request

Also included in this Definitive Interconnection System Impact Study is one (1) Affected System Study. The Affected System Interconnection Requests have been given the designations with the “ASGI” prefix. These requests are listed in Appendix A. Affected System Interconnection Requests were studied only in a “cluster” scenario.

Previously Queued Interconnection Requests

The previous queued requests included in this study are listed in Appendix B. In addition to the Base Case Upgrades, the previous queued requests and associated upgrades were assumed to be in-service and added to the Base Case models. These projects were dispatched as Energy Resources with equal distribution across the SPP footprint. Prior queued projects that requested Network Resource Interconnection Service (NRIS) were dispatched in an additional analysis into the balancing authority of the interconnecting transmission owner.

Development of Base Cases

Power Flow

The 2015 series Integrated Transmission Planning models (used in the 2016ITPNT) including the 2016 Winter, 2017 Spring and Summer, 2020 Light Load, Summer and Winter, and the 2025 Summer seasons scenario 0 cases were used for this study. After the cases were developed, each of the control areas’ resources were then re-dispatched to account for the new generation requests using current dispatch orders. Planned High Priority Incremental Loads (HPILs) are accounted for in these models.

Dynamic Stability

The 2015 series SPP Model Development Working Group (MDWG) Models 2016 winter, 2017 summer, and 2025 summer peak cases were used as starting points for this study.

Short Circuit

The 2025 summer peak stability case was used for this analysis.

Base Case Upgrades

The following facilities are part of the SPP Transmission Expansion Plan, the Balanced Portfolio or recently approved Priority Projects. These facilities have an approved Notification to Construct (NTC) or are in construction stages and were assumed to be in-service at the time of dispatch and added to the base case models. The DISIS-2014-002 Interconnection Customers have not been assigned advancement costs for the below listed projects. The DISIS-2014-002 Interconnection

Customers Generation Facilities in service dates may need to be delayed until the completion of the following upgrades. In some cases, the in-service date is beyond the allowable time a customer can delay. In this case, the Interconnection Customer may move forward with Limited Operation or remain in the DISIS Queue for additional study cycles. If for some reason, construction on these projects is discontinued, additional restudies will be needed to determine the interconnection needs of the DISIS Interconnection Customers.

- 2012 Integrated Transmission Plan (2012 ITP10) Projects
 - Woodward-Tatonga-Mathewson-Cimarron 345kV transmission line, scheduled for 2021 in-service³
 - Chisholm – Gracemont 345kV transmission line, and Chisholm 345/230kV transformer circuit #1, scheduled for 3/1/2018 in-service⁴
- 2015 Integrated Transmission Plan Near Term (2015 ITPNT) Projects
 - China Draw 115kV Reactive Power Support
 - 200Mvar Capacitive and 50Mvar Inductive Static Var Compensator (SVC)
 - Road Runner 115kV Reactive Power Support
 - 200Mvar Capacitive and 50Mvar Inductive Static Var Compensator (SVC)
 - Potash Junction – Intrepid – IMC #1 – Livingston Ridge 115kV rebuild
- Balanced Portfolio Projects⁵:
 - Iatan – Nashua 345/161 kV Project, placed in-service in 2015
 - Iatan – Nashua 345 kV circuit #1 and associated terminal equipment
 - Nashua 345/161/13 kV autotransformer circuit #1
- Nebraska City – Mullin Creek – Sibley 345kV circuit #1 build, scheduled for 12/31/2016 in-service⁶
- Northwest 345/138/13.8 kV circuit #3 autotransformer, placed in-service in 2015⁷
- Hoskins – Neligh East 345/115 kV Project⁸
 - Neligh East 345/115 kV substation and transformer
 - Neligh East Area 115 kV upgrades to support new station
 - Hoskins – Neligh East 345 kV circuit #1
- High Priority Incremental Loads (HPILs) Projects⁹:
 - TUCO Interchange – Yoakum – Hobbs Interchange 345/230 kV Project
 - TUCO Interchange – Yoakum – Hobbs Interchange 345 kV circuit #1 and associated terminal equipment upgrades
 - Hobbs 345/230/13 kV transformer circuit #1
 - Yoakum 345/230/13 kV transformer circuit #1

³ SPP Notification to Construct (NTC) 200223

⁴ SPP Notification to Construct (NTC) 200240 and 200255

⁵ SPP Notification to Construct (NTC) issued June 2009

⁶ SPP Notification to Construct (NTC) 20097 and 20098

⁷ SPP Transmission Service Project identified in SPP 2009-AG2-AFS6. Per SPP NTC 20137 & 200194

⁸ SPP Regional Reliability 2012 ITP 10 Project Per SPP-NTC-200220

⁹ Per Network Upgrades assigned in High Priority Incremental Loads (HPILs) study, Including Direct Assigned Upgrades, Projects in SPP-NTC-200256 and SPP-NTC-200283.

- Battle Axe – Road Runner 115 kV circuit #1
- Chaves County – Price – CV Pines – Capitan 115 kV circuit #1
- China Draw – Yeso Hills 115 kV circuit #1
- Dollarhide – Toboso Flats 115 kV circuit #1
- Hobbs Interchange – Kiowa 345 kV circuit #1
- Kiowa – North Loving – China Draw 345/115 kV Projects
 - Kiowa – North Loving – China Draw circuit #1 and associated terminal equipment upgrades
 - China Draw 345/115/13 kV transformer circuit #1
 - North Loving 345/115/13 kV transformer circuit #1
- Kiowa – Road Runner 345/230/115 kV Projects
 - Kiowa 345/230 kV transformer circuit #1
 - Road Runner 345/115/13 kV transformer circuit #1
- Livingston Ridge – Sage Brush – Lagarto – Cardinal 115 kV circuit #1
- North Loving – South Loving 115 kV circuit #1
- Ponderosa – Ponderosa Tap 115 kV circuit #1
- Potash 230/115/13kV Transformer circuit #1 replacement

Contingent Upgrades

The following facilities do not yet have approval. These facilities have been assigned to higher queued interconnection customers. These facilities have been included in the models for the DISIS-2014-002 study and are assumed to be in service. This list may not be all inclusive. The DISIS-2014-002 Interconnection Customers, at this time, do not have responsibility for these facilities but may later be assigned the cost of these facilities if higher queued customers terminate their Generation Interconnection Agreement or withdraw from the interconnection queue. The DISIS-2014-002 Interconnection Customer Generation Facilities in-service dates may need to be delayed until the completion of the following upgrades.

- Upgrades assigned to DISIS-2010-002 Interconnection Customers:
 - Twin Church – Dixon County 230 kV circuit #1 rerate (320 MVA)
 - Buckner – Spearville 345 kV terminal equipment
- Upgrades assigned to DISIS-2011-001 Interconnection Customers:
 - Hoskins – Dixon County – Twin Church 230 kV circuit #1 conductor clearance increase
 - (NRIS only) Woodward District Phase Shifting Transformer
- Upgrades assigned to DISIS-2012-002 Interconnection Customers:
 - Amoco Wasson – Oxy Tap 230 kV circuit #1 replace line traps
 - Associated Electric Cooperatives Inc. (AECI) Fairfax 138/69 kV transformer replacement
 - Lake Creek – Lone Wolf 69 kV circuit #1 reset CT
 - Remington – Fairfax 138 kV circuit #1 conductor clearance increase
- Upgrades assigned to DISIS-2013-002 Interconnection Customers:
 - Battle Creek – County Line – Neligh East 115kV circuit #1 rebuild

Potential Upgrades Not in the Base Case

Any potential upgrades that do not have a Notification to Construct (NTC) and not explicitly listed within this report have not been included in the base case. These upgrades include any identified in the SPP Extra-High Voltage (EHV) overlay plan, or any other SPP planning study other than the upgrades listed above in the previous section.

Regional Groupings

The interconnection requests listed in Appendix A were grouped together into ten (10) active regional groups based on geographical and electrical impacts. These groupings are shown in Appendix C.

To determine interconnection impacts, ten (10) different generation dispatch scenarios of the spring, summer, and winter base case models were developed to accommodate the regional groupings.

Power Flow

For Energy Resource Interconnection Service (ERIS), the generating plants were modeled at 100% nameplate of maximum generation. The generating plants in the remote areas were modeled at 20% nameplate of maximum generation. These projects were dispatched as Energy Resources with a load factor by area distribution across the SPP footprint. All generators that requested Network Resource Interconnection Service (NRIS) were dispatched in an additional analysis into the balancing authority of the interconnecting transmission owner at 100% nameplate with Energy Resource Interconnection Service (ERIS) only requests at 80% nameplate. This method allowed for the identification of network constraints that were common to the regional groupings that could then in turn have the mitigating upgrade cost allocated throughout the entire cluster.

Peaking units were not dispatched in the 2017 spring or 2020 light load models. To study peaking units' impacts, the 2016 winter and 2017 summer, 2020 summer and winter, and 2025 summer seasonal models were chosen and peaking units were modeled at 100% of the nameplate rating and non-dispatchable generating facilities were modeled at 10% of the nameplate rating. Each interconnection request was also modeled separately at 100% nameplate for certain analyses.

Dynamic Stability

For each group, all interconnection requests were studied at 100% nameplate output while the other groups were dispatched at 20% output for wind requests and 100% output for thermal requests.

Short Circuit

The dynamic stability models (2025 SP) were used for this analysis.

Identification of Network Constraints

The initial set of network constraints were found by using PSS®MUST First Contingency Incremental Transfer Capability (FCITC) analysis on the entire cluster grouping dispatched at the various levels mentioned above. The Energy Resource Interconnection Service (ERIS) constraints were then

screened to determine which of the generation interconnection requests had at least a 20% Distribution Factor (DF) upon outage based constraints (n-1) and 3% DF upon system intact constraints (n-0). In addition, stability issues are also considered for transmission reinforcement under ERIS. Interconnection Requests that have requested Network Resource Interconnection Service (NRIS) were also studied in the NRIS analysis to determine if any constraint measured at least a 3% DF. If so, these constraints were also considered for mitigation under NRIS.

Constraints that were identified and require transmission reinforcement are listed in Appendix G. These constraints met the criteria for analysis for Energy Resource Interconnection Service and Network Resource Interconnection Service (if requested).

Other network constraints which do not require transmission reinforcements are shown in Appendix H. With a defined source and sink in a Transmission Service Request, this list of network constraints can be refined and expanded to account for all Network Upgrade requirements for firm transmission service. Additional constraints identified by multi-element contingencies are listed in Appendix I.

In no way does the list of constraints in Appendix G identify all potential constraints that guarantee operation for all periods of time. It should be noted that although this study analyzed many of the most probable contingencies, it is not an all-inclusive list and cannot account for every operational situation. Because of this, it is likely that the Customer(s) may be required to reduce their generation output to 0 MW, also known as curtailment, under certain system conditions to allow system operators to maintain the reliability of the transmission network.

Determination of Cost Allocated Network Upgrades

Cost Allocated Network Upgrades of wind generation interconnection requests were determined using the 2017 spring model. Cost Allocated Network Upgrades of peaking units was determined using the 2020 summer peak model. A PSS[®]MUST sensitivity analysis was performed to determine the Distribution Factors (DF), a distribution factor with no contingency that each generation interconnection request had on each new upgrade. The impact each generation interconnection request had on each upgrade project was weighted by the size of each request. Finally the costs due by each request for a particular project were then determined by allocating the portion of each request's impact over the impact of all affecting requests.

For example, assume that there are three Generation Interconnection requests, X, Y, and Z that are responsible for the costs of Upgrade Project '1'. Given that their respective PTDF for the project have been determined, the cost allocation for Generation Interconnection request 'X' for Upgrade Project 1 is found by the following set of steps and formulas:

- Determine an Impact Factor on a given project for all responsible GI requests:

$$\text{Request X Impact Factor on Upgrade Project 1} = \text{PTDF}(\%)(X) * \text{MW}(X) = X1$$

$$\text{Request Y Impact Factor on Upgrade Project 1} = \text{PTDF}(\%)(Y) * \text{MW}(Y) = Y1$$

$$\text{Request Z Impact Factor on Upgrade Project 1} = \text{PTDF}(\%)(Z) * \text{MW}(Z) = Z1$$

- Determine each request’s Allocation of Cost for that particular project:

$$\text{Request X’s Project 1 Cost Allocation (\$)} = \frac{\text{Network Upgrade Project 1 Cost(\$)} * X1}{X1 + Y1 + Z1}$$

- Repeat previous for each responsible GI request for each Project

The cost allocation of each needed Network Upgrade is determined by the size of each request and its impact on the given project. This allows for the most efficient and reasonable mechanism for sharing the costs of upgrades.

Credits/Compensation for Amounts Advanced for Network Upgrades

Interconnection Customer shall be entitled to either credits or potentially Long Term Congestion Rights (LTCR)¹⁰ in accordance with Attachment Z2 of the SPP Tariff for any Network Upgrades including any tax gross-up or any other tax-related payments associated with the Network Upgrades, and not refunded to the Interconnection Customer.

Required Interconnection Facilities

The requirement to interconnect the 2,261.8 MW of generation into the existing and proposed transmission systems in the affected areas of the SPP transmission footprint consist of the necessary cost allocated shared facilities listed in Appendix F by upgrade. The interconnection requirements for the cluster total an estimated \$98,552,250. Interconnection Facilities specific to each generation interconnection request are listed in Appendix E. A preliminary one-line drawing for each generation interconnection request are listed in Appendix D.

For an explanation of how required Network Upgrades and Interconnection Facilities were determined, refer to the section on “Identification of Network Constraints” above.

Facilities Analysis

The Transmission Owner for each Interconnection Request has provided its analysis of Interconnection Facilities and Network Upgrades at the Point of Interconnection, shown in Appendix D. This analysis was limited only to the facilities at the substation at the Point of Interconnection. These costs as provided by the Transmission Owners are given with the one-line diagrams in Appendix D and are also listed in Appendix E and F as “Interconnection Costs”. These costs will be refined by the Transmission Owner as part of the Interconnection Facilities Study. Any additional Network Upgrades identified by this DISIS beyond the Point of Interconnection were

¹⁰ FERC compliance filing pending

either analyzed by the Transmission Owner or by SPP. These additional Network Upgrade costs will be more closely estimated by the Transmission Owner in the Interconnection Facilities Study.

Power Flow Analysis

Power Flow Analysis Methodology

The ACCC function of PSS®E was used to simulate single element and special (i.e., breaker-to-breaker, multi-element, etc.) contingencies in portions or all of the modeled control areas of SPP, as well as, other control areas external to SPP and the resulting scenarios analyzed. Single element and multi-element contingencies were evaluated.

Power Flow Analysis

A power flow analysis was conducted for each Interconnection Customer's facility using modified versions of the 2016 Winter, 2017 Spring and Summer, 2020 Light Load, Summer and Winter, and the 2025 Summer peak models. The output of the Interconnection Customer's facility was offset in each model by a reduction in output of existing online SPP generation. This method allows the request to be studied as an Energy Resource Interconnection Service request (ERIS). Certain requests that are pursuing Network Resource Interconnection Service (NRIS) had an additional analysis conducted for displacing resources in the interconnecting Transmission Owner's balancing authority.

Cluster Group 1 (Woodward Area)

In addition to the 3,866.5 MW of previously queued generation in the area, 350.0 MW of new interconnection service was studied. This group was not analyzed for this restudy and previously identified results remain valid.

Cluster Group 2 (Hitchland Area)

In addition to the 2,962.7 MW of previously queued generation in the area, 150.0 MW of new interconnection service was studied. GEN-2014-026 has withdrawn from Group 2, but Group 2 was not restudied since no further Group 2 requests remain in DISIS-2014-002.

Cluster Group 3 (Spearville Area)

In addition to the 3,105.8 MW of previously queued generation in the area, 99.0 MW of new interconnection service was studied. This group was not analyzed for this restudy and previously identified results remain valid.

Cluster Group 4 (Northwest Kansas Area)

In addition to the 1,339.0 MW of previously queued generation in the area, 123.2 MW of new interconnection service was studied. This group was not analyzed for this restudy and previously identified results remain valid.

Cluster Group 5 (Amarillo Area)

In addition to the 653.5 MW of previously queued generation in the area, 320.4 MW of new interconnection service was studied. This group was not analyzed for this restudy and previously identified results remain valid.

Cluster Group 6 (South Texas Panhandle/New Mexico)

In addition to the 3,454.37 MW of previously queued generation in the area, 360.0 MW of new interconnection service was studied. The Plant X – Tolk 230kV overloads will be mitigated with the reconductor of both circuits. The TUCO 345/230/13kV transformer thermal overload for the contingency of the second TUCO 345/230/13kV transformer can be alleviated by replacing the 560MVA (emergency rating) transformer with a new transformer rated at 644 MVA(emergency rating) . The Plant X – Tolk 230kV line does not show up as overloaded in 2017 any longer. The need date for Plant X – Tolk upgrade is now designated as 6/1/2018. The designated need date for the Tuco transformer is now 10/1/2020. The following approximate Engineering and Construction (E&C) lead times are required after Generator Interconnection Agreements have been fully executed.

- TUCO transformer 345/230/13kV replacement – twenty-four (24) months
- Tolk – Plant X 230kV circuit #1 & #2 rebuilds – eighteen (18) months

Cluster ERIS Constraints			
MONITORED ELEMENT	Limiting Rate A/B (MVA)	TC%LOADING (% MVA)	CONTINGENCY
PLANT X STATION - TOLK STATION EAST 230KV CKT 2	501.6	102.5964	PLANT X STATION - TOLK STATION WEST 230KV CKT 1
PLANT X STATION - TOLK STATION WEST 230KV CKT 1	502	103.352	PLANT X STATION - TOLK STATION EAST 230KV CKT 2
TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	106.2878	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2

Cluster NRIS Constraints			
MONITORED ELEMENT	Limiting Rate A/B (MVA)	TC%LOADING (% MVA)	CONTINGENCY
Currently, No NRIS Group 6 constraints			

Group 6 (Limited Operation)

Limited Operation results are listed below. While these results are based on the criteria listed in GIP 8.4.3, the Interconnection Customer may request additional scenarios for Limited Operation based on higher queued Interconnection Requests not being placed in service.

Limited Operation Analysis		
Interconnection Request	MW	Constraint that limits LOIS
GEN-2013-027	123	Plant X – Tolk 230kV (not a limit provided rebuilds of circuit #1 & #2 are completed prior to 2018)
	75	Tuco 345/230kV xfmr (not a limit provided new transformer can be installed prior to 2020)
GEN-2014-033	57	Plant X – Tolk 230kV (not a limit provided rebuilds of circuit #1 & #2 are completed prior to 2018)
	50	Tuco 345/230kV xfmr (not a limit provided new transformer can be installed prior to 2020)
GEN-2014-034	57	Plant X – Tolk 230kV (not a limit provided rebuilds of circuit #1 & #2 are completed prior to 2018)
	50	Tuco 345/230kV xfmr (not a limit provided new transformer can be installed prior to 2020)

Limited Operation Analysis		
Interconnection Request	MW	Constraint that limits LOIS
GEN-2014-035	24	Plant X – Tolk 230kV (not a limit provided rebuilds of circuit #1 & #2 are completed prior to 2018)
	21	Tuco 345/230kV xfmr (not a limit provided new transformer can be installed prior to 2020)
GEN-2014-047	33	Plant X – Tolk 230kV (not a limit provided rebuilds of circuit #1 & #2 are completed prior to 2018)
	10	Tuco 345/230kV xfmr (not a limit provided new transformer can be installed prior to 2020)

Cluster Group 7 (Southwestern Oklahoma)

In addition to the 1,751.0 MW of previously queued generation in the area, 0.0 MW of new interconnection service was studied. No new power flow constraints were found in this area.

Cluster Group 8 (North Oklahoma/South Central Kansas)

In addition to the 3,771.9 MW of previously queued generation in the area, 339.8 MW of new interconnection service was studied. This group was not analyzed for this restudy and previously identified results remain valid.

Cluster Group 9 (Nebraska Area)

In addition to the 1,973.1 MW of previously queued generation in the area, 119.4 MW of new interconnection service was studied. This group was not analyzed for this restudy and previously identified results remain valid.

Cluster Group 10 (Southeast Oklahoma/Northeast Texas)

In addition to the 0.0 MW of previously queued generation in the area, 0.0 MW of new interconnection service was studied. No new constraints were found in this area.

Cluster Group 12 (Northwest Arkansas)

In addition to the 30.0 MW of previously queued generation in the area, 0.0 MW of new interconnection service was studied. No new constraints were found in this area.

Cluster Group 13 (Northwest Missouri)

In addition to the 134.6 MW of previously queued generation in the area, 300.0 MW of new interconnection service was studied. This group was not analyzed for this restudy and previously identified results remain valid.

Cluster Group 14 (South Central Oklahoma)

In addition to the 362.5 MW of previously queued generation in the area, 250.0 MW of new interconnection service was studied. This group was not analyzed for this restudy and previously identified results remain valid.

Curtailment and System Reliability

In no way does this study guarantee operation for all periods of time. It should be noted that although this study analyzed many of the most probable contingencies, it is not an all-inclusive list and cannot account for every operational situation. Because of this, it is likely that the Customer(s) may be required to reduce their generation output to 0 MW, also known as curtailment, under certain system conditions to allow system operators to maintain the reliability of the transmission network.

Stability & Short Circuit Analysis

A stability and short circuit analysis was conducted for each Interconnection Customer using modified versions of the 2015 series SPP Model Development Working Group (MDWG) Models 2016 winter, 2017 summer, and 2025 summer peak dynamic cases¹¹. The stability analysis was conducted with all upgrades in service that were identified in the power flow analysis unless otherwise noted in the individual group stability study. For each group, the interconnection requests were studied at 100% nameplate output while the other groups were dispatched at 20% output for non-dispatchable requests and 100% output for other requests. The output of the Interconnection Customer's facility was offset in each model by a reduction in output of existing online SPP generation. Each Interconnection Request was studied in a Stand Alone scenario in addition to the cluster scenario. The following synopsis is included for each group. The entire stability study for each group can be found in the Appendices.

Cluster Group 1 (Woodward Area)

The Group 1 stability analysis was not performed again for this restudy. The original analysis in DISIS-2014-002 is still valid.

Cluster Group 2 (Hitchland Area)

GEN-2014-026 has withdrawn from Group 2, but Group 2 was not restudied since no further Group 2 requests remain in DISIS-2014-002.

Cluster Group 3 (Spearville Area)

The Group 3 stability analysis was not performed again for this restudy. The original analysis in DISIS-2014-002 is still valid.

Cluster Group 4 (Northwest Kansas)

The Group 4 stability analysis was not performed again for this restudy. The original analysis in DISIS-2014-002 is still valid.

Cluster Group 5 (Amarillo Area)

The Group 5 stability analysis was not performed again for this restudy. The original analysis in DISIS-2014-002 is still valid.

Cluster Group 6 (South Texas Panhandle/New Mexico)

The Group 6 stability analysis was not performed again for this restudy. The requirements from DISIS-2014-002-5 are listed in the table below. In addition, some Interconnection Requests may have requirements for reactors under low wind conditions as identified in previous reports.

¹¹ Short Circuit analysis performed only on the 2025 Summer Peak seasonal model.

Power Factor Requirements:

Request	Size (MW)	Generator Model	Point of Interconnection	Power Factor Requirement at POI*	
				Lagging (supplying)	Leading (absorbing)
GEN-2013-027**	150	Siemens 2.3MW and 2.415MW	Tap Tolk to Yoakum 230kV (562480)	0.95	0.95
GEN-2014-033	70	GE LV5 1500V 4.0MW inverter	Chaves County 115kV	0.95	0.95
GEN-2014-034	70	GE LV5 1500V 4.0MW inverter	Chaves County 115kV	0.95	0.95
GEN-2014-035	30	GE LV5 1500V 4.0MW inverter	Chaves County 115kV	0.95	0.95
GEN-2014-047**	40	AE 500NX 0.5MW PV inverters	Tap Tolk - Eddy County (Crossroads) 345kV	0.95	0.95
ASGI-2014-002	49.6	SMA SC 800CP 0.8MW PV inverter	Santa Rosa tap - Tucumcari 69kV line	0.95	0.95
ASGI-2014-005	10	Solar PV inverter	Strata 69 kV - bus 528046	0.95	0.95
ASGI-2014-008	10	Solar PV inverter	South Loving 69 kV - bus 528218	0.95	0.95
ASGI-2014-009	10	Solar PV inverter	Wood Draw 115 kV - bus 528228	0.95	0.95
ASGI-2014-010	10	Solar PV inverter	Ochoa 115 kV - bus 528232	0.95	0.95
ASGI-2014-012	10	Solar PV inverter	Cooper Ranch 115 kV - bus 528554	0.95	0.95

*As reactive power is required for all projects, the final requirement in the GIA will be the pro-forma 95% lagging to 95% leading at the point of interconnection.

** Requirement for reactors for low wind conditions

Cluster Group 7 (Southwest Oklahoma)

There were no customers requesting interconnection service in the Southwest Oklahoma area.

Cluster Group 8 (South Central Kansas/North Oklahoma)

The Group 8 stability analysis was not performed again for this restudy. The original analysis in DISIS-2014-002 is still valid.

Cluster Group 9 (Nebraska)

The Group 9 stability analysis was not performed again for this restudy. The original analysis in DISIS-2014-002 is still valid.

Cluster Group 10 (Southeast Oklahoma/Northeast Texas Area)

There were no customers requesting interconnection service in Southeast Oklahoma/Northeast Texas area.

Cluster Group 12 (Northwest Arkansas Area)

There were no customers requesting interconnection service in the Northwest Arkansas area.

Cluster Group 13 (Northwest Missouri Area)

The Group 13 stability analysis was not performed again for this restudy. The original analysis in DISIS-2014-002 is still valid.

Cluster Group 14 (South Central Oklahoma)

The Group 14 stability analysis was not performed again for this restudy. The original analysis in DISIS-2014-002 is still valid.

Conclusion

The minimum cost of interconnecting 2,261.8 MW of new interconnection requests included in this Definitive Interconnection System Impact Study is estimated at \$98,552,250 for the Allocated Network Upgrades and Transmission Owner Interconnection Facilities are listed in Appendix E and F. These costs do not include the cost of upgrades of other transmission facilities listed in Appendix H which are Network Constraints.

These interconnection costs do not include any cost of Network Upgrades determined to be required by the short circuit analysis. These studies will be performed if the Interconnection Customer executes the appropriate Interconnection Facilities Study Agreement and provides the required data along with demonstration of Site Control and the appropriate deposit. At the time of the Interconnection Facilities Study, a better determination of the interconnection facilities may be available.

The required interconnection costs listed in Appendices E, and F, and other upgrades associated with Network Constraints do not include all costs associated with the deliverability of the energy to final customers. These costs are determined by separate studies if the Customer submits a Transmission Service Request (TSR) through SPP's Open Access Same Time Information System (OASIS) as required by Attachment Z1 of the SPP Open Access Transmission Tariff (OATT).

Appendices

A: Generation Interconnection Requests Considered for Impact Study

See next page.

A: Generation Interconnection Requests Considered for Study

Request	Amount	Service	Area	Requested Point of Interconnection	Proposed Point of Interconnection	Requested In-Service Date	In Service Date Delayed Until no earlier than*
ASGI-2014-014	56.40	ER	GRDA	Ferguson 69kV	Ferguson 69kV		TBD
GEN-2013-010	99.00	ER	SUNCMKEC	Tap Spearville - Post Rock 345kV	Tap Spearville - Post Rock (North of GEN-2011-017 Tap) 345kV	12/31/2017	TBD
GEN-2013-027	150.00	ER	SPS	Tap Tolk - Yoakum 230kV	Tap Tolk - Yoakum 230kV	3/31/2016	TBD
GEN-2014-020	100.00	ER/NR	AEPW	Tuttle 138kV	Tuttle 138kV	12/31/2014	TBD
GEN-2014-021	300.00	ER/NR	KCPL	Tap Nebraska City - Mullens Creek 345kV	Tap Nebraska City - Mullin Creek 345kV	12/1/2016	TBD
GEN-2014-025	2.40	ER	MIDW	Tap Nekoma - Bazine (Walnut Creek) 69kV	Walnut Creek 69kV	10/15/2015	TBD
GEN-2014-028	35.00	ER	EMDE	Riverton 161kV	Riverton 161kV	1/1/2016	TBD
GEN-2014-031	35.80	ER/NR	NPPD	Meadow Grove 230kV	Meadow Grove 230kV	10/1/2015	TBD
GEN-2014-032	10.20	ER/NR	NPPD	Meadow Grove 230kV	Meadow Grove 230kV	10/1/2015	TBD
GEN-2014-033	70.00	ER	SPS	Chaves County 115kV	Chaves County 115kV	12/31/2016	TBD
GEN-2014-034	70.00	ER	SPS	Chaves County 115kV	Chaves County 115kV	12/31/2016	TBD
GEN-2014-035	30.00	ER	SPS	Chaves County 115kV	Chaves County 115kV	12/31/2016	TBD
GEN-2014-039	73.40	ER/NR	NPPD	Friend 115kV	Friend 115kV	12/1/2016	TBD
GEN-2014-040	320.40	ER	SPS	Castro 115kV	Castro 115kV	9/1/2016	TBD
GEN-2014-041	120.80	ER	SUNCMKEC	Arnold 115kV	Arnold 115kV	3/31/2016	TBD
GEN-2014-047	40.00	ER	SPS	Tap Tolk - Eddy County (Crossroads) 345kV	Crossroads 345kV	12/1/2016	TBD
GEN-2014-056	250.00	ER	OKGE	Minco 345kV	Minco 345kV	12/31/2016	TBD
GEN-2014-057	250.00	ER	AEPW	Tap Lawton - Sunnyside 345kV	Tap Lawton - Sunnyside (Terry Road) 345kV	12/31/2016	TBD
GEN-2014-064	248.40	ER	OKGE	Otter 138kV	Otter 138kV	12/1/2016	TBD
Total:						2,261.80	

*In-Service Date for each request is to be determined after the Interconnection Facility Study is completed.

B: Prior Queued Interconnection Requests

See next page.

B: Prior Queued Interconnection Requests

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
ASGI-2010-006	150.00	AECI	Remington 138kV	AECI queue Affected Study
ASGI-2010-010	42.20	SPS	Lovington 115kV	Lea County Affected Study
ASGI-2010-020	30.00	SPS	Tap LE-Tatum - LE-Crossroads 69kV	Lea County Affected Study
ASGI-2010-021	15.00	SPS	Tap LE-Saunders Tap - LE-Anderson 69kV	Lea County Affected Study
ASGI-2011-001	27.30	SPS	Lovington 115kV	On-Line
ASGI-2011-002	20.00	SPS	Herring 115kV	On-Line
ASGI-2011-003	10.00	SPS	Hendricks 69kV	On-Line
ASGI-2011-004	20.00	SPS	Pleasant Hill 69kV	Under Study (DISIS-2011-002)
ASGI-2012-002	18.15	SPS	FE-Clovis Interchange 115kV	Under Study (DISIS-2012-002)
ASGI-2012-006	22.50	SUNCMKEC	Tap Hugoton - Rolla 69kV	Under Study (DISIS-2012-001)
ASGI-2013-001	11.50	SPS	PanTex South 115kV	Under Study (DISIS-2013-001)
ASGI-2013-002	18.40	SPS	FE Tucumcari 115kV	Under Study (DISIS-2013-001)
ASGI-2013-003	18.40	SPS	FE Clovis 115kV	Under Study (DISIS-2013-001)
ASGI-2013-004	36.60	SUNCMKEC	Morris 115kV	Under Study (DISIS-2013-002)
ASGI-2013-005	1.65	SPS	FE Clovis 115kV	Under Study (DISIS-2013-002)
ASGI-2013-006	2.00	SPS	SP-Erskine 115kV	
ASGI-2014-001	2.50	SPS	SP-Erskine 115kV	Under Study (DISIS-2014-001)
GEN-2001-014	96.00	WFEC	Ft Supply 138kV	On-Line
GEN-2001-026	74.30	WFEC	Washita 138kV	On-Line
GEN-2001-033	180.00	SPS	San Juan Tap 230kV	On-Line at 120MW
GEN-2001-036	80.00	SPS	Norton 115kV	On-Line
GEN-2001-037	100.00	OKGE	FPL Moreland Tap 138kV	On-Line
GEN-2001-039A	105.00	SUNCMKEC	Shooting Star Tap 115kV	On-Line
GEN-2001-039M	100.00	SUNCMKEC	Central Plains Tap 115kV	On-Line
GEN-2002-004	200.00	WERE	Latham 345kV	On-Line at 150MW
GEN-2002-005	120.00	WFEC	Red Hills Tap 138kV	On-Line
GEN-2002-008	240.00	SPS	Hitchland 345kV	On-Line at 120MW
GEN-2002-009	80.00	SPS	Hansford 115kV	On-Line
GEN-2002-022	240.00	SPS	Bushland 230kV	On-Line
GEN-2002-023N	0.80	NPPD	Harmony 115kV	On-Line
GEN-2002-025A	150.00	SUNCMKEC	Spearville 230kV	On-Line
GEN-2003-004	100.00	WFEC	Washita 138kV	On-Line
GEN-2003-005	100.00	WFEC	Anadarko - Paradise (Blue Canyon) 138kV	On-Line
GEN-2003-006A	200.00	SUNCMKEC	Elm Creek 230kV	On-Line
GEN-2003-019	250.00	MIDW	Smoky Hills Tap 230kV	On-Line
GEN-2003-020	160.00	SPS	Martin 115kV	On-Line
GEN-2003-021N	75.00	NPPD	Ainsworth Wind Tap 115kV	On-Line
GEN-2003-022	120.00	AEPW	Weatherford 138kV	On-Line
GEN-2004-014	154.50	SUNCMKEC	Spearville 230kV	On-Line at 100MW
GEN-2004-020	27.00	AEPW	Weatherford 138kV	On-Line
GEN-2004-023	20.60	WFEC	Washita 138kV	On-Line
GEN-2004-023N	75.00	NPPD	Columbus Co 115kV	On-Line
GEN-2005-003	30.60	WFEC	Washita 138kV	On-Line
GEN-2005-008	120.00	OKGE	Woodward 138kV	On-Line
GEN-2005-012	250.00	SUNCMKEC	Ironwood 345kV	On-Line at 160MW
GEN-2005-013	201.00	WERE	Caney River 345kV	On-Line

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2006-002	101.00	AEPW	Sweetwater 230kV	On-Line
GEN-2006-018	170.00	SPS	TUCO Interchange 230kV	On-Line
GEN-2006-020N	42.00	NPPD	Bloomfield 115kV	On-Line
GEN-2006-020S	18.90	SPS	DWS Frisco 115kV	On-Line
GEN-2006-021	101.00	SUNCMKEC	Flat Ridge Tap 138kV	On-Line
GEN-2006-024S	19.80	WFEC	Buffalo Bear Tap 69kV	On-Line
GEN-2006-026	502.00	SPS	Hobbs 230kV & Hobbs 115kV	On-Line
GEN-2006-031	75.00	MIDW	Knoll 115kV	On-Line
GEN-2006-035	225.00	AEPW	Sweetwater 230kV	On-Line at 132MW
GEN-2006-037N1	75.00	NPPD	Broken Bow 115kV	On-Line
GEN-2006-038N005	80.00	NPPD	Broken Bow 115kV	On-Line
GEN-2006-038N019	80.00	NPPD	Petersburg North 115kV	On-Line
GEN-2006-043	99.00	AEPW	Sweetwater 230kV	On-Line
GEN-2006-044	370.00	SPS	Hitchland 345kV	On-Line at 120MW
GEN-2006-044N	40.50	NPPD	North Petersburg 115kV	On-Line
GEN-2006-046	131.00	OKGE	Dewey 138kV	On-Line
GEN-2007-011N08	81.00	NPPD	Bloomfield 115kV	On-Line
GEN-2007-021	201.00	OKGE	Tatonga 345kV	On-Line
GEN-2007-025	300.00	WERE	Viola 345kV	On-Line
GEN-2007-040	200.00	SUNCMKEC	Buckner 345kV	On-Line at 132MW
GEN-2007-043	200.00	OKGE	Minco 345kV	On-Line
GEN-2007-044	300.00	OKGE	Tatonga 345kV	On-Line at 199MW
GEN-2007-046	200.00	SPS	Hitchland 115kV	On Schedule for 2015
GEN-2007-050	170.00	OKGE	Woodward EHV 138kV	On-Line at 150MW
GEN-2007-052	150.00	WFEC	Anadarko 138kV	On-Line
GEN-2007-062	765.00	OKGE	Woodward EHV 345kV	On Schedule for 2016 and 2017
GEN-2008-003	101.00	OKGE	Woodward EHV 138kV	On-Line
GEN-2008-013	300.00	OKGE	Hunter 345kV	On-Line at 235MW
GEN-2008-018	250.00	SPS	Finney 345kV	On-Line
GEN-2008-021	42.00	WERE	Wolf Creek 345kV	On-Line
GEN-2008-022	300.00	SPS	Crossroads 345kV	On-Line
GEN-2008-023	150.00	AEPW	Hobart Junction 138kV	On-Line
GEN-2008-037	101.00	WFEC	Slick Hills 138kV	On-Line
GEN-2008-044	197.80	OKGE	Tatonga 345kV	On-Line
GEN-2008-047	300.00	OKGE	Beaver County 345kV	On-Line
GEN-2008-051	322.00	SPS	Potter County 345kV	On-Line at 161MW
GEN-2008-079	99.20	SUNCMKEC	Crooked Creek 115kV	On-Line
GEN-2008-086N02	201.00	NPPD	Meadow Grove 230kV	On-Line
GEN-2008-092	200.60	MIDW	Post Rock 230kV	On-Line
GEN-2008-098	100.80	WERE	Waverly 345kV	On-Line
GEN-2008-1190	60.00	OPPD	S1399 161kV	On-Line
GEN-2008-123N	89.70	NPPD	Tap Pauline - Hildreth (Rosemont) 115kV	On Schedule for 2016
GEN-2008-124	200.10	SUNCMKEC	Ironwood 345kV	On Schedule for 2016
GEN-2008-129	80.00	KCPL	Pleasant Hill 161kV	On-Line
GEN-2009-008	199.50	MIDW	South Hays 230kV	On-Line
GEN-2009-020	48.30	MIDW	Walnut Creek 69kV	On-Line
GEN-2009-025	59.80	OKGE	Nardins 69kV	On-Line
GEN-2009-040	73.80	WERE	Marshall 115kV	On Schedule for 2016
GEN-2010-001	300.00	OKGE	Beaver County 345kV	On-Line

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2010-003	100.80	WERE	Waverly 345kV	On-Line
GEN-2010-005	299.20	WERE	Viola 345kV	On-Line at 170MW
GEN-2010-006	205.00	SPS	Jones 230kV	On-Line
GEN-2010-009	165.60	SUNCMKEC	Buckner 345kV	On-Line
GEN-2010-011	29.70	OKGE	Tatonga 345kV	On-Line
GEN-2010-014	358.80	SPS	Hitchland 345kV	On Suspension
GEN-2010-036	4.60	WERE	6th Street 115kV	On-Line
GEN-2010-040	300.00	OKGE	Cimarron 345kV	On-Line
GEN-2010-041	10.50	OPPD	S1399 161kV	On Schedule for 2015
GEN-2010-045	197.80	SUNCMKEC	Buckner 345kV	On Schedule for 2017
GEN-2010-046	56.00	SPS	TUCO Interchange 230kV	On Schedule for 2016
GEN-2010-051	200.00	NPPD	Tap Hoskins - Twin Church (Dixon County) 230kV	On Suspension
GEN-2010-055	4.50	AEPW	Wekiwa 138kV	On-Line
GEN-2010-057	201.00	MIDW	Rice County 230kV	On-Line
GEN-2011-008	600.00	SUNCMKEC	Clark County 345kV	On Schedule for 2016
GEN-2011-010	100.80	OKGE	Minco 345kV	On-Line
GEN-2011-011	50.00	KCPL	Iatan 345kV	On-Line
GEN-2011-014	201.00	OKGE	Tap Hitchland - Woodward Dbl Ckt (GEN-2011-014 Tap) 345kV	On Schedule for 2016
GEN-2011-016	200.10	SUNCMKEC	Ironwood 345kV	On Schedule for 2017
GEN-2011-018	73.60	NPPD	Steele City 115kV	On-Line
GEN-2011-019	299.00	OKGE	Woodward 345kV	On Suspension
GEN-2011-020	299.00	OKGE	Woodward 345kV	On Suspension
GEN-2011-022	299.00	SPS	Hitchland 345kV	On Suspension
GEN-2011-025	80.00	SPS	Tap Floyd County - Crosby County 115kV	On Schedule for 2016
GEN-2011-027	120.00	NPPD	Tap Hoskins - Twin Church (Dixon County) 230kV	On Suspension
GEN-2011-037	7.00	WFEC	Blue Canyon 5 138kV	On-Line
GEN-2011-040	111.00	OKGE	Carter County 138kV	On-Line
GEN-2011-045	205.00	SPS	Jones 230kV	On-Line
GEN-2011-046	27.00	SPS	Lopez 115kV	On-Line
GEN-2011-048	175.00	SPS	Mustang 230kV	On-Line
GEN-2011-049	250.70	OKGE	Border 345kV	On Schedule for 2016
GEN-2011-050	109.80	AEPW	Santa Fe Tap 138kV	On Schedule for 2016
GEN-2011-051	104.40	OKGE	Tap Woodward - Tatonga 345kV (GEN-2011-051 Tap)	On Schedule for 2017
GEN-2011-054	300.00	OKGE	Cimarron 345kV	On-Line
GEN-2011-056	3.60	NPPD	Jeffrey 115kV	On-Line
GEN-2011-056A	3.60	NPPD	John 1 115kV	On-Line
GEN-2011-056B	4.50	NPPD	John 2 115kV	On-Line
GEN-2011-057	150.40	WERE	Creswell 138kV	On-Line
GEN-2012-001	61.20	SPS	Cirrus Tap 230kV	On-Line
GEN-2012-004	41.40	OKGE	Carter County 138kV	On-Line
GEN-2012-007	120.00	SUNCMKEC	Rubart 115kV	On-Line
GEN-2012-020	478.00	SPS	TUCO 230kV	On Schedule for 2016
GEN-2012-021	4.80	LES	Terry Bundy Generating Station 115kV	On-Line
GEN-2012-024	180.00	SUNCMKEC	Clark County 345kV	On Schedule for 2016
GEN-2012-027	136.00	AEPW	Shidler 138kV	On Suspension
GEN-2012-028	74.80	WFEC	Gotebo 69kV	On-Line
GEN-2012-032	300.00	OKGE	Open Sky 345kV	On-Line
GEN-2012-033	98.80	OKGE	Tap and Tie South 4th - Bunch Creek & Enid Tap - Fairmont (GEN-2012-033T) 138kV	On-Line

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2012-034	7.00	SPS	Mustang 230kV	On-Line
GEN-2012-035	7.00	SPS	Mustang 230kV	On-Line
GEN-2012-036	7.00	SPS	Mustang 230kV	On-Line
GEN-2012-037	203.00	SPS	TUCO 345kV	On-Line
GEN-2012-041	121.50	OKGE	Ranch Road 345kV	On-Line
GEN-2013-002	50.60	LES	Tap Sheldon - Folsom & Pleasant Hill (GEN-2013-002 Tap) 115kV CKT 2	On Schedule for 2016
GEN-2013-007	100.30	OKGE	Tap Prices Falls - Carter 138kV	On-Line
GEN-2013-008	1.20	NPPD	Steele City 115kV	On-Line
GEN-2013-011	30.00	AEPW	Turk 138kV	On-Line
GEN-2013-012	147.00	OKGE	Redbud 345kV	On-Line
GEN-2013-014	25.50	NPPD	Tap Pauline - Hildreth (Rosemont) 115kV	On Suspension
GEN-2013-016	203.00	SPS	TUCO 345kV	On Schedule for 2017
GEN-2013-019	73.60	LES	Tap Sheldon - Folsom & Pleasant Hill (GEN-2013-002 Tap) 115kV CKT 2	On Schedule for 2016
GEN-2013-022	25.00	SPS	Norton 115kV	On Schedule for 2016
GEN-2013-028	559.50	GRDA	Tap N Tulsa - GRDA 1 345kV	On Schedule for 2017
GEN-2013-029	300.00	OKGE	Renfrow 345kV	On Schedule for 2016 (150MW) and 2016 (150MW)
GEN-2013-030	300.00	OKGE	Beaver County 345kV	On Schedule for 2016 (200MW) and 2017 (100MW)
GEN-2013-032	204.00	NPPD	Antelope 115kV	On Schedule for 2017
GEN-2013-033	28.00	MIDW	Knoll 115kV	On Schedule for 2016
GEN-2014-001	200.60	WERE	Tap Wichita - Emporia Energy Center (GEN-2014-001 Tap) 345kV	On Suspension
GEN-2014-002	10.50	OKGE	Tatonga 345kV (GEN-2007-021 POI)	On Schedule for 2015
GEN-2014-003	15.80	OKGE	Tatonga 345kV (GEN-2007-044 POI)	On Schedule for 2015
GEN-2014-004	4.00	NPPD	Steele City 115kV (GEN-2011-018 POI)	On-Line
GEN-2014-005	5.70	OKGE	Minco 345kV (GEN-2011-010 POI)	On-Line
GEN-2014-012	225.00	SPS	Tap Hobbs Interchange - Andrews 230kV	On Schedule for 2018
GEN-2014-013	73.50	NPPD	Meadow Grove (GEN-2008-086N2 Sub) 230kV	On-Line
Gray County Wind (Montezuma)	110.00	SUNCMKEC	Gray County Tap 115kV	On-Line
Llano Estacado (White Deer)	80.00	SPS	Llano Wind 115kV	On-Line
NPPD Distributed (Broken Bow)	8.30	NPPD	Broken Bow 115kV	On-Line
NPPD Distributed (Buffalo County Solar)	10.00	NPPD	Kearney Northeast	On-Line
NPPD Distributed (Burt County Wind)	12.00	NPPD	Tekamah & Oakland 115kV	On-Line
NPPD Distributed (Burwell)	3.00	NPPD	Ord 115kV	On-Line
NPPD Distributed (Columbus Hydro)	45.00	NPPD	Columbus 115kV	On-Line
NPPD Distributed (North Platte - Lexington)	54.00	NPPD	Multiple: Jeffrey 115kV, John_1 115kV, John_2 115kV	On-Line
NPPD Distributed (Ord)	11.90	NPPD	Ord 115kV	On-Line
NPPD Distributed (Stuart)	2.10	NPPD	Ainsworth 115kV	On-Line
SPS Distributed (Dumas 19th St)	20.00	SPS	Dumas 19th Street 115kV	On-Line
SPS Distributed (Etter)	20.00	SPS	Etter 115kV	On-Line
SPS Distributed (Hopi)	10.00	SPS	Hopi 115kV	On-Line
SPS Distributed (Jal)	10.00	SPS	S Jal 115kV	On-Line
SPS Distributed (Lea Road)	10.00	SPS	Lea Road 115kV	On-Line
SPS Distributed (Monument)	10.00	SPS	Monument 115kV	On-Line
SPS Distributed (Moore E)	25.00	SPS	Moore East 115kV	On-Line
SPS Distributed (Ocotillo)	10.00	SPS	S_Jal 115kV	On-Line
SPS Distributed (Sherman)	20.00	SPS	Sherman 115kV	On-Line

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
SPS Distributed (Spearman)	10.00	SPS	Spearman 69kV	On-Line
SPS Distributed (TC-Texas County)	20.00	SPS	Texas County 115kV	On-Line
SPS Distributed (Yuma)	2.57	SPS	SP-Yuma 69kV	On-Line
Total:	23,405.0			

C: Study Groupings

See next page

C. Study Groups

GROUP 1: WOODWARD AREA			
Request	Capacity	Area	Proposed Point of Interconnection
GEN-2001-014	96.00	WFEC	Ft Supply 138kV
GEN-2001-037	100.00	OKGE	FPL Moreland Tap 138kV
GEN-2005-008	120.00	OKGE	Woodward 138kV
GEN-2006-024S	19.80	WFEC	Buffalo Bear Tap 69kV
GEN-2006-046	131.00	OKGE	Dewey 138kV
GEN-2007-021	201.00	OKGE	Tatonga 345kV
GEN-2007-043	200.00	OKGE	Minco 345kV
GEN-2007-044	300.00	OKGE	Tatonga 345kV
GEN-2007-050	170.00	OKGE	Woodward EHV 138kV
GEN-2007-062	765.00	OKGE	Woodward EHV 345kV
GEN-2008-003	101.00	OKGE	Woodward EHV 138kV
GEN-2008-044	197.80	OKGE	Tatonga 345kV
GEN-2010-011	29.70	OKGE	Tatonga 345kV
GEN-2010-040	300.00	OKGE	Cimarron 345kV
GEN-2011-010	100.80	OKGE	Minco 345kV
GEN-2011-019	299.00	OKGE	Woodward 345kV
GEN-2011-020	299.00	OKGE	Woodward 345kV
GEN-2011-051	104.40	OKGE	Tap Woodward - Tatonga 345kV (GEN-2011-051 Tap)
GEN-2011-054	300.00	OKGE	Cimarron 345kV
GEN-2014-002	10.50	OKGE	Tatonga 345kV (GEN-2007-021 POI)
GEN-2014-003	15.80	OKGE	Tatonga 345kV (GEN-2007-044 POI)
GEN-2014-005	5.70	OKGE	Minco 345kV (GEN-2011-010 POI)
PRIOR QUEUED SUBTOTAL	3,866.50		
GEN-2014-020	100.00	AEPW	Tuttle 138kV
GEN-2014-056	250.00	OKGE	Minco 345kV
CURRENT CLUSTER SUBTOTAL	350.00		
AREA TOTAL	4,216.50		

GROUP 2: HITCHLAND AREA			
Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2011-002	20.00	SPS	Herring 115kV
GEN-2002-008	240.00	SPS	Hitchland 345kV
GEN-2002-009	80.00	SPS	Hansford 115kV
GEN-2003-020	160.00	SPS	Martin 115kV
GEN-2006-020S	18.90	SPS	DWS Frisco 115kV
GEN-2006-044	370.00	SPS	Hitchland 345kV
GEN-2007-046	200.00	SPS	Hitchland 115kV
GEN-2008-047	300.00	OKGE	Beaver County 345kV
GEN-2010-001	300.00	OKGE	Beaver County 345kV
GEN-2010-014	358.80	SPS	Hitchland 345kV
GEN-2011-014	201.00	OKGE	Tap Hitchland - Woodward Dbl Ckt (GEN-2011-014 Tap) 345kV
GEN-2011-022	299.00	SPS	Hitchland 345kV
GEN-2013-030	300.00	OKGE	Beaver County 345kV
SPS Distributed (Dumas 19th St)	20.00	SPS	Dumas 19th Street 115kV
SPS Distributed (Etter)	20.00	SPS	Etter 115kV
SPS Distributed (Moore E)	25.00	SPS	Moore East 115kV
SPS Distributed (Sherman)	20.00	SPS	Sherman 115kV
SPS Distributed (Spearman)	10.00	SPS	Spearman 69kV
SPS Distributed (TC-Texas County)	20.00	SPS	Texas County 115kV
PRIOR QUEUED SUBTOTAL	2,962.70		
AREA TOTAL	2,962.70		

GROUP 3: SPEARVILLE AREA			
Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2012-006	22.50	SUNCMKEC	Tap Hugoton - Rolla 69kV
GEN-2001-039A	105.00	SUNCMKEC	Shooting Star Tap 115kV
GEN-2002-025A	150.00	SUNCMKEC	Spearville 230kV
GEN-2004-014	154.50	SUNCMKEC	Spearville 230kV
GEN-2005-012	250.00	SUNCMKEC	Ironwood 345kV
GEN-2006-021	101.00	SUNCMKEC	Flat Ridge Tap 138kV
GEN-2007-040	200.00	SUNCMKEC	Buckner 345kV
GEN-2008-018	250.00	SPS	Finney 345kV
GEN-2008-079	99.20	SUNCMKEC	Crooked Creek 115kV
GEN-2008-124	200.10	SUNCMKEC	Ironwood 345kV
GEN-2010-009	165.60	SUNCMKEC	Buckner 345kV
GEN-2010-045	197.80	SUNCMKEC	Buckner 345kV
GEN-2011-008	600.00	SUNCMKEC	Clark County 345kV
GEN-2011-016	200.10	SUNCMKEC	Ironwood 345kV
GEN-2012-007	120.00	SUNCMKEC	Rubart 115kV
GEN-2012-024	180.00	SUNCMKEC	Clark County 345kV
Gray County Wind (Montezuma)	110.00	SUNCMKEC	Gray County Tap 115kV
PRIOR QUEUED SUBTOTAL	3,105.80		
GEN-2013-010	99.00	SUNCMKEC	Tap Spearville - Post Rock (North of GEN-2011-017 Tap) 345kV
CURRENT CLUSTER SUBTOTAL	99.00		
AREA TOTAL	3,204.80		

GROUP 4: NORTHWEST KANSAS AREA			
Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2013-004	36.60	SUNCMKEC	Morris 115kV
GEN-2001-039M	100.00	SUNCMKEC	Central Plains Tap 115kV
GEN-2003-006A	200.00	SUNCMKEC	Elm Creek 230kV
GEN-2003-019	250.00	MIDW	Smoky Hills Tap 230kV
GEN-2006-031	75.00	MIDW	Knoll 115kV
GEN-2008-092	200.60	MIDW	Post Rock 230kV
GEN-2009-008	199.50	MIDW	South Hays 230kV
GEN-2009-020	48.30	MIDW	Walnut Creek 69kV
GEN-2010-057	201.00	MIDW	Rice County 230kV
GEN-2013-033	28.00	MIDW	Knoll 115kV
PRIOR QUEUED SUBTOTAL	1,339.00		
GEN-2014-025	2.40	MIDW	Walnut Creek 69kV
GEN-2014-041	120.80	SUNCMKEC	Arnold 115kV
CURRENT CLUSTER SUBTOTAL	123.20		
AREA TOTAL	1,462.20		

GROUP 5: AMARILLO AREA			
Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2013-001	11.50	SPS	PanTex South 115kV
GEN-2002-022	240.00	SPS	Bushland 230kV
GEN-2008-051	322.00	SPS	Potter County 345kV
Llano Estacado (White Deer)	80.00	SPS	Llano Wind 115kV
PRIOR QUEUED SUBTOTAL	653.50		
GEN-2014-040	320.40	SPS	Castro 115kV
CURRENT CLUSTER SUBTOTAL	320.40		
AREA TOTAL	973.90		

GROUP 6: SOUTH TEXAS PANHANDLE/NEW MEXICO AREA

Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2010-010	42.20	SPS	Lovington 115kV
ASGI-2010-020	30.00	SPS	Tap LE-Tatum - LE-Crossroads 69kV
ASGI-2010-021	15.00	SPS	Tap LE-Saunders Tap - LE-Anderson 69kV
ASGI-2011-001	27.30	SPS	Lovington 115kV
ASGI-2011-003	10.00	SPS	Hendricks 69kV
ASGI-2011-004	20.00	SPS	Pleasant Hill 69kV
ASGI-2012-002	18.15	SPS	FE-Clovis Interchange 115kV
ASGI-2013-002	18.40	SPS	FE Tucumcari 115kV
ASGI-2013-003	18.40	SPS	FE Clovis 115kV
ASGI-2013-005	1.65	SPS	FE Clovis 115kV
ASGI-2013-006	2.00	SPS	SP-Erskine 115kV
ASGI-2014-001	2.50	SPS	SP-Erskine 115kV
GEN-2001-033	180.00	SPS	San Juan Tap 230kV
GEN-2001-036	80.00	SPS	Norton 115kV
GEN-2006-018	170.00	SPS	TUCO Interchange 230kV
GEN-2006-026	502.00	SPS	Hobbs 230kV & Hobbs 115kV
GEN-2008-022	300.00	SPS	Crossroads 345kV
GEN-2010-006	205.00	SPS	Jones 230kV
GEN-2010-046	56.00	SPS	TUCO Interchange 230kV
GEN-2011-025	80.00	SPS	Tap Floyd County - Crosby County 115kV
GEN-2011-045	205.00	SPS	Jones 230kV
GEN-2011-046	27.00	SPS	Lopez 115kV
GEN-2011-048	175.00	SPS	Mustang 230kV
GEN-2012-001	61.20	SPS	Cirrus Tap 230kV
GEN-2012-020	478.00	SPS	TUCO 230kV
GEN-2012-034	7.00	SPS	Mustang 230kV
GEN-2012-035	7.00	SPS	Mustang 230kV
GEN-2012-036	7.00	SPS	Mustang 230kV
GEN-2012-037	203.00	SPS	TUCO 345kV
GEN-2013-016	203.00	SPS	TUCO 345kV
GEN-2013-022	25.00	SPS	Norton 115kV
GEN-2014-012	225.00	SPS	Tap Hobbs Interchange - Andrews 230kV
SPS Distributed (Hopi)	10.00	SPS	Hopi 115kV
SPS Distributed (Jal)	10.00	SPS	S Jal 115kV
SPS Distributed (Lea Road)	10.00	SPS	Lea Road 115kV
SPS Distributed (Monument)	10.00	SPS	Monument 115kV
SPS Distributed (Ocotillo)	10.00	SPS	S_Jal 115kV
SPS Distributed (Yuma)	2.57	SPS	SP-Yuma 69kV
PRIOR QUEUED SUBTOTAL	3,454.37		
GEN-2013-027	150.00	SPS	Tap Tolk - Yoakum 230kV
GEN-2014-033	70.00	SPS	Chaves County 115kV
GEN-2014-034	70.00	SPS	Chaves County 115kV
GEN-2014-035	30.00	SPS	Chaves County 115kV
GEN-2014-047	40.00	SPS	Crossroads 345kV
CURRENT CLUSTER SUBTOTAL	360.00		
AREA TOTAL	3,814.37		

GROUP 7: SOUTHWEST OKLAHOMA AREA			
Request	Capacity	Area	Proposed Point of Interconnection
GEN-2001-026	74.30	WFEC	Washita 138kV
GEN-2002-005	120.00	WFEC	Red Hills Tap 138kV
GEN-2003-004	100.00	WFEC	Washita 138kV
GEN-2003-005	100.00	WFEC	Anadarko - Paradise (Blue Canyon) 138kV
GEN-2003-022	120.00	AEPW	Weatherford 138kV
GEN-2004-020	27.00	AEPW	Weatherford 138kV
GEN-2004-023	20.60	WFEC	Washita 138kV
GEN-2005-003	30.60	WFEC	Washita 138kV
GEN-2006-002	101.00	AEPW	Sweetwater 230kV
GEN-2006-035	225.00	AEPW	Sweetwater 230kV
GEN-2006-043	99.00	AEPW	Sweetwater 230kV
GEN-2007-052	150.00	WFEC	Anadarko 138kV
GEN-2008-023	150.00	AEPW	Hobart Junction 138kV
GEN-2008-037	101.00	WFEC	Slick Hills 138kV
GEN-2011-037	7.00	WFEC	Blue Canyon 5 138kV
GEN-2011-049	250.70	OKGE	Border 345kV
GEN-2012-028	74.80	WFEC	Gotebo 69kV
PRIOR QUEUED SUBTOTAL	1,751.00		
AREA TOTAL	1,751.00		

GROUP 8: NORTH OKLAHOMA/SOUTH CENTRAL KANSAS AREA			
Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2010-006	150.00	AECI	Remington 138kV
GEN-2002-004	200.00	WERE	Latham 345kV
GEN-2005-013	201.00	WERE	Caney River 345kV
GEN-2007-025	300.00	WERE	Viola 345kV
GEN-2008-013	300.00	OKGE	Hunter 345kV
GEN-2008-021	42.00	WERE	Wolf Creek 345kV
GEN-2008-098	100.80	WERE	Waverly 345kV
GEN-2009-025	59.80	OKGE	Nardins 69kV
GEN-2010-003	100.80	WERE	Waverly 345kV
GEN-2010-005	299.20	WERE	Viola 345kV
GEN-2010-055	4.50	AEPW	Wekiwa 138kV
GEN-2011-057	150.40	WERE	Creswell 138kV
GEN-2012-027	136.00	AEPW	Shidler 138kV
GEN-2012-032	300.00	OKGE	Open Sky 345kV
GEN-2012-033	98.80	OKGE	Tap and Tie South 4th - Bunch Creek & Enid Tap - Fairmont (GEN-2012-033T) 138kV
GEN-2012-041	121.50	OKGE	Ranch Road 345kV
GEN-2013-012	147.00	OKGE	Redbud 345kV
GEN-2013-028	559.50	GRDA	Tap N Tulsa - GRDA 1 345kV
GEN-2013-029	300.00	OKGE	Renfrow 345kV
GEN-2014-001	200.60	WERE	Tap Wichita - Emporia Energy Center (GEN-2014-001 Tap) 345kV
PRIOR QUEUED SUBTOTAL	3,771.90		
ASGI-2014-014	56.40	GRDA	Ferguson 69kV
GEN-2014-028	35.00	EMDE	Riverton 161kV
GEN-2014-064	248.40	OKGE	Otter 138kV
CURRENT CLUSTER SUBTOTAL	339.80		
AREA TOTAL	4,111.70		

GROUP 9: NEBRASKA AREA			
Request	Capacity	Area	Proposed Point of Interconnection
GEN-2002-023N	0.80	NPPD	Harmony 115kV
GEN-2003-021N	75.00	NPPD	Ainsworth Wind Tap 115kV
GEN-2004-023N	75.00	NPPD	Columbus Co 115kV
GEN-2006-020N	42.00	NPPD	Bloomfield 115kV
GEN-2006-037N1	75.00	NPPD	Broken Bow 115kV
GEN-2006-038N005	80.00	NPPD	Broken Bow 115kV
GEN-2006-038N019	80.00	NPPD	Petersburg North 115kV
GEN-2006-044N	40.50	NPPD	North Petersburg 115kV
GEN-2007-011N08	81.00	NPPD	Bloomfield 115kV
GEN-2008-086N02	201.00	NPPD	Meadow Grove 230kV
GEN-2008-1190	60.00	OPPD	S1399 161kV
GEN-2008-123N	89.70	NPPD	Tap Pauline - Hildreth (Rosemont) 115kV
GEN-2009-040	73.80	WERE	Marshall 115kV
GEN-2010-041	10.50	OPPD	S1399 161kV
GEN-2010-051	200.00	NPPD	Tap Hoskins - Twin Church (Dixon County) 230kV
GEN-2011-018	73.60	NPPD	Steele City 115kV
GEN-2011-027	120.00	NPPD	Tap Hoskins - Twin Church (Dixon County) 230kV
GEN-2011-056	3.60	NPPD	Jeffrey 115kV
GEN-2011-056A	3.60	NPPD	John 1 115kV
GEN-2011-056B	4.50	NPPD	John 2 115kV
GEN-2012-021	4.80	LES	Terry Bundy Generating Station 115kV
GEN-2013-002	50.60	LES	Tap Sheldon - Folsom & Pleasant Hill (GEN-2013-002 Tap) 115kV CKT 2
GEN-2013-008	1.20	NPPD	Steele City 115kV
GEN-2013-014	25.50	NPPD	Tap Pauline - Hildreth (Rosemont) 115kV
GEN-2013-019	73.60	LES	Tap Sheldon - Folsom & Pleasant Hill (GEN-2013-002 Tap) 115kV CKT 2
GEN-2013-032	204.00	NPPD	Antelope 115kV
GEN-2014-004	4.00	NPPD	Steele City 115kV (GEN-2011-018 POI)
GEN-2014-013	73.50	NPPD	Meadow Grove (GEN-2008-086N2 Sub) 230kV
NPPD Distributed (Broken Bow)	8.30	NPPD	Broken Bow 115kV
NPPD Distributed (Buffalo County Solar)	10.00	NPPD	Kearney Northeast
NPPD Distributed (Burt County Wind)	12.00	NPPD	Tekamah & Oakland 115kV
NPPD Distributed (Burwell)	3.00	NPPD	Ord 115kV
NPPD Distributed (Columbus Hydro)	45.00	NPPD	Columbus 115kV
NPPD Distributed (North Platte - Lexington)	54.00	NPPD	Multiple: Jeffrey 115kV, John_1 115kV, John_2 115kV
NPPD Distributed (Ord)	11.90	NPPD	Ord 115kV
NPPD Distributed (Stuart)	2.10	NPPD	Ainsworth 115kV
PRIOR QUEUED SUBTOTAL	1,973.10		
GEN-2014-031	35.80	NPPD	Meadow Grove 230kV
GEN-2014-032	10.20	NPPD	Meadow Grove 230kV
GEN-2014-039	73.40	NPPD	Friend 115kV
CURRENT CLUSTER SUBTOTAL	119.40		
AREA TOTAL	2,092.50		

GROUP 10: SOUTHEAST OKLAHOMA/NORTHEAST TEXAS AREA

Request	Capacity	Area	Proposed Point of Interconnection
AREA TOTAL	0.00		

GROUP 12: NORTHWEST ARKANSAS AREA

Request	Capacity	Area	Proposed Point of Interconnection
GEN-2013-011	30.00	AEPW	Turk 138kV
PRIOR QUEUED SUBTOTAL	30.00		
AREA TOTAL	30.00		

GROUP 13: NORTHWEST MISSOURI AREA

Request	Capacity	Area	Proposed Point of Interconnection
GEN-2008-129	80.00	KCPL	Pleasant Hill 161kV
GEN-2010-036	4.60	WERE	6th Street 115kV
GEN-2011-011	50.00	KCPL	Iatan 345kV
PRIOR QUEUED SUBTOTAL	134.60		
GEN-2014-021	300.00	KCPL	Tap Nebraska City - Mullin Creek 345kV
CURRENT CLUSTER SUBTOTAL	300.00		
AREA TOTAL	434.60		

GROUP 14: SOUTH CENTRAL OKLAHOMA AREA

Request	Capacity	Area	Proposed Point of Interconnection
GEN-2011-040	111.00	OKGE	Carter County 138kV
GEN-2011-050	109.80	AEPW	Santa Fe Tap 138kV
GEN-2012-004	41.40	OKGE	Carter County 138kV
GEN-2013-007	100.30	OKGE	Tap Prices Falls - Carter 138kV
PRIOR QUEUED SUBTOTAL	362.50		
GEN-2014-057	250.00	AEPW	Tap Lawton - Sunnyside (Terry Road) 345kV
CURRENT CLUSTER SUBTOTAL	250.00		
AREA TOTAL	612.50		

CLUSTER TOTAL (CURRENT STUDY)	2,261.8	MW
PQ TOTAL (PRIOR QUEUED)	23,405.0	MW
CLUSTER TOTAL (INCLUDING PRIOR QUEUED)	25,666.8	MW

D: Proposed Point of Interconnection One Line Diagrams

See next page

*Please note for Affected System Generation Interconnection Requests (ASGI) interconnection cost estimate could include distribution system or third party system network upgrades and costs estimates.

GEN-2013-027
See Interconnection Facilities Study

GEN-2014-033
See Interconnection Facilities Study

GEN-2014-034
See Interconnection Facilities Study

GEN-2014-035
See Interconnection Facilities Study

GEN-2014-047
See Interconnection Facilities Study

E: Cost Allocation per Interconnection Request (Including Prior Queued Upgrades)

Important Note:

****WITHDRAWAL OF HIGHER QUEUED PROJECTS WILL CAUSE A RESTUDY
AND MAY RESULT IN HIGHER INTERCONNECTION COSTS****

This section shows each Generation Interconnection Request Customer, their current study impacted Network Upgrades, and the previously allocated upgrades upon which they rely to accommodate their interconnection to the transmission system.

The costs associated with the current study Network Upgrades are allocated to the Customers shown in this report.

In addition should a higher queued request, defined as one this study includes as a prior queued request, withdraw, the Network Upgrades assigned to the withdrawn request may be reallocated to the remaining requests that have an impact on the Network Upgrade under a restudy. Also, should an Interconnection Request choose to go into service prior to the operation date of any necessary Network Upgrades, the costs associated with those upgrades may be reallocated to the impacted Interconnection Request. The actual costs allocated to each Generation Interconnection Request Customer will be determined at the time of a restudy.

The required interconnection costs listed do not include all costs associated with the deliverability of the energy to final customers. These costs are determined by separate studies if the Customer submits a Transmission Service Request through SPP's Open Access Same Time Information System (OASIS) as required by Attachment Z1 of the SPP OATT. In addition, costs associated with a short circuit analysis will be allocated should the Interconnection Request Customer choose to execute a Facility Study Agreement.

There may be additional costs allocated to each Customer. See Appendix F for more details.

Appendix E. Cost Allocation Per Request

(Including Previously Allocated Network Upgrades*)

Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
ASGI-2014-014			
ASGI-2014-014 Interconnection Costs See One-Line Diagram.	Current Study	\$223,983	\$223,983
	Current Study Total	\$223,983	
GEN-2013-010			
GEN-2013-010 Interconnection Costs See One-Line Diagram.	Current Study	\$11,021,522	\$11,021,522
Bucker - Spearville 345V CKT 1 Replace Terminal equipment	Previously Allocated		\$1,480,238
	Current Study Total	\$11,021,522	
GEN-2013-027			
GEN-2013-027 Interconnection Costs See One-Line Diagram.	Current Study	\$6,004,592	\$6,004,592
Tolk - Plant X 230kV CKT 1 & 2 Rebuild circuit 1 and 2 between Tolk - Plant X 230kV to 1200 amps each.	Current Study	\$4,571,447	\$9,921,693
TUCO 345/230/13.2kV CKT 1 Replace existing TUCO 345/230/13.2kV Transformer circuit #1 with 644MVA.	Current Study	\$1,393,039	\$3,347,036
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT SPP-NTC-200324.	Previously Allocated		\$20,064,549
Potash Junction 230/115 kV Ckt 1 Per HPILs SPP-NTC-200282 (Total Project E&C Cost Shown)	Previously Allocated		\$3,508,346
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) per 2015 ITPNT SPP-NTC-200324.	Previously Allocated		\$18,349,020
	Current Study Total	\$11,969,077	
GEN-2014-020			
GEN-2014-020 Interconnection Costs See One-Line Diagram.	Current Study	\$7,684,803	\$7,684,803
	Current Study Total	\$7,684,803	

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
GEN-2014-021			
GEN-2014-021 Interconnection Costs See One-Line Diagram.	Current Study	\$18,384,455	\$18,384,455
Nashua 345/161/13.8KV Autotransformer CKT 1 Balanced Portfolio: Nashua/161/13.8 Autotransformer 345kV CKT 1 (Total Project E&C Cost Shown).	In-Service		\$4,230,000
Nebraska City - Sibley 345kV CKT 1 Priority Project: Nebraska City - Mullin Creek - Sibley 345kV circuit 1 per SPP-NTC-20097 and SPP-NTC-20098 (Total Project E&C Cost Shown).	Previously Allocated		\$336,433,874
	Current Study Total	\$18,384,455	
GEN-2014-025			
GEN-2014-025 Interconnection Costs See One-Line Diagram.	Current Study	\$184,473	\$184,473
Iatan - Nashua 345KV CKT 1 Balanced Portfolio: Iatan - Nashua 345kV CKT 1 (Total Project E&C Cost Shown).	In-Service		\$60,569,180
Nashua 345/161/13.8KV Autotransformer CKT 1 Balanced Portfolio: Nashua/161/13.8 Autotransformer 345kV CKT 1 (Total Project E&C Cost Shown).	In-Service		\$4,230,000
	Current Study Total	\$184,473	
GEN-2014-028			
GEN-2014-028 Interconnection Costs See One-Line Diagram.	Current Study	\$0	\$0
	Current Study Total	\$0	
GEN-2014-031			
GEN-2014-031 Interconnection Costs See One-Line Diagram.	Current Study	\$100,000	\$100,000
Battle Creek-County Line 115kV CKT 1 Rebuild approximately 11 miles of 115kV from Battle Creek to County Line.	Previously Allocated		\$4,000,000
County Line-Neligh East 115kV CKT 1 Rebuild approximately 12 miles of 115kV from County Line to Neligh East.	Previously Allocated		\$8,050,000
Hoskins - Dixon County - Twin Church 230kV Rerate per NPPD Facility Study	Previously Allocated		\$500,000
Hoskins - Neligh 345/115kV Projects Per SPP 2014 ITP NT and NTC 200253 for 6/1/2016 in-service.	Previously Allocated		\$98,697,720

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
Twin Church - Dixon County 230kV Increase conductor clearances to accommodate 320MVA facility rating	Previously Allocated		\$100,000
	Current Study Total	\$100,000	
GEN-2014-032			
GEN-2014-032 Interconnection Costs See One-Line Diagram.	Current Study	\$0	\$0
Battle Creek-County Line 115kV CKT 1 Rebuild approximately 11 miles of 115kV from Battle Creek to County Line.	Previously Allocated		\$4,000,000
County Line-Neligh East 115kV CKT 1 Rebuild approximately 12 miles of 115kV from County Line to Neligh East.	Previously Allocated		\$8,050,000
Hoskins - Dixon County - Twin Church 230kV Rerate per NPPD Facility Study	Previously Allocated		\$500,000
Hoskins - Neligh 345/115kV Projects Per SPP 2014 ITP NT and NTC 200253 for 6/1/2016 in-service.	Previously Allocated		\$98,697,720
Twin Church - Dixon County 230kV Increase conductor clearances to accommodate 320MVA facility rating	Previously Allocated		\$100,000
	Current Study Total	\$0	
GEN-2014-033			
GEN-2014-033 Interconnection Costs See One-Line Diagram.	Current Study	\$2,090,343	\$2,090,343
Tolk - Plant X 230kV CKT 1 & 2 Rebuild circuit 1 and 2 between Tolk - Plant X 230kV to 1200 amps each.	Current Study	\$1,708,374	\$9,921,693
TUCO 345/230/13.2kV CKT 1 Replace existing TUCO 345/230/13.2kV Transformer circuit #1 with 644MVA.	Current Study	\$651,816	\$3,347,036
Amoco Wasson - Oxy Tap 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$200,000
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT SPP-NTC-200324.	Previously Allocated		\$20,064,549
Potash Junction 230kV Reactive Power Support Build Potash Junction 100Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$6,465,875
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) per 2015 ITPNT SPP-NTC-200324.	Previously Allocated		\$18,349,020

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
	Current Study Total	\$4,450,533	
GEN-2014-034			
GEN-2014-034 Interconnection Costs See One-Line Diagram.	Current Study	\$1,257,430	\$1,257,430
Tolk - Plant X 230kV CKT 1 & 2 Rebuild circuit 1 and 2 between Tolk - Plant X 230kV to 1200 amps each.	Current Study	\$1,708,374	\$9,921,693
TUCO 345/230/13.2kV CKT 1 Replace existing TUCO 345/230/13.2kV Transformer circuit #1 with 644MVA.	Current Study	\$651,816	\$3,347,036
Amoco Wasson - Oxy Tap 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$200,000
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT SPP-NTC-200324.	Previously Allocated		\$20,064,549
Potash Junction 230kV Reactive Power Support Build Potash Junction 100Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$6,465,875
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) per 2015 ITPNT SPP-NTC-200324.	Previously Allocated		\$18,349,020
	Current Study Total		\$3,617,620
GEN-2014-035			
GEN-2014-035 Interconnection Costs See One-Line Diagram.	Current Study	\$0	\$0
Tolk - Plant X 230kV CKT 1 & 2 Rebuild circuit 1 and 2 between Tolk - Plant X 230kV to 1200 amps each.	Current Study	\$732,160	\$9,921,693
TUCO 345/230/13.2kV CKT 1 Replace existing TUCO 345/230/13.2kV Transformer circuit #1 with 644MVA.	Current Study	\$279,350	\$3,347,036
Amoco Wasson - Oxy Tap 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$200,000
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT SPP-NTC-200324.	Previously Allocated		\$20,064,549
Potash Junction 230kV Reactive Power Support Build Potash Junction 100Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$6,465,875
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) per 2015 ITPNT SPP-NTC-200324.	Previously Allocated		\$18,349,020

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
	Current Study Total	\$1,011,510	
GEN-2014-039			
GEN-2014-039 Interconnection Costs See One-Line Diagram.	Current Study	\$4,900,000	\$4,900,000
Battle Creek-County Line 115kV CKT 1 Rebuild approximately 11 miles of 115kV from Battle Creek to County Line.	Previously Allocated		\$4,000,000
County Line-Neligh East 115kV CKT 1 Rebuild approximately 12 miles of 115kV from County Line to Neligh East.	Previously Allocated		\$8,050,000
Hoskins - Neligh 345/115kV Projects Per SPP 2014 ITP NT and NTC 200253 for 6/1/2016 in-service.	Previously Allocated		\$98,697,720
Twin Church - Dixon County 230kV Increase conductor clearances to accommodate 320MVA facility rating	Previously Allocated		\$100,000
	Current Study Total	\$4,900,000	
GEN-2014-040			
GEN-2014-040 Interconnection Costs See One-Line Diagram.	Current Study	\$1,510,017	\$1,510,017
	Current Study Total	\$1,510,017	
GEN-2014-041			
Arnold - Ransom 115kV CKT 1 Replace terminal equipment and relay panels at Ransom Substation	Current Study	\$268,321	\$268,321
GEN-2014-041 Interconnection Costs See One-Line Diagram.	Current Study	\$5,111,551	\$5,111,551
Iatan - Nashua 345KV CKT 1 Balanced Portfolio: Iatan - Nashua 345kV CKT 1 (Total Project E&C Cost Shown).	In-Service		\$60,569,180
Nashua 345/161/13.8KV Autotransformer CKT 1 Balanced Portfolio: Nashua/161/13.8 Autotransformer 345kV CKT 1 (Total Project E&C Cost Shown).	In-Service		\$4,230,000
Ellsworth - Mullergren 115kV CKT 1 Per SPP 2012 NT and SPP-NTC-200173 for 6/1/2015 in-service(Total Project E&C Cost Shown).	Not Active		\$19,459,597
Bucker - Spearville 345V CKT 1 Replace Terminal equipment	Previously Allocated		\$1,480,238
	Current Study Total	\$5,379,872	

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
GEN-2014-047			
GEN-2014-047 Interconnection Costs See One-Line Diagram.	Current Study	\$3,164,380	\$3,164,380
Tolk - Plant X 230kV CKT 1 & 2 Rebuild circuit 1 and 2 between Tolk - Plant X 230kV to 1200 amps each.	Current Study	\$1,201,337	\$9,921,693
TUCO 345/230/13.2kV CKT 1 Replace existing TUCO 345/230/13.2kV Transformer circuit #1 with 644MVA.	Current Study	\$371,017	\$3,347,036
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT SPP-NTC-200324.	Previously Allocated		\$20,064,549
Potash Junction 230/115 kV Ckt 1 Per HPILs SPP-NTC-200282 (Total Project E&C Cost Shown)	Previously Allocated		\$3,508,346
Potash Junction 230kV Reactive Power Support Build Potash Junction 100Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$6,465,875
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) per 2015 ITPNT SPP-NTC-200324.	Previously Allocated		\$18,349,020
	Current Study Total	\$4,736,734	
GEN-2014-056			
GEN-2014-056 Interconnection Costs See One-Line Diagram.	Current Study	\$40,000	\$40,000
	Current Study Total	\$40,000	
GEN-2014-057			
GEN-2014-057 Interconnection Costs See One-Line Diagram.	Current Study	\$20,120,000	\$20,120,000
	Current Study Total	\$20,120,000	
GEN-2014-064			
GEN-2014-064 Interconnection Costs See One-Line Diagram.	Current Study	\$3,217,651	\$3,217,651
Fairfax 138/69kV CKT 1 Per AECL Affected System Study for DISIS-2012-002	Previously Allocated		\$2,200,000
Remington - Fairfax 138KV CKT 1 Increase conductor clearance	Previously Allocated		\$400,000
	Current Study Total	\$3,217,651	

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
TOTAL CURRENT STUDY COSTS:		\$98,552,250	

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

F: Cost Allocation per Proposed Study Network Upgrade

Important Note:

****WITHDRAWAL OF HIGHER QUEUED PROJECTS WILL CAUSE A RESTUDY
AND MAY RESULT IN HIGHER INTERCONNECTION COSTS****

This section shows each Direct Assigned Facility and Network Upgrade and the Generation Interconnection Request Customer(s) which have an impact in this study assuming all higher queued projects remain in the queue and achieve commercial operation.

The required interconnection costs listed do not include all costs associated with the deliverability of the energy to final customers. These costs are determined by separate studies if the Customer submits a Transmission Service Request through SPP's Open Access Same Time Information System (OASIS) as required by Attachment Z1 of the SPP OATT. In addition, costs associated with a short circuit analysis will be allocated should the Interconnection Request Customer choose to execute a Facility Study Agreement.

There may be additional costs allocated to each Customer. See Appendix E for more details.

Appendix F. Cost Allocation by Upgrade

Arnold - Ransom 115kV CKT 1		\$268,321
Replace terminal equipment and relay panels at Ransom Substation		
	GEN-2014-041	\$268,321
	Total Allocated Costs	\$268,321
ASGI-2014-014 Interconnection Costs		\$223,983
See One-Line Diagram.		
	ASGI-2014-014	\$223,983
	Total Allocated Costs	\$223,983
GEN-2013-010 Interconnection Costs		\$11,021,522
See One-Line Diagram.		
	GEN-2013-010	\$11,021,522
	Total Allocated Costs	\$11,021,522
GEN-2013-027 Interconnection Costs		\$6,004,592
See One-Line Diagram.		
	GEN-2013-027	\$6,004,592
	Total Allocated Costs	\$6,004,592
GEN-2014-020 Interconnection Costs		\$7,684,803
See One-Line Diagram.		
	GEN-2014-020	\$7,684,803
	Total Allocated Costs	\$7,684,803
GEN-2014-021 Interconnection Costs		\$18,384,455
See One-Line Diagram.		
	GEN-2014-021	\$18,384,455
	Total Allocated Costs	\$18,384,455
GEN-2014-025 Interconnection Costs		\$184,473
See One-Line Diagram.		
	GEN-2014-025	\$184,473
	Total Allocated Costs	\$184,473

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

GEN-2014-028 Interconnection Costs		\$0
See One-Line Diagram.		
	GEN-2014-028	\$0
	Total Allocated Costs	\$0
GEN-2014-031 Interconnection Costs		\$100,000
See One-Line Diagram.		
	GEN-2014-031	\$100,000
	Total Allocated Costs	\$100,000
GEN-2014-032 Interconnection Costs		\$0
See One-Line Diagram.		
	GEN-2014-032	\$0
	Total Allocated Costs	\$0
GEN-2014-033 Interconnection Costs		\$2,090,343
See One-Line Diagram.		
	GEN-2014-033	\$2,090,343
	Total Allocated Costs	\$2,090,343
GEN-2014-034 Interconnection Costs		\$1,257,430
See One-Line Diagram.		
	GEN-2014-034	\$1,257,430
	Total Allocated Costs	\$1,257,430
GEN-2014-035 Interconnection Costs		\$0
See One-Line Diagram.		
	GEN-2014-035	\$0
	Total Allocated Costs	\$0
GEN-2014-039 Interconnection Costs		\$4,900,000
See One-Line Diagram.		
	GEN-2014-039	\$4,900,000
	Total Allocated Costs	\$4,900,000
GEN-2014-040 Interconnection Costs		\$1,510,017
See One-Line Diagram.		
	GEN-2014-040	\$1,510,017
	Total Allocated Costs	\$1,510,017

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

GEN-2014-041 Interconnection Costs		\$5,111,551
See One-Line Diagram.		
	GEN-2014-041	\$5,111,551
	Total Allocated Costs	\$5,111,551
GEN-2014-047 Interconnection Costs		\$3,164,380
See One-Line Diagram.		
	GEN-2014-047	\$3,164,380
	Total Allocated Costs	\$3,164,380
GEN-2014-056 Interconnection Costs		\$40,000
See One-Line Diagram.		
	GEN-2014-056	\$40,000
	Total Allocated Costs	\$40,000
GEN-2014-057 Interconnection Costs		\$20,120,000
See One-Line Diagram.		
	GEN-2014-057	\$20,120,000
	Total Allocated Costs	\$20,120,000
GEN-2014-064 Interconnection Costs		\$3,217,651
See One-Line Diagram.		
	GEN-2014-064	\$3,217,651
	Total Allocated Costs	\$3,217,651
Tolk - Plant X 230kV CKT 1 & 2		\$9,921,693
Rebuild circuit 1 and 2 between Tolk - Plant X 230kV to 1200 amps each.		
	GEN-2013-027	\$4,571,447
	GEN-2014-033	\$1,708,374
	GEN-2014-034	\$1,708,374
	GEN-2014-035	\$732,160
	GEN-2014-047	\$1,201,337
	Total Allocated Costs	\$9,921,693

* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

TUCO 345/230/13.2kV CKT 1

\$3,347,036

Replace existing TUCO 345/230/13.2kV Transformer circuit #1 with 644MVA.

GEN-2013-027	\$1,393,039
GEN-2014-033	\$651,816
GEN-2014-034	\$651,816
GEN-2014-035	\$279,350
GEN-2014-047	\$371,017

Total Allocated Costs	\$3,347,036
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* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

G: Power Flow Analysis (Constraints Requiring Transmission Reinforcements Mitigations)

See next page.

H: Power Flow Analysis (Other Constraints Not Requiring Transmission Reinforcements Mitigations)

See Next page

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	0		0175P	ASGI_14_14_SP	FROM->TO	STILLWATER KINZIE 138/69KV TRANSFORMER CKT 1	72	72	0.03159	114.5393	2WILLIAMS 69.000 - STILLWTR2 69.000 69KV CKT 1
FDNS	0		2175P	ASGI_14_14_SP	FROM->TO	STILLWATER KINZIE 138/69KV TRANSFORMER CKT 1	72	72	0.03159	114.5378	2WILLIAMS 69.000 - STILLWTR2 69.000 69KV CKT 1
FDNS	06ALL		017G	G13_010	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.03906	100	DBL-THIS-WIC
FDNS	06ALL		017G	G13_010	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03906	140.3128	DBL-THIS-WIC
FDNS	06ALL		020L	G13_010	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03838	139.5459	DBL-THIS-WIC
FDNS	06ALL		020WP	G13_010	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.04297	135.3473	DBL-THIS-WIC
FDNS	06ALL		016WP	G13_010	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03939	126.9485	DBL-THIS-WIC
FDNS	0		020WP	G13_010	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.04308	125.1641	DBL-THIS-WIC
FDNS	0		016WP	G13_010	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.0395	120.463	DBL-THIS-WIC
FDNS	06ALL		0175P	G13_010	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.04264	108.5285	DBL-THIS-WIC
FDNS	06ALL		017G	G13_010	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138.6	143.4	0.03906	115.6939	DBL-THIS-WIC
FDNS	06ALL		016WP	G13_010	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03939	104.1963	DBL-THIS-WIC
FDNS	0		016WP	G13_010	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.0395	99.2	DBL-THIS-WIC
FDNS	0		0255P	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04332	95.3	GEN525562 1-TOLK GEN #2 24 KV
FDNS	06ALL		217G	G13_010	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.03906	100	DBL-THIS-WIC
FDNS	06ALL		217G	G13_010	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03906	140.3164	DBL-THIS-WIC
FDNS	06ALL		220L	G13_010	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03838	139.5513	DBL-THIS-WIC
FDNS	06ALL		220WP	G13_010	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.04297	135.3524	DBL-THIS-WIC
FDNS	06ALL		216WP	G13_010	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03939	126.9521	DBL-THIS-WIC
FDNS	0		220WP	G13_010	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.04308	125.1641	DBL-THIS-WIC
FDNS	0		216WP	G13_010	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.0395	120.4571	DBL-THIS-WIC
FDNS	06ALL		2175P	G13_010	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.04264	108.5141	DBL-THIS-WIC
FDNS	06ALL		217G	G13_010	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138.6	143.4	0.03906	115.6967	DBL-THIS-WIC
FDNS	06ALL		216WP	G13_010	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03939	104.1991	DBL-THIS-WIC
FDNS	0		216WP	G13_010	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.0395	99.2	DBL-THIS-WIC
FDNS	0		2255P	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04332	95.5	GEN525562 1-TOLK GEN #2 24 KV
FDNS	06ALL		020L	G13_027	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.1365	97.6414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		020L	G13_027	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.1365	97.6414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		017G	G13_027	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.033	100	DBL-THIS-WIC
FDNS	06ALL		017G	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.033	140.3128	DBL-THIS-WIC
FDNS	06ALL		020WP	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03344	135.3473	DBL-THIS-WIC
FDNS	06ALL		016WP	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03333	126.9485	DBL-THIS-WIC
FDNS	0		020WP	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03346	125.1641	DBL-THIS-WIC
FDNS	0		016WP	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03344	120.463	DBL-THIS-WIC
FDNS	06ALL		0175P	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03632	108.5285	DBL-THIS-WIC
FDNS	06ALL		020L	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03252	121.945	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		020L	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03252	106.1396	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		020L	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03252	104.7335	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL		020L	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03536	104.0551	DBL-THIS-WWR
FDNS	06ALL		020L	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03325	98.59768	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		020L	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03325	98.59768	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		020L	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.11135	106.8828	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		020L	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.11135	106.8828	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		020WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12949	100.673	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL		020WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12949	100.673	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL		020WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.10631	99.3	DBL-G1114-WW
FDNS	06ALL		020WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.10631	97.6	DBL-BVR-G111
FDNS	06ALL		020L	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11545	100.4316	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		020L	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11545	100.4316	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		017G	G13_027	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138.6	143.4	0.033	115.6939	DBL-THIS-WIC
FDNS	06ALL		016WP	G13_027	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03333	104.1963	DBL-THIS-WIC
FDNS	0		016WP	G13_027	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03344	99.2	DBL-THIS-WIC
FDNS	06ALL		0255P	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.07063	102.0313	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL		0255P	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.07063	102.0111	P12:230:SPS:K37.1.TOLK.LAMB
FDNS	06ALL		0255P	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.07063	102.0111	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		0255P	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.07063	102.0111	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		0255P	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.07063	98.3	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL		0255P	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.07063	98.3	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		0255P	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.07063	98.3	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		020L	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.07063	98.3	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		020L	G13_027	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.1365	97.24515	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		020L	G13_027	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.1365	97.24515	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		020L	G13_027	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.1365	104.6715	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		020L	G13_027	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.1365	104.6715	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		020L	G13_027	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.22648	96.4	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL		020L	G13_027	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.22648	96.4	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL		020L	G13_027	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.22648	96.3	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL	0	20L	G13_027	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.22648	96.3	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	2	20L	G13_027	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13637	97.61975	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G13_027	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13637	97.61975	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	17G	G13_027	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.033	100	DBL-THIS-WIC
FDNS	06ALL	2	17G	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.033	140.3164	DBL-THIS-WIC
FDNS	06ALL	2	20WP	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03344	135.3524	DBL-THIS-WIC
FDNS	06ALL	2	16WP	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03333	126.9521	DBL-THIS-WIC
FDNS	0	2	20WP	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03345	125.1641	DBL-THIS-WIC
FDNS	0	2	16WP	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03344	120.4571	DBL-THIS-WIC
FDNS	06ALL	2	17SP	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03632	108.5141	DBL-THIS-WIC
FDNS	06ALL	2	20L	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03251	121.9374	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	2	20L	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03251	106.141	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	2	20L	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03251	104.7348	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL	2	20L	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03535	104.0543	DBL-THIS-WWR
FDNS	06ALL	2	20L	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03328	98.60944	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03328	98.60944	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.11125	106.86	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.11125	106.86	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12937	100.6652	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	2	20WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12937	100.6652	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	2	20WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.10622	99.3	DBL-G1114-WW
FDNS	06ALL	2	20WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.10622	97.7	DBL-BVR-G111
FDNS	06ALL	2	20L	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11534	100.4069	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11534	100.4069	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	17G	G13_027	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138.6	143.4	0.033	115.6967	DBL-THIS-WIC
FDNS	06ALL	2	16WP	G13_027	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03333	104.1991	DBL-THIS-WIC
FDNS	0	2	16WP	G13_027	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03344	99.2	DBL-THIS-WIC
FDNS	06ALL	2	25SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06772	100.7443	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	2	25SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06772	100.7443	P12:230:SPS:K37.1.TOLK.LAMB
FDNS	06ALL	2	25SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06772	100.7442	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06772	100.7442	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06772	97.1	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	2	25SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06772	97.1	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06772	97.1	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06772	97.1	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	20L	G13_027	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13637	97.2183	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G13_027	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13637	97.2183	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G13_027	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13637	104.6425	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G13_027	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13637	104.6425	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	17SP	G13_027	FROM->TO	YOAKUM COUNTY INTERCHANGE (PENN C010585) 230/115/13.2KV TRANSFORMER CKT 2	150	150	0.02971	98.9	YOAKUM COUNTY INTERCHANGE (GE M100899) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	17SP	G13_027	FROM->TO	YOAKUM COUNTY INTERCHANGE (PENN C010585) 230/115/13.2KV TRANSFORMER CKT 2	150	150	0.02971	98.9	YOAKUM COUNTY INTERCHANGE (GE M100899) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0	2	17SP	G13_027	FROM->TO	YOAKUM COUNTY INTERCHANGE (PENN C010585) 230/115/13.2KV TRANSFORMER CKT 2	150	150	0.02969	98.6	YOAKUM COUNTY INTERCHANGE (GE M100899) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0	2	17SP	G13_027	FROM->TO	YOAKUM COUNTY INTERCHANGE (PENN C010585) 230/115/13.2KV TRANSFORMER CKT 2	150	150	0.02969	98.6	YOAKUM COUNTY INTERCHANGE (GE M100899) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	17SP	G13_027	FROM->TO	YOAKUM COUNTY INTERCHANGE (PENN C010585) 230/115/13.2KV TRANSFORMER CKT 2	150	150	0.02971	95.2	YOAKUM COUNTY INTERCHANGE (GE M100899) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	17SP	G13_027	FROM->TO	YOAKUM COUNTY INTERCHANGE (PENN C010585) 230/115/13.2KV TRANSFORMER CKT 2	150	150	0.02971	95.2	YOAKUM COUNTY INTERCHANGE (GE M100899) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.077	109.9582	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.077	107.5989	G14-057T 345.00 - LAWTON EASTSIDE 345KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.0771	105.9975	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	0	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.0779	105.4257	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07499	104.3144	CIMARRON - MINCO 345KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.0771	103.6821	G14-057T 345.00 - LAWTON EASTSIDE 345KV CKT 1
FDNS	06ALL	0	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.0779	103.1118	G14-057T 345.00 - LAWTON EASTSIDE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07352	101.9764	ANADARKO - GEORGIA 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07366	101.8158	P12:138:WFEC:MSL02
FDNS	0	0	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07801	101.2827	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07452	101.2784	COMANCHE - LOCO 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07352	101.2149	FLETCHER - GEORGIA 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07444	100.6604	ANADARKO - POCASSETT 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07444	100	POCASSETT - TUTTLE 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07499	99.2	GRACEMONT - MINCO 345KV CKT 1
FDNS	0	0	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07801	99	G14-057T 345.00 - LAWTON EASTSIDE 345KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07515	99	CIMARRON - MINCO 345KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07361	99	ANADARKO - GEORGIA 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07349	99	EMPIRE - FLETCHER 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07064	99	P12:138:OKGE:3TERM21
FDNS	0	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07376	98.8	P12:138:WFEC:MSL02
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07444	98.4	BRIDGECR 138.00 - TUTTLE 138KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07349	98.4	COMANCHE - EMPIRE 138KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07361	98.2	FLETCHER - GEORGIA 138KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07462	98.1	COMANCHE - LOCO 138KV CKT 1
FDNS	06ALL	0	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07406	98	ANADARKO - GEORGIA 138KV CKT 1
FDNS	06ALL	0	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07421	97.9	P12:138:WFEC:MSL02
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.0728	97.6	BASE CASE
FDNS	06ALL	0	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07656	97.4	CIMARRON - MINCO 345KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07454	97.4	ANADARKO - POCASSETT 138KV CKT 1
FDNS	06ALL	0	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07406	97.3	FLETCHER - GEORGIA 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07444	97.3	BRIDGEGR 138.00 - SUNSHINE CANYON 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07444	97.3	P12:138:WFEC:MSL01
FDNS	06ALL	0	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07509	97.2	COMANCHE - LOCO 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07139	97.1	LOCO - PINTO 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07123	97	FRANKLIN SW - MIDWEST TAP 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07292	96.9	FLETCHER - MARLOW JCT 69KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07454	96.8	POCASSETT - TUTTLE 138KV CKT 1
FDNS	06ALL	0	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07501	96.7	ANADARKO - POCASSETT 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07097	96.7	DRAPER LAKE - MIDWEST TAP 138KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07072	96.4	P12:138:OKGE:3TERM21
FDNS	06ALL	0	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07501	96.1	POCASSETT - TUTTLE 138KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07359	96	EMPIRE - FLETCHER 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07426	95.9	CIMARRON - DRAPER LAKE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07292	95.5	FARWELLJ2 69.000 - MARLOW JCT 69KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07359	95.4	COMANCHE - EMPIRE 138KV CKT 1
FDNS	06ALL	0	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07403	95.3	EMPIRE - FLETCHER 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07139	95.3	ARCO - PINTO 138KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07454	95.2	BRIDGEGR 138.00 - TUTTLE 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07157	95.2	CANEY CREEK - TEXOMA JCT 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.19318	95	TUTTLE - TUTTLE CONOCO TAP 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.077	106.9719	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.077	104.6152	G14-057T 345.00 - LAWTON EASTSIDE 345KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.0771	103.0135	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	0	16WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.0779	102.456	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07499	101.3338	CIMARRON - MINCO 345KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.0771	100.701	G14-057T 345.00 - LAWTON EASTSIDE 345KV CKT 1
FDNS	06ALL	0	16WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.0779	100.1452	G14-057T 345.00 - LAWTON EASTSIDE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07352	99	ANADARKO - GEORGIA 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07366	98.8	P12:138:WFEC:MSL02
FDNS	0	0	16WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07801	98.3	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07452	98.3	COMANCHE - LOCO 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07352	98.2	FLETCHER - GEORGIA 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07444	97.7	ANADARKO - POCASSETT 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07444	97.1	POCASSETT - TUTTLE 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07499	96.3	GRACEMONT - MINCO 345KV CKT 1
FDNS	0	0	16WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07801	96	G14-057T 345.00 - LAWTON EASTSIDE 345KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07515	96	CIMARRON - MINCO 345KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07361	96	ANADARKO - GEORGIA 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07349	96	EMPIRE - FLETCHER 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07064	96	P12:138:OKGE:3TERM21
FDNS	0	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07376	95.8	P12:138:WFEC:MSL02
FDNS	06ALL	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07444	95.5	BRIDGEGR 138.00 - TUTTLE 138KV CKT 1
FDNS	06ALL	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07349	95.4	COMANCHE - EMPIRE 138KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07361	95.2	FLETCHER - GEORGIA 138KV CKT 1
FDNS	0	0	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07462	95.1	COMANCHE - LOCO 138KV CKT 1
FDNS	06ALL	0	16WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07406	95	ANADARKO - GEORGIA 138KV CKT 1
FDNS	0	0	25SP	G14_020	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.02974	111.3683	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	0	0	25SP	G14_020	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.02974	111.3683	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	0	0	25SP	G14_020	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.02974	109.5196	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	0	0	25SP	G14_020	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.02974	109.5196	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.077	109.957	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.077	107.5948	G14-057T 345.00 - LAWTON EASTSIDE 345KV CKT 1
FDNS	0	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07711	105.9986	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	2	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07791	105.4226	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07499	104.3104	CIMARRON - MINCO 345KV CKT 1
FDNS	0	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07711	103.6831	G14-057T 345.00 - LAWTON EASTSIDE 345KV CKT 1
FDNS	06ALL	2	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07791	103.1085	G14-057T 345.00 - LAWTON EASTSIDE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07352	101.9741	ANADARKO - GEORGIA 138KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07366	101.8135	P12:138:WFEC:MSL02
FDNS	0	2	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07801	101.2891	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07452	101.2758	COMANCHE - LOCO 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07352	101.2125	FLETCHER - GEORGIA 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07444	100.6578	ANADARKO - POCASSETT 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07444	100	POCASSETT - TUTTLE 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07499	99.2	GRACEMONT - MINCO 345KV CKT 1
FDNS	0	2	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07801	99	G14-057T 345.00 - LAWTON EASTSIDE 345KV CKT 1
FDNS	0	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07515	99	CIMARRON - MINCO 345KV CKT 1
FDNS	0	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07361	99	ANADARKO - GEORGIA 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07349	99	EMPIRE - FLETCHER 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07064	99	P12:138:OKGE:3TERM21
FDNS	0	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07376	98.8	P12:138:WFEC:MSL02
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07444	98.4	BRIDGEGR 138.00 - TUTTLE 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07349	98.4	COMANCHE - EMPIRE 138KV CKT 1
FDNS	0	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07361	98.2	FLETCHER - GEORGIA 138KV CKT 1
FDNS	0	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07462	98.1	COMANCHE - LOCO 138KV CKT 1
FDNS	06ALL	2	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07406	98	ANADARKO - GEORGIA 138KV CKT 1
FDNS	06ALL	2	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07421	97.9	P12:138:WFEC:MSL02
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.0728	97.6	BASE CASE
FDNS	06ALL	2	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07656	97.4	CIMARRON - MINCO 345KV CKT 1
FDNS	0	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07454	97.4	ANADARKO - POCASSETT 138KV CKT 1
FDNS	06ALL	2	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07406	97.3	FLETCHER - GEORGIA 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07444	97.3	BRIDGEGR 138.00 - SUNSHINE CANYON 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07444	97.3	P12:138:WFEC:MSL01
FDNS	06ALL	2	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07509	97.2	COMANCHE - LOCO 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07139	97.1	LOCO - PINTO 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07123	97	FRANKLIN SW - MIDWEST TAP 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07292	96.9	FLETCHER - MARLOW JCT 69KV CKT 1
FDNS	0	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07454	96.8	POCASSETT - TUTTLE 138KV CKT 1
FDNS	06ALL	2	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07501	96.7	ANADARKO - POCASSETT 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07097	96.7	DRAPER LAKE - MIDWEST TAP 138KV CKT 1
FDNS	0	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07072	96.4	P12:138:OKGE:3TERM21
FDNS	06ALL	2	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07501	96.1	POCASSETT - TUTTLE 138KV CKT 1
FDNS	0	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07359	96	EMPIRE - FLETCHER 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07426	95.8	CIMARRON - DRAPER LAKE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07292	95.5	FARWELLJ2 69.000 - MARLOW JCT 69KV CKT 1
FDNS	0	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07359	95.4	COMANCHE - EMPIRE 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07139	95.3	ARCO - PINTO 138KV CKT 1
FDNS	06ALL	2	16WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07403	95.2	EMPIRE - FLETCHER 138KV CKT 1
FDNS	0	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07454	95.2	BRIDGEGR 138.00 - TUTTLE 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.07157	95.2	CANEY CREEK - TEXOMA JCT 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.19318	95	TUTTLE - TUTTLE CONOCO TAP 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.077	106.9706	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.077	104.6111	G14-057T 345.00 - LAWTON EASTSIDE 345KV CKT 1
FDNS	0	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07711	103.0146	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	2	16WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07791	102.4529	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07499	101.3299	CIMARRON - MINCO 345KV CKT 1
FDNS	0	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07711	100.702	G14-057T 345.00 - LAWTON EASTSIDE 345KV CKT 1
FDNS	06ALL	2	16WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07791	100.1419	G14-057T 345.00 - LAWTON EASTSIDE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07352	99	ANADARKO - GEORGIA 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07366	98.8	P12:138:WFEC:MSL02
FDNS	0	2	16WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07801	98.3	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07452	98.3	COMANCHE - LOCO 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07352	98.2	FLETCHER - GEORGIA 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07444	97.7	ANADARKO - POCASSETT 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07444	97.1	POCASSETT - TUTTLE 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07499	96.3	GRACEMONT - MINCO 345KV CKT 1
FDNS	0	2	16WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07801	96	G14-057T 345.00 - LAWTON EASTSIDE 345KV CKT 1
FDNS	0	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07515	96	CIMARRON - MINCO 345KV CKT 1
FDNS	0	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07361	96	ANADARKO - GEORGIA 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07349	96	EMPIRE - FLETCHER 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07064	96	P12:138:OKGE:3TERM21
FDNS	0	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07376	95.8	P12:138:WFEC:MSL02
FDNS	06ALL	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07444	95.5	BRIDGEGR 138.00 - TUTTLE 138KV CKT 1
FDNS	06ALL	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07349	95.4	COMANCHE - EMPIRE 138KV CKT 1
FDNS	0	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07361	95.2	FLETCHER - GEORGIA 138KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	0	2	20WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07462	95.1	COMANCHE - LOCO 138KV CKT 1
FDNS	06ALL	2	16WP	G14_020	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.07406	95	ANADARKO - GEORGIA 138KV CKT 1
FDNS	0	0	25SP	G14_021	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	259	0.03184	98	P12:161:KCPL:NORTHEAST-GRANDAVEW-NAVY
FDNS	0	0	25SP	G14_021	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	259	0.03232	97.4	GRAND AVENUE WEST - NORTHEAST 161KV CKT 1
FDNS	06ALL	0	25SP	G14_021	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	259	0.03185	96.2	P12:161:KCPL:NORTHEAST-GRANDAVEW-NAVY
FDNS	06ALL	0	25SP	G14_021	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	259	0.03233	95.6	GRAND AVENUE WEST - NORTHEAST 161KV CKT 1
FDNS	0	2	25SP	G14_021	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	259	0.03184	98	P12:161:KCPL:NORTHEAST-GRANDAVEW-NAVY
FDNS	0	2	25SP	G14_021	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	259	0.03232	97.4	GRAND AVENUE WEST - NORTHEAST 161KV CKT 1
FDNS	06ALL	2	25SP	G14_021	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	259	0.03185	96.2	P12:161:KCPL:NORTHEAST-GRANDAVEW-NAVY
FDNS	06ALL	2	25SP	G14_021	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	259	0.03233	95.6	GRAND AVENUE WEST - NORTHEAST 161KV CKT 1
FDNS	06ALL	0	17G	G14_025	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.03355	100	DBL-THIS-WIC
FDNS	06ALL	0	17G	G14_025	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03355	140.3128	DBL-THIS-WIC
FDNS	06ALL	0	20L	G14_025	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03242	139.5459	DBL-THIS-WIC
FDNS	06ALL	0	20WP	G14_025	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03701	135.3473	DBL-THIS-WIC
FDNS	06ALL	0	16WP	G14_025	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03388	126.9485	DBL-THIS-WIC
FDNS	0	0	20WP	G14_025	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03712	125.164	DBL-THIS-WIC
FDNS	0	0	16WP	G14_025	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03399	120.463	DBL-THIS-WIC
FDNS	06ALL	0	17SP	G14_025	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03674	108.5285	DBL-THIS-WIC
FDNS	06ALL	0	17G	G14_025	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138.6	143.4	0.03355	115.6939	DBL-THIS-WIC
FDNS	06ALL	0	16WP	G14_025	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03388	104.1963	DBL-THIS-WIC
FDNS	0	0	16WP	G14_025	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03399	99.2	DBL-THIS-WIC
FDNS	0	0	25SP	G14_025	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04412	95.3	GEN525562 1-TOLK GEN #2 24 KV
FDNS	06ALL	2	17G	G14_025	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.03355	100	DBL-THIS-WIC
FDNS	06ALL	2	17G	G14_025	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03355	140.3164	DBL-THIS-WIC
FDNS	06ALL	2	20L	G14_025	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03242	139.5513	DBL-THIS-WIC
FDNS	06ALL	2	20WP	G14_025	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03701	135.3524	DBL-THIS-WIC
FDNS	06ALL	2	16WP	G14_025	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03388	126.9521	DBL-THIS-WIC
FDNS	0	2	20WP	G14_025	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03712	125.1641	DBL-THIS-WIC
FDNS	0	2	16WP	G14_025	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03399	120.4571	DBL-THIS-WIC
FDNS	06ALL	2	17SP	G14_025	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03674	108.5141	DBL-THIS-WIC
FDNS	06ALL	2	17G	G14_025	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138.6	143.4	0.03355	115.6967	DBL-THIS-WIC
FDNS	06ALL	2	16WP	G14_025	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03388	104.1991	DBL-THIS-WIC
FDNS	0	2	16WP	G14_025	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03399	99.2	DBL-THIS-WIC
FDNS	0	2	25SP	G14_025	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04411	95.5	GEN525562 1-TOLK GEN #2 24 KV
FDNS	0	0	25SP	G14_031	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.02993	95.3	GEN525562 1-TOLK GEN #2 24 KV
FDNS	0	2	25SP	G14_031	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.02993	95.5	GEN525562 1-TOLK GEN #2 24 KV
FDNS	0	0	25SP	G14_032	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.02993	95.3	GEN525562 1-TOLK GEN #2 24 KV
FDNS	0	2	25SP	G14_032	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.02993	95.5	GEN525562 1-TOLK GEN #2 24 KV
FDNS	06ALL	0	20L	G14_033	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13473	97.6414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_033	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13473	97.6414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	17G	G14_033	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.03297	100	DBL-THIS-WIC
FDNS	06ALL	0	17G	G14_033	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03297	140.3128	DBL-THIS-WIC
FDNS	06ALL	0	20WP	G14_033	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03316	135.3473	DBL-THIS-WIC
FDNS	06ALL	0	16WP	G14_033	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03331	126.9485	DBL-THIS-WIC
FDNS	0	0	20WP	G14_033	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03327	125.164	DBL-THIS-WIC
FDNS	0	0	16WP	G14_033	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03341	120.463	DBL-THIS-WIC
FDNS	06ALL	0	17SP	G14_033	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03628	108.5285	DBL-THIS-WIC
FDNS	06ALL	0	25SP	G14_033	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.14254	99.8	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	25SP	G14_033	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.14254	99	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	16WP	G14_033	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	273.8	311	0.08826	98.8	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	16WP	G14_033	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	273.8	311	0.08826	98.3	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	17SP	G14_033	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.09112	95.8	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	20L	G14_033	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	121.945	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	0	20L	G14_033	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	106.1396	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	0	20L	G14_033	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	104.7335	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL	0	20L	G14_033	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03531	104.0551	DBL-THIS-WWR
FDNS	06ALL	0	20L	G14_033	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03357	98.59768	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_033	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03357	98.59768	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_033	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.10989	106.8828	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_033	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.10989	106.8828	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20WP	G14_033	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12803	100.673	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_033	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12803	100.673	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_033	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.10285	99.3	DBL-G1114-WW
FDNS	06ALL	0	20WP	G14_033	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.10285	97.6	DBL-BVR-G111
FDNS	06ALL	0	20L	G14_033	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11395	100.4316	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_033	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11395	100.4316	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	17G	G14_033	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138.6	143.4	0.03297	115.6939	DBL-THIS-WIC

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL	0	16WP	G14_033	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03331	104.1963	DBL-THIS-WIC
FDNS	0	0	16WP	G14_033	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03341	99.2	DBL-THIS-WIC
FDNS	0	0	17SP	G14_033	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04224	102.9301	BUCKEYE TAP - CUNNINGHAM STATION 115KV CKT 1
FDNS	06ALL	0	17SP	G14_033	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04228	100.6187	BUCKEYE TAP - CUNNINGHAM STATION 115KV CKT 1
FDNS	0	0	17SP	G14_033	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04224	95.5	BUCKEYE TAP - LE-TXACO_TP3115.00 115KV CKT 1
FDNS	06ALL	0	20L	G14_033	TO->FROM	PLANT X STATION - TOLK STATION EAST 230KV CKT 2	478.05	501.55	0.05629	105.4721	P12:345:SPS:J02.1.TOLK.EDDY
FDNS	06ALL	0	17G	G14_033	TO->FROM	PLANT X STATION - TOLK STATION EAST 230KV CKT 2	478.05	501.55	0.04005	103.375	P12:345:SPS:J02.1.TOLK.EDDY
FDNS	06ALL	0	25SP	G14_033	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	102.0313	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	0	25SP	G14_033	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	102.0111	P12:230:SPS:K37.1.TOLK.LAMB
FDNS	06ALL	0	25SP	G14_033	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	102.0111	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	25SP	G14_033	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	102.0111	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	25SP	G14_033	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	98.3	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	0	25SP	G14_033	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	98.3	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	25SP	G14_033	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	98.3	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	20L	G14_033	FROM->TO	STATION INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13473	97.24515	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_033	FROM->TO	STATION INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13473	97.24515	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_033	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13473	104.6715	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_033	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13473	104.6715	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_033	FROM->TO	TUCO INTERCHANGE (GE_M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.17005	96.4	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	0	20L	G14_033	FROM->TO	TUCO INTERCHANGE (GE_M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.17005	96.4	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	0	20L	G14_033	FROM->TO	TUCO INTERCHANGE (GE_M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.17005	96.3	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	0	20L	G14_033	FROM->TO	TUCO INTERCHANGE (GE_M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.17005	96.3	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	2	20L	G14_033	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13462	97.61975	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_033	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13462	97.61975	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	17G	G14_033	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.03298	100	DBL-THIS-WIC
FDNS	06ALL	2	17G	G14_033	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03298	140.3164	DBL-THIS-WIC
FDNS	06ALL	2	20WP	G14_033	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03315	135.3524	DBL-THIS-WIC
FDNS	06ALL	2	16WP	G14_033	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03332	126.9521	DBL-THIS-WIC
FDNS	0	2	20WP	G14_033	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03327	125.1641	DBL-THIS-WIC
FDNS	0	2	16WP	G14_033	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03342	120.4571	DBL-THIS-WIC
FDNS	06ALL	2	17SP	G14_033	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03629	108.5141	DBL-THIS-WIC
FDNS	06ALL	2	25SP	G14_033	FROM->TO	EDDY_NORTH 6230.00 (WAUK_WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.14371	100.0829	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	25SP	G14_033	FROM->TO	EDDY_NORTH 6230.00 (WAUK_WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.14371	99.3	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	16WP	G14_033	FROM->TO	EDDY_NORTH 6230.00 (WAUK_WT01134) 230/115/13.2KV TRANSFORMER CKT 2	273.8	311	0.08912	99.2	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	16WP	G14_033	FROM->TO	EDDY_NORTH 6230.00 (WAUK_WT01134) 230/115/13.2KV TRANSFORMER CKT 2	273.8	311	0.08912	98.7	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	17SP	G14_033	FROM->TO	EDDY_NORTH 6230.00 (WAUK_WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.09198	96.2	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	17SP	G14_033	FROM->TO	EDDY_NORTH 6230.00 (WAUK_WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.09198	95.4	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	20L	G14_033	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	121.9374	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	2	20L	G14_033	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	106.141	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	2	20L	G14_033	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	104.7348	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL	2	20L	G14_033	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0353	104.0543	DBL-THIS-WWR
FDNS	06ALL	2	20L	G14_033	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03359	98.60944	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_033	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03359	98.60944	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_033	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.1098	106.86	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_033	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.1098	106.86	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20WP	G14_033	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12793	100.6652	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_033	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12793	100.6652	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_033	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.1028	99.3	DBL-G1114-WW
FDNS	06ALL	2	20WP	G14_033	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.1028	97.7	DBL-BVR-G111
FDNS	06ALL	2	20L	G14_033	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11386	100.4069	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_033	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11386	100.4069	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	17G	G14_033	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138.6	143.4	0.03298	115.6967	DBL-THIS-WIC
FDNS	06ALL	2	16WP	G14_033	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03332	104.1991	DBL-THIS-WIC
FDNS	0	2	16WP	G14_033	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03342	99.2	DBL-THIS-WIC
FDNS	0	2	17SP	G14_033	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04242	102.9594	BUCKEYE TAP - CUNNINGHAM STATION 115KV CKT 1
FDNS	06ALL	2	17SP	G14_033	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04246	100.735	BUCKEYE TAP - CUNNINGHAM STATION 115KV CKT 1
FDNS	0	2	17SP	G14_033	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04242	95.5	BUCKEYE TAP - LE-TXACO_TP3115.00 115KV CKT 1
FDNS	06ALL	2	25SP	G14_033	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	100.7643	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	2	25SP	G14_033	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	100.7443	P12:230:SPS:K37.1.TOLK.LAMB
FDNS	06ALL	2	25SP	G14_033	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	100.7442	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G14_033	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	100.7442	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G14_033	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	97.1	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	2	25SP	G14_033	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	97.1	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G14_033	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	97.1	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G14_033	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	97.1	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	20L	G14_033	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13462	97.2183	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL	2	20L	G14_033	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13462	97.2183	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_033	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13462	104.6425	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_033	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13462	104.6425	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_034	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13473	97.6414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_034	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13473	97.6414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	17G	G14_034	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.03297	100	DBL-THIS-WIC
FDNS	06ALL	0	17G	G14_034	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03297	140.3128	DBL-THIS-WIC
FDNS	06ALL	0	20WP	G14_034	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03316	135.3473	DBL-THIS-WIC
FDNS	06ALL	0	16WP	G14_034	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03331	126.9485	DBL-THIS-WIC
FDNS	0	0	20WP	G14_034	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03327	125.164	DBL-THIS-WIC
FDNS	0	0	16WP	G14_034	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03341	120.463	DBL-THIS-WIC
FDNS	06ALL	0	17SP	G14_034	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03628	108.5285	DBL-THIS-WIC
FDNS	06ALL	0	25SP	G14_034	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.14254	99.8	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	25SP	G14_034	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.14254	99	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	16WP	G14_034	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	273.8	311	0.08826	98.8	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	16WP	G14_034	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	273.8	311	0.08826	98.3	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	17SP	G14_034	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.09112	95.8	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	20L	G14_034	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	121.945	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	0	20L	G14_034	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	106.1396	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	0	20L	G14_034	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	104.7335	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL	0	20L	G14_034	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03531	104.0551	DBL-THIS-WWR
FDNS	06ALL	0	20L	G14_034	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03357	98.59768	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_034	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03357	98.59768	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_034	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.10989	106.8828	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_034	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.10989	106.8828	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20WP	G14_034	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12803	100.673	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_034	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12803	100.673	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_034	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.10285	99.3	DBL-G1114-WW
FDNS	06ALL	0	20WP	G14_034	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.10285	97.6	DBL-BVR-G111
FDNS	06ALL	0	20L	G14_034	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11395	100.4316	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_034	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11395	100.4316	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	17G	G14_034	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138.6	143.4	0.03297	115.6939	DBL-THIS-WIC
FDNS	06ALL	0	16WP	G14_034	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03331	104.1963	DBL-THIS-WIC
FDNS	0	0	16WP	G14_034	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03341	99.2	DBL-THIS-WIC
FDNS	0	0	17SP	G14_034	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04224	102.9301	BUCKEYE TAP - CUNNINGHAM STATION 115KV CKT 1
FDNS	06ALL	0	17SP	G14_034	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04228	100.6187	BUCKEYE TAP - CUNNINGHAM STATION 115KV CKT 1
FDNS	0	0	17SP	G14_034	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04224	95.5	BUCKEYE TAP - LE-TXACO_TP3115.00 115KV CKT 1
FDNS	06ALL	0	20L	G14_034	TO->FROM	PLANT X STATION - TOLK STATION EAST 230KV CKT 2	478.05	501.55	0.05629	105.4721	P12:345:SPS:J02.1.TOLK.EDDY
FDNS	06ALL	0	17G	G14_034	TO->FROM	PLANT X STATION - TOLK STATION EAST 230KV CKT 2	478.05	501.55	0.04005	103.375	P12:345:SPS:J02.1.TOLK.EDDY
FDNS	06ALL	0	25SP	G14_034	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	102.0313	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	0	25SP	G14_034	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	102.0111	P12:230:SPS:K37.1.TOLK.LAMB
FDNS	06ALL	0	25SP	G14_034	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	102.0111	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	25SP	G14_034	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	102.0111	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	25SP	G14_034	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	98.3	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	0	25SP	G14_034	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	98.3	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	25SP	G14_034	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	98.3	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	20L	G14_034	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13473	97.24515	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_034	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13473	97.24515	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_034	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13473	104.6715	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_034	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13473	104.6715	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_034	FROM->TO	TUCO INTERCHANGE (GE_M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.17005	96.4	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	0	20L	G14_034	FROM->TO	TUCO INTERCHANGE (GE_M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.17005	96.4	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	0	20L	G14_034	FROM->TO	TUCO INTERCHANGE (GE_M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.17005	96.3	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	0	20L	G14_034	FROM->TO	TUCO INTERCHANGE (GE_M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.17005	96.3	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	2	20L	G14_034	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13462	97.61975	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_034	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13462	97.61975	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	17G	G14_034	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.03298	100	DBL-THIS-WIC
FDNS	06ALL	2	17G	G14_034	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03298	140.3164	DBL-THIS-WIC
FDNS	06ALL	2	20WP	G14_034	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03315	135.3524	DBL-THIS-WIC
FDNS	06ALL	2	16WP	G14_034	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03332	126.9521	DBL-THIS-WIC
FDNS	0	2	20WP	G14_034	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03327	125.1641	DBL-THIS-WIC
FDNS	0	2	16WP	G14_034	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03342	120.4571	DBL-THIS-WIC
FDNS	06ALL	2	17SP	G14_034	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03629	108.5141	DBL-THIS-WIC
FDNS	06ALL	2	25SP	G14_034	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.14371	100.0829	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	25SP	G14_034	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.14371	99.3	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	16WP	G14_034	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	273.8	311	0.08912	99.2	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL	2	16WP	G14_034	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	273.8	311	0.08912	98.7	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	17SP	G14_034	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.09198	96.2	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	17SP	G14_034	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.09198	95.4	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	20L	G14_034	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	121.9374	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	2	20L	G14_034	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	106.141	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	2	20L	G14_034	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	104.7348	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL	2	20L	G14_034	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0353	104.0543	DBL-THIS-WWR
FDNS	06ALL	2	20L	G14_034	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03359	98.60944	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_034	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03359	98.60944	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_034	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.1098	106.86	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_034	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.1098	106.86	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20WP	G14_034	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12793	100.6652	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_034	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12793	100.6652	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_034	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.1028	99.3	DBL-G1114-WW
FDNS	06ALL	2	20WP	G14_034	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.1028	97.7	DBL-BVR-G111
FDNS	06ALL	2	20L	G14_034	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11386	100.4069	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_034	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11386	100.4069	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	17G	G14_034	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138.6	143.4	0.03298	115.6967	DBL-THIS-WIC
FDNS	06ALL	2	16WP	G14_034	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03332	104.1991	DBL-THIS-WIC
FDNS	0	2	16WP	G14_034	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03342	99.2	DBL-THIS-WIC
FDNS	0	2	17SP	G14_034	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04242	102.9594	BUCKEYE TAP - CUNNINGHAM STATION 115KV CKT 1
FDNS	06ALL	2	17SP	G14_034	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04246	100.735	BUCKEYE TAP - CUNNINGHAM STATION 115KV CKT 1
FDNS	0	2	17SP	G14_034	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04242	95.5	BUCKEYE TAP - LE-TXACO_TP3115.00 115KV CKT 1
FDNS	06ALL	2	25SP	G14_034	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	100.7643	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	2	25SP	G14_034	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	100.7443	P12:230:SPS:K37.1.TOLK.LAMB
FDNS	06ALL	2	25SP	G14_034	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	100.7442	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G14_034	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	100.7442	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G14_034	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	97.1	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	2	25SP	G14_034	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	97.1	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G14_034	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	97.1	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G14_034	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	97.1	P12:230:SPS:K37.1.TOLK.LAMB
FDNS	06ALL	2	20L	G14_034	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13462	97.2183	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_034	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13462	97.2183	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_034	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13462	104.6425	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_034	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13462	104.6425	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_035	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13473	97.6414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_035	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13473	97.6414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	17G	G14_035	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.03297	100	DBL-THIS-WIC
FDNS	06ALL	0	17G	G14_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03297	140.3128	DBL-THIS-WIC
FDNS	06ALL	0	20WP	G14_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03316	135.3473	DBL-THIS-WIC
FDNS	06ALL	0	16WP	G14_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03331	126.9485	DBL-THIS-WIC
FDNS	0	0	20WP	G14_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03327	125.164	DBL-THIS-WIC
FDNS	0	0	16WP	G14_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03341	120.463	DBL-THIS-WIC
FDNS	06ALL	0	17SP	G14_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03628	108.5285	DBL-THIS-WIC
FDNS	06ALL	0	25SP	G14_035	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.14254	99.8	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	25SP	G14_035	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.14254	99	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	16WP	G14_035	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	273.8	311	0.08826	98.8	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	16WP	G14_035	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	273.8	311	0.08826	98.3	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	17SP	G14_035	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.09112	95.8	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	20L	G14_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	121.945	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	0	20L	G14_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	106.1396	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	0	20L	G14_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	104.7335	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL	0	20L	G14_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03531	104.0551	DBL-THIS-WWR
FDNS	06ALL	0	20L	G14_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03357	98.59768	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03357	98.59768	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.10989	106.8828	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.10989	106.8828	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20WP	G14_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12803	100.673	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12803	100.673	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.10285	99.3	DBL-G1114-WW
FDNS	06ALL	0	20WP	G14_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.10285	97.6	DBL-BVR-G111
FDNS	06ALL	0	20L	G14_035	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11395	100.4316	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_035	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11395	100.4316	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	17G	G14_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138.6	143.4	0.03297	115.6939	DBL-THIS-WIC
FDNS	06ALL	0	16WP	G14_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03331	104.1963	DBL-THIS-WIC
FDNS	0	0	16WP	G14_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03341	99.2	DBL-THIS-WIC
FDNS	0	0	17SP	G14_035	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04224	102.9301	BUCKEYE TAP - CUNNINGHAM STATION 115KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL	0	17SP	G14_035	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04228	100.6187	BUCKEYE TAP - CUNNINGHAM STATION 115KV CKT 1
FDNS	0	0	17SP	G14_035	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04224	95.5	BUCKEYE TAP - LE-TXACO_TP3115.00 115KV CKT 1
FDNS	06ALL	0	20L	G14_035	TO->FROM	PLANT X STATION - TOLK STATION EAST 230KV CKT 2	478.05	501.55	0.05629	105.4721	P12-345:SPS:J02.1.TOLK.EDDY
FDNS	06ALL	0	25SP	G14_035	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	102.0313	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	0	25SP	G14_035	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	102.0111	P12:230:SPS:K37.1.TOLK.LAMB
FDNS	06ALL	0	25SP	G14_035	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	102.0111	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	25SP	G14_035	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	102.0111	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	25SP	G14_035	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	98.3	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	0	25SP	G14_035	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	98.3	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	25SP	G14_035	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	98.3	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	25SP	G14_035	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.03972	98.3	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	20L	G14_035	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13473	97.24515	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_035	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13473	97.24515	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_035	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13473	104.6715	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_035	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13473	104.6715	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_035	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.17005	96.4	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	0	20L	G14_035	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.17005	96.4	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	0	20L	G14_035	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.17005	96.3	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	0	20L	G14_035	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.17005	96.3	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	2	17G	G14_035	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13462	97.61975	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	17G	G14_035	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13462	97.61975	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	17G	G14_035	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.03298	100	DBL-THIS-WIC
FDNS	06ALL	2	17G	G14_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03298	140.3164	DBL-THIS-WIC
FDNS	06ALL	2	20WP	G14_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03315	135.3524	DBL-THIS-WIC
FDNS	06ALL	2	16WP	G14_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03332	126.9521	DBL-THIS-WIC
FDNS	0	2	20WP	G14_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03327	125.1641	DBL-THIS-WIC
FDNS	0	2	16WP	G14_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03342	120.4571	DBL-THIS-WIC
FDNS	06ALL	2	17SP	G14_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03629	108.5141	DBL-THIS-WIC
FDNS	06ALL	2	25SP	G14_035	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.14371	100.0829	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	25SP	G14_035	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.14371	99.3	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	16WP	G14_035	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	273.8	311	0.08912	99.2	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	16WP	G14_035	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	273.8	311	0.08912	98.7	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	17SP	G14_035	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.09198	96.2	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	17SP	G14_035	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.09198	95.4	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	20L	G14_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	121.9374	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	2	20L	G14_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	106.141	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	2	20L	G14_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03236	104.7348	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL	2	20L	G14_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0353	104.0543	DBL-THIS-WWR
FDNS	06ALL	2	20L	G14_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03359	98.60944	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03359	98.60944	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.1098	106.86	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.1098	106.86	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20WP	G14_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12793	100.6652	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12793	100.6652	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.1028	99.3	DBL-G1114-WW
FDNS	06ALL	2	20WP	G14_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.1028	97.7	DBL-BVR-G111
FDNS	06ALL	2	20L	G14_035	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11386	100.4069	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_035	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11386	100.4069	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	17G	G14_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138.6	143.4	0.03298	115.6967	DBL-THIS-WIC
FDNS	06ALL	2	16WP	G14_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03332	104.1991	DBL-THIS-WIC
FDNS	0	2	16WP	G14_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03342	99.2	DBL-THIS-WIC
FDNS	0	2	17SP	G14_035	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04242	102.9594	BUCKEYE TAP - CUNNINGHAM STATION 115KV CKT 1
FDNS	06ALL	2	17SP	G14_035	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04246	100.735	BUCKEYE TAP - CUNNINGHAM STATION 115KV CKT 1
FDNS	0	2	17SP	G14_035	FROM->TO	LE-WEST_SUB3115.00 - LEA COUNTY REC-LOVINGTON INTERCHANGE 115KV CKT 1	143.4	179.3	0.04242	95.5	BUCKEYE TAP - LE-TXACO_TP3115.00 115KV CKT 1
FDNS	06ALL	2	25SP	G14_035	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	100.7643	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	2	25SP	G14_035	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	100.7443	P12:230:SPS:K37.1.TOLK.LAMB
FDNS	06ALL	2	25SP	G14_035	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	100.7442	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G14_035	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	100.7442	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G14_035	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	97.1	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	2	25SP	G14_035	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	97.1	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G14_035	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	97.1	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G14_035	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	97.1	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G14_035	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.0376	97.1	P12:230:SPS:K37.1.TOLK.LAMB
FDNS	06ALL	2	20L	G14_035	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13462	97.2183	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_035	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13462	97.2183	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_035	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13462	104.6425	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_035	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13462	104.6425	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	0	0	25SP	G14_039	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03097	95.3	GEN525562-1-TOLK GEN #2 24 KV

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	0	255P	G14_039	FROM->TO	POTTER COUNTY INTERCHANGE (WALK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03097	95.5	GEN525562 1-TOLK GEN #2 24 KV	
FDNS	06ALL	020L	G14_040	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.14597	97.6414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	020L	G14_040	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.14597	97.6414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	017G	G14_040	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.03381	100	DBL-THIS-WIC	
FDNS	06ALL	017G	G14_040	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03381	140.3128	DBL-THIS-WIC	
FDNS	06ALL	020L	G14_040	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.02971	139.5459	DBL-THIS-WIC	
FDNS	06ALL	020WP	G14_040	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.0343	135.3473	DBL-THIS-WIC	
FDNS	06ALL	016WP	G14_040	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03415	126.9485	DBL-THIS-WIC	
FDNS	0	020WP	G14_040	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03441	125.164	DBL-THIS-WIC	
FDNS	0	016WP	G14_040	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03426	120.463	DBL-THIS-WIC	
FDNS	06ALL	017SP	G14_040	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03722	108.5285	DBL-THIS-WIC	
FDNS	06ALL	020L	G14_040	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03328	121.945	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1	
FDNS	06ALL	020L	G14_040	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03328	106.1396	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1	
FDNS	06ALL	020L	G14_040	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03328	104.7335	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	
FDNS	06ALL	020L	G14_040	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.02959	104.0778	DBL-THIS-WIC	
FDNS	06ALL	020L	G14_040	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03559	104.0551	DBL-THIS-WWR	
FDNS	06ALL	020L	G14_040	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0316	98.59768	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	020L	G14_040	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0316	98.59768	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	020L	G14_040	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.11898	106.8828	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	020L	G14_040	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.11898	106.8828	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	020WP	G14_040	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.13711	100.673	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FDNS	06ALL	020WP	G14_040	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.13711	100.673	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FDNS	06ALL	020WP	G14_040	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12431	99.3	DBL-G1114-WW	
FDNS	06ALL	020WP	G14_040	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12431	97.6	DBL-BVR-G111	
FDNS	06ALL	020L	G14_040	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.12345	100.4316	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	020L	G14_040	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.12345	100.4316	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	017G	G14_040	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138.6	143.4	0.03381	115.6939	DBL-THIS-WIC	
FDNS	06ALL	016WP	G14_040	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03415	104.1963	DBL-THIS-WIC	
FDNS	0	016WP	G14_040	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03426	99.2	DBL-THIS-WIC	
FDNS	06ALL	020L	G14_040	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.14597	97.24515	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	020L	G14_040	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.14597	97.24515	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	020L	G14_040	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.14597	104.6715	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	020L	G14_040	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.14597	104.6715	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	020L	G14_040	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.24986	96.4	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	
FDNS	06ALL	020L	G14_040	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.24986	96.4	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	
FDNS	06ALL	020L	G14_040	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.24986	96.3	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	
FDNS	06ALL	020L	G14_040	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.24986	96.3	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	
FDNS	06ALL	220L	G14_040	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.1461	97.61975	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	220L	G14_040	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.1461	97.61975	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	217G	G14_040	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.03384	100	DBL-THIS-WIC	
FDNS	06ALL	217G	G14_040	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03384	140.3164	DBL-THIS-WIC	
FDNS	06ALL	220L	G14_040	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.02973	139.5513	DBL-THIS-WIC	
FDNS	06ALL	220WP	G14_040	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03431	135.3524	DBL-THIS-WIC	
FDNS	06ALL	216WP	G14_040	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03418	126.9521	DBL-THIS-WIC	
FDNS	0	220WP	G14_040	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03443	125.1641	DBL-THIS-WIC	
FDNS	0	216WP	G14_040	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03428	120.4571	DBL-THIS-WIC	
FDNS	06ALL	217SP	G14_040	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03725	108.5141	DBL-THIS-WIC	
FDNS	06ALL	220L	G14_040	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0333	121.9374	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1	
FDNS	06ALL	220L	G14_040	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0333	106.141	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1	
FDNS	06ALL	220L	G14_040	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0333	104.7348	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	
FDNS	06ALL	220L	G14_040	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0296	104.0797	DBL-THIS-WIC	
FDNS	06ALL	220L	G14_040	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03559	104.0543	DBL-THIS-WWR	
FDNS	06ALL	220L	G14_040	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03158	98.60944	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	220L	G14_040	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03158	98.60944	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	220L	G14_040	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.11908	106.86	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	220L	G14_040	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.11908	106.86	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	220WP	G14_040	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.13721	100.6652	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FDNS	06ALL	220WP	G14_040	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.13721	100.6652	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FDNS	06ALL	220WP	G14_040	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12472	99.3	DBL-G1114-WW	
FDNS	06ALL	220WP	G14_040	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12472	97.7	DBL-BVR-G111	
FDNS	06ALL	220L	G14_040	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.12356	100.4069	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	220L	G14_040	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.12356	100.4069	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	217G	G14_040	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03428	104.1991	DBL-THIS-WIC	
FDNS	0	216WP	G14_040	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03428	99.2	DBL-THIS-WIC	
FDNS	06ALL	220L	G14_040	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.1461	97.2183	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL	220L	G14_040	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.1461	97.2183	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL	2	20L	G14_040	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.1461	104.6425	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_040	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.1461	104.6425	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	17G	G14_041	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.03447	100	DBL-THIS-WIC
FDNS	06ALL	0	17G	G14_041	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03447	140.3128	DBL-THIS-WIC
FDNS	06ALL	0	20L	G14_041	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03283	139.5459	DBL-THIS-WIC
FDNS	06ALL	0	20WP	G14_041	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03742	135.3473	DBL-THIS-WIC
FDNS	06ALL	0	16WP	G14_041	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.0348	126.9485	DBL-THIS-WIC
FDNS	0	0	20WP	G14_041	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03753	125.164	DBL-THIS-WIC
FDNS	0	0	16WP	G14_041	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.0349	120.463	DBL-THIS-WIC
FDNS	06ALL	0	17SP	G14_041	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03768	108.5285	DBL-THIS-WIC
FDNS	06ALL	0	17G	G14_041	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138.6	143.4	0.03447	115.6939	DBL-THIS-WIC
FDNS	06ALL	0	16WP	G14_041	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.0348	104.1963	DBL-THIS-WIC
FDNS	0	0	16WP	G14_041	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.0349	99.2	DBL-THIS-WIC
FDNS	0	0	25SP	G14_041	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.05125	95.3	GEN525562 1-TOLK GEN #2 24 KV
FDNS	06ALL	2	17G	G14_041	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.03447	100	DBL-THIS-WIC
FDNS	06ALL	2	17G	G14_041	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03447	140.3164	DBL-THIS-WIC
FDNS	06ALL	2	20L	G14_041	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03283	139.5513	DBL-THIS-WIC
FDNS	06ALL	2	20WP	G14_041	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03742	135.3524	DBL-THIS-WIC
FDNS	06ALL	2	16WP	G14_041	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.0348	126.9521	DBL-THIS-WIC
FDNS	0	2	20WP	G14_041	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03753	125.1641	DBL-THIS-WIC
FDNS	0	2	16WP	G14_041	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.0349	120.4571	DBL-THIS-WIC
FDNS	06ALL	2	17SP	G14_041	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03768	108.5141	DBL-THIS-WIC
FDNS	06ALL	2	17G	G14_041	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138.6	143.4	0.03447	115.6967	DBL-THIS-WIC
FDNS	06ALL	2	16WP	G14_041	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.0348	104.1991	DBL-THIS-WIC
FDNS	0	2	16WP	G14_041	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.0349	99.2	DBL-THIS-WIC
FDNS	0	2	25SP	G14_041	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.05122	95.5	GEN525562 1-TOLK GEN #2 24 KV
FDNS	06ALL	0	20L	G14_047	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13617	97.6414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_047	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13617	97.6414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	17G	G14_047	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.033	100	DBL-THIS-WIC
FDNS	06ALL	0	17G	G14_047	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.033	140.3128	DBL-THIS-WIC
FDNS	06ALL	0	20WP	G14_047	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03311	135.3473	DBL-THIS-WIC
FDNS	06ALL	0	16WP	G14_047	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03334	126.9485	DBL-THIS-WIC
FDNS	0	0	20WP	G14_047	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03343	125.164	DBL-THIS-WIC
FDNS	0	0	16WP	G14_047	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03344	120.463	DBL-THIS-WIC
FDNS	06ALL	0	17SP	G14_047	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03633	108.5285	DBL-THIS-WIC
FDNS	06ALL	0	25SP	G14_047	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.17367	99.8	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	25SP	G14_047	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.17367	99	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	16WP	G14_047	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	273.8	311	0.13668	98.8	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	16WP	G14_047	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	273.8	311	0.13668	98.8	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	17SP	G14_047	FROM->TO	EDDY_NORTH 6230.00 (WAUK WT01134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.13929	95.8	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	0	20L	G14_047	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03249	121.945	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	0	20L	G14_047	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03249	106.1396	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	0	20L	G14_047	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03249	104.7335	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL	0	20L	G14_047	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03535	104.0551	DBL-THIS-WWR
FDNS	06ALL	0	20L	G14_047	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03331	98.59768	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_047	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03331	98.59768	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_047	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.11109	106.8828	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_047	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.11109	106.8828	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20WP	G14_047	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12922	100.673	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_047	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.12922	100.673	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_047	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.10569	99.3	DBL-G1114-WW
FDNS	06ALL	0	20WP	G14_047	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.10569	97.6	DBL-BVR-G111
FDNS	06ALL	0	20L	G14_047	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11518	100.4316	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_047	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11518	100.4316	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	17G	G14_047	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138.6	143.4	0.033	115.6939	DBL-THIS-WIC
FDNS	06ALL	0	16WP	G14_047	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03344	104.1963	DBL-THIS-WIC
FDNS	0	0	16WP	G14_047	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03344	99.2	DBL-THIS-WIC
FDNS	06ALL	0	25SP	G14_047	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06622	102.0313	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	0	25SP	G14_047	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06622	102.0111	P12:230-SPS:K37.1.TOLK.LAMB
FDNS	06ALL	0	25SP	G14_047	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06622	102.0111	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	25SP	G14_047	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06622	102.0111	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	25SP	G14_047	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06622	98.3	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	0	25SP	G14_047	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06622	98.3	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	25SP	G14_047	FROM->TO	PLANT X STATION (WH_ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06622	98.3	LAMB COUNTY INTERCHANGE (WH_ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	20L	G14_047	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13617	97.24515	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_047	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13617	97.24515	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL	0	20L	G14_047	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13617	104.6715	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_047	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13617	104.6715	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20L	G14_047	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.21315	96.4	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	0	20L	G14_047	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.21315	96.4	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	0	20L	G14_047	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.21315	96.3	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	0	20L	G14_047	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.21315	96.3	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	2	20L	G14_047	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13605	97.61975	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_047	TO->FROM	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	421	439	0.13605	97.61975	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	17G	G14_047	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.03301	100	DBL-THIS-WIC
FDNS	06ALL	2	17G	G14_047	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03301	140.3164	DBL-THIS-WIC
FDNS	06ALL	2	20WP	G14_047	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.0333	135.3524	DBL-THIS-WIC
FDNS	06ALL	2	16WP	G14_047	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03334	126.9521	DBL-THIS-WIC
FDNS	0	2	20WP	G14_047	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03342	125.1641	DBL-THIS-WIC
FDNS	0	2	16WP	G14_047	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03345	120.4571	DBL-THIS-WIC
FDNS	06ALL	2	17SP	G14_047	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03633	108.5141	DBL-THIS-WIC
FDNS	06ALL	2	25SP	G14_047	FROM->TO	EDDY_NORTH 6230.00 (WAUK W011134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.17513	100.0829	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	25SP	G14_047	FROM->TO	EDDY_NORTH 6230.00 (WAUK W011134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.17513	99.3	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	16WP	G14_047	FROM->TO	EDDY_NORTH 6230.00 (WAUK W011134) 230/115/13.2KV TRANSFORMER CKT 2	273.8	311	0.13773	99.2	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	16WP	G14_047	FROM->TO	EDDY_NORTH 6230.00 (WAUK W011134) 230/115/13.2KV TRANSFORMER CKT 2	273.8	311	0.13773	98.7	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	17SP	G14_047	FROM->TO	EDDY_NORTH 6230.00 (WAUK W011134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.14035	96.2	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	17SP	G14_047	FROM->TO	EDDY_NORTH 6230.00 (WAUK W011134) 230/115/13.2KV TRANSFORMER CKT 2	248.9	286	0.14035	95.4	EDDY COUNTY INTERCHANGE - EDDY_NORTH 6230.00 230KV CKT @1
FDNS	06ALL	2	20L	G14_047	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03248	121.9374	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	2	20L	G14_047	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03248	106.141	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL	2	20L	G14_047	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03248	104.7348	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL	2	20L	G14_047	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03534	104.0543	DBL-THIS-WWR
FDNS	06ALL	2	20L	G14_047	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03333	98.60944	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_047	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03333	98.60944	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_047	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.11098	106.86	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_047	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	318.7	350.57	0.11098	106.86	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20WP	G14_047	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.1291	100.6652	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_047	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.1291	100.6652	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_047	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.10559	99.3	DBL-G1114-WW
FDNS	06ALL	2	20WP	G14_047	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	329.05	360.92	0.10559	97.7	DBL-BVR-G111
FDNS	06ALL	2	20L	G14_047	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11507	100.4069	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_047	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	318.7	350.57	0.11507	100.4069	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	17G	G14_047	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138.6	143.4	0.03301	115.6967	DBL-THIS-WIC
FDNS	06ALL	2	16WP	G14_047	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03334	104.1991	DBL-THIS-WIC
FDNS	0	2	16WP	G14_047	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143.4	143.4	0.03345	99.2	DBL-THIS-WIC
FDNS	06ALL	2	25SP	G14_047	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06341	100.7643	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	2	25SP	G14_047	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06341	100.7443	P12:230:SPS:K37.1.TOLK.LAMB
FDNS	06ALL	2	25SP	G14_047	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06341	100.7442	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G14_047	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06341	100.7442	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G14_047	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06341	97.1	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	2	25SP	G14_047	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06341	97.1	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G14_047	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06341	97.1	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	2	25SP	G14_047	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	252	0.06341	97.1	P12:230:SPS:K37.1.TOLK.LAMB
FDNS	06ALL	2	20L	G14_047	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13605	97.2183	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_047	FROM->TO	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	348.58	381.24	0.13605	97.2183	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_047	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13605	104.6425	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	2	20L	G14_047	FROM->TO	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	353	353	0.13605	104.6425	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	20WP	G14_056	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.05502	104.3144	CIMARRON - MINCO 345KV CKT 1
FDNS	0	0	20WP	G14_056	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.05518	99	CIMARRON - MINCO 345KV CKT 1
FDNS	06ALL	0	16WP	G14_056	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.06044	97.4	CIMARRON - MINCO 345KV CKT 1
FDNS	06ALL	0	20WP	G14_056	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.05502	101.3338	CIMARRON - MINCO 345KV CKT 1
FDNS	0	0	20WP	G14_056	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.05518	96	CIMARRON - MINCO 345KV CKT 1
FDNS	0	0	25SP	G14_056	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03076	111.3683	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	0	0	25SP	G14_056	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03076	111.3683	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	0	0	25SP	G14_056	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03076	109.5196	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	0	0	25SP	G14_056	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03076	109.5196	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	2	20WP	G14_056	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.05502	104.3104	CIMARRON - MINCO 345KV CKT 1
FDNS	0	2	20WP	G14_056	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.05519	99	CIMARRON - MINCO 345KV CKT 1
FDNS	06ALL	2	16WP	G14_056	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.06044	97.4	CIMARRON - MINCO 345KV CKT 1
FDNS	06ALL	2	20WP	G14_056	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.05502	101.3299	CIMARRON - MINCO 345KV CKT 1
FDNS	0	2	20WP	G14_056	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.05519	96	CIMARRON - MINCO 345KV CKT 1
FDNS	06ALL	0	20WP	G14_057	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.04288	109.9582	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	0	0	20WP	G14_057	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.04299	105.9975	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	0	16WP	G14_057	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.04392	105.4257	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TC%LOADING (% MVA)	TDF	CONTINGENCY
FDNS	06ALL	0	20WP	G14_057	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.03085	104.3144	CIMARRON - MINCO 345KV CKT 1
FDNS	0	0	16WP	G14_057	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.04403	101.2827	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_057	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.03085	99.2	GRACEMONT - MINCO 345KV CKT 1
FDNS	0	0	20WP	G14_057	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.03102	99	CIMARRON - MINCO 345KV CKT 1
FDNS	06ALL	0	16WP	G14_057	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.03398	97.4	CIMARRON - MINCO 345KV CKT 1
FDNS	06ALL	0	20WP	G14_057	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.04288	106.9719	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	0	0	20WP	G14_057	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.04299	103.0135	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	0	16WP	G14_057	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.04392	102.456	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_057	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.03085	101.3338	CIMARRON - MINCO 345KV CKT 1
FDNS	0	0	16WP	G14_057	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.04403	98.3	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	0	20WP	G14_057	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.03085	96.3	GRACEMONT - MINCO 345KV CKT 1
FDNS	0	0	20WP	G14_057	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.03102	96	CIMARRON - MINCO 345KV CKT 1
FDNS	0	0	25SP	G14_057	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.05094	111.3683	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	0	0	25SP	G14_057	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.05094	111.3683	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	0	0	25SP	G14_057	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.05094	109.5196	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	0	0	25SP	G14_057	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.05094	109.5196	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	0	0	25SP	G14_057	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04041	105.4161	TUCO INTERCHANGE - YOAKUM_345 345.00 345KV CKT 1
FDNS	0	0	25SP	G14_057	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04041	104.4164	TUCO INTERCHANGE - YOAKUM_345 345.00 345KV CKT 1
FDNS	06ALL	2	20WP	G14_057	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.04289	109.957	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	0	2	20WP	G14_057	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.04299	105.9986	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	2	16WP	G14_057	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.04393	105.4226	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_057	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.03085	104.3104	CIMARRON - MINCO 345KV CKT 1
FDNS	0	2	16WP	G14_057	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.04403	101.2891	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_057	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.03085	99.2	GRACEMONT - MINCO 345KV CKT 1
FDNS	0	2	20WP	G14_057	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.03102	99	CIMARRON - MINCO 345KV CKT 1
FDNS	06ALL	2	16WP	G14_057	FROM->TO	CORN TAP - NAPLESTP 138.00 138KV CKT 1	132	143	0.03399	97.4	CIMARRON - MINCO 345KV CKT 1
FDNS	06ALL	2	20WP	G14_057	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.04289	106.9706	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	0	2	20WP	G14_057	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.04299	103.0146	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	2	16WP	G14_057	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.04393	102.4529	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_057	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.03085	101.3299	CIMARRON - MINCO 345KV CKT 1
FDNS	0	2	16WP	G14_057	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.04403	98.3	G14-057T 345.00 - SUNNYSIDE 345KV CKT 1
FDNS	06ALL	2	20WP	G14_057	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.03085	96.3	GRACEMONT - MINCO 345KV CKT 1
FDNS	0	2	20WP	G14_057	FROM->TO	NAPLESTP 138.00 - PAYNE 138.00 138KV CKT 1	132	143	0.03102	96	CIMARRON - MINCO 345KV CKT 1

I: Power Flow Analysis (Constraints from Multi-Contingencies)

Available upon request. Contact SPP Generation Interconnection Studies for details.