

Definitive Interconnection
System Impact Study for
Generation Interconnection
Requests
(DISIS-2014-001)

July 2014

Generator Interconnection

Revision History

Date	Author	Change Description
07/31/2014	SPP	Report Issued (DISIS-2014-001)

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 March 31, 2014. The customers will be referred to in this study as the DISIS-2014-001 Interconnection Customers. This System Impact Study analyzes the interconnecting of multiple generation interconnection requests associated with new generation totaling approximately 2,213.9 MW of new generation which would be located within the transmission systems of Kansas City Power and Light Company – Greater Missouri Operations Company (KCPL-GMO), Nebraska Public Power District (NPPD), Oklahoma Gas and Electric (OKGE), Southwestern Public Service (SPS), and Westar Energy, Inc. (WERE). 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.

Power flow analysis has indicated that for the power flow cases studied, 2,213.9 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 FERC Order #661A for wind farm interconnection requests and those requirements are listed for 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.

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) and Network Resource (NR) constraints, if requested by the Customer. 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.

¹ The generation interconnection requests in-service dates will 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.

The total estimated minimum cost for interconnecting the DISIS-2014-001 Interconnection Customers is estimated at \$322,600,000 plus the costs associated with incremental upgrade needs for Shared Network Upgrades assigned to DISIS-2013-001 Interconnection Customers around the Meadow Grove area, which those costs will be determined during the facility study stage. These costs are shown in Appendix E and F. Interconnection Service to DISIS-2014-001 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.

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. 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 March 31, 2014. The customers will be referred to in this study as the DISIS-2014-001 Interconnection Customers. This DISIS analyzes the interconnecting of multiple generation interconnection requests associated with new generation totaling 2,213.9 MW of new generation which would be located within the transmission systems of Kansas City Power and Light Company – Greater Missouri Operations Company (KCPL-GMO), Nebraska Public Power District (NPPD), Oklahoma Gas and Electric (OKGE), Southwestern Public Service (SPS), and Westar Energy, Inc. (WERE). 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.

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 will 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.

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 March 31, 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. 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 Affected System Study. The Affected System Study Request has been given the designation: ASGI-2014-001. ASGI-2014-001 is a 2.5 MW increase to ASGI-2013-006, which interconnects to the South Plains Electric Cooperative, Inc. System. The Point of Interconnection (POI) for ASGI-2014-001 is at SP-Erskine 115 kV. SP-Erskine 115kV has connections to Southwestern Public Service Indiana and Carlisle 115 kV.

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 2013 series Transmission Service Request (TSR) Models including the 2014 (spring, summer and winter peak seasons), the 2019 (summer and winter peak seasons), and the 2024 (summer peak season) 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) in group 6 were accounted for and modeled in the 2019 and 2024 seasonal peak cases.

Dynamic Stability

The 2013 series SPP Model Development Working Group (MDWG) Models 2014 winter, 2015 summer, and 2024 summer peak cases were used as starting points for this study. In addition to these seasonal cases, the 2019 summer and winter peak study cases for Group 6 included the planned High Priority Incremental Loads (HPILs) for 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-2014-001 Interconnection Customers have not been

assigned acceleration costs for the below listed projects. The DISIS-2014-001 Interconnection Customers Generation Facilities in service dates may need to be delayed until the completion of the following upgrades. 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.

- **Balanced Portfolio Projects³:**
 - Woodward – Border – TUCO Interchange 345 kV Project, scheduled for 9/30/2014 in-service
 - Woodward – Border – TUCO Interchange 345 kV circuit #1 and associated terminal equipment upgrades
 - Iatan – Nashua 345/161 kV Project, scheduled for 6/1/2015 in-service
 - Iatan – Nashua 345 kV circuit #1 and associated terminal equipment
 - Nashua 345/161/13 kV autotransformer circuit #1
- **Priority Projects⁴:**
 - Woodward – Thistle double circuit 345 kV, scheduled for 12/31/2014 in-service
 - Spearville – Clark County – Thistle double circuit 345 kV, scheduled for 12/31/2014 in-service
- Northwest 345/138/13.8 kV circuit #3 autotransformer, scheduled for 6/1/2015 in-service⁵
- Hoskins – Neligh East 345/115 kV Project⁶
 - 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) Projects⁷:**
 - 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
 - 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

³ Notification to Construct (NTC) issued June 2009

⁴ Notification to Construct (NTC) issued June 2010

⁵ SPP Transmission Service Project identified in SPP 2009-AG2-AFS6. Per SPP NTC 20137 & 200194

⁶ SPP Regional Reliability 2012 ITP 10 Project Per SPP-NTC-200220

⁷ Per Network Upgrades assigned in High Priority Incremental Loads (HPILs) study, Including Direct Assigned Upgrades, Projects in SPP-NTC-200256 and SPP-NTC-200283.

- 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

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-2014-001 study and are assumed to be in service. This list may not be all inclusive. The DISIS-2014-001 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-2014-001 Interconnection Customer Generation Facilities in-service dates may need to be delayed until the completion of the following upgrades.

- Upgrades assigned to DISIS-2009-001 Interconnection Customers:
 - Lancer Project
 - Spearville – Lancer 345 kV addition
 - Lancer 345/115 kV transformer circuit #1 addition
 - Lancer – North Ft. Dodge 115 kV addition
 - Ft Dodge – North Ft. Dodge circuit #2 addition
 - Move Fort Dodge terminal of Shooting Star 115 kV at North Ft Dodge
 - Fort Randall – Meadow Grove – Kelly 230 kV circuit #1 rerate (320 MVA)
- Upgrades assigned to DISIS-2010-001 Interconnection Customers:
 - Switch 2749 – Wildorado 69 kV circuit # 1 rebuild
- 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:
 - Beaver County – Buckner 345 kV circuit #1 build
 - Hoskins – Dixon County – Twin Church 230 kV circuit #1 conductor clearance increase
 - (NRIS only) New Deal – TUCO 345 kV/115 kV Project
 - (NRIS only) Wolfforth Interchange 230/115/13 kV transformer circuit #1
 - (NRIS only) Woodward – FPL Switch – Mooreland – Glass Mountain 138 kV circuit #1 rebuild
- Upgrades assigned to DISIS-2011-002 Interconnection Customers:
 - Power System Stabilizers - Install Power System Stabilizers @ Tolk (Units: 1,2) and Jones (Units: 1,2,3,4)
 - Jones – Lubbock South 230 kV circuit #2 replace line traps
 - SUB 967 – SUB 968 – SUB 969 – SUB 974 69 kV circuit #1 replace terminal equipment

- (NRIS only) Hydro Carbon Tap – SUB 974 69 kV circuit #1 rewire CT
- (NRIS only) Nebraska City U Syracuse – SUB 970 circuit #1 replace terminal equipment
- Upgrades assigned to DISIS-2012-001 Interconnection Customers:
 - GEN-2011-017 Tap +100 Mvar Static Var Compensator (SVC) and 100 Mvar Capacitor Bank(s)
- 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
 - Thistle +100 Mvar Static Var Compensator (SVC) and 100 Mvar Capacitor Bank(s)
- Upgrades assigned to DISIS-2013-001 Interconnection Customers:
 - Deaf Smith – Plant X 230 kV circuit #1 line trap replacements
 - 60 MVAR Capacitor Bank(s) at Oklaunion
 - Meadow Grove, North Petersburg, and South Norfolk 345/230/115 kV Projects
 - Meadow Grove 115kV substation bay and 230/115 kV transformer circuit #1
 - Meadow Grove – North Petersburg 115 kV circuit #1
 - Meadow Grove – South Norfolk 230 kV circuit #1
 - South Norfolk 345/230 kV substation and 345/230 kV transformer circuit #1
 - Tolk – Plant X 230 kV circuit #3 build
 - Thistle +100 Mvar Static Var Compensator (SVC) and 75 Mvar Capacitor Bank(s)
 - Vinita – Vinita Junction 69 kV rebuild
 - Vinita Junction 138/69/13.2 kV transformer circuit #1 replacement
 - (NRIS only) Plant X 230/115/13 kV transformer circuit #2 addition
- Upgrades assigned to DISIS-2013-002 Interconnection Customers:
 - Bushland – Tumbleweed (Bushland South) 230 kV circuit #1 build
 - Bushland – Potter 230kV line traps
 - Gerald Gentlemen Station (GGS) Flowgate stability mitigation
 - Viola – Wichita 345 kV circuit #1 terminal equipment upgrade

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 twelve active regional groups based on geographical and electrical impacts. These groupings are shown in Appendix C.

To determine interconnection impacts, fifteen different generation dispatch scenarios of the spring base case models were developed to accommodate the regional groupings.

Power Flow

For Energy Resource Interconnection Service (ERIS), the wind generating plants were modeled at 100% nameplate of maximum generation. The other wind generating plants in the area were modeled at 80% nameplate while the wind 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 wind 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. 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. Other sensitivity analyses are also performed with all interconnection requests in each group being dispatched at 100% nameplate.

Peaking units were not dispatched in the 2014 spring model. To study peaking units' impacts, the 2014 summer and winter and 2019 summer and winter, and 2024 summer seasonal models were chosen and peaking units were modeled at 100% of the nameplate rating and wind generating facilities were modeled at 10% of the nameplate rating. Each interconnection request was also modeled separately at 100% nameplate for certain analyses. Planned High Priority Incremental Loads (HPILs) in group 6 were accounted for and modeled in the 2019 and 2024 seasonal peak cases.

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.

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 the constraint. Constraints that measured at least a 20% DF from at least one interconnection request were considered for transmission reinforcement under ERIS. 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.

Determination of Cost Allocated Network Upgrades

Cost Allocated Network Upgrades of wind generation interconnection requests were determined using the 2014 spring model. Cost Allocated Network Upgrades of peaking units was determined using the 2019 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 for Amounts Advanced for Network Upgrades

Interconnection Customer shall be entitled to credits 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 2,213.9 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 \$322,600,000 plus the costs associated with incremental upgrade needs for Shared Network Upgrades assigned to DISIS-2013-001 Interconnection Customers around the Meadow Grove area, which those costs will be determined during the facility study stage. 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.

A list of constraints that were identified and used for mitigation are listed in Appendix G. Listed within Appendix G are the ERIS constraints with greater than or equal to a 20% DF, as well as, the NRIS constraints that have a DF of 3% or greater. Other Network Constraints which are not requiring mitigation are shown in Appendix H. 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. Additional constraints identified by multi-element contingencies are listed in Appendix I.

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 2014 spring peak, 2014 summer and winter peak, and the 2019 summer and winter peak, 2024 summer peak models. Planned High Priority Incremental Loads (HPILs) in group 6 were accounted for and modeled in the 2019 and 2024 seasonal peak cases. 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.

This analysis was conducted assuming that previous queued requests in the immediate area of these interconnect requests were in-service. The analysis of each Customer's project indicates that

criteria violations will occur on the AEPW, NPPD, OKGE, SPS, and WFEC transmission systems under system intact and contingency conditions in the peak seasons.

Cluster Group 1 (Woodward Area)

In addition to the 4,408.2 MW of previously queued generation in the area, 132.04 MW of new interconnection service was studied. No new ERIE constraints for mitigation were found in this area. For Interconnection Requests with NRIS, a number of additional upgrades were identified in Appendices E and F for mitigation of overloads. To mitigate NRIS thermal overloads on Nichols – Grapevine – Stateline – Sweetwater 230kV circuit #1, the Chisholm 345kV Substation project is needed. The Chisholm 345kV Substation project includes tapping and interconnecting the Woodward – Border 345kV circuit #1 into the Chisholm 345kV Substation. This upgrade is an additional upgrade to SPP-NTC-200255 and SPP-NTC-200240 Chisholm – Gracemont 345kV circuit #1.

ERIS Constraints			
MONITORED ELEMENT	RATE B (MVA)	TC%LOADING (% MVA)	CONTINGENCY
Currently, No ERIE Constraints for Group 1			

NRIS Constraints			
MONITORED ELEMENT	RATE B (MVA)	TC%LOADING (% MVA)	CONTINGENCY
ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	129.07	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FPL SWITCH - MOORELAND 138KV CKT 1	287	130.85	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FPL SWITCH - WOODWARD 138KV CKT 1	153	202.41	NORTHWEST - TATONGA7 345.00 345KV CKT 1
GLASS MOUNTAIN - MOORELAND 138KV CKT 1	124	102.66	NORTHWEST - TATONGA7 345.00 345KV CKT 1
GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	129.81	NORTHWEST - TATONGA7 345.00 345KV CKT 1
GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	109.79	NORTHWEST - TATONGA7 345.00 345KV CKT 1
NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	112.55	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	102.89	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
WOODWARD - WOODWARD EHV 138KV CKT 1	287	103.55	NORTHWEST - TATONGA7 345.00 345KV CKT 1
WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1	134	106.46	FPL SWITCH - MOORELAND 138KV CKT 1

Cluster Group 2 (Hitchland Area)

In addition to the 2,962.2 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 3 (Spearville Area)

In addition to the 4,309.4 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 4/11 (NW Kansas Group)

In addition to the 2,045.7 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 5 (Amarillo Area)

In addition to the 1,074.1 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 6 (South Texas Panhandle/New Mexico)

In addition to the 3,608.65 MW of previously queued generation in the area, 1,578.5 MW of new interconnection service was studied. Planned High Priority Incremental Loads (HPILs) in group 6 were accounted for and modeled in the 2019 and 2024 seasonal peak cases. GEN-2014-012, which is required to serve HPILS Loads was studied only in the seasons that included those loads. In the spring seasons (light load), non-converged contingencies were identified for N-1 outages on TUCO Interchange – GEN-2014-007 Tap – Border – Woodward 345kV circuit #1, Hobbs 345/230/13kV circuit #1, and Oklaunion – TUCO Interchange 345kV circuit #1. In addition to the non-convergence issues for N-1 outages, SPP-AEPW-32 and SPP-SWPS-01 flowgate outages are non-converged. To alleviate the voltage issues, the following 345kV reinforcements were identified. Tapping the Border – Woodward 345kV circuit #1 and interconnecting into the Chisholm Substation, which is referred to Chisholm Substation Upgrades in this study, will be needed. The Chisholm Substation Upgrade is an additional upgrade that will utilize Chisholm – Gracemont 345kV circuit #1 (per SPP-NTC-200255 and SPP-NTC-200240) as a 345kV reinforcement. A second 345kV circuit from GEN-2014-007 Tap – Border – Chisholm is also needed. In the peak seasons (summer and winter), voltage issues and thermal overloads are seen around the Andrews/Hobbs area. Andrews – Roadrunner 345k circuit #1 and Hobbs – GEN-2014-012 – Andrews 230kV voltage conversion to 345kV will alleviate the constraints in the south region of Group 6. For Interconnection Requests with NRIS, a number of additional upgrades were identified in Appendices E and F for mitigation of overloads.

ERIS Constraints			
MONITORED ELEMENT	RATE B (MVA)	TC%LOADING (% MVA)	CONTINGENCY
Non-Converged Contingency	1972	N/A	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
Non-Converged Contingency	1623	N/A	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
Non-Converged Contingency	421.9	N/A	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1
Non-Converged Contingency	1492	N/A	G14_012T 345.00 - HOBBS 345KV CKT 1
Non-Converged Contingency	2532	N/A	HOBBS - KIOWA 7345.00 345KV CKT 1
Non-Converged Contingency	644	N/A	HOBBS (UPDATE DATA) 345/230/13.2KV TRANSFORMER CKT 1
Non-Converged Contingency	679	N/A	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
Non-Converged Contingency	N/A	N/A	SPP-SWPS-01
Non-Converged Contingency	N/A	N/A	SPP-AEPW-32
ANDREWS 3115.00 - National Enrichment Plant Sub 115KV CKT 1	525	125.13	G14_012T 345.00 - HOBBS 345KV CKT 1
BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1	361	156.92	BUSHLAND_S 230.00 - POTTER COUNTY INTERCHANGE 230KV CKT 1
DRINKARD SUB - DRINKARD TAP 115KV CKT 1	160	150.65	G14_012T 345.00 - HOBBS 345KV CKT 1
DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1	160	161.93	G14_012T 345.00 - HOBBS 345KV CKT 1
DRINKARD TAP - WEST HOBBS SWITCHING STATION 115KV CKT 1	160	137.03	G14_012T 345.00 - HOBBS 345KV CKT 1
G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	161.61	ANDREWS 6230.00 - G14_012T 230.00 230KV CKT 1
JAL SUB - TEAGUE SUB 115KV CKT 1	160	111.96	G14_012T 345.00 - HOBBS 345KV CKT 1
JAL SUB - WHITTEN SUB 115KV CKT 1	141	109.46	G14_012T 345.00 - HOBBS 345KV CKT 1

ERIS Constraints			
MONITORED ELEMENT	RATE B (MVA)	TC%LOADING (% MVA)	CONTINGENCY
National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	230.96	G14_012T 345.00 - HOBBS 345KV CKT 1
National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	220.33	G14_012T 345.00 - HOBBS 345KV CKT 1
National Enrichment Plant Tap - TEAGUE SUB 115KV CKT 1	160	115.62	G14_012T 345.00 - HOBBS 345KV CKT 1
TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	130.6	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	560	128.7	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1

NRIS Constraints			
MONITORED ELEMENT	RATE B (MVA)	TC%LOADING (% MVA)	CONTINGENCY
Non-converged Contingency	557	N/A	CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1
Non-converged Contingency	560	N/A	EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1
PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	116.41	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	115.2	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	560	113.4	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1

Cluster Group 7 (Southwestern Oklahoma)

In addition to the 1,900.0 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 8 (South Central Kansas/North Oklahoma)

In addition to the 3,864.1 MW of previously queued generation in the area, 200.6 MW of new interconnection service was studied. No new ERIS constraints for mitigation were found in this area.

ERIS Constraints			
MONITORED ELEMENT	RATE B (MVA)	TC%LOADING (% MVA)	CONTINGENCY
Currently, No ERIS constraints			

Cluster Group 9/10 (Nebraska)

In addition to the 2,449.8 MW of previously queued generation in the area, 152.36 MW of new interconnection service was studied. ERIS constraints on the Meadow Grove – South Norfolk 230kV transmission line and South Norfolk 345/230/13kV transformer are identified. ERIS mitigations at this time will include the need for incremental upgrade needs to the Meadow Grove – South Norfolk 230kV transmission line and South Norfolk 345/230/13kV transformer, which are assigned to DISIS-2013-001 Interconnection Customer. The Transmission Owner will further review the incremental upgrade needs and costs during the Facility Study. In addition to the ERIS mitigations, for Interconnection Requests with NRIS, Harbine – Crete 115kV circuit #1 and Hoskins – Neligh East 345/115kV Projects per SPP-NTC-200220 were identified in Appendices E and F for mitigation of overloads.

345/115kV Projects per SPP-NTC-200220 were identified in Appendices E and F for mitigation of overloads.

ERIS Constraints			
MONITORED ELEMENT	RATE B (MVA)	TC%LOADING (% MVA)	CONTINGENCY
MEADOWGROVE 230.00 - S_NORFOLK 230.00 230KV CKT 1	320	107.64	KELLY - MEADOWGROVE 230.00 230KV CKT 1
S_NORFOLK 345.00 (SNORFOLKT) 345/230/13.8KV TRANSFORMER CKT 1	336	103.29	KELLY - MEADOWGROVE 230.00 230KV CKT 1

NRIS Constraints			
MONITORED ELEMENT	RATE B (MVA)	TC%LOADING (% MVA)	CONTINGENCY
BATTLE CREEK - COUNTY LINE 115KV CKT 1	120	101.66	PETERSBRG.N7115.00 - PETERSBURG 115KV CKT Z1
BEATRICE - HARBINE 115KV CKT 1	99	103.66	KNOB HILL - STEELE CITY 115KV CKT 1
COUNTY LINE - NELIGH 115KV CKT 1	120	102.35	PETERSBRG.N7115.00 - PETERSBURG 115KV CKT Z1

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 375.8 MW of previously queued generation in the area, 150.0 MW of new interconnection service was studied. No new constraints were found in this area.

ERIS Constraints			
MONITORED ELEMENT	RATE B (MVA)	TC%LOADING (% MVA)	CONTINGENCY
Currently, No ERIS constraints			

Cluster Group 14 (South Central Oklahoma)

In addition to the 362.5 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.

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 Analysis

A stability analysis was conducted for each Interconnection Customer using modified versions of the 2013 series SPP Model Development Working Group (MDWG) Models 2014 winter, 2015 summer, and 2024 summer peak dynamic cases. In addition to the 2014 winter and 2015 summer seasonal cases, Group 6 included the 2019 summer and 2019 winter peak cases and a modified version of the 2024 summer peak case to analyze the planned High Priority Incremental Loads (HPILs) in the area. 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 wind 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. 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 for this area was performed by SPP Staff. Stability analysis has determined that with all previously assigned and currently assigned Network Upgrades placed in service the transmission system will remain stable and low voltage ride through requirements are satisfied for the contingencies studied. Power Factor requirements are listed in the table below. In addition, some Interconnection Requests may have requirements for reactors under low wind conditions as identified in the SPP Staff Group 1 report.

Power Factor Requirements:

Request	Size (MW)	Generator Model	Point of Interconnection	Power Factor Requirement at POI*	
				Lagging (supplying)	Leading (absorbing)
GEN-2013-035**	105.6	G.E. 1.79MW	Tap Woodward – Tatonga (GEN-2011-051 Tap) 345kV	0.95	0.95
GEN-2014-002** ⁸	10.53	G.E. 1.79MW	Tatonga 345kV	0.95	0.95
GEN-2014-003** ⁹	15.84	G.E. 1.79MW	Tatonga 345kV	0.95	0.95
GEN-2014-005** ¹⁰	5.67	G.E. 1.79MW	Minco 345kV	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

⁸ GEN-2014-002 is a capacity increase to GEN-2007-021.

⁹ GEN-2014-003 is a capacity increase to GEN-2007-044.

¹⁰ GEN-2014-005 is a capacity increase to GEN-2011-010.

Cluster Group 2 (Hitchland Area)

There were no customers requesting interconnection service in the Hitchland area.

Cluster Group 3 (Spearville Area)

There were no customers requesting interconnection service in the Spearville area.

Cluster Group 4/11 (Northwest Kansas)

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

Cluster Group 5 (Amarillo Area)

There were no customers requesting interconnection service in the Amarillo area.

Cluster Group 6 (South Texas Panhandle/New Mexico)

The Group 6 stability analysis for this area was performed by Mitsubishi Electric Power Products, Inc. (MEPPI). Planned High Priority Incremental Loads (HPILs) in group 6 were accounted for and modeled in the 2019 and 2024 seasonal peak cases. GEN-2014-012, which is required to serve HPILS Loads was studied only in the seasons that included those loads. Stability analysis has determined that with all currently assigned Network Upgrades from the powerflow analysis and all previously assigned Network Upgrades placed in service the transmission system will remain stable and low voltage ride through requirements are satisfied for the contingencies studied. Power Factor requirements are listed in the table below. In addition, some Interconnection Requests may have requirements for reactors under low wind conditions as identified in the MEPPI report.

Power Factor Requirements:

Request	Size (MW)	Generator Model	Point of Interconnection	Power Factor Requirement at POI*	
				Lagging (supplying)	Leading (absorbing)
ASGI-2014-001 ¹¹	2.3	G.E. 2. 3MW	SP-Erskine 69kV	0.95	0.95
GEN-2013-027**	327.0	Alstom ECO1222 3MW	Tap Tolk – Yoakum 230kV	0.95	0.95
GEN-2014-007**	399.6	G.E 1.85 MW	Tap TUCO Interchange – Border 345kV	0.95	0.95
GEN-2014-012	779/850	GENROU	Tap Hobbs Interchange – Andrews 345kV	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.

¹¹ ASGI-2014-001 is a capacity increase to ASGI-2013-006.

Cluster Group 8 (South Central Kansas/North Oklahoma)

The Group 8 stability analysis for this area was performed by S&C Electric Company (S&C). Stability analysis has determined that with all previously assigned and currently assigned Network Upgrades placed in service the transmission system will remain stable and low voltage ride through requirements are satisfied for the contingencies studied. For certain prior outage conditions, the study generators will need to curtail their output as discussed in the S&C report. Power Factor requirements are listed in the table below. In addition, some Interconnection Requests may have requirements for reactors under low wind conditions as identified in the S&C report.

Power Factor Requirements:

Request	Size (MW)	Generator Model	Point of Interconnection	Power Factor Requirement at POI*	
				Lagging (supplying)	Leading (absorbing)
GEN-2014-001**	200.6	G.E. 1.7 MW	Tap Wichita – Emporia Energy Center 345kV	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 9/10 (Nebraska)

The Group 9/10 stability analysis for this area was performed by POWER-tek Global Inc. Stability analysis has determined that with all previously assigned and currently assigned Network Upgrades placed in service the transmission system will remain stable and low voltage ride through requirements are satisfied for the contingencies studied. Power Factor requirements are listed in the table below. In addition, some Interconnection Requests may have requirements for reactors under low wind conditions as identified in the POWER-tek report.

Power Factor Requirements:

Request	Size (MW)	Generator Model	Point of Interconnection	Power Factor Requirement at POI*	
				Lagging (supplying)	Leading (absorbing)
GEN-2014-004 ¹²	4	G.E. 1.79 MW	Steele City 115kV	0.95	0.95
GEN-2014-006	73.6	Siemens 2.3 MW	Harbine 115kV	0.95	0.95
GEN-2014-013**	73.5	G.E. 1.75 MW	Tap Fort Randall – Columbus (Meadow Grove) 230kV	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 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 for this area was performed by Quanta Technology. Stability analysis has determined that with all previously assigned and currently assigned Network Upgrades placed in service the transmission system will remain stable and low voltage ride through requirements are satisfied for the contingencies studied. Power Factor requirements are listed in the table below. In addition, some Interconnection Requests may have requirements for reactors under low wind conditions as identified in the Quanta Technology report.

Power Factor Requirements:

Request	Size (MW)	Generator Model	Point of Interconnection	Power Factor Requirement at POI*	
				Lagging (supplying)	Leading (absorbing)
GEN-2013-026** ¹³	150	Vestas 2.0 MW	Tap St Joseph – Cooper 345kV	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 14 (South Central Oklahoma)

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

¹² GEN-2014-004 is a capacity increase to GEN-2011-018 and GEN-2013-008.

¹³ GEN-2013-026 is a capacity increase to GEN-2010-056

Conclusion

The minimum cost of interconnecting 2,213.6 MW of new interconnection requests included in this Definitive Interconnection System Impact Study is estimated at \$322,600,000 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. In addition to the estimated \$322,600,000 for Allocated Network Upgrades and Transmission Owner Interconnection Facilities, the costs associated with incremental upgrade needs for Shared Network Upgrades assigned to DISIS-2013-001 Interconnection Customers around the Meadow Grove area will be determined during the facility study stage.

These interconnection costs do not include any cost of Network Upgrades determined to be required by 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).

A: Generation Interconnection Requests Considered for Impact Study

See next page.

A: Generation Interconnection Requests Considered for Impact 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-2014-001	2.50	ER	SPS	SP-Erskine 115kV	SP-Erskine 115kV		TBD
GEN-2013-026	150.00	ER/NR	GMO	Tap Saint Joseph - Cooper 345kV (GEN-2010-056 Tap)	Tap Saint Joseph - Cooper 345kV (GEN-2010-056 Tap)	12/1/2015	TBD
GEN-2013-027	326.40	ER/NR	SPS	Tap Tolk - Yoakum 230kV	Tap Tolk - Yoakum 230kV	3/31/2016	TBD
GEN-2013-035	100.00	ER/NR	OKGE	Tap Woodward - Tatonga 345kV (GEN-2011-051 Tap)	Tap Woodward - Tatonga 345kV (GEN-2011-051 Tap)	12/31/2016	TBD
GEN-2014-001	200.60	ER	WERE	Tap Wichita - Emporia Energy Center 345kV	Tap Wichita - Emporia Energy Center 345kV	7/15/2014	TBD
GEN-2014-002	10.53	ER/NR	OKGE	Tatonga 345kV (GEN-2007-021 POI)	Tatonga 345kV (GEN-2007-021 POI)	12/31/2014	TBD
GEN-2014-003	15.84	ER/NR	OKGE	Tatonga 345kV (GEN-2007-044 POI)	Tatonga 345kV (GEN-2007-044 POI)	12/31/2014	TBD
GEN-2014-004	3.96	ER/NR	NPPD	Steele City 115kV (GEN-2011-018 POI)	Steele City 115kV (GEN-2011-018 POI)	12/31/2014	TBD
GEN-2014-005	5.67	ER/NR	OKGE	Minco 345kV (GEN-2011-010 POI)	Minco 345kV (GEN-2011-010 POI)	12/31/2014	TBD
GEN-2014-006	74.90	ER/NR	NPPD	Harbine 115kV	Harbine 115kV	10/31/2016	TBD
GEN-2014-007	400.00	ER	SPS	Tap TUCO Interchange - Border 345kV	Tap TUCO Interchange - Border 345kV	12/15/2016	TBD
GEN-2014-012	850.00	ER	SPS	Tap Hobbs Interchange - Andrews 230kV	Tap Hobbs Interchange - Andrews 230kV	6/1/2018	TBD
GEN-2014-013	73.50	ER/NR	NPPD	Meadow Grove (GEN-2008-086N2 Sub) 230kV	Meadow Grove (GEN-2008-086N2 Sub) 230kV	12/31/2014	TBD
Total: 2,213.90							

*Requests that are dependent upon Priority Projects or Balanced Portfolio may be delayed until 12/31/2014. Other requests in-service date to be determined after Facility Study.

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	Tap Fairfax (AECI) - Shilder (AEPW) 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	28.80	SPS	Lovington 115kV	On-Line
ASGI-2011-002	20.00	SPS	Herring 115kV	On-Line
ASGI-2011-003	10.00	SPS	Hendricks 115kV	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	29.60	SUNCMKEC	Morris 115kV	Under Study (DISIS-2013-002)
ASGI-2013-005	1.80	SPS	FE Clovis 115kV	Under Study (DISIS-2013-002)
ASGI-2013-006	2.00	SPS	SP-Erskine 115kV	
ASGI-2013-007	90.00	AECI	Tap Hickory Creek - Locust Creek 161kV	AECI System Impact Study
GEN-2001-014	96.00	WFEC	Ft Supply 138kV	On-Line
GEN-2001-026	74.00	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	Tap Greensburg - Ft Dodge (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	Washita 138kV	On-Line
GEN-2004-014	154.50	SUNCMKEC	Spearville 230kV	On-Line at 100MW
GEN-2004-020	27.00	AEPW	Washita 34.5kV	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	Tap Latham - Neosho (Caney River) 345kV	On-Line
GEN-2006-002	101.00	AEPW	Sweetwater 230kV	On-Line

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2006-006	205.50	SUNCMKEC	Spearville 345kV	On Suspension
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	604.00	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 Schedule for 2014
GEN-2006-038N005	80.00	NPPD	Broken Bow 115kV	On-Line
GEN-2006-038N019	80.00	NPPD	Petersburg North 115kV	On-Line
GEN-2006-040	108.00	SUNCMKEC	Mingo 115kV	On Suspension
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-2007-011	135.00	SUNCMKEC	Syracuse 115kV	On Suspension
GEN-2007-011N08	81.00	NPPD	Bloomfield 115kV	On-Line
GEN-2007-021	201.00	OKGE	Tatonga 345kV	On Schedule for 2014
GEN-2007-025	300.00	WERE	Viola 345kV	On-Line
GEN-2007-032	150.00	WFEC	Tap Clinton Junction - Clinton 138kV	On Suspension
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 Schedule for 2014
GEN-2007-046	199.50	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 2014
GEN-2008-003	101.00	OKGE	Woodward EHV 138kV	On-Line
GEN-2008-013	300.00	OKGE	Tap Wichita - Woodring (Hunter) 345kV	On-Line at 235MW
GEN-2008-017	300.00	SUNCMKEC	Setab 345kV	On Schedule for 2015
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	Tap Eddy Co - Tolk (Crossroads) 345kV	On Schedule for 2015
GEN-2008-023	150.00	AEPW	Hobart Junction 138kV	On-Line
GEN-2008-037	101.00	WFEC	Tap Washita - Blue Canyon Wind 138kV	On-Line
GEN-2008-044	197.80	OKGE	Tatonga 345kV	On-Line
GEN-2008-047	300.00	OKGE	Tap Hitchland - Woodward Dbl Ckt (Beaver County) 345kV	On Schedule for 2014
GEN-2008-051	322.00	SPS	Potter County 345kV	On-Line at 161MW
GEN-2008-079	99.20	SUNCMKEC	Tap Cudahy - Ft Dodge 115kV	On-Line
GEN-2008-086N02	200.00	NPPD	Tap Ft Randle - Columbus (Meadow Grove) 230kV	On Schedule for 2014
GEN-2008-088	50.60	SPS	Vega 69kV	On Suspension
GEN-2008-092	201.00	MIDW	Post Rock 230kV	On Schedule for 2014
GEN-2008-098	100.80	WERE	Tap Lacygne - Wolf Creek (Anderson County) 345kV	On Schedule for 2015
GEN-2008-119O	60.00	OPPD	S1399 161kV	On-Line
GEN-2008-123N	89.70	NPPD	Tap Guide Rock - Pauline (Rosemont) 115kV	On Schedule for 2014
GEN-2008-124	200.10	SUNCMKEC	Ironwood 345kV	On Schedule for 2016
GEN-2008-129	80.00	MIPU	Pleasant Hill 161kV	On-Line

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2009-008	199.50	MIDW	South Hays 230kV	On Suspension
GEN-2009-020	48.60	MIDW	Tap Nekoma - Bazine (Walnut Creek) 69kV	On Schedule for 2015
GEN-2009-025	60.00	OKGE	Nardins 69kV	On-Line
GEN-2009-040	73.80	WERE	Marshall 115kV	On Schedule for 2015
GEN-2010-001	300.00	OKGE	Tap Hitchland - Woodward Dbl Ckt (Beaver County) 345kV	On Schedule for 2014 (204 MW) and 2015 (96 MW)
GEN-2010-003	100.80	WERE	Tap Lacygne - Wolf Creek (Anderson County) 345kV	On Schedule for 2015
GEN-2010-005	300.00	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 Schedule for 2016
GEN-2010-015	200.10	SUNCMKEC	Spearville 345kV	On Schedule for 2015
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	S 1399 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-2010-048	70.00	MIDW	Tap Beach Station - Redline 115kV	IA Pending
GEN-2010-051	200.00	NPPD	Tap Twin Church - Hoskins 230kV	On Schedule for 2014
GEN-2010-055	4.50	AEPW	Wekiwa 138kV	On-Line
GEN-2010-056	151.20	MIPU	Tap Saint Joseph - Cooper 345kV	On Schedule for 2015
GEN-2010-057	201.00	MIDW	Rice County 230kV	On-Line
GEN-2011-007	250.10	OKGE	Tap Cimarron - Woodring (Mathewson) 345kV	On Suspension
GEN-2011-008	600.00	SUNCMKEC	Clark County 345kV	On Schedule for 2019
GEN-2011-010	100.80	OKGE	Minco 345kV	On-Line
GEN-2011-011	50.00	KACP	Iatan 345kV	On-Line
GEN-2011-014	201.00	OKGE	Tap Hitchland - Woodward Dbl Ckt (Beaver County) 345kV	IA Pending
GEN-2011-016	200.10	SUNCMKEC	Spearville 345kV	IA Pending
GEN-2011-017	299.00	SUNCMKEC	Tap Spearville - PostRock (GEN-2011-017T) 345kV	On Schedule 2018
GEN-2011-018	73.60	NPPD	Steele City 115kV	On-Line
GEN-2011-019	299.00	OKGE	Woodward 345kV	On Schedule for 2017
GEN-2011-020	299.00	OKGE	Woodward 345kV	On Schedule for 2017
GEN-2011-022	299.00	SPS	Hitchland 345kV	On Schedule for 2017
GEN-2011-025	82.30	SPS	Tap Floyd County - Crosby County 115kV	On Schedule for 2015
GEN-2011-027	120.00	NPPD	Tap Twin Church - Hoskins 230kV (GEN-2010-51 Tap)	On Schedule for 2015
GEN-2011-037	7.00	WFEC	Blue Canyon 5 138kV	On-Line
GEN-2011-040	111.00	OKGE	Tap Ratliff - Pooleville 138kV	On Schedule for 2014
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	250.00	OKGE	Border 345kV	On Suspension
GEN-2011-050	109.80	AEPW	Rush Springs Natural Gas Tap 138kV	On Suspension
GEN-2011-051	104.40	OKGE	Tap Woodward - Tatonga 345kV	On Suspension
GEN-2011-054	300.00	OKGE	Cimarron 345kV	On Schedule for 2014
GEN-2011-055	52.80	OPPD	South Sterling 69kV	IA Pending
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

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2011-057	150.40	WERE	Creswell 138kV	On Schedule for 2014
GEN-2012-001	61.20	SPS	Tap Grassland - Borden County 230kV	On-Line
GEN-2012-004	41.40	OKGE	Tap Ratliff - Pooleville (Carter County) 138kV	On Schedule for 2014
GEN-2012-005	81.00	NPPD	Tap Fort Randall - Columbus (North of Meadow Grove) 230kV	Facility Study
GEN-2012-007	120.00	SUNCMKEC	Rubart 115kV	On Schedule for 2014
GEN-2012-009	15.00	SPS	Mustang 230kV	IA Pending
GEN-2012-010	15.00	SPS	Mustang 230kV	IA Pending
GEN-2012-011	200.00	SUNCMKEC	Tap Spearville - Post Rock 345kV (North of GEN-2011-017 Tap)	Facility Study
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-2012-023	115.00	WERE	Viola 345kV	IA Pending
GEN-2012-024	180.00	SUNCMKEC	Clark County 345kV	Facility Study
GEN-2012-026	100.00	MIDW	Colby 115kV	IA Pending
GEN-2012-027	136.00	AEPW	Shidler 138kV	On Schedule for 2015
GEN-2012-028	74.80	WFEC	Gotebo 69kV	On Schedule for 2015
GEN-2012-031	200.00	OKGE	Cimarron 345kV (GEN-2010-040 Sub)	IA Pending
GEN-2012-032	300.00	OKGE	Tap Rose Hill - Sooner (Ranch) 345kV	On Schedule for 2015
GEN-2012-033	98.80	OKGE	Tap and Tie South 4th - Bunch Creek & Enid Tap - Fairmont (GEN-2012-033T) 138kV	On Schedule for 2015
GEN-2012-034	7.00	SPS	Mustang 230kV	IA Pending
GEN-2012-035	7.00	SPS	Mustang 230kV	IA Pending
GEN-2012-036	7.00	SPS	Mustang 230kV	On Schedule
GEN-2012-037	203.00	SPS	TUCO 345kV	On Schedule for 2015
GEN-2012-040	76.50	WFEC	Chilocco 138kV	On Suspension
GEN-2012-041	121.50	OKGE	Tap Rose Hill - Sooner 345kV	On Schedule for 2015
GEN-2013-002	50.60	LES	Tap Sheldon - Folsom & Pleasant Hill 115kV CKT 2	Facility Study
GEN-2013-004	6.00	NPPD	Tap Fort Randall - Columbus (Meadow Grove) 230kV	Facility Study
GEN-2013-005	73.50	NPPD	Meadow Grove (GEN-2008-086N2 Sub) 230kV	Facility Study
GEN-2013-006	50.60	NPPD	Tap Fort Randall - Columbus (Meadow Grove) 230kV	Facility Study
GEN-2013-007	100.30	OKGE	Tap Prices Falls - Carter 138kV	On Schedule for 2015
GEN-2013-008	1.20	NPPD	Steele City 115kV	On-Line
GEN-2013-009	100.30	AEPW	Tap Alluwe Tap - Vinita Junction 138kV	Facility Study
GEN-2013-010	99.00	SUNCMKEC	Tap Spearville - Post Rock 345kV (GEN-2012-011 Tap)	Facility Study
GEN-2013-011	30.00	AEPW	Turk 138kV	Facility Study
GEN-2013-012	147.00	OKGE	Redbud 345kV	Facility Study
GEN-2013-013	248.40	SPS	Tap Eddy County - Tolk 345kV	Facility Study
GEN-2013-014	25.50	NPPD	Tap Guide Rock - Pauline (GEN-2008-123N Tap) 115kV	IA Pending
GEN-2013-015	125.80	NPPD	Tap Pauline - Hildreth 115kV	IA Pending
GEN-2013-016	203.00	SPS	TUCO 345kV	Facility Study
GEN-2013-019	73.60	LES	Tap Sheldon - Folsom & Pleasant Hill (GEN-2013-002 Tap) 115kV CKT 2	Facility Study
GEN-2013-021	229.50	NPPD	Ogallala 230kV	Facility Study
GEN-2013-022	25.00	SPS	Norton 115kV	Facility Study
GEN-2013-025	50.00	OKGE	Tap Cimarron - Woodring (Mathewson) 345kV	Facility Study
GEN-2013-028	559.50	GRDA	Tap N Tulsa - GRDA 1 345kV	Facility Study
GEN-2013-029	300.00	OKGE	Renfrow 345kV	Facility Study
GEN-2013-030	300.00	OKGE	Tap Hitchland - Woodward Dbl Ckt (Beaver County) 345kV	Facility Study
GEN-2013-031	370.00	SPS	Bushland 230kV	Facility Study

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2013-032	204.00	NPPD	Neligh 115kV	Facility Study
GEN-2013-033	28.00	MIDW	Goodman Energy Center 115kV	Facility Study
GEN-2013-034	73.60	OKGE	Tap Hitchland - Woodward Dbl Ckt (GEN-2013-034 Tap) 345kV	Facility Study
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 (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 (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
SPS Distributed (Spearman)	10.00	SPS	Spearman 69kV	On-Line
SPS Distributed (TC-Texas County)	20.00	SPS	Texas County 115kV	On-Line
Total:		27,190.5		

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-2011-007	250.10	OKGE	Tap Cimarron - Woodring (Mathewson) 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-2011-054	300.00	OKGE	Cimarron 345kV
GEN-2012-031	200.00	OKGE	Cimarron 345kV (GEN-2010-040 Sub)
GEN-2013-025	50.00	OKGE	Tap Cimarron - Woodring (Mathewson) 345kV
GEN-2013-034	73.60	OKGE	Tap Hitchland - Woodward Dbl Ckt (GEN-2013-034 Tap) 345kV
PRIOR QUEUED SUBTOTAL	4,408.20		
GEN-2013-035	100.00	OKGE	Tap Woodward - Tatonga 345kV (GEN-2011-051 Tap)
GEN-2014-002	10.53	OKGE	Tatonga 345kV (GEN-2007-021 POI)
GEN-2014-003	15.84	OKGE	Tatonga 345kV (GEN-2007-044 POI)
GEN-2014-005	5.67	OKGE	Minco 345kV (GEN-2011-010 POI)
CURRENT CLUSTER SUBTOTAL	132.04		
AREA TOTAL	4,540.24		

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	199.50	SPS	Hitchland 115kV
GEN-2008-047	300.00	OKGE	Tap Hitchland - Woodward Dbl Ckt (Beaver County) 345kV
GEN-2010-001	300.00	OKGE	Tap Hitchland - Woodward Dbl Ckt (Beaver County) 345kV
GEN-2010-014	358.80	SPS	Hitchland 345kV
GEN-2011-014	201.00	OKGE	Tap Hitchland - Woodward Dbl Ckt (Beaver County) 345kV
GEN-2011-022	299.00	SPS	Hitchland 345kV
GEN-2013-030	300.00	OKGE	Tap Hitchland - Woodward Dbl Ckt (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	2,962.20		
AREA TOTAL	2,962.20		

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	Tap Greensburg - Ft Dodge (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-2006-006	205.50	SUNCMKEC	Spearville 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	Tap Cudahy - Ft Dodge 115kV
GEN-2008-124	200.10	SUNCMKEC	Ironwood 345kV
GEN-2010-009	165.60	SUNCMKEC	Buckner 345kV
GEN-2010-015	200.10	SUNCMKEC	Spearville 345kV
GEN-2010-045	197.80	SUNCMKEC	Buckner 345kV
GEN-2011-008	600.00	SUNCMKEC	Clark County 345kV
GEN-2011-016	200.10	SUNCMKEC	Spearville 345kV
GEN-2011-017	299.00	SUNCMKEC	Tap Spearville - PostRock (GEN-2011-017T) 345kV
GEN-2012-007	120.00	SUNCMKEC	Rubart 115kV
GEN-2012-011	200.00	SUNCMKEC	Tap Spearville - Post Rock 345kV (North of GEN-2011-017 Tap)
GEN-2012-024	180.00	SUNCMKEC	Clark County 345kV
GEN-2013-010	99.00	SUNCMKEC	Tap Spearville - Post Rock 345kV (GEN-2012-011 Tap)
Gray County Wind (Montezuma)	110.00	SUNCMKEC	Gray County Tap 115kV
PRIOR QUEUED SUBTOTAL	4,109.40		
AREA TOTAL	4,109.40		

GROUP 4/11: NW KANSAS AREA

Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2013-004	29.60	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-2006-040	108.00	SUNCMKEC	Mingo 115kV
GEN-2007-011	135.00	SUNCMKEC	Syracuse 115kV
GEN-2008-017	300.00	SUNCMKEC	Setab 345kV
GEN-2008-092	201.00	MIDW	Post Rock 230kV
GEN-2009-008	199.50	MIDW	South Hays 230kV
GEN-2009-020	48.60	MIDW	Tap Nekoma - Bazine (Walnut Creek) 69kV
GEN-2010-048	70.00	MIDW	Tap Beach Station - Redline 115kV
GEN-2010-057	201.00	MIDW	Rice County 230kV
GEN-2012-026	100.00	MIDW	Colby 115kV
GEN-2013-033	28.00	MIDW	Goodman Energy Center 115kV
PRIOR QUEUED SUBTOTAL	2,045.70		
AREA TOTAL	2,045.70		

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
GEN-2008-088	50.60	SPS	Vega 69kV
GEN-2013-031	370.00	SPS	Bushland 230kV
Llano Estacado (White Deer)	80.00	SPS	Llano Wind 115kV
PRIOR QUEUED SUBTOTAL	1,074.10		
AREA TOTAL	1,074.10		

GROUP 6: S-TX PANHANDLE/W-TX 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	28.80	SPS	Lovington 115kV
ASGI-2011-003	10.00	SPS	Hendricks 115kV
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	1.80	SPS	FE Clovis 115kV
ASGI-2013-006	2.00	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	604.00	SPS	Hobbs 230kV & Hobbs 115kV
GEN-2008-022	300.00	SPS	Tap Eddy Co - Tolk (Crossroads) 345kV
GEN-2010-006	205.00	SPS	Jones 230kV
GEN-2010-046	56.00	SPS	TUCO Interchange 230kV
GEN-2011-025	82.30	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	Tap Grassland - Borden County 230kV
GEN-2012-009	15.00	SPS	Mustang 230kV
GEN-2012-010	15.00	SPS	Mustang 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-2013-013	248.40	SPS	Tap Eddy County - Tolk 345kV
GEN-2013-016	203.00	SPS	TUCO 345kV
GEN-2013-022	25.00	SPS	Norton 115kV
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
PRIOR QUEUED SUBTOTAL	3,608.65		
ASGI-2014-001	2.50	SPS	SP-Erskine 115kV
GEN-2013-027	326.40	SPS	Tap Tolk - Yoakum 230kV
GEN-2014-007	400.00	SPS	Tap TUCO Interchange - Border 345kV
GEN-2014-012	850.00	SPS	Tap Hobbs Interchange - Andrews 230kV
CURRENT CLUSTER SUBTOTAL	1,578.90		
AREA TOTAL	5,187.55		

GROUP 7: SW-OKLAHOMA AREA

Request	Capacity	Area	Proposed Point of Interconnection
GEN-2001-026	74.00	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	Washita 138kV
GEN-2004-020	27.00	AEPW	Washita 34.5kV
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-2007-032	150.00	WFEC	Tap Clinton Junction - Clinton 138kV
GEN-2007-052	150.00	WFEC	Anadarko 138kV
GEN-2008-023	150.00	AEPW	Hobart Junction 138kV
GEN-2008-037	101.00	WFEC	Tap Washita - Blue Canyon Wind 138kV
GEN-2011-037	7.00	WFEC	Blue Canyon 5 138kV
GEN-2011-049	250.00	OKGE	Border 345kV
GEN-2012-028	74.80	WFEC	Gotebo 69kV
PRIOR QUEUED SUBTOTAL	1,900.00		
AREA TOTAL	1,900.00		

GROUP 8: N-OK/S-KS AREA

Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2010-006	150.00	AECI	Tap Fairfax (AECI) - Shilder (AEPW) 138kV
GEN-2002-004	200.00	WERE	Latham 345kV
GEN-2005-013	201.00	WERE	Tap Latham - Neosho (Caney River) 345kV
GEN-2007-025	300.00	WERE	Viola 345kV
GEN-2008-013	300.00	OKGE	Tap Wichita - Woodring (Hunter) 345kV
GEN-2008-021	42.00	WERE	Wolf Creek 345kV
GEN-2008-098	100.80	WERE	Tap Lacygne - Wolf Creek (Anderson County) 345kV
GEN-2009-025	60.00	OKGE	Nardins 69kV
GEN-2010-003	100.80	WERE	Tap Lacygne - Wolf Creek (Anderson County) 345kV
GEN-2010-005	300.00	WERE	Viola 345kV
GEN-2010-055	4.50	AEPW	Wekiwa 138kV
GEN-2011-057	150.40	WERE	Creswell 138kV
GEN-2012-023	115.00	WERE	Viola 345kV
GEN-2012-027	136.00	AEPW	Shidler 138kV
GEN-2012-032	300.00	OKGE	Tap Rose Hill - Sooner (Ranch) 345kV
GEN-2012-033	98.80	OKGE	Tap and Tie South 4th - Bunch Creek & Enid Tap - Fairmont (GEN-2012-033T) 138kV
GEN-2012-040	76.50	WFEC	Chilocco 138kV
GEN-2012-041	121.50	OKGE	Tap Rose Hill - Sooner 345kV
GEN-2013-009	100.30	AEPW	Tap Alluwe Tap - Vinita Junction 138kV
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
PRIOR QUEUED SUBTOTAL	3,864.10		
GEN-2014-001	200.60	WERE	Tap Wichita - Emporia Energy Center 345kV
CURRENT CLUSTER SUBTOTAL	200.60		
AREA TOTAL	4,064.70		

GROUP 9/10: 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	200.00	NPPD	Tap Ft Randle - Columbus (Meadow Grove) 230kV
GEN-2008-1190	60.00	OPPD	S1399 161kV
GEN-2008-123N	89.70	NPPD	Tap Guide Rock - Pauline (Rosemont) 115kV
GEN-2009-040	73.80	WERE	Marshall 115kV
GEN-2010-041	10.50	OPPD	S 1399 161kV
GEN-2010-051	200.00	NPPD	Tap Twin Church - Hoskins 230kV
GEN-2011-018	73.60	NPPD	Steele City 115kV
GEN-2011-027	120.00	NPPD	Tap Twin Church - Hoskins 230kV (GEN-2010-51 Tap)
GEN-2011-055	52.80	OPPD	South Sterling 69kV
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-2012-005	81.00	NPPD	Tap Fort Randall - Columbus (North of Meadow Grove) 230kV
GEN-2012-021	4.80	LES	Terry Bundy Generating Station 115kV
GEN-2013-002	50.60	LES	Tap Sheldon - Folsom & Pleasant Hill 115kV CKT 2
GEN-2013-004	6.00	NPPD	Tap Fort Randall - Columbus (Meadow Grove) 230kV
GEN-2013-005	73.50	NPPD	Meadow Grove (GEN-2008-086N2 Sub) 230kV
GEN-2013-006	50.60	NPPD	Tap Fort Randall - Columbus (Meadow Grove) 230kV
GEN-2013-008	1.20	NPPD	Steele City 115kV
GEN-2013-014	25.50	NPPD	Tap Guide Rock - Pauline (GEN-2008-123N Tap) 115kV
GEN-2013-015	125.80	NPPD	Tap Pauline - Hildreth 115kV
GEN-2013-019	73.60	LES	Tap Sheldon - Folsom & Pleasant Hill (GEN-2013-002 Tap) 115kV CKT 2
GEN-2013-021	229.50	NPPD	Ogallala 230kV
GEN-2013-032	204.00	NPPD	Neligh 115kV
NPPD Distributed (Broken Bow)	8.30	NPPD	Broken Bow 115kV
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 (Ord)	11.90	NPPD	Ord 115kV
NPPD Distributed (Stuart)	2.10	NPPD	Ainsworth 115kV
PRIOR QUEUED SUBTOTAL	2,449.80		
GEN-2014-004	3.96	NPPD	Steele City 115kV (GEN-2011-018 POI)
GEN-2014-006	74.90	NPPD	Harbine 115kV
GEN-2014-013	73.50	NPPD	Meadow Grove (GEN-2008-086N2 Sub) 230kV
CURRENT CLUSTER SUBTOTAL	152.36		
AREA TOTAL	2,602.16		

GROUP 12: NW-AR 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: NW MISSOURI AREA

Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2013-007	90.00	AECI	Tap Hickory Creek - Locust Creek 161kV
GEN-2008-129	80.00	GMO	Pleasant Hill 161kV
GEN-2010-036	4.60	WERE	6th Street 115kV
GEN-2010-056	151.20	MIPU	Tap Saint Joseph - Cooper 345kV
GEN-2011-011	50.00	KACP	Iatan 345kV
PRIOR QUEUED SUBTOTAL	375.80		
GEN-2013-026	150.00	GMO	Tap Saint Joseph - Cooper 345kV (GEN-2010-056 Tap)
CURRENT CLUSTER SUBTOTAL	150.00		
AREA TOTAL	525.80		

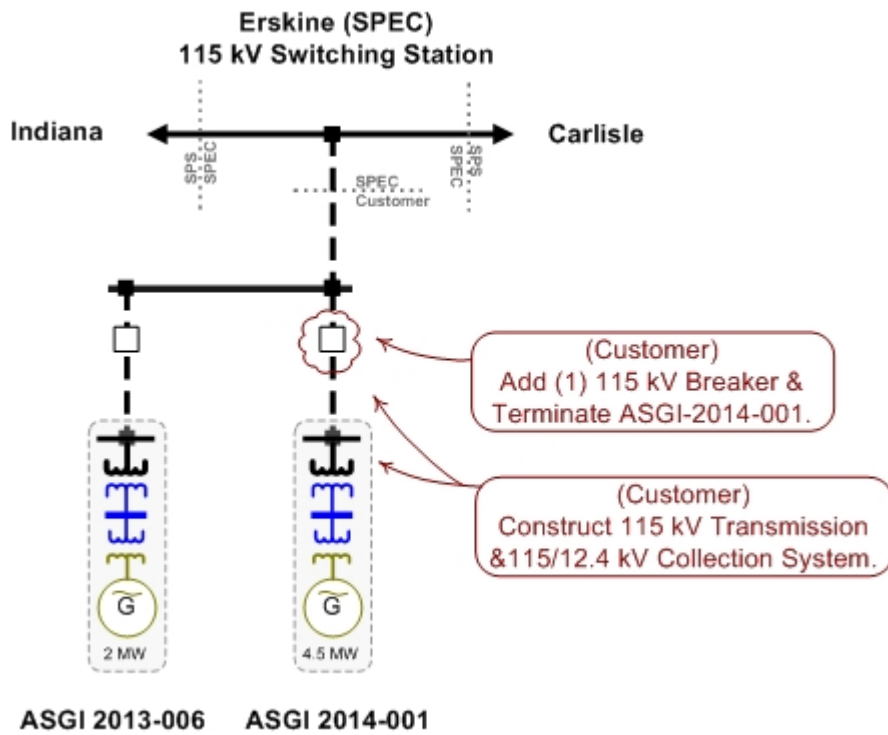
GROUP 14: S-OKLAHOMA AREA

Request	Capacity	Area	Proposed Point of Interconnection
GEN-2011-040	111.00	OKGE	Tap Ratliff - Pooleville 138kV
GEN-2011-050	109.80	AEPW	Rush Springs Natural Gas Tap 138kV
GEN-2012-004	41.40	OKGE	Tap Ratliff - Pooleville (Carter County) 138kV
GEN-2013-007	100.30	OKGE	Tap Prices Falls - Carter 138kV
PRIOR QUEUED SUBTOTAL	362.50		
AREA TOTAL	362.50		

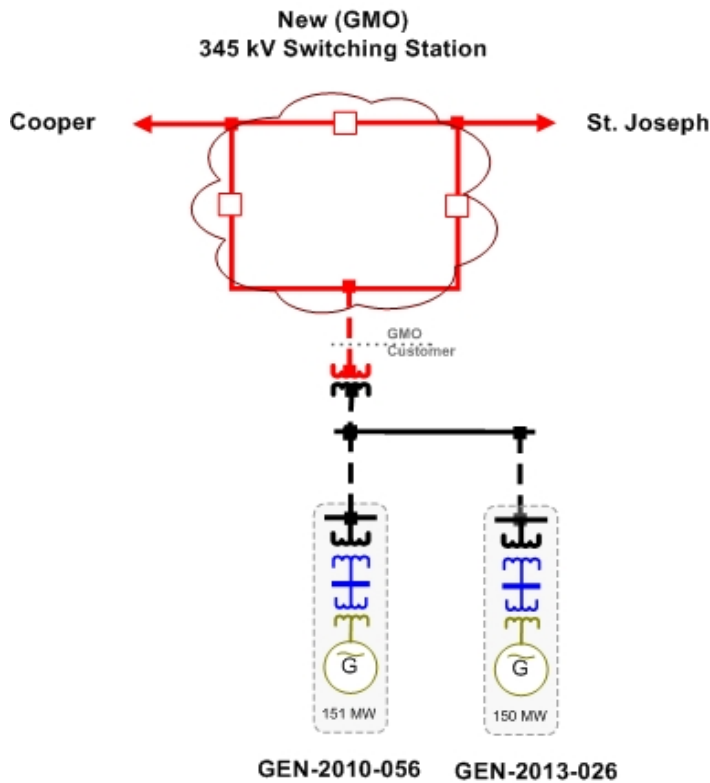
CLUSTER TOTAL (CURRENT STUDY)	2,213.9	MW
PQ TOTAL (PRIOR QUEUED)	27,190.5	MW
CLUSTER TOTAL (INCLUDING PRIOR QUEUED)	29,404.4	MW

D: Proposed Point of Interconnection One Line Diagrams

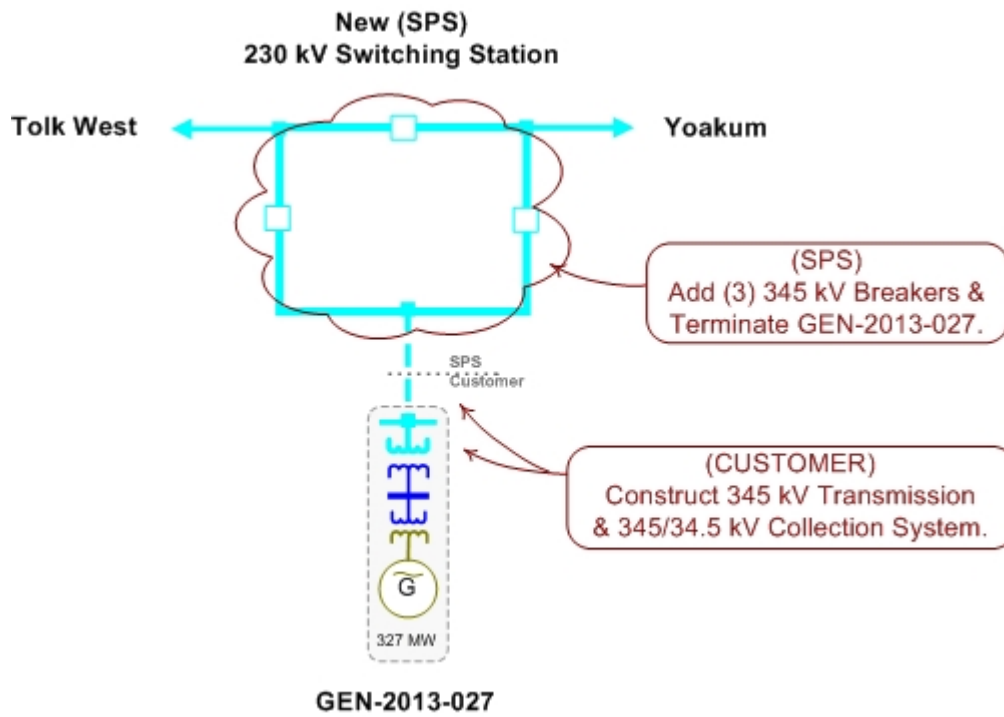
ASGI-2014-001



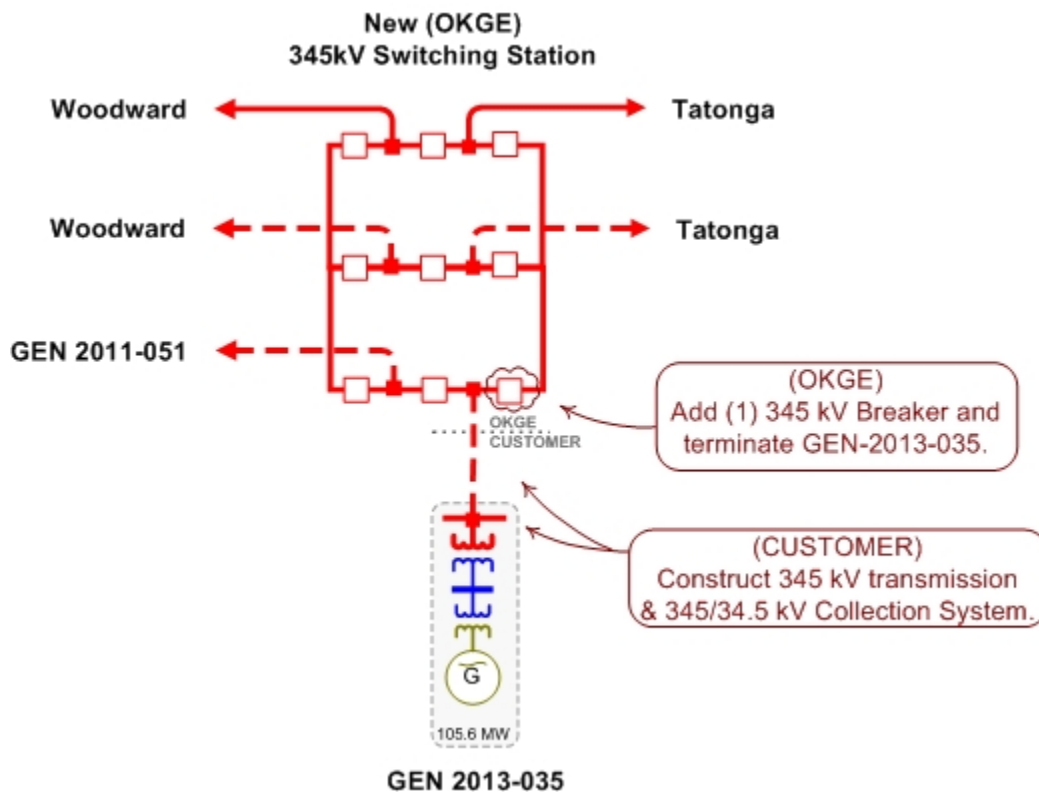
GEN-2013-026



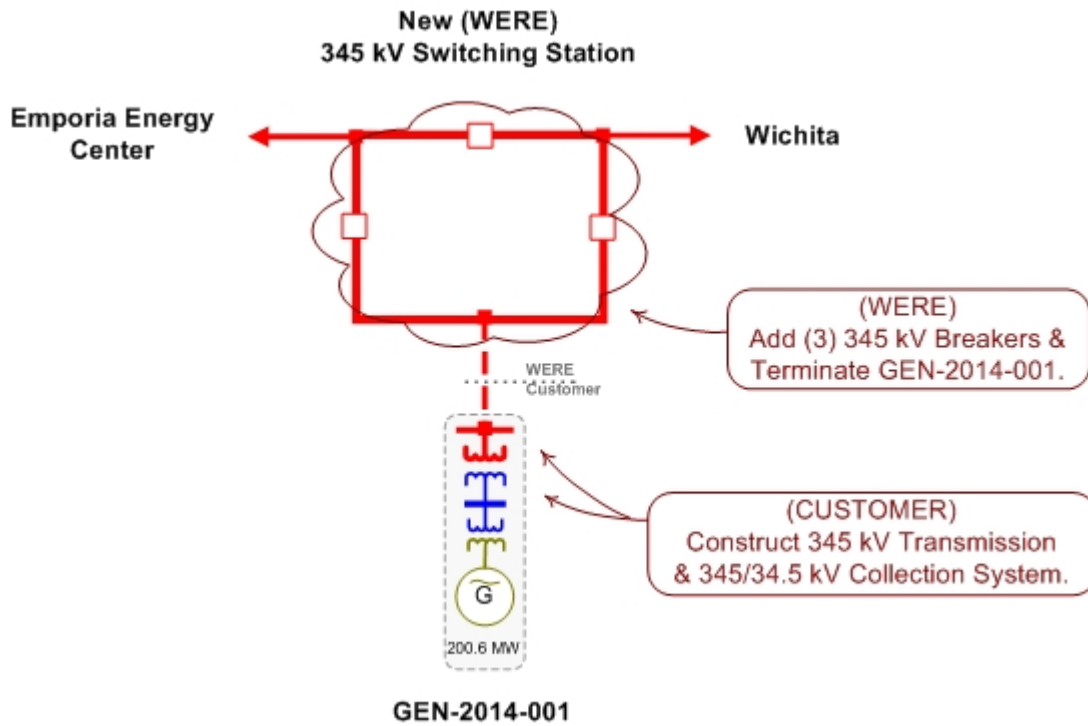
GEN-2013-027



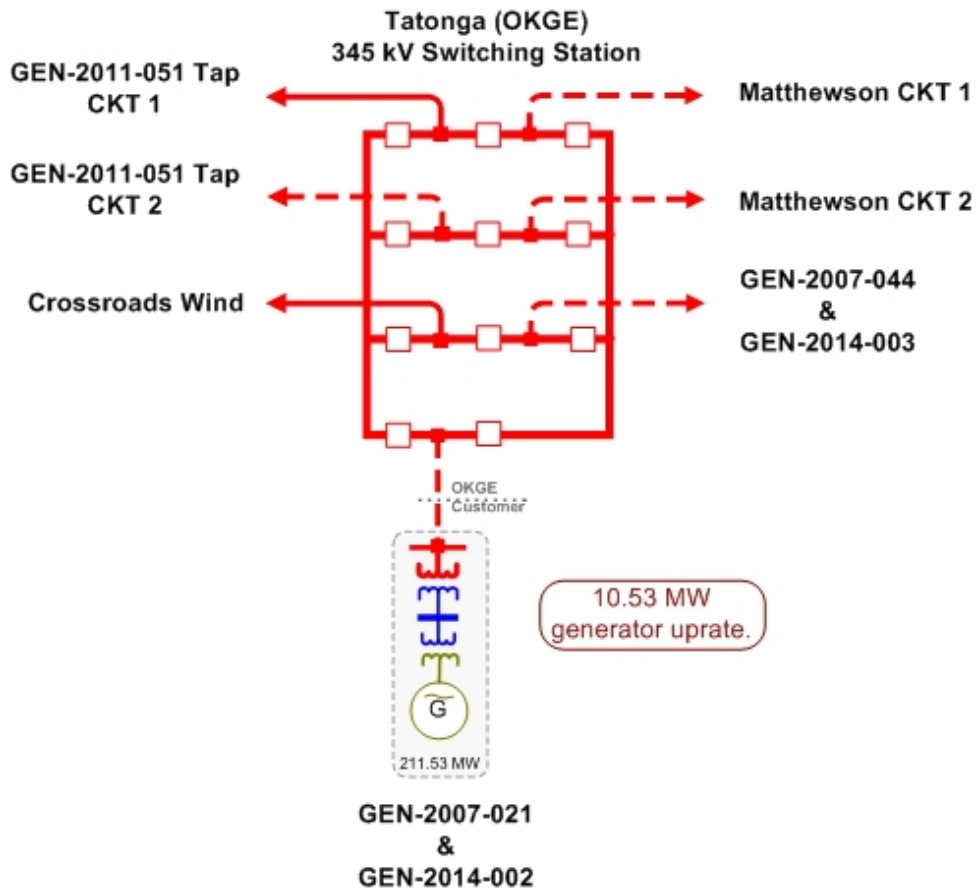
GEN-2013-035



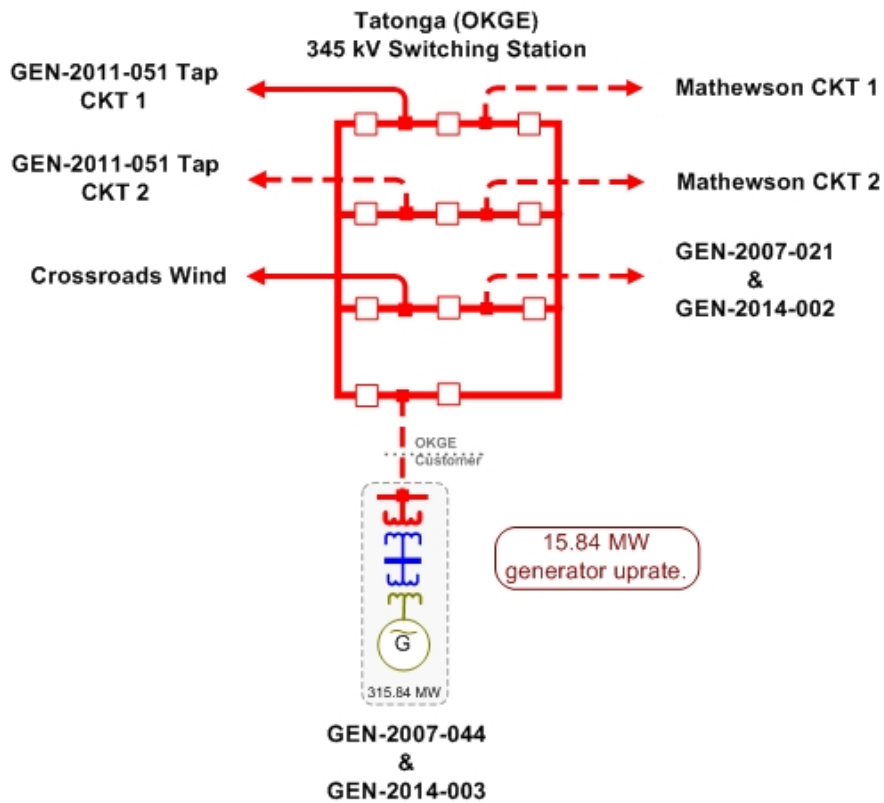
GEN-2014-001



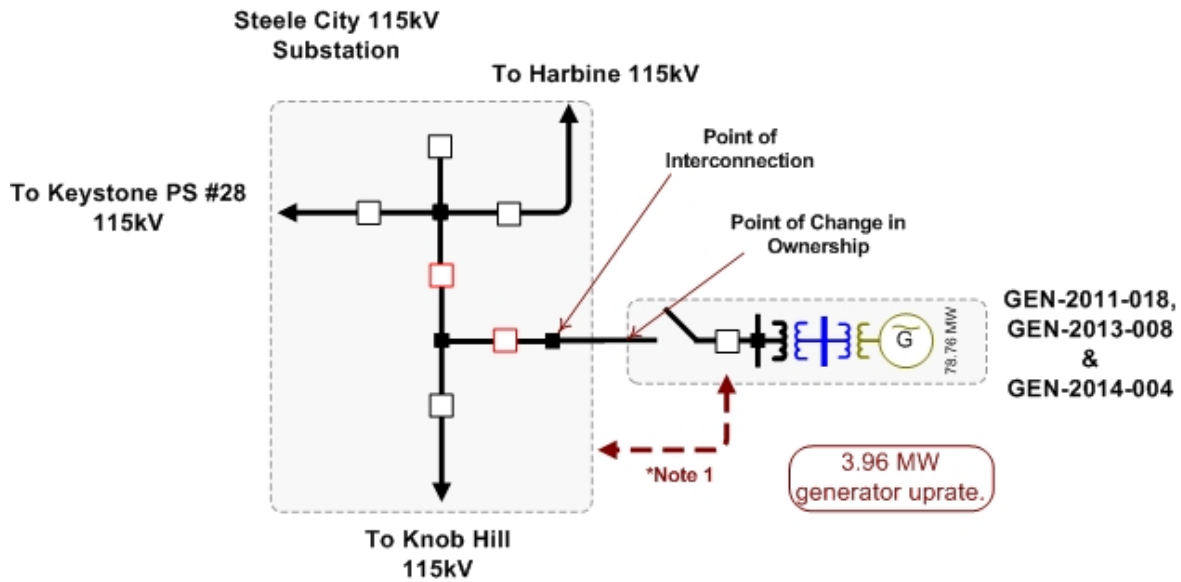
GEN-2014-002



GEN-2014-003

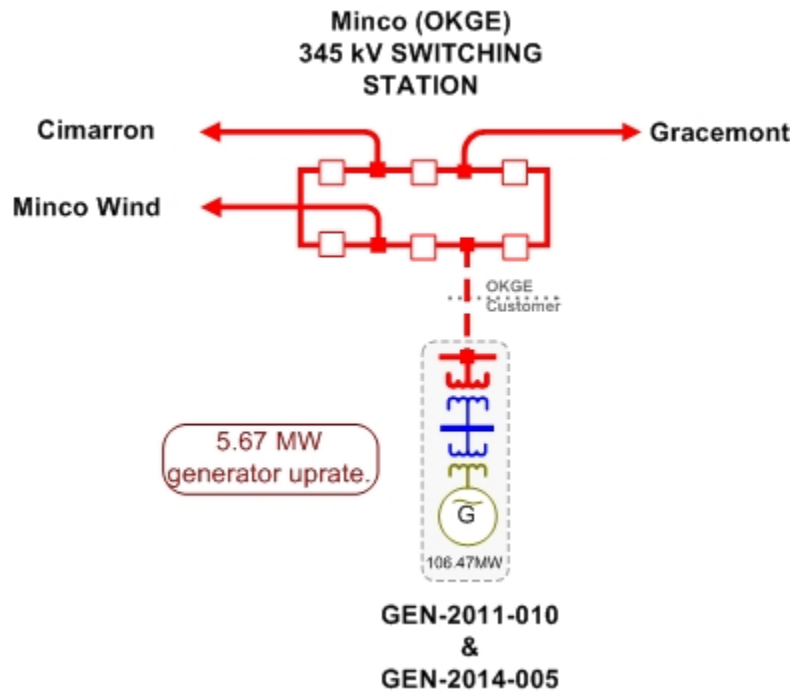


GEN-2014-004

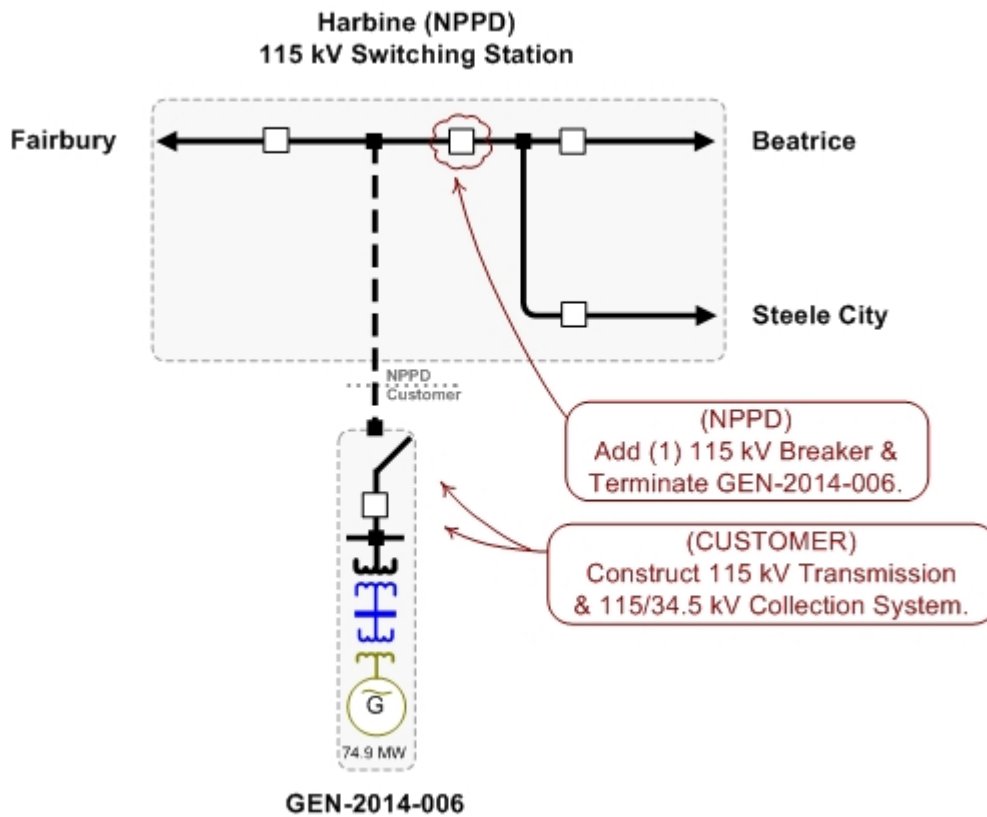


***Note 1: Breaker status & control signal to Transmission Owner to allow operation by Transmission Owner of 115kV breaker during Emergency Condition. Breaker operation will need coordination to ensure safe operation of the transmission line.**

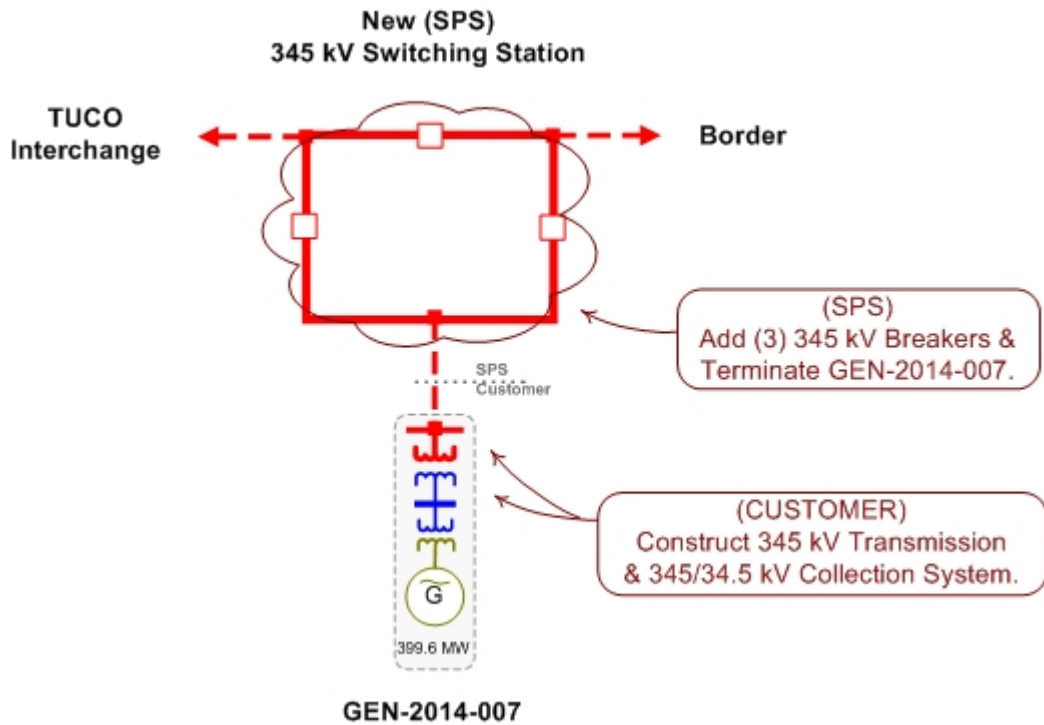
GEN-2014-005



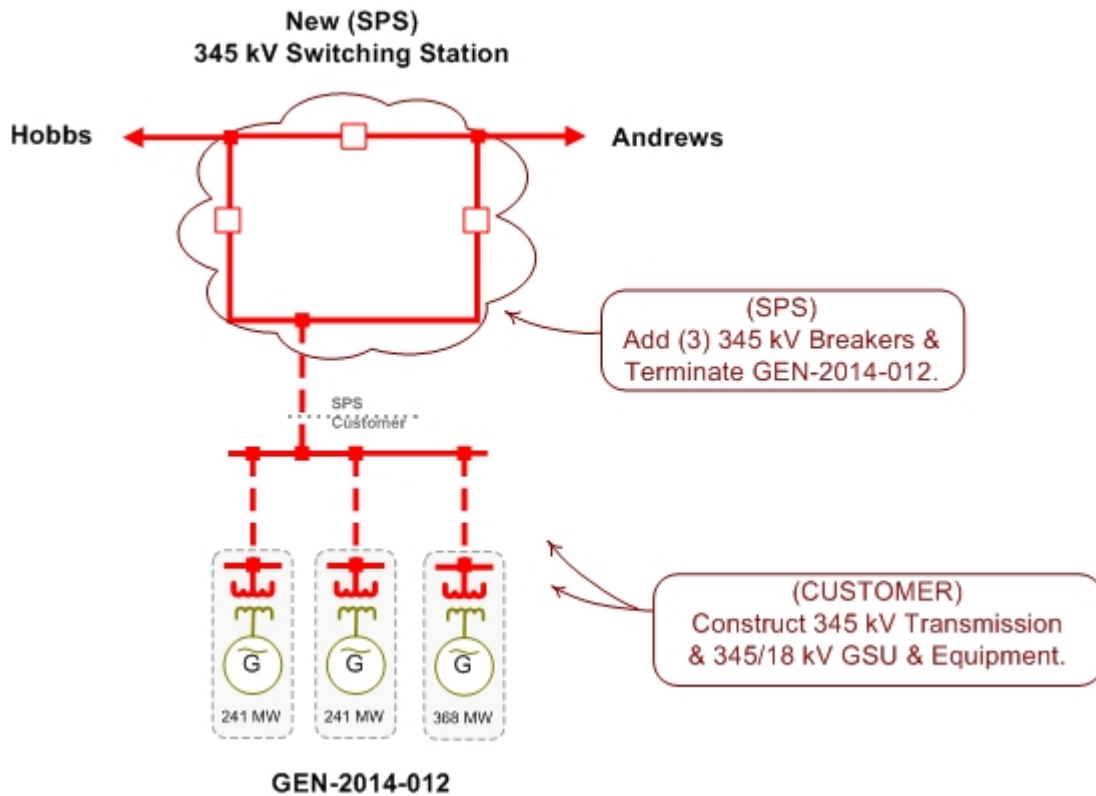
GEN-2014-006



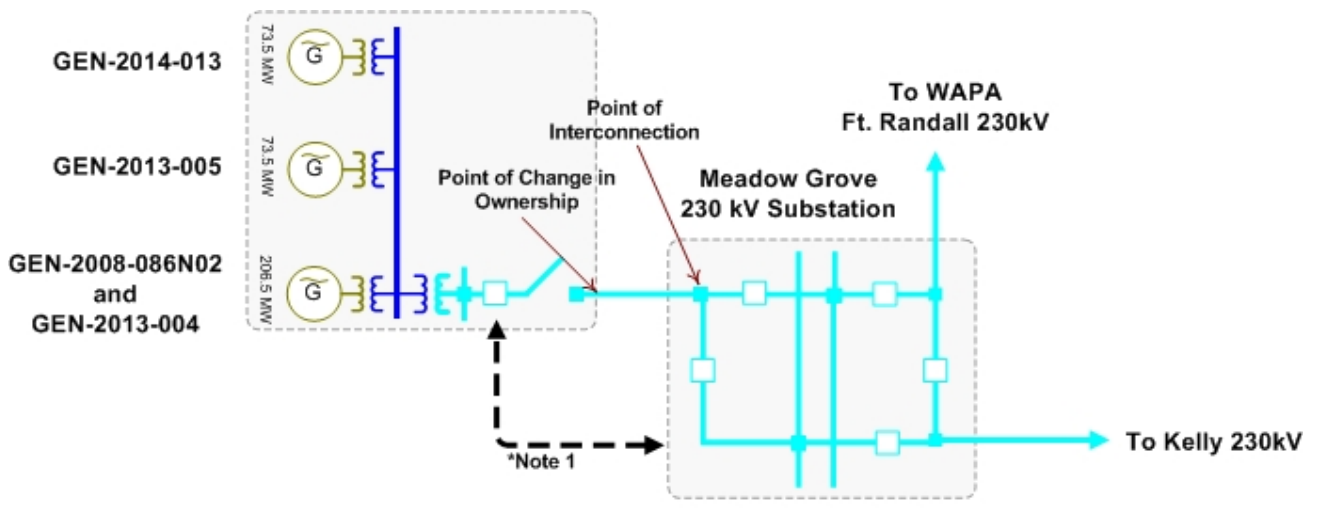
GEN-2014-007



GEN-2014-012



GEN-2014-013



***Note 1: Breaker status & control signal to Transmission Owner to allow operation by Transmission Owner of 230kV breaker during Emergency Condition. Breaker operation will need coordination to ensure safe operation of the transmission line.**

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 a 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-2014-001			
ASGI-2014-001 Interconnection Costs See One-line diagram	Current Study	\$0.00	\$0.00
Chisholm Substation Upgrade 345kV Expand planned Chisholm Substation to tap and terminate Woodward - Border 345kV into the Chisholm Substation	Current Study	\$24,380.61	\$12,000,000.00
GEN-2014-007 Tap - Border - Chisholm 345kV CKT 2 Build approximately 167 miles of second circuit 345kV from GEN-2014-007 Tap - Border - Chisholm	Current Study	\$370,138.87	\$167,000,000.00
Border - GEN-2014-007 Tap - TUCO Interchange 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV CKT 1 (Total Project E&C Cost Shown)	Previously Allocated		\$249,247,072.00
Bushland - Potter County 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$400,000.00
Chisholm - Gracemont 345kV CKT 1 Per SPP-NTC-200255 and 200240 (Total Project E&C Cost Shown)	Previously Allocated		\$162,952,357.00
Deaf Smith - Plant X 230kV CKT 1 Replace line traps at both ends	Previously Allocated		\$1,000,000.00
Oklaunion 345kV 60 Mvar Cap Bank Install 60MVar Cap Bank at Oklaunion.	Previously Allocated		\$20,000,000.00
Thistle - Woodward 345KV Dbl CKT Priority Project: Thistle - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		\$207,782,000.00
Tolk - Plant X 230kV CKT 3 Build a 3rd circuit between Tolk - Plant X 230kV	Previously Allocated		\$20,000,000.00
TUCO Interchange - Yoakum - Hobbs 345/230kV Projects Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$237,543,568.00
	Current Study Total	\$394,519.48	

GEN-2013-026

GEN-2013-026 Interconnection Costs See One-line diagram	Current Study	\$0.00	\$0.00
Iatan - Nashua 345KV CKT 1 Balanced Portfolio: Iatan - Nashua 345kV CKT 1 (Total Project E&C Cost Shown).	Previously Allocated		\$60,569,180.00

* 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
Nashua 345/161/13.8KV Autotransformer CKT 1 Balanced Portfolio: Nashua/161/13.8 Autotransformer 345kV CKT 1 (Total Project E&C Cost Shown).	Previously Allocated		\$4,230,000.00
	Current Study Total	\$0.00	
GEN-2013-027			
Chisholm Substation Upgrade 345kV Expand planned Chisholm Substation to tap and terminate Woodward - Border 345kV into the Chisholm Substation	Current Study	\$3,361,236.17	\$12,000,000.00
GEN-2013-027 Interconnection Costs See One-line diagram	Current Study	\$6,000,000.00	\$6,000,000.00
GEN-2014-007 Tap - Border - Chisholm 345kV CKT 2 Build approximately 167 miles of second circuit 345kV from GEN-2014-007 Tap - Border - Chisholm	Current Study	\$51,061,847.74	\$167,000,000.00
Amoco Wasson - Oxy Tap 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$200,000.00
Border - GEN-2014-007 Tap - TUCO Interchange 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV CKT 1 (Total Project E&C Cost Shown)	Previously Allocated		\$249,247,072.00
Bushland - Potter County 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$400,000.00
Chisholm - Gracemont 345kV CKT 1 Per SPP-NTC-200255 and 200240 (Total Project E&C Cost Shown)	Previously Allocated		\$162,952,357.00
Clark - Thistle 345KV Dbl CKT Priority Project: Spearville - Clark - Thistle Dbl 345kV CKT (Total Project E&C Cost Shown.)	Previously Allocated		\$426,504,292.00
Deaf Smith - Plant X 230kV CKT 1 Replace line traps at both ends	Previously Allocated		\$1,000,000.00
New Hart Interchange 230/115kV CKT 1 Project NRIS only required upgrade: Build per NTC 20084. Total project E&C costs shown.	Previously Allocated		\$53,164,688.00
Oklunion 345kV 60 Mvar Cap Bank Install 60MVar Cap Bank at Oklaunion.	Previously Allocated		\$20,000,000.00
Spearville - Clark 345KV Dbl CKT Priority Project: Spearville - Clark - Thistle Dbl 345kV CKT (Total Project E&C Cost Shown.)	Previously Allocated		\$426,504,292.00
SUB 967 - SUB 968 69kV CKT 1 Replace terminal equipment	Previously Allocated		\$15,667.00
SUB 968 - SUB 969 69kV CKT 1 Mitigated by replacing terminal equipment at Sub 969	Previously Allocated		\$0.00

* 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
Thistle - Woodward 345KV Dbl CKT Priority Project: Thistle - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		\$207,782,000.00
Tolk - Plant X 230kV CKT 3 Build a 3rd circuit between Tolk - Plant X 230kV	Previously Allocated		\$20,000,000.00
TUCO Interchange - Yoakum - Hobbs 345/230kV Projects Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$237,543,568.00
	Current Study Total	\$60,423,083.91	

GEN-2013-035

Chisholm Substation Upgrade 345kV Expand planned Chisholm Substation to tap and terminate Woodward - Border 345kV into the Chisholm Substation (Group1 NRIS)	Current Study	\$1,277,250.95	\$12,000,000.00
Elk City 230/115/13kV Transformer CKT 1 NRIS only required upgrade: Replace terminal equipment for Elk City Transformer	Current Study	\$1,669,892.95	\$2,000,000.00
GEN-2013-035 Interconnection Costs See One-line diagram	Current Study	\$3,000,000.00	\$3,000,000.00
Border - GEN-2014-007 Tap - TUCO Interchange 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV CKT 1 (Total Project E&C Cost Shown)	Previously Allocated		\$249,247,072.00
FPL Switch - Mooreland 138kV CKT 1 NRIS only required upgrade: Rebuild approximately 0.2 miles of 138kV line	Previously Allocated		\$820,000.00
FPL Switch - Woodward 138kV CKT 1 NRIS only required upgrade: Rebuild approximately 12 miles of 138kV line	Previously Allocated		\$6,509,948.00
Thistle - Woodward 345KV Dbl CKT Priority Project: Thistle - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		\$207,782,000.00
	Current Study Total	\$5,947,143.90	

GEN-2014-001

GEN-2014-001 Interconnection Costs See One-line diagram	Current Study	\$10,000,000.00	\$10,000,000.00
Iatan - Nashua 345KV CKT 1 Balanced Portfolio: Iatan - Nashua 345kV CKT 1 (Total Project E&C Cost Shown).	Previously Allocated		\$60,569,180.00
Nashua 345/161/13.8KV Autotransformer CKT 1 Balanced Portfolio: Nashua/161/13.8 Autotransformer 345kV CKT 1 (Total Project E&C Cost Shown).	Previously Allocated		\$4,230,000.00
	Current Study Total	\$10,000,000.00	

GEN-2014-002

* 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
Chisholm Substation Upgrade 345kV Expand planned Chisholm Substation to tap and terminate Woodward - Border 345kV into the Chisholm Substation (Group1 NRIS)	Current Study	\$98,614.62	\$12,000,000.00
Elk City 230/115/13kV Transformer CKT 1 NRIS only required upgrade: Replace terminal equipment for Elk City Transformer	Current Study	\$129,562.64	\$2,000,000.00
GEN-2014-002 Interconnection Costs See One-line diagram	Current Study	\$0.00	\$0.00
Border - GEN-2014-007 Tap - TUCO Interchange 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV CKT 1 (Total Project E&C Cost Shown)	Previously Allocated		\$249,247,072.00
FPL Switch - Mooreland 138kV CKT 1 NRIS only required upgrade: Rebuild approximately 0.2 miles of 138kV line	Previously Allocated		\$820,000.00
FPL Switch - Woodward 138kV CKT 1 NRIS only required upgrade: Rebuild approximately 12 miles of 138kV line	Previously Allocated		\$6,509,948.00
Thistle - Woodward 345KV Dbl CKT Priority Project: Thistle - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		\$207,782,000.00
Viola - Wichita 345kV CKT 1 Replace Terminal Equipment	Previously Allocated		\$100,000.00
	Current Study Total	\$228,177.26	

GEN-2014-003

Chisholm Substation Upgrade 345kV Expand planned Chisholm Substation to tap and terminate Woodward - Border 345kV into the Chisholm Substation (Group1 NRIS)	Current Study	\$143,439.45	\$12,000,000.00
Elk City 230/115/13kV Transformer CKT 1 NRIS only required upgrade: Replace terminal equipment for Elk City Transformer	Current Study	\$188,454.74	\$2,000,000.00
GEN-2014-003 Interconnection Costs See One-line diagram	Current Study	\$0.00	\$0.00
Border - GEN-2014-007 Tap - TUCO Interchange 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV CKT 1 (Total Project E&C Cost Shown)	Previously Allocated		\$249,247,072.00
FPL Switch - Mooreland 138kV CKT 1 NRIS only required upgrade: Rebuild approximately 0.2 miles of 138kV line	Previously Allocated		\$820,000.00
FPL Switch - Woodward 138kV CKT 1 NRIS only required upgrade: Rebuild approximately 12 miles of 138kV line	Previously Allocated		\$6,509,948.00
Thistle - Woodward 345KV Dbl CKT Priority Project: Thistle - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		\$207,782,000.00

* 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
Viola - Wichita 345kV CKT 1 Replace Terminal Equipment	Previously Allocated		\$100,000.00
	Current Study Total	\$331,894.19	
GEN-2014-004			
GEN-2014-004 Interconnection Costs See One-line diagram	Current Study	\$0.00	\$0.00
Harbine - Crete 115kV CKT 1 Build approximately 35 miles of 115kV from Harbine - Crete	Current Study	\$750,922.87	\$17,200,000.00
	Current Study Total	\$750,922.87	
GEN-2014-005			
Chisholm Substation Upgrade 345kV Expand planned Chisholm Substation to tap and terminate Woodward - Border 345kV into the Chisholm Substation (Group1 NRIS)	Current Study	\$29,365.87	\$12,000,000.00
Elk City 230/115/13kV Transformer CKT 1 NRIS only required upgrade: Replace terminal equipment for Elk City Transformer	Current Study	\$12,089.67	\$2,000,000.00
GEN-2014-005 Interconnection Costs See One-line diagram	Current Study	\$0.00	\$0.00
Border - GEN-2014-007 Tap - TUCO Interchange 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV CKT 1 (Total Project E&C Cost Shown)	Previously Allocated		\$249,247,072.00
FPL Switch - Mooreland 138kV CKT 1 NRIS only required upgrade: Rebuild approximately 0.2 miles of 138kV line	Previously Allocated		\$820,000.00
FPL Switch - Woodward 138kV CKT 1 NRIS only required upgrade: Rebuild approximately 12 miles of 138kV line	Previously Allocated		\$6,509,948.00
Thistle - Woodward 345KV Dbl CKT Priority Project: Thistle - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		\$207,782,000.00
Viola - Wichita 345kV CKT 1 Replace Terminal Equipment	Previously Allocated		\$100,000.00
	Current Study Total	\$41,455.54	
GEN-2014-006			
GEN-2014-006 Interconnection Costs See One-line diagram	Current Study	\$1,000,000.00	\$1,000,000.00
Harbine - Crete 115kV CKT 1 Build approximately 35 miles of 115kV from Harbine - Crete	Current Study	\$16,449,077.13	\$17,200,000.00

* 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	\$17,449,077.13	
GEN-2014-007			
Chisholm Substation Upgrade 345kV Expand planned Chisholm Substation to tap and terminate Woodward - Border 345kV into the Chisholm Substation	Current Study	\$7,065,712.34	\$12,000,000.00
GEN-2014-007 Interconnection Costs See One-line diagram	Current Study	\$11,000,000.00	\$11,000,000.00
GEN-2014-007 Tap - Border - Chisholm 345kV CKT 2 Build approximately 167 miles of second circuit 345kV from GEN-2014-007 Tap - Border - Chisholm	Current Study	\$115,568,013.40	\$167,000,000.00
Amoco Wasson - Oxy Tap 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$200,000.00
Border - GEN-2014-007 Tap - TUCO Interchange 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV CKT 1 (Total Project E&C Cost Shown)	Previously Allocated		\$249,247,072.00
Bushland - Potter County 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$400,000.00
Chisholm - Gracemont 345kV CKT 1 Per SPP-NTC-200255 and 200240 (Total Project E&C Cost Shown)	Previously Allocated		\$162,952,357.00
Deaf Smith - Plant X 230kV CKT 1 Replace line traps at both ends	Previously Allocated		\$1,000,000.00
Oklaunion 345kV 60 Mvar Cap Bank Install 60MVar Cap Bank at Oklaunion.	Previously Allocated		\$20,000,000.00
Thistle - Woodward 345KV Dbl CKT Priority Project: Thistle - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		\$207,782,000.00
TUCO Interchange - Yoakum - Hobbs 345/230kV Projects Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$237,543,568.00
	Current Study Total	\$133,633,725.74	
GEN-2014-012			
Andrews - Road Runner 345kV CKT 1 Build approximately 50 miles of 345kV from Andrews - Road Runner	Current Study	\$55,000,000.00	\$55,000,000.00
Andrews Substation Voltage Conversion Convert Andrews 230kV to 345kV and replace Andrews 230/115/13kV to 345/115/13kV transformer	Current Study	\$15,000,000.00	\$15,000,000.00
GEN-2014-012 Interconnection Costs See One-line diagram	Current Study	\$12,000,000.00	\$12,000,000.00

* 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
Hobbs - GEN-2014-012 Tap - Andrews Voltage Conversion Convert Hobbs - GEN-2014-012 Tap - Andrews from 230kV to 345kV	Current Study	\$10,000,000.00	\$10,000,000.00
Amoco Wasson - Oxy Tap 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$200,000.00
Battle Axe - Road Runner 115kV CKT 1 Per HPILs Direct Assigned Upgrade (Total Project E&C Cost Shown)	Previously Allocated		\$15,538,804.00
Bushland - Potter County 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$400,000.00
Chaves County - Price - CV Pines - Capitan 115kV CKT 1 Per HPILs SPP-NTC-200256 (Total Project E&C Cost Shown)	Previously Allocated		\$14,275,000.00
China Draw - Yeso Hills 115kV CKT 1 Per HPILs Direct Assigned Upgrade (Total Project E&C Cost Shown)	Previously Allocated		\$14,707,442.00
Deaf Smith - Plant X 230kV CKT 1 Replace line traps at both ends	Previously Allocated		\$1,000,000.00
Dollarhide - Toboso Flats 115kV CKT 1 Per HPILs Direct Assigned Upgrade (Total Project E&C Cost Shown)	Previously Allocated		\$5,702,228.00
Hobbs Interchange - Kiowa 345kV CKT 1 Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$65,989,591.00
Kiowa - North Loving - China Draw 345/115kV Projects Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$62,619,690.00
Kiowa - Road Runner 345/230/115kV Projects Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$21,560,659.00
Livingston Ridge - Sage Brush - Lagarto - Cardinal 115kV CKT 1 Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$37,316,546.00
North Loving - South Loving 115kV CKT 1 Per HPILs (Total Project E&C Cost Shown)	Previously Allocated		\$6,928,199.00
Oklunion 345kV 60 Mvar Cap Bank Install 60MVar Cap Bank at Oklaunion.	Previously Allocated		\$20,000,000.00
Ponderosa - Ponderosa Tap 115kV CKT 1 Per HPILs Direct Assigned Upgrade (Total Project E&C Cost Shown)	Previously Allocated		\$9,796,438.00
Tolk - Plant X 230kV CKT 3 Build a 3rd circuit between Tolk - Plant X 230kV	Previously Allocated		\$20,000,000.00

* 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
TUCO Interchange - Yoakum - Hobbs 345/230kV Projects Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$237,543,568.00
	Current Study Total	\$92,000,000.00	
GEN-2014-013			
GEN-2014-013 Interconnection Costs See One-line diagram	Current Study	\$1,400,000.00	\$1,400,000.00
Meadow Grove - South Norfolk 230kV CKT 1 Incremental Upgrade Increase rating limits of line and substations to atleast 1044 amps (416MVA)	Current Study		TBD in NPPD Facility Study
South Norfolk 345/230/13.8kV Xfmr CKT 1 Incremental Upgrade Increase rating limits of transformer and substation to atleast 417MVA	Current Study		TBD in NPPD Facility Study
Hoskins - Dixon County - Twin Church 230kV Rerate per NPPD Facility Study	Previously Allocated		\$500,000.00
Meadow Grove - North Petersburg 115kV CKT 1 Build approx. 25 miles of new 115kV circuit from Meadow Grove - N. Petersburg, expand N. Petersburg 115kV Sub and replace equip. at Neligh 115kV Sub.	Previously Allocated		\$16,300,000.00
Meadow Grove - South Norfolk 230kV CKT 1 Build approximately 25 miles of new 230kV circuit from Meadow Grove - South Norfolk	Previously Allocated		\$25,000,000.00
Meadow Grove 230/115/13.8kV Transformer CKT 1 Build Meadow Grove 230/115/13.8kV Transformer and Substation Expansion	Previously Allocated		\$11,000,000.00
South Norfolk 345/230/13.8kV Transformer CKT 1 Build new 345/230/13.8kV transformer	Previously Allocated		\$6,600,000.00
South Norfolk 345/230kV Substation Build new 345/230kV substation on Hoskins - Shell Creek 345kV	Previously Allocated		\$10,600,000.00
Twin Church - Dixon County 230kV Increase conductor clearances to accommodate 320MVA facility rating	Previously Allocated		\$100,000.00
	Current Study Total	\$1,400,000.00	
TOTAL CURRENT STUDY COSTS:		\$322,600,000.02*	

*Total Current Study Costs do not include costs for Meadow Grove - South Norfolk 230kV circuit #1 and South Norfolk 345/115/13kV transformer thermal overload mitigations. Costs for the mitigations will be determined in the NPPD Facility Study. These mitigations are Non-Shared Network Upgrades assigned to GEN-2014-013.

* 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

Andrews - Road Runner 345kV CKT 1		\$55,000,000.00
Build approximately 50 miles of 345kV from Andrews - Road Runner		
	GEN-2014-012	\$55,000,000.00
	Total Allocated Costs	\$55,000,000.00
Andrews Substation Voltage Conversion		\$15,000,000.00
Convert Andrews 230kV to 345kV and replace Andrews 230/115/13kV to 345/115/13kV transformer		
	GEN-2014-012	\$15,000,000.00
	Total Allocated Costs	\$15,000,000.00
ASGI-2014-001 Interconnection Costs		\$0.00
See One-line diagram		
	ASGI-2014-001	\$0.00
	Total Allocated Costs	\$0.00
Chisholm Substation Upgrade 345kV		\$12,000,000.00
Expand planned Chisholm Substation to tap and terminate Woodward - Border 345kV into the Chisholm Substation		
	ASGI-2014-001	\$24,380.61
	GEN-2013-027	\$3,361,236.17
	GEN-2013-035	\$1,277,250.95
	GEN-2014-002	\$98,614.62
	GEN-2014-003	\$143,439.45
	GEN-2014-005	\$29,365.87
	GEN-2014-007	\$7,065,712.34
	Total Allocated Costs	\$12,000,000.00
Hobbs - GEN-2014-012 Tap - Andrews Voltage Conversion		\$10,000,000.00
Convert Hobbs - GEN-2014-012 Tap - Andrews from 230kV to 345kV		
	GEN-2014-012	\$10,000,000.00
	Total Allocated Costs	\$10,000,000.00

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

Elk City 230/115/13kV Transformer CKT 1**\$2,000,000.00**

NRIS only required upgrade: Replace terminal equipment for Elk City Transformer

GEN-2013-035	\$1,669,892.95
GEN-2014-002	\$129,562.64
GEN-2014-003	\$188,454.74
GEN-2014-005	\$12,089.67

Total Allocated Costs	\$2,000,000.00
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GEN-2013-026 Interconnection Costs**\$0.00**

See One-line diagram

GEN-2013-026	\$0.00
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Total Allocated Costs	\$0.00
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GEN-2013-027 Interconnection Costs**\$6,000,000.00**

See One-line diagram

GEN-2013-027	\$6,000,000.00
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Total Allocated Costs	\$6,000,000.00
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GEN-2013-035 Interconnection Costs**\$3,000,000.00**

See One-line diagram

GEN-2013-035	\$3,000,000.00
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Total Allocated Costs	\$3,000,000.00
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GEN-2014-001 Interconnection Costs**\$10,000,000.00**

See One-line diagram

GEN-2014-001	\$10,000,000.00
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Total Allocated Costs	\$10,000,000.00
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GEN-2014-002 Interconnection Costs**\$0.00**

See One-line diagram

GEN-2014-002	\$0.00
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Total Allocated Costs	\$0.00
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GEN-2014-003 Interconnection Costs**\$0.00**

See One-line diagram

GEN-2014-003	\$0.00
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Total Allocated Costs	\$0.00
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* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

GEN-2014-004 Interconnection Costs		\$0.00
See One-line diagram		
	GEN-2014-004	\$0.00
	Total Allocated Costs	\$0.00
GEN-2014-005 Interconnection Costs		\$0.00
See One-line diagram		
	GEN-2014-005	\$0.00
	Total Allocated Costs	\$0.00
GEN-2014-006 Interconnection Costs		\$1,000,000.00
See One-line diagram		
	GEN-2014-006	\$1,000,000.00
	Total Allocated Costs	\$1,000,000.00
GEN-2014-007 Interconnection Costs		\$11,000,000.00
See One-line diagram		
	GEN-2014-007	\$11,000,000.00
	Total Allocated Costs	\$11,000,000.00
GEN-2014-007 Tap - Border - Chisholm 345kV CKT 2		\$167,000,000.00
Build approximately 167 miles of second circuit 345kV from GEN-2014-007 Tap - Border - Chisholm		
	ASGI-2014-001	\$370,138.87
	GEN-2013-027	\$51,061,847.74
	GEN-2014-007	\$115,568,013.40
	Total Allocated Costs	\$167,000,000.00
GEN-2014-012 Interconnection Costs		\$12,000,000.00
See One-line diagram		
	GEN-2014-012	\$12,000,000.00
	Total Allocated Costs	\$12,000,000.00
GEN-2014-013 Interconnection Costs		\$1,400,000.00
See One-line diagram		
	GEN-2014-013	\$1,400,000.00
	Total Allocated Costs	\$1,400,000.00

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

Harbine - Crete 115kV CKT 1**\$17,200,000.00**

Build approximately 35 miles of 115kV from Harbine - Crete

GEN-2014-004 \$750,922.87

GEN-2014-006 \$16,449,077.13

Total Allocated Costs **\$17,200,000.00**

Meadow Grove - South Norfolk 230kV CKT 1 Incremental Upgrade**TBD**

Increase rating limits of line and substations to atleast 1044 amps (416MVA)

GEN-2014-013 TBD

Total Allocated Costs **TBD**

South Norfolk 345/230/13.8kV Xfmr CKT 1 Incremental Upgrade**TBD**

Increase rating limits of transformer and substation to atleast 417MVA

GEN-2014-013 TBD

Total Allocated Costs **TBD**

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

G: Power Flow Analysis (Constraints Used For Mitigation)

See next page.

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FNSL-Blown up	06ALL	0	14G	ASGI_14_001		Non-Converged Contingency	0	0.53534	-	SPP-AEPW-32
FNSL-Blown up	06ALL	0	14G	ASGI_14_001		Non-Converged Contingency	0	0.52567	-	SPP-SWPS-01
FNSL-Blown up	06ALL	0	14G	ASGI_14_001		Non-Converged Contingency	994	0.26767	-	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FNSL-Blown up	06ALL	0	14G	ASGI_14_001		Non-Converged Contingency	1972	0.21517	-	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FNSL-Blown up	06ALL	0	14G	ASGI_14_001		Non-Converged Contingency	1623	0.21517	-	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00ASGI_14_001	2	19WP	ASGI_14_001	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	0.49988	102.2	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	00ASGI_14_001	2	19WP	ASGI_14_001	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	0.49988	100.9	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	00ASGI_14_001	2	19WP	ASGI_14_001	FROM->TO	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	560	0.49241	100.7	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1
FNSL-Blown up	00G13_027	0	19WP	G13_027		Non-Converged Contingency	0	0.44539	-	SPP-AEPW-32
FNSL-Blown up	00G13_027	0	19WP	G13_027		Non-Converged Contingency	0	0.43456	-	SPP-SWPS-01
FNSL-Blown up	00G13_027	0	19WP	G13_027		Non-Converged Contingency	1071	0.2227	-	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FNSL-Blown up	00G13_027	0	19WP	G13_027		Non-Converged Contingency	1972	0.17381	-	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FNSL-Blown up	00G13_027	0	19WP	G13_027		Non-Converged Contingency	1623	0.17381	-	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FNSL-Blown up	00NR	0	14WP	G13_027		Non-Converged Contingency	557	0.03829	-	CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1
FNSL-Blown up	00NR	0	14WP	G13_027		Non-Converged Contingency	560	0.03829	-	EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1
FNSL-Blown up	00NR	0	19WP	G13_027		Non-Converged Contingency	0	0.05722	-	SPP-SWPS-01
FNSL-Blown up	00NR	0	19WP	G13_027		Non-Converged Contingency	0	0.05553	-	SPP-AEPW-32
FNSL-Blown up	06ALL	0	14G	G13_027		Non-Converged Contingency	0	0.45192	-	SPP-AEPW-32
FNSL-Blown up	06ALL	0	14G	G13_027		Non-Converged Contingency	0	0.43823	-	SPP-SWPS-01
FNSL-Blown up	06ALL	0	14G	G13_027		Non-Converged Contingency	994	0.22596	-	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FNSL-Blown up	06ALL	0	14G	G13_027		Non-Converged Contingency	1972	0.1713	-	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FNSL-Blown up	06ALL	0	14G	G13_027		Non-Converged Contingency	1623	0.1713	-	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FNSL-Blown up	00NR	2	14WP	G13_027		Non-Converged Contingency	557	0.03881	-	CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1
FNSL-Blown up	00NR	2	14WP	G13_027		Non-Converged Contingency	560	0.03881	-	EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	00G13_027	0	19WP	G13_027	FROM->TO	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1	557	0.23639	101.7067	BUSHLAND_S 230.00 - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	06NR	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04681	116.4067	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06NR	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04681	116.3925	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06NR	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04681	116.3925	SPP-SWPS-K37
FDNS	06NR	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.05538	114.7824	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	06NR	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.05267	114.5303	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	06NR	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04681	113.6769	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06NR	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04681	113.6768	SPP-SWPS-K37
FDNS	06NR	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04681	113.6743	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06NR	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.05267	112.5884	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	06NR	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.05538	112.2641	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	00NR	0	14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.066	111.4653	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	00NR	0	14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.066	111.4498	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	00NR	0	14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.066	111.4498	SPP-SWPS-K37
FDNS	00NR	0	14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.066	109.8109	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	00NR	0	14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.066	109.7955	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	00NR	0	14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.066	109.7955	SPP-SWPS-K37
FDNS	06NR	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04984	105.2662	BUSHLAND_S 230.00 - PLANT X STATION 230KV CKT 1
FDNS	00NR	0	14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.05394	104.5585	GEN525493 1-PLANT X GEN #3
FDNS	06NR	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04984	103.3937	BUSHLAND_S 230.00 - PLANT X STATION 230KV CKT 1
FDNS	00NR	0	14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.05394	102.2817	GEN525493 1-PLANT X GEN #3
FDNS	06NR	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04402	101.8681	LAMB COUNTY INTERCHANGE - PLANT X STATION 115KV CKT 1
FDNS	00NR	0	14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.06953	101.396	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	06NR	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04298	101.2286	PLANT X STATION - SUNDOWN INTERCHANGE 230KV CKT 1
FDNS	06NR	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04402	100.1314	LAMB COUNTY INTERCHANGE - PLANT X STATION 115KV CKT 1
FDNS	00NR	0	14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.06953	99.9	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	06NR	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04298	99.7	PLANT X STATION - SUNDOWN INTERCHANGE 230KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	0.37962	108.1872	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	00G13_027	0	19WP	G13_027	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	0.37962	104.8586	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	00G13_027	0	19WP	G13_027	FROM->TO	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	560	0.37457	106.4908	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	00G13_027	0	19WP	G13_027	FROM->TO	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 1	560	0.37457	102.9722	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	06NR	2	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04741	115.8675	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06NR	2	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04741	115.8499	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06NR	2	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04741	115.8499	SPP-SWPS-K37
FDNS	06NR	2	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.05353	115.7155	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	06NR	2	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.05353	113.8546	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	06NR	2	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04741	113.3765	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06NR	2	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04741	113.3721	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06NR	2	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04741	113.3721	SPP-SWPS-K37
FDNS	06NR	2	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.05547	111.4327	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	00NR	2	14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.06638	111.2492	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	00NR	2	14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.06638	111.2492	SPP-SWPS-K37
FDNS	00NR	2	14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.06638	111.2202	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	00NR	2	14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.06638	109.5978	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	00NR	2	14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.06638	109.5978	SPP-SWPS-K37
FDNS	00NR	2	14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.06638	109.5693	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06NR	2	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.05547	109.4127	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	00NR		5 14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.05327	103.0746	GEN525493 1-PLANT X GEN #3
FDNS	06NR		5 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.05362	102.8632	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	06NR		5 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04926	101.6294	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	06NR		5 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.05362	101.2829	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	00NR		5 14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.05327	100.9209	GEN525493 1-PLANT X GEN #3
FDNS	06NR		5 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04926	100.4298	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	01NR		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.13311	130.854	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.13311	111.1607	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.13331	106.4426	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.13311	100.3334	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.13311	202.4049	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.13331	169.3359	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.13331	162.169	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08142	152.5363	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.13222	150.2238	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.13311	146.8683	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0856	143.9178	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.13372	143.0662	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.13222	142.8117	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0856	142.1841	DEWEY - IODINE 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	141.9553	BASE CASE
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	141.7568	GEN515787 1-OKLA WIND ENERGY CENTER
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08114	141.585	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08113	141.5531	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	140.5267	GEN520997 1-MORLND2
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.1349	140.4348	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0745	138.8459	DEWEY - TALOGA 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08142	138.5662	WOODWARD - WOODWARD 69KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.08207	138.0917	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07585	137.4382	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	137.1561	GEN520922 1-SLEEPING BEAR
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07665	135.7669	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07665	135.7669	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.08602	135.1114	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07585	134.0044	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.08602	133.6519	DEWEY - IODINE 138KV CKT 1
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.13372	133.2089	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07279	132.2651	FT SUPPLY - IODINE 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07608	132.0664	SPP-SWPS-03
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07585	131.925	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07602	131.7076	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07602	131.7027	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07602	131.2227	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07427	131.1511	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.1349	130.9813	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	130.9004	GEN520997 1-MORLND2
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07279	130.6935	IODINE - MOORELAND 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07675	130.1517	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	130.0615	GEN515389 1-TLGAWND1 34.500
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07723	129.8283	SPP-AEPW-32
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07004	129.6972	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07318	129.4663	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0749	129.0889	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	128.6611	GEN514805 1-SOONER UNIT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07602	128.5945	SPP-SWPS-02A
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07297	128.2626	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	128.0842	GEN520998 1-MORLND3
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07318	127.897	SPP-SWPS-04
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07727	127.8954	SPP-SWPS-01
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07318	127.7678	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0749	127.7351	SPP-SWPS-05
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0749	127.6829	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07723	127.5416	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07186	127.4958	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07297	127.476	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07556	127.4477	SPP-SWPS-03
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08276	127.3891	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07675	127.0914	STLN-DEMAR6 - SWEETWATER 230KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07675	127.0751	STATELINE INTERCHANGE - STLN-DEMAR6 230KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07675	127.0733	SPP-SWPS-02
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	126.9248	GEN514806 1-SOONER UNIT 2

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06726	126.8665	RENFROW4 138.00 - SAND RDG_ 138138.00 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.073	126.635	MINGO - SETAB 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07297	126.5631	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08163	126.4614	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0749	126.3372	CARTER ICT - WOODWARD 69KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07278	126.1539	SPP-MKEC-08
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	126.0295	GEN521120 1-BUFBEAR2
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07372	126.0213	BENTON - WICHITA 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0727	125.8833	AXTELL - POST ROCK 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	125.7537	GEN520947 1-HUGO1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0749	125.717	CARTER JCT - MOORELAND 69KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0749	125.7149	MOORELAND (MOORELND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0731	125.6177	MINGO - RED WILLOW 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	125.53	GEN515225 1-MUSKOGEE 5G
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	125.5204	GEN515226 1-MUSKOGEE 6G
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	125.5024	GEN515223 1-MUSKOGEE 4G
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07282	125.4819	HOLCOMB - SETAB 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07142	125.404	MOORELAND - TALOGA 138KV CKT 1
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07365	124.896	GEN520998 1-MORLND3
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.08207	124.6397	WOODWARD - WOODWARD 69KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07493	124.57	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07237	124.2158	GEN520998 1-MORLND3
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.08097	123.8153	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	123.3991	NC1_GEN-NEBRASKA CITY 1
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07365	122.892	GEN520997 1-MORLND2
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.08224	122.2698	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.08223	122.2458	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07237	122.191	GEN520997 1-MORLND2
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07191	121.4599	BRANTLEY - MORWOOD 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07191	121.455	MOREWOOD SW - MORWOOD 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07166	121.321	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	121.2625	GEN645001 1-FORT CALHOUN 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0719	121.2207	BUFFALO - WEST 69KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	121.2058	GEN562017 1-G11_022_3 0.6900
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07089	121.1984	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	121.1905	GEN542962 2-IATAN UNIT #2
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0705	121.1788	WOODWARD - WOODWARD EHV 138KV CKT 2
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	121.1516	GEN560121 1-G08-47 0.5750
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	121.1503	GEN562432 1-G13-030 0.6900
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0709	121.0797	DOVER - TWIN LAKES 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	121.0683	GEN527161 1-MUSTANG GEN #1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	121.0683	GEN527162 1-MUSTANG GEN #2
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	121.0652	GEN645011 1-NEBRASKA CITY 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	121.0424	GEN659111 2-LELAND OLDS UNIT2
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07089	120.9913	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07404	120.976	OPENSKY 345.00 - RANCH 345.00 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0709	120.9751	DOVER - DOVER SW 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.9689	GEN515449 1-CRSRDW11 0.6900
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07404	120.9609	RANCH 345.00 - SOONER 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.9467	GEN539670 4-JUDSON LARGE GENERATOR
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.9046	GEN515450 1-CRSRDW21 0.6900
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.9032	GEN659103 1-ANTELOPE VALLEY UNIT1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.9032	GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.8814	GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.8811	GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.8589	GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07503	120.8023	GRAPEVINE INTERCHANGE - STATLINE INTERCHANGE 230KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0719	120.7785	BUFBEAR2 - BUFFALO 69KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.7595	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07061	120.7222	CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.6985	GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.6198	GEN562443 1-G13-034 0.6900
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07222	120.597	LYDIA - VALLIANT 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07222	120.5894	SPP-AEPW-01
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.5502	GEN645012 2-NEBRASKA CITY 2
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.4709	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.2957	GEN640009 1-COOPER NUCLEAR STATION
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.2699	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.2481	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.1582	GEN526331 1-JONES GEN #1 22 KV
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07404	120.1301	OPENSKY 345.00 - ROSE HILL 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06838	120.126		SANDY_CN_138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	119.898		GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	119.8964		GEN526334 1-JONES_4 116.500
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	119.862		GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	119.7824		GEN526332 1-JONES GEN #2 21 KV
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07663	119.7698		SPP-AEPW-32
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.08488	119.6411		IODINE - WOODWARD EHV 138KV CKT 1
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07183	119.2514		GEN520997 1-MORLND2
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07749	119.2266		THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07749	119.2266		THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	119.1161		GEN562472 1-G13_035_3 0.6900
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	118.9736		GEN562078 1-G11_051_3 0.6900
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	118.81		GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	118.627		GEN523971 1-HARRINGTON GEN #1 24 KV
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	118.6268		GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	118.6133		GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	118.512		GEN560648 1-G0721_G1402 0.6900
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07309	118.2818		CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07309	118.2727		ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.08488	118.2648		DEWEY - IODINE 138KV CKT 1
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07667	118.1035		SPP-SWPS-01
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07663	117.8877		OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08716	117.6815		IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	117.4229		GEN659118 1-LARAMIE RIVER UNIT1
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07562	117.1933		ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07562	117.1543		ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08602	117.1299		IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	116.9305		GEN515397 1-OUSPR1 34.500
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06934	116.8837		EL RENO - ROMAN NOSE 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	116.7431		BASE CASE
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06934	116.4955		ROMAN NOSE - SOUTHARD 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	116.2205		GEN560175 1-G0744_G1403 0.6900
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07595	115.9789		FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	115.9723		GEN525561 1-TOLK GEN #1 24 KV
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08716	115.8518		DEWEY - IODINE 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07663	115.7771		VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06934	115.613		DEWEY - SOUTHARD 138KV CKT 1
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07562	115.4625		SPP-SWPS-02A
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08602	115.3894		DEWEY - IODINE 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	115.3794		GEN531447 1-HOLCOMB GENERATOR
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07109	115.3269		RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	115.2669		GEN525562 1-TOLK GEN #2 24 KV
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	115.2063		GEN560221 1-G07-62-1 0.6900
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	115.2063		GEN560222 1-G07-62-2 0.6900
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	115.2063		GEN560223 1-G07-62-3 0.6900
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	115.2063		GEN560224 1-G07-62-4 0.6900
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07595	115.0153		SPP-SWPS-05
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07595	114.8982		FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06838	114.5662		BYRON_138 138.00 - SANDY_CN_138138.00 138KV CKT 1
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07421	114.2436		SPP-SWPS-03
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07738	113.5912		SPP-AEPW-32
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07562	113.5882		STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07562	113.5803		SPP-SWPS-02
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07562	113.5758		STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06838	113.4397		BYRON_138 138.00 - C_CITY_138 138.00 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06916	113.3693		MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07864	113.2099		SPP-AEPW-32
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	113.1635		GEN514805 1-SOONER UNIT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06827	113.1626		RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06439	113.0764		WOODWARD - WOODWARD EHV 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06838	112.8362		C_CITY_138 138.00 - KNOBHILL 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06661	112.2663		DOVER SW - OKEENE 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07337	112.1256		BUCKNER7 345.00 - HOLCOMB 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	112.122		GEN515365 1-CENT 21 34.500
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	112.1168		GEN515393 1-OGEWIND2G
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07337	111.9868		BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07529	111.7969		VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	111.6676		GEN514806 1-SOONER UNIT 2
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0737	111.5683		GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07501	111.1943		FARGO JCT - WOODWARD 69KV CKT 1
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07742	111.19		SPP-SWPS-01

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07738	110.9835		OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07618	110.9699		DEWEY - TALOGA 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07388	110.9311		G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07868	110.873		SPP-SWPS-01
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07288	110.8598		WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	110.8174		GEN509416 1-TURK GENERATION
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.08097	110.787		WOODWARD - WOODWARD 69KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07333	110.7174		CONWAY SUB - NICHOLS STATION 115KV CKT 1
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07864	110.6608		OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07388	110.6547		G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	110.5558		GEN520947 1-HUGO1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07378	110.4897		SPP-MKEC-08
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07491	110.4431		SPP-SWPS-03
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	110.3256		GEN509403 1-PIRKEY GENERATION
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07476	110.3252		BENTON - WICHITA 345KV CKT 1
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07641	110.32		ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07641	110.3161		ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	110.3133		GEN515226 1-MUSKOGEE 6G
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07333	110.2764		CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	110.2493		GEN509406 1-WELSH #3
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	110.2489		GEN509404 1-WELSH #1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07333	110.2217		SPP-SWPS-T53
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07325	110.1998		SMOKYHL6 230.00 - SUMMIT 230KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07388	110.1263		G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	110.0817		GEN501801 1-DOLET HILLS UNIT1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	110.0765		GEN515225 1-MUSKOGEE 5G
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	110.0761		GEN515223 1-MUSKOGEE 4G
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07501	110.0582		FARGO JCT - FT SUPPLY 69KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07736	110.013		RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06827	109.9984		SAND RDG 138138.00 - WAKITA 138 138.00 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0744	109.8871		CIMARRON - NORTHWEST 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	109.8859		GEN336153 1-WATERFORD UNIT#3
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	109.7874		GEN511840 1-NORTHEASTERN STATION #3
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06916	109.6697		ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	109.6632		GEN515787 1-OKLA WIND ENERGY CENTER
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07366	109.6131		FLATRDG3 - THISTLE4 138.00 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07366	109.6124		THISTLE7 345.00 (THISTLE T1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07183	109.467		GEN520998 1-MORLND3
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07641	108.6497		SPP-SWPS-02A
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07436	108.4822		GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06377	108.2989		IMO TAP - MEN TAP 138KV CKT 1
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0737	108.1583		GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06377	107.5648		CLEO CORNER - MEN TAP 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	107.3067		GEN562023 1-G11_020_3 0.6900
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	107.3067		GEN562026 1-G11_019_3 0.6900
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08276	107.2461		WOODWARD - WOODWARD 69KV CKT 1
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07172	106.834		RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07641	106.4481		SPP-SWPS-02
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07641	106.432		STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07365	106.3982		BASE CASE
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08163	106.396		WOODWARD - WOODWARD 69KV CKT 1
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07641	106.2987		STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	106.076		GEN524286 1-CLR_3 0.6900
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	106.0559		GEN560331 1-G10-46 13.800
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	106.0197		GEN562327 1-G12-026 13.800
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07187	106.0136		DOVER - TWIN LAKES 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	105.9956		GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	105.9244		GEN528361 1-MADDOX GEN #1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	105.9219		GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	105.8956		GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07187	105.8937		DOVER - DOVER SW 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07445	105.8417		BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07445	105.8417		BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 2
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	105.8288		GEN542957 1-IATAN UNIT #1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	105.8169		GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	105.6003		GEN659111 2-LELAND OLDS UNIT2
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07256	105.5766		KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.08092	105.479		THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	105.4681		GEN659103 1-ANTELOPE VALLEY UNIT1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	105.4681		GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0809	105.4615		THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	105.4182	GEN562412 1-G13-021 0.6900	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	105.4079	GEN539670 4-JUDSON LARGE GENERATOR	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07251	105.3209	CLINTON JUNCTION - ELK CITY 138KV CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	105.2015	GEN542962 2-IATAN UNIT #2	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07405	105.1214	SPP-SWPS-04	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07405	104.9847	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07374	104.9305	FT SUPPLY - IODINE 138KV CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	104.8877	GEN645001 1-FORT CALHOUN 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07135	104.8791	WOODWARD - WOODWARD EHV 138KV CKT 2	
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07237	104.7626	BASE CASE	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07405	104.6847	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07154	104.6845	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	104.5812	GEN523461 1-BLACKHAWK GEN #1	
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07632	104.5248	THISTLE7 345.00 - WICHITA 345KV CKT 1	
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07632	104.5248	THISTLE7 345.00 - WICHITA 345KV CKT 2	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	104.5248	GEN523462 1-BLACKHAWK GEN #2	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	104.5175	GEN645012 2-NEBRASKA CITY 2	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	104.4781	GEN527161 1-MUSTANG GEN #1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	104.4781	GEN527162 1-MUSTANG GEN #2	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07154	104.4031	CHISHOLM7 345.00 () 345/230/13.2KV TRANSFORMER CKT 1	
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06918	104.298	RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1	
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07628	104.2188	SPP-SWPS-03	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	104.1946	GEN562472 1-G13_035_3 0.6900	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	104.157	GEN527163 1-MUSTANG GEN #3 22 KV	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07374	103.9052	IODINE - MOORELAND 138KV CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	103.8905	GEN562078 1-G11_051_3 0.6900	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	103.8595	GEN640009 1-COOPER NUCLEAR STATION	
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07436	103.8579	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07375	103.8457	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07375	103.8424	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	103.7734	GEN527902 1-HOBBS PLANT #2 (CT)	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	103.7464	GEN527901 1-HOBBS PLANT #1 (CT)	
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07561	103.7369	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06447	103.6434	CEDARDALE - OKEENE 138KV CKT 1	
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08249	103.6381	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2	
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08247	103.6179	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07057	103.5115	EL RENO - ROMAN NOSE 138KV CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07057	103.2156	ROMAN NOSE - SOUTHARD 138KV CKT 1	
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06447	102.9471	CEDARDALE - MOORELAND 138KV CKT 1	
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08113	102.9219	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2	
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08112	102.8997	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	102.8762	GEN527166 1-MUSTANG_6 118.000	
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07183	102.8394	BASE CASE	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	102.71	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	102.5876	GEN527882 1-CUNNINGHAM GEN #2 20 KV	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07057	102.5201	DEWEY - SOUTHARD 138KV CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	102.4999	GEN562434 1-G13-031CT1 18.000	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	102.4999	GEN562435 1-G13-031CT2 18.000	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06912	102.4907	MOREWOOD SW - RED HILLS WIND 138KV CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	102.4021	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1	
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07753	102.2931	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	102.2546	GEN659118 1-LARAMIE RIVER UNIT1	
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06967	102.2413	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07024	102.1774	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	102.0693	GEN560738 1-G13_016_2 18.000	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	101.9494	GEN525844 1-ANTELOPE_CT118.000	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	101.9355	GEN526333 1-JONES GEN #3 21 KV	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	101.9355	GEN526334 1-JONES_4 116.500	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	101.8363	GEN527903 1-HOBBS PLANT #3 (ST)	
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06311	101.819	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06937	101.7305	BYRON 138 138.00 - SANDY_CN_138138.00 138KV CKT 1	
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06674	101.4573	RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	101.3165	GEN562495 1-G14_012_2 18.000	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	101.3165	GEN562496 1-G14_012_3 18.000	
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06545	101.1202	KNOBHILL - MOORELAND 138KV CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	101.1104	GEN526331 1-JONES GEN #1 22 KV	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	101.1089	GEN526332 1-JONES GEN #2 21 KV	
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06311	101.0891	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	101.0047	GEN560729 1-G13_013_3 0.6900	
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0779	100.7984	THISTLE7 345.00 - WICHITA 345KV CKT 1	
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0779	100.7984	THISTLE7 345.00 - WICHITA 345KV CKT 2	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07183	100.6086		GEN514805 1-SOONER UNIT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06937	100.4736		BYRON 138 138.00 - C_CITY 138 138.00 138KV CKT 1
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06758	100.4513		RENFROW4 138.00 - SAND RDG 138138.00 138KV CKT 1
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0767	100.3221		THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0767	100.3221		THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06918	100.1804		SAND RDG 138138.00 - WAKITA 138 138.00 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06937	99.9		C_CITY 138 138.00 - KNOBHILL 138KV CKT 1
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07616	99.8		RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	99.6		GEN531447 1-HOLCOMB GENERATOR
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0726	99.6		MOORELAND - TALOGA 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06763	99.6		DOVER SW - OKEENE 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	124	0.04333	102.6577		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05518	129.81		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.03233	129.1933		CONWAY SUB - NICHOLS STATION 115KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05518	127.5601		G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.03233	127.1301		SPP-SWPS-753
FDNS	00NR		0 19WP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.03233	127.015		CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.03113	122.6441		KINGSMILL INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.03113	120.507		BOWERS INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.03104	115.3093		MOORELAND - NINE MILE 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.03104	115.2909		MOREWOOD SW - NINE MILE 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.03158	115.0676		FPL SWITCH - MOORELAND 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.03021	115.0589		THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.03021	115.0589		THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	00NR		0 19WP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.03158	114.9472		FPL SWITCH - WOODWARD 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.03079	114.6335		THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	00NR		0 19WP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.03079	114.6292		THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.05725	109.788		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.03384	107.5675		BOWERS INTERCHANGE - Graves Sub 115KV CKT 1
FDNS	00NR		0 19WP	G13_035	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.05725	107.5169		G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.03462	100.4096		FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.03462	100.1294		SPP-SWPS-05
FDNS	00NR		0 19WP	G13_035	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.03462	100.1012		FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	00NR		0 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.06135	112.5531		NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.06135	110.6789		NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14WP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03815	103.4892		NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14WP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03815	102.0372		NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05926	102.8868		NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05926	101.2035		NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	WOODWARD - WOODWARD EHV 138KV CKT 1	287	0.11192	103.5489		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	WOODWARD - WOODWARD EHV 138KV CKT 1	287	0.11192	99.7		G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	FROM->TO	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1	134	0.03342	106.4647		FPL SWITCH - MOORELAND 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	FROM->TO	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1	134	0.03342	104.886		FPL SWITCH - WOODWARD 138KV CKT 1
FDNS	01NR		0 14G	G13_035	FROM->TO	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1	134	0.03355	103.7931		FPL SWITCH - MOORELAND 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	FROM->TO	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1	134	0.03342	103.7601		FPL SWITCH - MOORELAND 138KV CKT 1
FDNS	01NR		0 14G	G13_035	FROM->TO	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1	134	0.03355	102.5067		FPL SWITCH - MOORELAND 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	FROM->TO	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1	134	0.03342	102.1278		FPL SWITCH - WOODWARD 138KV CKT 1
FDNS	00NR		5 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.05113	129.0725		CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		5 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.05113	127.9339		CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		5 14WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.05304	113.3816		CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		5 14WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.05304	112.4812		CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		5 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03234	110.7633		SPP-AEPW-32
FDNS	00NR		5 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03232	109.0588		SPP-SWPS-01
FDNS	00NR		5 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03234	108.8109		SPP-AEPW-32
FDNS	00NR		5 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03232	107.2581		SPP-SWPS-01
FDNS	00NR		5 14SP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.05578	104.6501		CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		5 14SP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.05578	103.9917		CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		5 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04863	102.7694		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		5 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04863	101.9302		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		5 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04863	101.0485		G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		5 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04863	100.2369		G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		5 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.10106	101.2947		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.10106	149.1096		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07636	131.7738		CHISHOLM7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06678	120.8968		WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05931	113.9621		GEN515787 1-OKLA WIND ENERGY CENTER
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05931	113.7688		GEN520997 1-MORLND2
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06999	111.1431		IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05931	110.5292		BASE CASE
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0641	110.0293		CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0641	110.0143		ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05931	109.849	GENS20922 1-SLEEPING BEAR	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06999	109.5281	DEWEY - IODINE 138KV CKT 1	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06107	109.4918	DEWEY - TALOGA 138KV CKT 1	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06577	108.982	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06576	108.9597	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06678	107.6479	WOODWARD - WOODWARD 69KV CKT 1	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.10106	106.5834	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06259	105.3255	THISTLE7 345.00 - WICHITA 345KV CKT 1	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06259	105.3255	THISTLE7 345.00 - WICHITA 345KV CKT 2	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05974	104.4267	FT SUPPLY - IODINE 138KV CKT 1	
FDNS	00NR		5 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.09785	104.2246	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06155	104.126	CHISHOLM7 345.00 (CHISHOLMXF) 345/230/13.2KV TRANSFORMER CKT 1	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06449	103.933	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05974	102.89	IODINE - MOORELAND 138KV CKT 1	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05931	102.8221	GENS15389 1-TLGAWND1 34.500	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0574	102.496	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		5 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.10094	101.4154	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05931	100.966	GENS14805 1-SOONER UNIT 1	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06147	100.5119	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05915	100.3095	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05485	100	RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05988	99.8	G12-011T 345.00 - POST ROCK 345KV CKT 1	
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06147	99.6	SPP-SWPS-05	
FDNS	00NR		5 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05785	110.3801	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		5 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05785	108.4328	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		5 14WP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03464	101.4014	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		5 14WP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03464	99.8	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		5 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05588	100.8898	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		6 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.05014	127.8214	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		6 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.05014	126.7025	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		6 14WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.05193	111.8076	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		6 14WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.05193	110.9256	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		6 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03147	109.5641	SPP-AEPW-32	
FDNS	00NR		6 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03145	107.8719	SPP-SWPS-01	
FDNS	00NR		6 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03147	107.6508	SPP-AEPW-32	
FDNS	00NR		6 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03145	106.0852	SPP-SWPS-01	
FDNS	00NR		6 14SP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.05463	103.4072	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		6 14SP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.05463	102.7605	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		6 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04714	101.2472	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	00NR		6 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04714	100.4321	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	00NR		6 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04714	99.6	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1	
FDNS	01NR		6 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.11283	114.0414	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	01NR		6 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.08511	102.9642	CHISHOLM7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	
FNSL-Blown up	00NR		0 19WP	G14_002		Non-Converged Contingency	0	0.09025	-	SPP-AEPW-32	
FNSL-Blown up	00NR		0 19WP	G14_002		Non-Converged Contingency	0	0.0499	-	SPP-SWPS-01	
FNSL-Blown up	00NR		0 19WP	G14_002		Non-Converged Contingency	1071	0.04513	-	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FDNS	01NR		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.13311	130.854	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	00NR		0 19WP	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.13331	111.1607	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.13311	202.4049	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.13331	169.3359	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06146	152.5363	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1	
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.13222	150.2238	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06445	143.9178	IODINE - WOODWARD EHV 138KV CKT 1	
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.13372	143.0662	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06445	142.1841	DEWEY - IODINE 138KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	141.9553	BASE CASE	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	141.7568	GENS15787 1-OKLA WIND ENERGY CENTER	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0615	141.585	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06149	141.5531	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	140.5267	GENS20997 1-MORLND2	
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.1349	140.4348	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05647	138.8459	DEWEY - TALOGA 138KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06146	138.5662	WOODWARD - WOODWARD 69KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06178	138.0917	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05725	137.4382	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	137.1561	GENS20922 1-SLEEPING BEAR	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05797	135.7669	THISTLE7 345.00 - WICHITA 345KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05797	135.7669	THISTLE7 345.00 - WICHITA 345KV CKT 2	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06456	135.1114	IODINE - WOODWARD EHV 138KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05725	134.0404	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06456	133.6519	DEWEY - IODINE 138KV CKT 1	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05495	132.2651		FT SUPPLY - IODINE 138KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05736	132.0664		SPP-SWPS-03
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05725	131.925		BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05731	131.7076		ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05731	131.7027		ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05731	131.2227		GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05603	131.1511		GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	130.9004		GEN520997 1-MORLND2
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05495	130.6935		IODINE - MOORELAND 138KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05767	130.1517		CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	130.0615		GEN515389 1-TLGAWND1 34.500
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05826	129.8283		SPP-AEPW-32
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05292	129.6972		RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05523	129.4663		POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05666	129.0889		FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	128.6611		GEN514805 1-SOONER UNIT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05731	128.5945		SPP-SWPS-02A
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05513	128.2626		G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	128.0842		GEN520998 1-MORLND3
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05523	127.897		SPP-SWPS-04
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05829	127.8954		SPP-SWPS-01
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05523	127.7678		Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05666	127.7351		SPP-SWPS-05
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05666	127.6829		FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05826	127.5416		OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05447	127.4958		WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05513	127.476		G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05682	127.4477		SPP-SWPS-03
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06248	127.3891		WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05767	127.0914		STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05767	127.0751		STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05767	127.0733		SPP-SWPS-02
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	126.9248		GEN514806 1-SOONER UNIT 2
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05067	126.8665		RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05515	126.635		MINGO - SETAB 345KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05513	126.5631		G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06171	126.4614		WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05656	126.3372		CARTER JCT - WOODWARD 69KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05497	126.1539		SPP-MKEC-08
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	126.0295		GEN521120 1-BUFBEAR2
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05573	126.0213		BENTON - WICHITA 345KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05492	125.8833		AXTELL - POST ROCK 345KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	125.7537		GEN520947 1-HUGO1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05656	125.717		CARTER JCT - MOORELAND 69KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05656	125.7149		MOORELAND (MOORELND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05523	125.6177		MINGO - RED WILLOW 345KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	125.53		GEN515225 1-MUSKOGEE 5G
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	125.5204		GEN515226 1-MUSKOGEE 6G
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	125.5024		GEN515223 1-MUSKOGEE 4G
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05501	125.4819		HOLCOMB - SETAB 345KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05413	125.404		MOORELAND - TALOGA 138KV CKT 1
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05561	124.896		GEN520998 1-MORLND3
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06178	124.6397		WOODWARD - WOODWARD 69KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05637	124.57		GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05472	124.2158		GEN520998 1-MORLND3
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06106	123.8153		WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	123.3991		NC1_GEN-NEBRASKA CITY 1
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05561	122.892		GEN520997 1-MORLND2
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06223	122.2698		THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06221	122.2458		THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05472	122.191		GEN520997 1-MORLND2
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05431	121.4599		BRANTLEY - MORWOOD 138KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05431	121.455		MOREWOOD SW - MORWOOD 138KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0541	121.321		KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.2625		GEN645001 1-FORT CALHOUN 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05428	121.2207		BUFFALO - WEST 69KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.2058		GEN562017 1-G11_022_3 0.6900
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05353	121.1984		CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.1905		GEN542962 2-IATAN UNIT #2
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05323	121.1788		WOODWARD - WOODWARD EHV 138KV CKT 2
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.1516		GEN560121 1-G08-47 0.5750

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.1503	GEN562432 1-G13-030 0.6900	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05359	121.0797	DOVER - TWIN LAKES 138KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.0683	GEN527161 1-MUSTANG GEN #1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.0683	GEN527162 1-MUSTANG GEN #2	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.0652	GEN645011 1-NEBRASKA CITY 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.0424	GEN659111 2-LELAND OLDS UNIT2	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05353	120.9913	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05586	120.976	OPENSKY 345.00 - RANCH 345.00 345KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05359	120.9751	DOVER - DOVER SW 138KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.9689	GEN515449 1-CRSRDW11 0.6900	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05586	120.9609	RANCH 345.00 - SOONER 345KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.9467	GEN539670 4-JUDSON LARGE GENERATOR	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.9046	GEN515450 1-CRSRDW21 0.6900	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.9032	GEN659103 1-ANTELOPE VALLEY UNIT1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.9032	GEN659107 2-ANTELOPE VALLEY UNIT2	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.8814	GEN532653 1-JEFFREY ENERGY CENTER UNIT 3	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.8811	GEN532652 1-JEFFREY ENERGY CENTER UNIT 2	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.8589	GEN532651 1-JEFFREY ENERGY CENTER UNIT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05644	120.8023	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05428	120.7785	BUFBEAR2 - BUFFALO 69KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.7595	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05337	120.7222	CLINTON JUNCTION - ELK CITY 138KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.6985	GEN527163 1-MUSTANG GEN #3 22 KV	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.6198	GEN562443 1-G13-034 0.6900	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0545	120.597	LYDIA - VALLIANT 345KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0545	120.5894	SPP-AEPW-01	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.5502	GEN645012 2-NEBRASKA CITY 2	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.4709	GEN527882 1-CUNNINGHAM GEN #2 20 KV	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.2957	GEN640009 1-COOPER NUCLEAR STATION	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.2699	GEN527902 1-HOBBS PLANT #2 (CT)	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.2481	GEN527901 1-HOBBS PLANT #1 (CT)	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.1582	GEN526331 1-JONES GEN #1 22 KV	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05586	120.1301	OPENSKY 345.00 - ROSE HILL 345KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05155	120.126	SANDY_CN 138138.00 - WAKITA 138 138.00 138KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	119.898	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	119.8964	GEN526334 1-JONES_4 116.500	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	119.862	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	119.7824	GEN526332 1-JONES GEN #2 21 KV	
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05772	119.7698	SPP-AEPW-32	
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06378	119.6411	IODINE - WOODWARD EHV 138KV CKT 1	
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05418	119.2514	GEN520997 1-MORLND2	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05849	119.2266	THISTLE7 345.00 - WICHITA 345KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05849	119.2266	THISTLE7 345.00 - WICHITA 345KV CKT 2	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	119.1161	GEN562472 1-G13_035_3 0.6900	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	118.9736	GEN562078 1-G11_051_3 0.6900	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	118.81	GEN527903 1-HOBBS PLANT #3 (ST)	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	118.627	GEN523971 1-HARRINGTON GEN #1 24 KV	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	118.6268	GEN523972 1-HARRINGTON GEN #2 24 KV	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	118.6133	GEN523973 1-HARRINGTON GEN #3 24 KV	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	118.512	GEN560648 1-G0721_G1402 0.6900	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05508	118.2818	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05508	118.2727	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06378	118.2648	DEWEY - IODINE 138KV CKT 1	
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05775	118.1035	SPP-SWPS-01	
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05772	117.8877	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06569	117.6815	IODINE - WOODWARD EHV 138KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	117.4229	GEN659118 1-LARAMIE RIVER UNIT1	
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05693	117.1933	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05693	117.1543	ELK CITY 230KV - SWEETWATER 230KV CKT 1	
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06492	117.1299	IODINE - WOODWARD EHV 138KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	116.9305	GEN515397 1-OUSPR1 34.500	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05245	116.8837	EL RENO - ROMAN NOSE 138KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	116.7431	BASE CASE	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05245	116.4955	ROMAN NOSE - SOUTHARD 138KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	116.2205	GEN560175 1-G0744_G1403 0.6900	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05734	115.9789	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	115.9723	GEN525561 1-TOLK GEN #1 24 KV	
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06569	115.8518	DEWEY - IODINE 138KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05748	115.7771	VIOLA 7 345.00 - WICHITA 345KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05245	115.613	DEWEY - SOUTHARD 138KV CKT 1	
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05693	115.4625	SPP-SWPS-02A	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06492	115.3894	DEWEY - IODINE 138KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	115.3794	GEN531447 1-HOLCOMB GENERATOR	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05354	115.3269	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	115.2669	GEN525562 1-TOLK GEN #2 24 KV	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	115.2063	GEN560221 1-G07-62-1 0.6900	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	115.2063	GEN560222 1-G07-62-2 0.6900	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	115.2063	GEN560223 1-G07-62-3 0.6900	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	115.2063	GEN560224 1-G07-62-4 0.6900	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05734	115.0153	SPP-SWPS-05	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05734	114.8982	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05155	114.5662	BYRON_138 138.00 - SANDY_CN_138138.00 138KV CKT 1	
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05591	114.2436	SPP-SWPS-03	
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05847	113.5912	SPP-AEPW-32	
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05693	113.5882	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05693	113.5803	SPP-SWPS-02	
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05693	113.5758	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05155	113.4397	BYRON_138 138.00 - C_CITY_138 138.00 138KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05229	113.3693	MOREWOOD SW - RED HILLS WIND 138KV CKT 1	
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05935	113.2099	SPP-AEPW-32	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	113.1635	GEN514805 1-SOONER UNIT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05124	113.1626	RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04862	113.0764	WOODWARD - WOODWARD EHV 138KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05155	112.8362	C_CITY_138 138.00 - KNOBHILL 138KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05027	112.2663	DOVER SW - OKEENE 138KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05527	112.1256	BUCKNER7 345.00 - HOLCOMB 345KV CKT 1	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	112.1222	GEN515365 1-CENT 21 34.500	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	112.1168	GEN515393 1-OGEWND2G	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05527	111.9868	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05653	111.7969	VIOLA 7 345.00 - WICHITA 345KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	111.6676	GEN514806 1-SOONER UNIT 2	
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05554	111.5683	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0565	111.1943	FARGO JCT - WOODWARD 69KV CKT 1	
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0585	111.19	SPP-SWPS-01	
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05847	110.9835	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05765	110.9699	DEWEY - TALOGA 138KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05568	110.9311	G12-011T 345.00 - POST ROCK 345KV CKT 1	
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05938	110.873	SPP-SWPS-01	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0551	110.8598	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.8174	GEN509416 1-TURK GENERATION	
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06106	110.787	WOODWARD - WOODWARD 69KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05521	110.7174	CONWAY SUB - NICHOLS STATION 115KV CKT 1	
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05935	110.6608	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05568	110.6547	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.5558	GEN520947 1-HUGO1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05559	110.4897	SPP-MKEC-08	
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0566	110.4431	SPP-SWPS-03	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.3256	GEN509403 1-PIRKEY GENERATION	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05639	110.3252	BENTON - WICHITA 345KV CKT 1	
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05772	110.32	ELK CITY 230KV - SWEETWATER 230KV CKT 1	
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05772	110.3161	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.3133	GEN515226 1-MUSKOGEE 6G	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05521	110.2764	CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.2493	GEN509406 1-WELSH #3	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.2489	GEN509404 1-WELSH #1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05521	110.2217	SPP-SWPS-T53	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05517	110.1998	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05568	110.1263	G11-17T 345.00 - SPEARVILLE 345KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.0817	GEN501801 1-DOLET HILLS UNIT1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.0765	GEN515225 1-MUSKOGEE 5G	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.0761	GEN515223 1-MUSKOGEE 4G	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0565	110.0582	FARGO JCT - FT SUPPLY 69KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05784	110.013	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05124	109.9984	SAND RDG_138138.00 - WAKITA_138 138.00 138KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05732	109.8871	CIMARRON - NORTHWEST 345KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	109.8859	GEN336153 1-WATERFORD UNIT#3	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	109.7874	GEN511840 1-NORTHEASTERN STATION #3	
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05229	109.6697	ELK CITY - RED HILLS WIND 138KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	109.6632	GEN515787 1-OKLA WIND ENERGY CENTER	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05549	109.6131	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05549	109.6124	THISTLE7 345.00 (THISTLE T1) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05418	109.467	GEN520998 1-MORLND3	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05772	108.6497	SPP-SWPS-02A
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0562	108.4822	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04802	108.2989	IMO TAP - MEN TAP 138KV CKT 1
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05553	108.1583	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04802	107.5648	CLEO CORNER - MEN TAP 138KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	107.3067	GEN562023 1-G11_020_3 0.6900
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	107.3067	GEN562026 1-G11_019_3 0.6900
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06248	107.2461	WOODWARD - WOODWARD 69KV CKT 1
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05418	106.834	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05772	106.4481	SPP-SWPS-02
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05772	106.432	STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05561	106.3982	BASE CASE
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06171	106.396	WOODWARD - WOODWARD 69KV CKT 1
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05772	106.2987	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	106.076	GEN524286 1-CLR_3 0.6900
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	106.0559	GEN560331 1-G10-46 13.800
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	106.0197	GEN562327 1-G12-026 13.800
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0542	106.0136	DOVER - TWIN LAKES 138KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.9956	GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.9244	GEN528361 1-MADDOX GEN #1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.9219	GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.8956	GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0542	105.8937	DOVER - DOVER SW 138KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05609	105.8417	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05609	105.8417	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 2
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.8288	GEN542957 1-IATAN UNIT #1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.8169	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.6003	GEN659111 2-LELAND OLDS UNIT2
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05463	105.5766	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06132	105.479	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.4681	GEN659103 1-ANTELOPE VALLEY UNIT1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.4681	GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0613	105.4615	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.4182	GEN562412 1-G13-021 0.6900
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.4079	GEN539670 4-JUDSON LARGE GENERATOR
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05463	105.3209	CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.2015	GEN542962 2-IATAN UNIT #2
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05574	105.1214	SPP-SWPS-04
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05574	104.9847	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05552	104.9305	FT SUPPLY - IODINE 138KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.887	GEN645001 1-FORT CALHOUN 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05374	104.8791	WOODWARD - WOODWARD EHV 138KV CKT 2
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05472	104.7626	BASE CASE
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05574	104.6847	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05394	104.6845	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.5812	GEN523461 1-BLACKHAWK GEN #1
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05769	104.5248	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05769	104.5248	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.5248	GEN523462 1-BLACKHAWK GEN #2
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.5175	GEN645012 2-NEBRASKA CITY 2
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.4781	GEN527161 1-MUSTANG GEN #1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.4781	GEN527162 1-MUSTANG GEN #2
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05394	104.4031	CHISHOLM7 345.00 () 345/230/13.2KV TRANSFORMER CKT 1
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05214	104.298	RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05754	104.2188	SPP-SWPS-03
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.1946	GEN562472 1-G13_035_3 0.6900
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.157	GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05552	103.9052	IODINE - MOORELAND 138KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	103.8905	GEN562078 1-G11_051_3 0.6900
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	103.8595	GEN640009 1-COOPER NUCLEAR STATION
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0562	103.8579	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05574	103.8457	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05574	103.8424	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	103.7734	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	103.7464	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05705	103.7369	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04869	103.6434	CEDARDALE - OKEENE 138KV CKT 1
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06247	103.6381	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06246	103.6179	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05327	103.5115	EL RENO - ROMAN NOSE 138KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05327	103.2156	ROMAN NOSE - SOUTHARD 138KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04869	102.9471		CEDARDALE - MOORELAND 138KV CKT 1
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06153	102.9219		THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06152	102.8997		THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	102.8762		GEN527166 1-MUSTANG_6 118.000
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05418	102.8394		BASE CASE
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	102.71		GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	102.5876		GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05327	102.5201		DEWEY - SOUTHARD 138KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	102.4999		GEN562434 1-G13-031CT1 18.000
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	102.4999		GEN562435 1-G13-031CT2 18.000
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0522	102.4907		MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	102.4021		GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05845	102.2931		CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	102.2546		GEN659118 1-LARAMIE RIVER UNIT1
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05259	102.2413		RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05316	102.1774		RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	102.0693		GEN560738 1-G13_016_2 18.000
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.9494		GEN525844 1-ANTELOPE_CT118.000
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.9355		GEN526333 1-JONES GEN #3 21 KV
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.9355		GEN526334 1-JONES_4 116.500
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.8363		GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0475	101.819		CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05212	101.7305		BYRON_138 138.00 - SANDY_CN_138138.00 138KV CKT 1
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05019	101.4573		RENFROW4 138.00 - SAND_RDG_138138.00 138KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.3165		GEN562495 1-G14_012_2 18.000
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.3165		GEN562496 1-G14_012_3 18.000
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0493	101.1202		KNOBHILL - MOORELAND 138KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.1104		GEN526331 1-JONES GEN #1 22 KV
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.1089		GEN526332 1-JONES GEN #2 21 KV
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0475	101.0891		GLASS MOUNTAIN - MOORELAND 138KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.0047		GEN560729 1-G13_013_3 0.6900
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0589	100.7984		THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0589	100.7984		THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05418	100.6086		GEN514805 1-SOONER UNIT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05212	100.4736		BYRON_138 138.00 - C_CITY_138 138.00 138KV CKT 1
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05103	100.4513		RENFROW4 138.00 - SAND_RDG_138138.00 138KV CKT 1
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05807	100.3221		THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05807	100.3221		THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05214	100.1804		SAND_RDG_138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05212	99.9		C_CITY_138 138.00 - KNOBHILL 138KV CKT 1
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05706	99.8		RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	99.6		GEN531447 1-HOLCOMB GENERATOR
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05493	99.6		MOORELAND - TALOGA 138KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05087	99.6		DOVER SW - OKEENE 138KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	124	0.04333	102.6577		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05518	129.81		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G14_002	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.05725	109.788		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.07465	112.5531		NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.07465	110.6789		NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14WP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05149	103.4892		NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14WP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05149	102.0372		NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	0.07211	102.8868		NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	0.07211	101.2035		NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	WOODWARD - WOODWARD EHV 138KV CKT 1	287	0.11192	103.5489		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		5 19WP	G14_002	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03734	129.0725		CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		5 19WP	G14_002	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03734	127.9339		CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		5 14WP	G14_002	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03884	113.3816		CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		5 14WP	G14_002	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03884	112.4812		CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		5 14SP	G14_002	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.0416	104.6501		CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		5 14SP	G14_002	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.0416	103.9917		CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		5 19WP	G14_002	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04863	102.7694		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		5 19WP	G14_002	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04863	101.9302		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		5 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.10106	101.2947		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.10106	149.1096		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05762	131.7738		CHISHOLM7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05063	120.8968		WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04498	113.9621		GEN515787 1-OKLA WIND ENERGY CENTER
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04498	113.7688		GEN520997 1-MORLND2
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05292	111.1431		IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04498	110.5292		BASE CASE
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04857	110.0293		CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04857	110.0143	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04498	109.849	GEN520922 1-SLEEPING BEAR
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05292	109.5281	DEWEY - IODINE 138KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04653	109.4918	DEWEY - TALOGA 138KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05007	108.982	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05006	108.9597	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05063	107.6479	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04755	105.3255	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04755	105.3255	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0453	104.4267	FT SUPPLY - IODINE 138KV CKT 1
FDNS	00NR		5 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.09785	104.2246	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0467	104.126	CHISHOLM7 345.00 (CHISHOLMXF) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04876	103.933	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0453	102.89	IODINE - MOORELAND 138KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04498	102.8221	GEN515389 1-TLGAWND1 34.500
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04356	102.496	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		5 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.10094	101.4154	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04498	100.966	GEN514805 1-SOONER UNIT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04672	100.5119	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04507	100.3095	WOODRNG (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04149	100	RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04544	99.8	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04672	99.6	SPP-SWPS-05
FDNS	00NR		5 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.07205	110.3801	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		5 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.07205	108.4328	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		5 14WP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.04889	101.4014	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		5 14WP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.04889	99.8	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		5 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	0.0696	100.8898	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		6 19WP	G14_002	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03659	127.8214	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		6 19WP	G14_002	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03659	126.7025	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		6 14WP	G14_002	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03795	111.8076	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		6 14WP	G14_002	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03795	110.9256	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		6 14SP	G14_002	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04068	103.4072	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		6 14SP	G14_002	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04068	102.7605	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00NR		6 19WP	G14_002	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04714	101.2472	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		6 19WP	G14_002	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04714	100.4321	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		6 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.11283	114.0414	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		6 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06417	102.9642	CHISHOLM7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FNLS-Blown up	00NR		0 19WP	G14_003		Non-Converged Contingency	0	0.09025	-	SPP-AEPW-32
FNLS-Blown up	00NR		0 19WP	G14_003		Non-Converged Contingency	0	0.0499	-	SPP-SWPS-01
FNLS-Blown up	00NR		0 19WP	G14_003		Non-Converged Contingency	1071	0.04513	-	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01NR		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.13311	130.854	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.13331	111.1607	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.13311	202.4049	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.13331	169.3359	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06146	152.5363	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.13222	150.2238	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06445	143.9178	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.13372	143.0662	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06445	142.1841	DEWEY - IODINE 138KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	141.9553	BASE CASE
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	141.7568	GEN515787 1-OKLA WIND ENERGY CENTER
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0615	141.585	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06149	141.5531	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	140.5267	GEN520997 1-MORLND2
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.1349	140.4348	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05647	138.8459	DEWEY - TALOGA 138KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06146	138.5662	WOODWARD - WOODWARD 69KV CKT 1
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06178	138.0917	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05725	137.4382	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	137.1561	GEN520922 1-SLEEPING BEAR
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05797	135.7669	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05797	135.7669	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06456	135.1114	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05725	134.0404	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06456	133.6519	DEWEY - IODINE 138KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05495	132.2651	FT SUPPLY - IODINE 138KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05736	132.0664	SPP-SWPS-03
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05725	131.925	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05731	131.7076	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05731	131.7027	ELK CITY 230KV - SWEETWATER 230KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05731	131.2227	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05603	131.1511	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	130.9004	GEN520997 1-MORLND2
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05495	130.6935	IODINE - MOORELAND 138KV CKT 1
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05767	130.1517	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	130.0615	GEN515389 1-TLGAWND1 34.500
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05826	129.8283	SPP-AEPW-32
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05292	129.6972	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05523	129.4663	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05666	129.0889	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	128.6611	GEN514805 1-SOONER UNIT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05731	128.5945	SPP-SWPS-02A
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05513	128.2626	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	128.0842	GEN520998 1-MORLND3
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05523	127.897	SPP-SWPS-04
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05829	127.8954	SPP-SWPS-01
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05523	127.7678	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05666	127.7351	SPP-SWPS-05
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05666	127.6829	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05826	127.5416	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05447	127.4958	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05513	127.476	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05682	127.4477	SPP-SWPS-03
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06248	127.3891	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05767	127.0914	STLN-DEMAR6C - SWEETWATER 230KV CKT 1
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05767	127.0751	STATELINE INTERCHANGE - STLN-DEMAR6C 230KV CKT 1
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05767	127.0733	SPP-SWPS-02
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	126.9248	GEN514806 1-SOONER UNIT 2
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05067	126.8665	RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05515	126.635	MINGO - SETAB 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05513	126.5631	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06171	126.4614	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05656	126.3372	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05497	126.1539	SPP-MKEC-08
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	126.0295	GEN521120 1-BUFBEAR2
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05573	126.0213	BENTON - WICHITA 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05492	125.8833	AXTELL - POST ROCK 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	125.7537	GEN520947 1-HUGO1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05656	125.717	CARTER JCT - MOORELAND 69KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05656	125.7149	MOORELAND (MOORELND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05523	125.6177	MINGO - RED WILLOW 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	125.53	GEN515225 1-MUSKOGEE 5G
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	125.5204	GEN515226 1-MUSKOGEE 6G
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	125.5024	GEN515223 1-MUSKOGEE 4G
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05501	125.4819	HOLCOMB - SETAB 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05413	125.404	MOORELAND - TALOGA 138KV CKT 1
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05561	124.896	GEN520998 1-MORLND3
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06178	124.6397	WOODWARD - WOODWARD 69KV CKT 1
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05637	124.57	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05472	124.2158	GEN520998 1-MORLND3
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06106	123.8153	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	123.3991	NC1_GEN-NEBRASKA CITY 1
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05561	122.892	GEN520997 1-MORLND2
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06223	122.2698	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06221	122.2458	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05472	122.191	GEN520997 1-MORLND2
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05431	121.4599	BRANTLEY - MORWOOD 138KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05431	121.455	MOREWOOD SW - MORWOOD 138KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0541	121.321	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.2625	GEN645001 1-FORT CALHOUN 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05428	121.2207	BUFFALO - WEST 69KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.2058	GEN562017 1-G11 022 3 0.6900
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05353	121.1984	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.1905	GEN542962 2-IATAN UNIT #2
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05323	121.1788	WOODWARD - WOODWARD EHV 138KV CKT 2
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.1516	GEN560121 1-G08-47 0.5750
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.1503	GEN562432 1-G13-030 0.6900
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05359	121.0797	DOVER - TWIN LAKES 138KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.0683	GEN527161 1-MUSTANG GEN #1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.0683	GEN527162 1-MUSTANG GEN #2
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.0652	GEN645011 1-NEBRASKA CITY 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	121.0424	GEN659111 2-LELAND OLDS UNIT2	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05353	120.9913	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05586	120.976	OPENSKY 345.00 - RANCH 345.00 345KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05359	120.9751	DOVER - DOVER SW 138KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.9689	GEN515449 1-CRSRDW11 0.6900	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05586	120.9609	RANCH 345.00 - SOONER 345KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.9467	GEN539670 4-JUDSON LARGE GENERATOR	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.9046	GEN515450 1-CRSRDW21 0.6900	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.9032	GEN659103 1-ANTELOPE VALLEY UNIT1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.9032	GEN659107 2-ANTELOPE VALLEY UNIT2	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.8814	GEN532653 1-JEFFREY ENERGY CENTER UNIT 3	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.8811	GEN532652 1-JEFFREY ENERGY CENTER UNIT 2	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.8589	GEN532651 1-JEFFREY ENERGY CENTER UNIT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05644	120.8023	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05428	120.7785	BUFBEAR2 - BUFFALO 69KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.7595	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05337	120.7222	CLINTON JUNCTION - ELK CITY 138KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.6985	GEN527163 1-MUSTANG GEN #3 22 KV	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.6198	GEN562443 1-G13-034 0.6900	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0545	120.597	LYDIA - VALLIANT 345KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0545	120.5894	SPP-AEPW-01	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.5502	GEN645012 2-NEBRASKA CITY 2	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.4709	GEN527882 1-CUNNINGHAM GEN #2 20 KV	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.2957	GEN640009 1-COOPER NUCLEAR STATION	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.2699	GEN527902 1-HOBBS PLANT #2 (CT)	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.2481	GEN527901 1-HOBBS PLANT #1 (CT)	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.1582	GEN526331 1-JONES GEN #1 22 KV	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05586	120.1301	OPENSKY 345.00 - ROSE HILL 345KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05155	120.126	SANDY_CN_138138.00 - WAKITA_138 138.00 138KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	119.898	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	119.8964	GEN526334 1-JONES_4 116.500	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	119.862	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	119.7824	GEN526332 1-JONES GEN #2 21 KV	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05772	119.7698	SPP-AEPW-32	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06378	119.6411	IODINE - WOODWARD EHV 138KV CKT 1	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05418	119.2514	GEN520997 1-MORLND2	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05849	119.2266	THISTLE7 345.00 - WICHITA 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05849	119.2266	THISTLE7 345.00 - WICHITA 345KV CKT 2	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	119.1161	GEN562472 1-G13_035 3 0.6900	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	118.9736	GEN562078 1-G11_051 3 0.6900	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	118.81	GEN527903 1-HOBBS PLANT #3 (ST)	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	118.627	GEN523971 1-HARRINGTON GEN #1 24 KV	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	118.6268	GEN523972 1-HARRINGTON GEN #2 24 KV	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	118.6133	GEN523973 1-HARRINGTON GEN #3 24 KV	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	118.512	GEN560648 1-G0721_G1402 0.6900	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05508	118.2818	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05508	118.2727	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06378	118.2648	DEWEY - IODINE 138KV CKT 1	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05775	118.1035	SPP-SWPS-01	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05772	117.8877	OCLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06569	117.6815	IODINE - WOODWARD EHV 138KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	117.4229	GEN659118 1-LARAMIE RIVER UNIT1	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05693	117.1933	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05693	117.1543	ELK CITY 230KV - SWEETWATER 230KV CKT 1	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06492	117.1299	IODINE - WOODWARD EHV 138KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	116.9305	GEN515397 1-OUSPR1 34.500	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05245	116.8837	EL RENO - ROMAN NOSE 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	116.7431	BASE CASE	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05245	116.4955	ROMAN NOSE - SOUTHARD 138KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	116.2205	GEN560175 1-G0744_G1403 0.6900	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05734	115.9789	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	115.9723	GEN525561 1-TOLK GEN #1 24 KV	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06569	115.8518	DEWEY - IODINE 138KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05748	115.7771	VIOLA 7 345.00 - WICHITA 345KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05245	115.613	DEWEY - SOUTHARD 138KV CKT 1	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05693	115.4625	SPP-SWPS-02A	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06492	115.3894	DEWEY - IODINE 138KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	115.3794	GEN531447 1-HOLCOMB GENERATOR	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05354	115.3269	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	115.2669	GEN525562 1-TOLK GEN #2 24 KV	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	115.2063	GEN560221 1-G07-62-1 0.6900	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	115.2063	GEN560222 1-G07-62-2 0.6900	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	115.2063	GEN560223 1-G07-62-3 0.6900	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	115.2063	GEN560224 1-G07-62-4 0.6900	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05734	115.0153	SPP-SWPS-05	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05734	114.8982	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05155	114.5662	BYRON_138 138.00 - SANDY_CN_138138.00 138KV CKT 1	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05591	114.2436	SPP-SWPS-03	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05847	113.5912	SPP-AEPW-32	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05693	113.5882	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05693	113.5803	SPP-SWPS-02	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05693	113.5758	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05155	113.4397	BYRON_138 138.00 - C_CITY_138 138.00 138KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05229	113.3693	MOREWOOD SW - RED HILLS WIND 138KV CKT 1	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05935	113.2099	SPP-AEPW-32	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	113.1635	GEN514805 1-SOONER UNIT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05124	113.1626	RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04862	113.0704	WOODWARD - WOODWARD EH 138KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05155	112.8362	C_CITY_138 138.00 - KNOBHILL 138KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05027	112.2663	DOVER SW - OKEENE 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05527	112.1256	BUCKNER7 345.00 - HOLCOMB 345KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	112.122	GEN515365 1-CENT 21 34.500	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	112.1168	GEN515393 1-OGEWIND2G	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05527	111.9868	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05653	111.7969	VIOLA 7 345.00 - WICHITA 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	111.6676	GEN514806 1-SOONER UNIT 2	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05554	111.5683	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0565	111.1943	FARGO JCT - WOODWARD 69KV CKT 1	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0585	111.19	SPP-SWPS-01	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05847	110.9835	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05765	110.9699	DEWEY - TALOGA 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05568	110.9311	G12-011T 345.00 - POST ROCK 345KV CKT 1	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05938	110.873	SPP-SWPS-01	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0551	110.8598	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.8174	GEN509416 1-TURK GENERATION	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06106	110.787	WOODWARD - WOODWARD 69KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05521	110.7174	CONWAY SUB - NICHOLS STATION 115KV CKT 1	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05935	110.6608	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05568	110.6547	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.5558	GEN520947 1-HUGO1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05559	110.4897	SPP-MKEC-08	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0566	110.4431	SPP-SWPS-03	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.3256	GEN509403 1-PIRKEY GENERATION	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05639	110.3252	BENTON - WICHITA 345KV CKT 1	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05772	110.32	ELK CITY 230KV - SWEETWATER 230KV CKT 1	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05772	110.3161	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.3133	GEN515226 1-MUSKOGEE 6G	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05521	110.2764	CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.2493	GEN509406 1-WELSH #3	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.2489	GEN509404 1-WELSH #1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05521	110.2217	SPP-SWPS-T53	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05517	110.1998	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05568	110.1263	G11-17T 345.00 - SPEARVILLE 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.0817	GEN501801 1-DOLET HILLS UNIT1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.0765	GEN515225 1-MUSKOGEE 5G	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	110.0761	GEN515223 1-MUSKOGEE 4G	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0565	110.0582	FARGO JCT - FT SUPPLY 69KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05784	110.013	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05124	109.9984	SAND RDG_138138.00 - WAKITA_138 138.00 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05732	109.8871	CIMARRON - NORTHWEST 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	109.8859	GEN336153 1-WATERFORD UNIT#3	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	109.7874	GEN511840 1-NORTHEASTERN STATION #3	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05229	109.6697	ELK CITY - RED HILLS WIND 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	109.6632	GEN515787 1-OKLA WIND ENERGY CENTER	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05549	109.6131	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05549	109.6124	THISTLE7 345.00 (THISTLE T1) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05418	109.467	GEN520998 1-MORLND3	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05772	108.6497	SPP-SWPS-02A	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0562	108.4822	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04802	108.2989	IMO TAP - MEN TAP 138KV CKT 1	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05553	108.1583	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04802	107.5648	CLEO CORNER - MEN TAP 138KV CKT 1	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	107.3067	GEN562023 1-G11_020_3 0.6900	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	107.3067	GEN562026 1-G11_019_3 0.6900	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06248	107.2461	WOODWARD - WOODWARD 69KV CKT 1	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05418	106.834	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05772	106.4481	SPP-SWPS-02	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05772	106.432	STLN-DEMARC6 - SWEETWATER 230KV CKT 1	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05561	106.3982	BASE CASE	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06171	106.396	WOODWARD - WOODWARD 69KV CKT 1	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05772	106.2987	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	106.076	GEN524286 1-CLR_3 0.6900	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	106.0559	GEN560331 1-G10-46 13.800	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	106.0197	GEN562327 1-G12-026 13.800	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0542	106.0136	DOVER - TWIN LAKES 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.9956	GEN532652 1-JEFFREY ENERGY CENTER UNIT 2	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.9244	GEN528361 1-MADDOX GEN #1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.9219	GEN532653 1-JEFFREY ENERGY CENTER UNIT 3	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.8956	GEN532651 1-JEFFREY ENERGY CENTER UNIT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0542	105.8937	DOVER - DOVER SW 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05609	105.8417	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05609	105.8417	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 2	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.8288	GEN542957 1-IATAN UNIT #1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.8169	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.6003	GEN659111 2-LELAND OLDS UNIT2	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05463	105.5766	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06132	105.479	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.4681	GEN659103 1-ANTELOPE VALLEY UNIT1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.4681	GEN659107 2-ANTELOPE VALLEY UNIT2	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0613	105.4615	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.4182	GEN562412 1-G13-021 0.6900	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.4079	GEN539670 4-JUDSON LARGE GENERATOR	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05463	105.3209	CLINTON JUNCTION - ELK CITY 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	105.2015	GEN542962 2-IATAN UNIT #2	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05574	105.1214	SPP-SWPS-04	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05574	104.9847	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05552	104.9305	FT SUPPLY - IODINE 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.887	GEN645001 1-FORT CALHOUN 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05374	104.8791	WOODWARD - WOODWARD EHV 138KV CKT 2	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05472	104.7626	BASE CASE	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05574	104.6847	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05394	104.6845	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.5812	GEN523461 1-BLACKHAWK GEN #1	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05769	104.5248	THISTLE7 345.00 - WICHITA 345KV CKT 1	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05769	104.5248	THISTLE7 345.00 - WICHITA 345KV CKT 2	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.5248	GEN523462 1-BLACKHAWK GEN #2	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.5175	GEN645012 2-NEBRASKA CITY 2	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.4781	GEN527161 1-MUSTANG GEN #1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.4781	GEN527162 1-MUSTANG GEN #2	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05394	104.4031	CHISHOLM7 345.00 () 345/230/13.2KV TRANSFORMER CKT 1	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05214	104.298	RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05754	104.2188	SPP-SWPS-03	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.1946	GEN562472 1-G13_035_3 0.6900	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.157	GEN527163 1-MUSTANG GEN #3 22 KV	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05552	103.9052	IODINE - MOORELAND 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	103.8905	GEN562078 1-G11_051_3 0.6900	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	103.8595	GEN640009 1-COOPER NUCLEAR STATION	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0562	103.8579	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05574	103.8457	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05574	103.8424	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	103.7734	GEN527902 1-HOBBS PLANT #2 (CT)	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	103.7464	GEN527901 1-HOBBS PLANT #1 (CT)	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05705	103.7369	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04869	103.6434	CEDARDALE - OKEENE 138KV CKT 1	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06247	103.6381	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06246	103.6179	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05327	103.5115	EL RENO - ROMAN NOSE 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05327	103.2156	ROMAN NOSE - SOUTHWARD 138KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04869	102.9471	CEDARDALE - MOORELAND 138KV CKT 1	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06153	102.9219	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06152	102.8997	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	102.8762	GEN527166 1-MUSTANG_6 118.000	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05418	102.8394	BASE CASE	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	102.71	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	102.5876	GEN527882 1-CUNNINGHAM GEN #2 20 KV	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05327	102.5201	DEWEY - SOUTHARD 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	102.4999	GEN562434 1-G13-031CT1 18.000	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	102.4999	GEN562435 1-G13-031CT2 18.000	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0522	102.4907	MOREWOOD SW - RED HILLS WIND 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	102.4021	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05845	102.2931	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	102.2546	GEN659118 1-LARAMIE RIVER UNIT1	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05259	102.2413	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05316	102.1774	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	102.0693	GEN560738 1-G13_016_2 18.000	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.9494	GEN525844 1-ANTELOPE_CT118.000	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.9355	GEN526333 1-JONES GEN #3 21 KV	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.9355	GEN526334 1-JONES_4 116.500	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.8363	GEN527903 1-HOBBS PLANT #3 (ST)	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0475	101.819	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05212	101.7305	BYRON_138 138.00 - SANDY_CN_138138.00 138KV CKT 1	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05019	101.4573	RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.3165	GEN562495 1-G14_012_2 18.000	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.3165	GEN562496 1-G14_012_3 18.000	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0493	101.1202	KNOBHILL - MOORELAND 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.1104	GEN526331 1-JONES GEN #1 22 KV	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.1089	GEN526332 1-JONES GEN #2 21 KV	
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0475	101.0891	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	101.0047	GEN560729 1-G13_013_3 0.6900	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0589	100.7984	THISTLE7 345.00 - WICHITA 345KV CKT 1	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0589	100.7984	THISTLE7 345.00 - WICHITA 345KV CKT 2	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05418	100.6086	GEN514805 1-SOONER UNIT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05212	100.4736	BYRON_138 138.00 - C_CITY_138 138.00 138KV CKT 1	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05103	100.4513	RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05807	100.3221	THISTLE7 345.00 - WICHITA 345KV CKT 1	
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05807	100.3221	THISTLE7 345.00 - WICHITA 345KV CKT 2	
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05214	100.1804	SAND RDG_138138.00 - WAKITA_138 138.00 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05212	99.9	C_CITY_138 138.00 - KNOBHILL 138KV CKT 1	
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05706	99.8	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	99.6	GEN531447 1-HOLCOMB GENERATOR	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05493	99.6	MOORELAND - TALOGA 138KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05087	99.6	DOVER SW - OKEENE 138KV CKT 1	
FDNS	01NR		0 14G	G14_003	TO->FROM	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	124	0.04333	102.6577	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05518	129.81	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	00NR		0 19WP	G14_003	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.05725	109.788	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	00NR		0 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.07465	112.5531	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.07465	110.6789	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 14WP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05149	103.4892	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 14WP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05149	102.0372	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	0.07211	102.8868	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	0.07211	101.2035	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		0 19WP	G14_003	TO->FROM	WOODWARD - WOODWARD EHV 138KV CKT 1	287	0.11192	103.5489	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	00NR		5 19WP	G14_003	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03734	129.0725	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		5 19WP	G14_003	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03734	127.9339	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		5 14WP	G14_003	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03884	113.3816	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		5 14WP	G14_003	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03884	112.4812	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		5 14SP	G14_003	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.0416	104.6501	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		5 14SP	G14_003	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.0416	103.9917	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		5 19WP	G14_003	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04863	102.7694	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	00NR		5 19WP	G14_003	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04863	101.9302	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	01NR		5 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.10106	101.2947	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.10106	149.1096	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05762	131.7738	CHISHOLM7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05063	120.8968	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04498	113.9621	GEN515787 1-OKLA WIND ENERGY CENTER	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04498	113.7688	GEN520997 1-MORLND2	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05292	111.1431	IODINE - WOODWARD EHV 138KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04498	110.5292	BASE CASE	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04857	110.0293	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04857	110.0143	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04498	109.849	GEN520922 1-SLEEPING BEAR	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05292	109.5281	DEWEY - IODINE 138KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04653	109.4918	DEWEY - TALOGA 138KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05007	108.982	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05006	108.9597	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05063	107.6479	WOODWARD - WOODWARD 69KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04755	105.3255	THISTLE7 345.00 - WICHITA 345KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04755	105.3255	THISTLE7 345.00 - WICHITA 345KV CKT 2	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0453	104.4267	FT SUPPLY - IODINE 138KV CKT 1	
FDNS	00NR		5 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.09785	104.2246	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0467	104.126	CHISHOLM7 345.00 (CHISHOLMXF) 345/230/13.2KV TRANSFORMER CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04876	103.933	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0453	102.89	IODINE - MOORELAND 138KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04498	102.8221	GENS15389 1-TLGAWND1 34.500	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04356	102.496	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		5 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.10094	101.4154	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04498	100.966	GENS14805 1-SOONER UNIT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04672	100.5119	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04507	100.3095	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04149	100	RENFROW4 138.00 - SAND RDG 138138.00 138KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04544	99.8	G12-011T 345.00 - POST ROCK 345KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04672	99.6	SPP-SWPS-05	
FDNS	00NR		5 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.07205	110.3801	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		5 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.07205	108.4328	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		5 14WP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.04889	101.4014	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		5 14WP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.04889	99.8	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		5 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	0.0696	100.8898	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		6 19WP	G14_003	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03659	127.8214	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		6 19WP	G14_003	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03659	126.7025	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		6 14WP	G14_003	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03795	111.8076	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		6 14WP	G14_003	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03795	110.9256	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		6 14SP	G14_003	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04068	103.4072	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		6 14SP	G14_003	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04068	102.7605	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00NR		6 19WP	G14_003	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04714	101.2472	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	00NR		6 19WP	G14_003	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.04714	100.4321	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	01NR		6 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.11283	114.0414	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	01NR		6 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06417	102.9642	CHISHOLM7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	
FDNS	09NR		0 14G	G14_004	TO->FROM	BEATRICE - HARBINE 115KV CKT 1	99	0.68939	103.6607	KNOB HILL - STEELE CITY 115KV CKT 1	
FDNS	00NR		0 14WP	G14_004	TO->FROM	BEATRICE - HARBINE 115KV CKT 1	99	0.68748	101.9137	KNOB HILL - STEELE CITY 115KV CKT 1	
FDNS	09NR		2 14G	G14_004	TO->FROM	BEATRICE - HARBINE 115KV CKT 1	99	0.68939	103.6607	KNOB HILL - STEELE CITY 115KV CKT 1	
FDNS	00NR		2 14WP	G14_004	TO->FROM	BEATRICE - HARBINE 115KV CKT 1	99	0.68748	101.9137	KNOB HILL - STEELE CITY 115KV CKT 1	
FDNS	09NR		5 14G	G14_004	TO->FROM	BEATRICE - HARBINE 115KV CKT 1	99	0.6894	103.409	KNOB HILL - STEELE CITY 115KV CKT 1	
FDNS	00NR		5 14WP	G14_004	TO->FROM	BEATRICE - HARBINE 115KV CKT 1	99	0.68749	101.4316	KNOB HILL - STEELE CITY 115KV CKT 1	
FDNS	00NR		5 14SP	G14_005	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03118	110.3801	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		5 14SP	G14_005	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03118	108.4328	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		5 14SP	G14_005	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03012	100.8898	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	09NR		0 14G	G14_006	TO->FROM	BEATRICE - HARBINE 115KV CKT 1	99	0.68939	103.6607	KNOB HILL - STEELE CITY 115KV CKT 1	
FDNS	00NR		0 14WP	G14_006	TO->FROM	BEATRICE - HARBINE 115KV CKT 1	99	0.68748	101.9137	KNOB HILL - STEELE CITY 115KV CKT 1	
FDNS	09NR		2 14G	G14_006	TO->FROM	BEATRICE - HARBINE 115KV CKT 1	99	0.68939	103.6607	KNOB HILL - STEELE CITY 115KV CKT 1	
FDNS	00NR		2 14WP	G14_006	TO->FROM	BEATRICE - HARBINE 115KV CKT 1	99	0.68748	101.9137	KNOB HILL - STEELE CITY 115KV CKT 1	
FDNS	09NR		5 14G	G14_006	TO->FROM	BEATRICE - HARBINE 115KV CKT 1	99	0.6894	103.409	KNOB HILL - STEELE CITY 115KV CKT 1	
FDNS	00NR		5 14WP	G14_006	TO->FROM	BEATRICE - HARBINE 115KV CKT 1	99	0.68749	101.4316	KNOB HILL - STEELE CITY 115KV CKT 1	
FNSL-Blown up	00G14_007		0 19WP	G14_007		Non-Converged Contingency	0	0.52296	-	SPP-AEPW-32	
FNSL-Blown up	00G14_007		0 19WP	G14_007		Non-Converged Contingency	1972	0.33651	-	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1	
FNSL-Blown up	00G14_007		0 19WP	G14_007		Non-Converged Contingency	1623	0.33651	-	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	
FNSL-Blown up	00G14_007		0 19WP	G14_007		Non-Converged Contingency	1071	0.26148	-	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FNSL-Blown up	00G14_007		0 19WP	G14_007		Non-Converged Contingency	0	0.04667	-	SPP-SWPS-01	
FNSL-Blown up	06ALL		0 14G	G14_007		Non-Converged Contingency	0	0.53719	-	SPP-AEPW-32	
FNSL-Blown up	06ALL		0 14G	G14_007		Non-Converged Contingency	1972	0.34161	-	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1	
FNSL-Blown up	06ALL		0 14G	G14_007		Non-Converged Contingency	1623	0.34161	-	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	
FNSL-Blown up	06ALL		0 14G	G14_007		Non-Converged Contingency	994	0.26859	-	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FNSL-Blown up	06ALL		0 14G	G14_007		'SPP-SWPS-01'	0	0.06031	9999	'BASE CASE'	
FNSL-Blown up	0		0 19SP	G14_012		Non-Converged Contingency	478	0.81172	-	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	
FNSL-Blown up	0		0 19SP	G14_012		Non-Converged Contingency	2532	0.05419	-	HOBBS - KIOWA 7345.00 345KV CKT 1	
FNSL-Blown up	0		0 19SP	G14_012		Non-Converged Contingency	644	0.05419	-	HOBBS (UPDATE DATA) 345/230/13.2KV TRANSFORMER CKT 1	
FNSL-Blown up	0		0 19WP	G14_012		Non-Converged Contingency	529	0.81168	-	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	
FNSL-Blown up	0		0 19WP	G14_012		Non-Converged Contingency	2626	0.05918	-	HOBBS - KIOWA 7345.00 345KV CKT 1	
FNSL-Blown up	0		0 19WP	G14_012		Non-Converged Contingency	644	0.05918	-	HOBBS (UPDATE DATA) 345/230/13.2KV TRANSFORMER CKT 1	
FNSL-Blown up	0		0 24SP	G14_012		Non-Converged Contingency	1492	0.87694	-	G14_012T 345.00 - HOBBS 345KV CKT 1	
FNSL-Blown up	0		0 24SP	G14_012		Non-Converged Contingency	2532	0.09674	-	HOBBS - KIOWA 7345.00 345KV CKT 1	
FNSL-Blown up	0		2 19SP	G14_012		Non-Converged Contingency	478	0.81172	-	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	
FNSL-Blown up	0		2 19SP	G14_012		Non-Converged Contingency	2532	0.21768	-	HOBBS - KIOWA 7345.00 345KV CKT 1	
FNSL-Blown up	0		2 19SP	G14_012		Non-Converged Contingency	2532	0.05419	-	HOBBS - KIOWA 7345.00 345KV CKT 1	
FNSL-Blown up	0		2 19SP	G14_012		Non-Converged Contingency	644	0.05419	-	HOBBS (UPDATE DATA) 345/230/13.2KV TRANSFORMER CKT 1	
FNSL-Blown up	0		2 19WP	G14_012		Non-Converged Contingency	1641	0.82172	-	G14_012T 345.00 - HOBBS 345KV CKT 1	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FNSL-Blown up	0		2 19WP	G14_012		Non-Converged Contingency	529	0.81168	-		G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1
FNSL-Blown up	0		2 19WP	G14_012		Non-Converged Contingency	2626	0.22749	-		HOBBS - KIOWA 7345.00 345KV CKT 1
FNSL-Blown up	0		2 19WP	G14_012		Non-Converged Contingency	2626	0.05918	-		HOBBS - KIOWA 7345.00 345KV CKT 1
FNSL-Blown up	0		2 19WP	G14_012		Non-Converged Contingency	644	0.05918	-		HOBBS (UPDATE DATA) 345/230/13.2KV TRANSFORMER CKT 1
FNSL-Blown up	0		2 24SP	G14_012		Non-Converged Contingency	1492	0.87729	-		G14_012T 345.00 - HOBBS 345KV CKT 1
FNSL-Blown up	0		2 24SP	G14_012		Non-Converged Contingency	1492	0.87694	-		G14_012T 345.00 - HOBBS 345KV CKT 1
FNSL-Blown up	0		2 24SP	G14_012		Non-Converged Contingency	2532	0.09674	-		HOBBS - KIOWA 7345.00 345KV CKT 1
FNSL-Blown up	0		2 24SP	G14_012		Non-Converged Contingency	2532	0.09515	-		HOBBS - KIOWA 7345.00 345KV CKT 1
FNSL-Blown up	0		3 19SP	G14_012		Non-Converged Contingency	2532	0.0901	-		HOBBS - KIOWA 7345.00 345KV CKT 1
FNSL-Blown up	0		3 19WP	G14_012		Non-Converged Contingency	1641	0.87706	-		G14_012T 345.00 - HOBBS 345KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478		1	161.6107	ANDREWS 6230.00 - G14_012T 230.00 230KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478		1	161.5629	ANDREWS 3115.00 - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529		1	159.1698	ANDREWS 6230.00 - G14_012T 230.00 230KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529		1	159.1258	ANDREWS 3115.00 - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.86669		129.1069	SPP-SWPS-T85
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.86688		129.0977	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.8671		127.7341	SPP-SWPS-T85
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.86707		127.6909	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.86688		126.9995	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.86707		125.7417	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.83991		111.6933	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.83968		111.6158	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.83994		111.2992	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.83971		111.2159	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.88735		110.7331	SPP-SWPS-T84
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.88735		110.6915	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.83463		110.6516	National Enrichment Plant Tap - TEAGUE SUB 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.83463		110.2543	JAL SUB - TEAGUE SUB 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82828		110.196	LAGARTO 3115.00 - National Enrichment Plant Tap 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82825		110.1078	LAGARTO 3115.00 - National Enrichment Plant Tap 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.83457		109.9211	National Enrichment Plant Tap - TEAGUE SUB 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.83457		109.39	JAL SUB - TEAGUE SUB 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.88762		108.7603	SPP-SWPS-T84
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.88762		108.7074	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.88735		108.5754	DRINKARD SUB - DRINKARD TAP 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82828		107.8347	LAGARTO 3115.00 - SAGE BRUSH 3115.00 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.83463		107.6638	JAL SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82825		107.5938	LAGARTO 3115.00 - SAGE BRUSH 3115.00 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81767		107.2227	PNDEROSATP 3115.00 - WHITTEN SUB 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81753		107.2155	PNDEROSATP 3115.00 - WHITTEN SUB 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.83457		107.0001	JAL SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.88735		106.7964	DRINKARD TAP - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.88762		106.0135	DRINKARD SUB - DRINKARD TAP 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81767		105.9942	OCHOA SUB - PNDEROSATP 3115.00 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81753		105.8639	OCHOA SUB - PNDEROSATP 3115.00 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82828		105.7628	LIVSTNRIDGE3115.00 - SAGE BRUSH 3115.00 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82825		105.3986	LIVSTNRIDGE3115.00 - SAGE BRUSH 3115.00 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81767		104.5794	AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81767		104.1461	AGAVE_RHILL3115.00 - RDRUNNER 3115.00 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82175		103.9945	SPP-SWPS-T13
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81168		103.9761	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81753		103.8647	AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.88762		103.6773	DRINKARD TAP - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82175		103.6145	SWITCH 4J44 - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82175		103.6139	SOUTH HOBBS SUB - SWITCH 4J44 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81753		103.4644	AGAVE_RHILL3115.00 - RDRUNNER 3115.00 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81168		103.3086	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82182		103.246	SPP-SWPS-T13
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81172		103.0576	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81172		102.962	SPP-SWPS-V83
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81066		102.9538	SPP-SWPS-T14
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82114		102.9119	JOHNSON DRAW - TAYLOR SWITCHING STATION 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82175		102.878	EAST SANGER SUB - SOUTH HOBBS SUB 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82182		102.7146	SWITCH 4J44 - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82182		102.714	SOUTH HOBBS SUB - SWITCH 4J44 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81172		102.2662	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81168		102.2248	BASE CASE
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82123		101.9918	JOHNSON DRAW - TAYLOR SWITCHING STATION 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81176		101.9821	SPP-SWPS-V83
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81069		101.8675	SPP-SWPS-T14
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82183		101.669	SPP-SWPS-T42

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY	
							(MVA)	TDF	(% MVA)			
FDNS	0		0	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82182	101.6674	EAST SANGER SUB - SOUTH HOBBS SUB 115KV CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81066	101.6589	OXY PERMIAN SUB - SANGER SWITCHING STATION 115KV CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81066	101.6588	MADDOX STATION - SANGER SWITCHING STATION 115KV CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82183	101.6032	MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81367	101.5608	MUSTANG STATION - SEMINOLE 230KV CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81225	101.4405	HOBBS INTERCHANGE - MADDOX STATION 115KV CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.8133	101.3999	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.8089	101.3722	CUNNINGHAM STATION (WH 700266) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.78374	101.3707	HOBBS INTERCHANGE - YOAKUM COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.80624	101.3351	HOBBS INTERCHANGE (UPDATE LATER) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.80585	101.2715	HOBBS INTERCHANGE (ME C0482951) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82183	101.2455	MADDOX STATION - MONUMENT SUB 115KV CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81168	101.198	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81168	101.1908	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81168	101.1327	GEN528361 1-MADDOX GEN #1
FDNS	0		0	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81172	101.0607	BASE CASE
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.8049	100.986	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		0	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.78363	100.4341	HOBBS INTERCHANGE - YOAKUM COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		0	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81079	100.3873	HOBBS INTERCHANGE - MILLEN SUB 115KV CKT 1
FDNS	0		0	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81226	100.3624	HOBBS INTERCHANGE - MADDOX STATION 115KV CKT 1
FDNS	0		0	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.80962	100.3327	KIOWA 7345.00 (UPDATE DATA) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81771	100.2647	SPP-SWPS-T39
FDNS	0		0	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81069	100.2645	OXY PERMIAN SUB - SANGER SWITCHING STATION 115KV CKT 1
FDNS	0		0	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81069	100.2644	MADDOX STATION - SANGER SWITCHING STATION 115KV CKT 1
FDNS	0		0	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81172	100.1646	GEN527884 1-CUNNINGHAM GEN #4 22 KV
FDNS	0		0	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81347	100.1033	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.80716	100.0921	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81771	100.0634	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		0	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81374	100.0545	MUSTANG STATION - SEMINOLE 230KV CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.8185	100	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81771	100	LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		0	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81172	99.9	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	0		0	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81172	99.9	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	0		0	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81172	99.8	GEN528361 1-MADDOX GEN #1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81771	99.7	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.8185	99.6	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81771	99.6	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	ANDREWS	3115.00 - National Enrichment Plant Sub 115KV CKT 1	525	1	125.1306	G14_012T 345.00 - HOBBS 345KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	DRINKARD SUB - DRINKARD TAP 115KV CKT 1	160	0.53906	150.6451	G14_012T 345.00 - HOBBS 345KV CKT 1	
FDNS	0		2	19SP	G14_012	TO->FROM	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1	160	0.53906	161.9331	G14_012T 345.00 - HOBBS 345KV CKT 1	
FDNS	0		2	19SP	G14_012	FROM->TO	DRINKARD TAP - WEST HOBBS SWITCHING STATION 115KV CKT 1	160	0.53906	137.0266	G14_012T 345.00 - HOBBS 345KV CKT 1	
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	1	161.6107	ANDREWS 6230.00 - G14_012T 230.00 230KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	1	161.5629	ANDREWS 3115.00 - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	1	159.1698	ANDREWS 6230.00 - G14_012T 230.00 230KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	1	159.1258	ANDREWS 3115.00 - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.8669	129.1069	SPP-SWPS-T85
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.86688	129.0977	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.8671	127.7341	SPP-SWPS-T85
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.86707	127.6909	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.86688	126.9995	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.86707	125.7418	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.83991	111.6933	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.83968	111.6158	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.83994	111.2992	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.83971	111.2159	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.88735	110.7331	SPP-SWPS-T84
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.88735	110.6915	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.83463	110.6516	National Enrichment Plant Tap - TEAGUE SUB 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.83463	110.2543	JAL SUB - TEAGUE SUB 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82828	110.196	LAGARTO 3115.00 - National Enrichment Plant Tap 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82825	110.1078	LAGARTO 3115.00 - National Enrichment Plant Tap 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.83457	109.9211	National Enrichment Plant Tap - TEAGUE SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.83457	109.3901	JAL SUB - TEAGUE SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.88762	108.7603	SPP-SWPS-T84
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.88762	108.7074	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.88735	108.5754	DRINKARD SUB - DRINKARD TAP 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82828	107.8347	LAGARTO 3115.00 - SAGE_BRUSH 3115.00 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.83463	107.6638	JAL SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82825	107.5938	LAGARTO 3115.00 - SAGE_BRUSH 3115.00 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81767	107.2227	PNDEROSATP 3115.00 - WHITTEN SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81753	107.2155	PNDEROSATP 3115.00 - WHITTEN SUB 115KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY	
							(MVA)	TDF	(% MVA)			
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.83457	107.0001	JAL SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.88735	106.7964	DRINKARD TAP - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.88762	106.0135	DRINKARD SUB - DRINKARD TAP 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81767	105.9942	OCHOA SUB - PNDEROSATP 3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81753	105.8639	OCHOA SUB - PNDEROSATP 3115.00 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82828	105.7628	LIVSTNRIDGE3115.00 - SAGE_BRUSH 3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82825	105.3986	LIVSTNRIDGE3115.00 - SAGE_BRUSH 3115.00 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81767	104.5795	AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81767	104.1461	AGAVE_RHILL3115.00 - RDRUNNER 3115.00 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82175	103.9945	SPP-SWPS-T13
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81168	103.9761	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81753	103.8647	AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.88762	103.6773	DRINKARD TAP - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82175	103.6145	SWITCH 4J44 - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82175	103.6139	SOUTH HOBBS SUB - SWITCH 4J44 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81753	103.4644	AGAVE_RHILL3115.00 - RDRUNNER 3115.00 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81168	103.3086	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82182	103.246	SPP-SWPS-T13
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81172	103.0576	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81172	102.9621	SPP-SWPS-V83
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81066	102.9538	SPP-SWPS-T14
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82114	102.9119	JOHNSON DRAW - TAYLOR SWITCHING STATION 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82175	102.878	EAST SANGER SUB - SOUTH HOBBS SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82182	102.7146	SWITCH 4J44 - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82182	102.714	SOUTH HOBBS SUB - SWITCH 4J44 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81172	102.2662	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81168	102.2248	BASE CASE
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82123	101.9918	JOHNSON DRAW - TAYLOR SWITCHING STATION 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81176	101.9821	SPP-SWPS-V83
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81069	101.8676	SPP-SWPS-T14
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82183	101.669	SPP-SWPS-T42
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82182	101.6674	EAST SANGER SUB - SOUTH HOBBS SUB 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81066	101.6589	OXY PERMIAN SUB - SANGER SWITCHING STATION 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81066	101.6588	MADDOX STATION - SANGER SWITCHING STATION 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82183	101.6032	MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81367	101.5608	MUSTANG STATION - SEMINOLE 230KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81225	101.4405	HOBBS INTERCHANGE - MADDOX STATION 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.8133	101.3999	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.8089	101.3722	CUNNINGHAM STATION (WH 700266) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.78374	101.3707	HOBBS INTERCHANGE - YOAKUM COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.80624	101.3351	HOBBS INTERCHANGE (UPDATE LATER) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.80585	101.2715	HOBBS INTERCHANGE (ME C0482951) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.82183	101.2455	MADDOX STATION - MONUMENT SUB 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81168	101.198	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81168	101.1908	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81168	101.1327	GEN528361 1-MADDOX GEN #1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81172	101.0607	BASE CASE
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.8049	100.986	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.78363	100.4341	HOBBS INTERCHANGE - YOAKUM COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81079	100.3873	HOBBS INTERCHANGE - MILLEN SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81226	100.3624	HOBBS INTERCHANGE - MADDOX STATION 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.80962	100.3327	KIOWA 7345.00 (UPDATE DATA) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81771	100.2647	SPP-SWPS-T39
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81069	100.2645	OXY PERMIAN SUB - SANGER SWITCHING STATION 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81069	100.2644	MADDOX STATION - SANGER SWITCHING STATION 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81172	100.1646	GEN527884 1-CUNNINGHAM GEN #4 22 KV
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81347	100.1033	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.80716	100.0921	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81771	100.0634	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81374	100.0545	MUSTANG STATION - SEMINOLE 230KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.8185	100	IMC #1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81771	100	LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81172	99.9	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81172	99.9	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.81172	99.8	GEN528361 1-MADDOX GEN #1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81771	99.7	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.8185	99.6	IMC #1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T	230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81771	99.6	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	JAL SUB - TEAGUE SUB 115KV CKT 1	160	0.26313	111.9568	G14_012T 345.00 - HOBBS 345KV CKT 1	
FDNS	0		2	19SP	G14_012	FROM->TO	JAL SUB - WHITTEN SUB 115KV CKT 1	141	0.26313	109.4636	G14_012T 345.00 - HOBBS 345KV CKT 1	
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.46094	230.9622	G14_012T 345.00 - HOBBS 345KV CKT 1	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.46094	220.3255	G14_012T	345.00 - HOBBS 345KV CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Tap - TEAGUE SUB 115KV CKT 1	160	0.26313	115.6201	G14_012T	345.00 - HOBBS 345KV CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	0.43858	101.9	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	
FDNS	0		2 19WP	G14_012	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	0.43858	100.6	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	
FDNS	0		2 19WP	G14_012	FROM->TO	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	560	0.43203	100.4	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	
FDNS	0		3 19SP	G14_012	FROM->TO	ANDREWS 3115.00 - National Enrichment Plant Sub 115KV CKT 1	525	1	120.7227	G14_012T	345.00 - HOBBS 345KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	DRINKARD SUB - DRINKARD TAP 115KV CKT 1	160	0.52966	144.8866	G14_012T	345.00 - HOBBS 345KV CKT 1
FDNS	0		3 19SP	G14_012	TO->FROM	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1	160	0.52966	156.1404	G14_012T	345.00 - HOBBS 345KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	DRINKARD TAP - WEST HOBBS SWITCHING STATION 115KV CKT 1	160	0.52966	131.3735	G14_012T	345.00 - HOBBS 345KV CKT 1
FDNS	0		3 19SP	G14_012	TO->FROM	JAL SUB - TEAGUE SUB 115KV CKT 1	160	0.26699	107.2672	G14_012T	345.00 - HOBBS 345KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	JAL SUB - WHITTEN SUB 115KV CKT 1	141	0.26699	104.3899	G14_012T	345.00 - HOBBS 345KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.47034	221.4376	G14_012T	345.00 - HOBBS 345KV CKT 1
FDNS	0		3 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.47034	211.0384	G14_012T	345.00 - HOBBS 345KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Tap - TEAGUE SUB 115KV CKT 1	160	0.26699	110.8737	G14_012T	345.00 - HOBBS 345KV CKT 1
FDNS	09NR		0 14G	G14_013	TO->FROM	BATTLE CREEK - COUNTY LINE 115KV CKT 1	120	0.03007	101.6557	PETERSBRG.N7115.00 - PETERSBURG 115KV CKT Z1	
FDNS	09NR		0 14G	G14_013	TO->FROM	BATTLE CREEK - COUNTY LINE 115KV CKT 1	120	0.03007	101.4975	ALBION - PETERSBURG 115KV CKT 1	
FDNS	09NR_BPS		0 14G	G14_013	TO->FROM	BATTLE CREEK - COUNTY LINE 115KV CKT 1	120	0.0304	101.2564	PETERSBRG.N7115.00 - PETERSBURG 115KV CKT Z1	
FDNS	09NR_BPS		0 14G	G14_013	TO->FROM	BATTLE CREEK - COUNTY LINE 115KV CKT 1	120	0.0304	101.1034	ALBION - PETERSBURG 115KV CKT 1	
FDNS	09NR		0 14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.03007	102.3533	PETERSBRG.N7115.00 - PETERSBURG 115KV CKT Z1	
FDNS	09NR		0 14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.03007	102.1943	ALBION - PETERSBURG 115KV CKT 1	
FDNS	09NR_BPS		0 14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.0304	101.9536	PETERSBRG.N7115.00 - PETERSBURG 115KV CKT Z1	
FDNS	09NR_BPS		0 14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.0304	101.8037	ALBION - PETERSBURG 115KV CKT 1	
FDNS	09NR_BPS		0 14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.03562	99.6	HOSKINS - S_NORFOLK 345.00 345KV CKT 1	
FDNS	09G14_013		0 14G	G14_013	FROM->TO	MEADOWGROVE 230.00 - S_NORFOLK 230.00 230KV CKT 1	320	0.57674	107.6443	KELLY - MEADOWGROVE 230.00 230KV CKT 1	
FDNS	09G14_013_BPS		0 14G	G14_013	FROM->TO	MEADOWGROVE 230.00 - S_NORFOLK 230.00 230KV CKT 1	320	0.57686	107.0051	KELLY - MEADOWGROVE 230.00 230KV CKT 1	
FDNS	09G14_013		0 14G	G14_013	FROM->TO	S_NORFOLK 345.00 (SNORFOLKT) 345/230/13.8KV TRANSFORMER CKT 1	336	0.57674	103.2936	KELLY - MEADOWGROVE 230.00 230KV CKT 1	
FDNS	09G14_013_BPS		0 14G	G14_013	FROM->TO	S_NORFOLK 345.00 (SNORFOLKT) 345/230/13.8KV TRANSFORMER CKT 1	336	0.57686	102.7065	KELLY - MEADOWGROVE 230.00 230KV CKT 1	
FDNS	09G14_013		0 14G	G14_013	FROM->TO	S_NORFOLK 345.00 (SNORFOLKT) 345/230/13.8KV TRANSFORMER CKT 1	336	0.57674	101.9939	KELLY - MEADOWGROVE 230.00 230KV CKT 1	
FDNS	09G14_013_BPS		0 14G	G14_013	FROM->TO	S_NORFOLK 345.00 (SNORFOLKT) 345/230/13.8KV TRANSFORMER CKT 1	336	0.57686	101.4212	KELLY - MEADOWGROVE 230.00 230KV CKT 1	
FDNS	09NR		2 14G	G14_013	TO->FROM	BATTLE CREEK - COUNTY LINE 115KV CKT 1	120	0.03007	101.6557	PETERSBRG.N7115.00 - PETERSBURG 115KV CKT Z1	
FDNS	09NR		2 14G	G14_013	TO->FROM	BATTLE CREEK - COUNTY LINE 115KV CKT 1	120	0.03007	101.4975	ALBION - PETERSBURG 115KV CKT 1	
FDNS	09NR_BPS		2 14G	G14_013	TO->FROM	BATTLE CREEK - COUNTY LINE 115KV CKT 1	120	0.0304	101.2564	PETERSBRG.N7115.00 - PETERSBURG 115KV CKT Z1	
FDNS	09NR_BPS		2 14G	G14_013	TO->FROM	BATTLE CREEK - COUNTY LINE 115KV CKT 1	120	0.0304	101.1034	ALBION - PETERSBURG 115KV CKT 1	
FDNS	09NR		2 14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.03007	102.3533	PETERSBRG.N7115.00 - PETERSBURG 115KV CKT Z1	
FDNS	09NR		2 14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.03007	102.1943	ALBION - PETERSBURG 115KV CKT 1	
FDNS	09NR_BPS		2 14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.0304	101.9536	PETERSBRG.N7115.00 - PETERSBURG 115KV CKT Z1	
FDNS	09NR_BPS		2 14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.0304	101.8038	ALBION - PETERSBURG 115KV CKT 1	
FDNS	09NR_BPS		2 14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.03562	99.6	HOSKINS - S_NORFOLK 345.00 345KV CKT 1	

H: Power Flow Analysis (Other Constraints Not Requiring Mitigation)

See next page.

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1	350.6	0.14949	99.4	BUSHLAND_S 230.00 - PLANT X STATION 230KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	BUSHLAND_S 230.00 - PLANT X STATION 230KV CKT 1	351	0.12442	105.7817	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FNSL	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	CONWAY SUB - NICHOLS STATION 115KV CKT 1	180	0.0346	99.7	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	DAWN SUB - Panda Energy Substation Hereford 115KV CKT 1	96	0.04506	101.7211	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07216	113.6094	DBL-G1334-WWR
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07216	113.4512	DBL-BVR-G1334
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07216	111.4222	DBL-G1334-WWR
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07216	111.2774	DBL-BVR-G1334
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07216	101.6379	DBL-HTCH-BVR
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.09551	101.4122	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	6		0 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.09551	101.3683	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07216	100.6758	DBL-HTCH-BVR
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.09551	100.4388	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	6		0 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.09551	100.3985	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.04161	113.5345	DBL-WICH-THI
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.0418	99.3	DBL-WICH-THI
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04461	149.3142	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05151	145.1403	DBL-THIS-WWR
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04147	131.851	DBL-WICH-THI
FDNS	1		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04474	123.8936	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	1		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.052	118.7057	DBL-THIS-WWR
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03443	112.0327	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03442	112.011	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	1		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04183	110.6048	DBL-WICH-THI
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03399	110.2912	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04461	110.259	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03399	109.2945	DEWEY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04893	107.9797	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03219	107.8848	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03156	107.5753	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03156	107.5753	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03932	104.1795	SPP-SWPS-03
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03916	104.1273	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03916	104.1248	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03413	104.024	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03366	103.9945	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03916	103.7193	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03366	103.3738	SPP-SWPS-05
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03366	103.3443	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04893	103.1232	SPP-AEPW-32
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03916	102.4116	SPP-SWPS-02A
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04824	102.1136	SPP-SWPS-01
FDNS	01ALL		0 14G	ASGI_14_001	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04893	101.8806	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04461	223.4623	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05151	215.0919	DBL-THIS-WWR
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04147	192.1486	DBL-WICH-THI
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04474	189.9648	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.052	179.5262	DBL-THIS-WWR
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03219	165.4563	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04183	164.762	DBL-WICH-THI
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0452	162.1943	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03443	157.4364	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03442	157.4	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03399	155.4729	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04461	154.3388	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03399	153.7454	DEWEY - IODINE 138KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05279	152.6347	DBL-THIS-WWR
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04275	151.7519	DBL-WICH-THI
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03219	151.4218	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04893	150.02	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03156	149.2408	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03156	149.2408	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0452	147.5169	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0452	144.1327	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03932	143.1363	SPP-SWPS-03
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03366	143.0163	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03413	142.7913	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03254	142.7668	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03916	142.6656	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03916	142.6613	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03916	142.3238	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03366	141.9972	SPP-SWPS-05
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03366	141.941	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04893	141.2275	SPP-AEPW-32
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03916	139.5657	SPP-SWPS-02A

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04824	139.4799	SPP-SWPS-01
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04893	139.0404	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0456	136.6556	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0456	136.6198	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04474	134.4539	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03428	133.9437	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04042	133.6591	SPP-SWPS-03
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03428	131.9406	DEWEY - IODINE 138KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0348	131.8635	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03479	131.8332	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04027	131.8276	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04027	131.7245	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04027	130.4725	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04924	129.5896	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03254	128.7757	WOODWARD - WOODWARD 69KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03189	126.7245	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03189	126.7245	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04317	126.4597	DBL-WICH-THI
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04317	126.418	DBL-WICH-THI
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04027	125.6416	SPP-SWPS-02A
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05061	124.5168	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03394	124.4625	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03111	124.4581	MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05061	124.4414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05335	123.6029	DBL-THIS-WWR
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05335	123.5519	DBL-THIS-WWR
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03962	123.3967	SPP-SWPS-03
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03946	123.0196	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03946	123.0139	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03445	122.6281	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03946	122.5638	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0456	122.4673	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0456	122.4326	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03548	121.29	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04924	120.9471	SPP-AEPW-32
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03111	120.9326	ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03014	120.801	GEN520997 1-MORLND2
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04027	120.1767	STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04027	120.156	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04027	120.1477	SPP-SWPS-02
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03402	120.1263	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03355	120.0944	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03946	119.9969	SPP-SWPS-02A
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04474	119.8856	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03548	119.5692	DEWEY - IODINE 138KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04855	119.0605	SPP-SWPS-01
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0456	118.862	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0456	118.8276	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03402	118.8145	SPP-SWPS-05
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03402	118.7619	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04924	118.7219	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03001	117.0838	MINGO - RED WILLOW 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03014	114.658	GEN520998 1-MORLND3
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03394	111.4018	WOODWARD - WOODWARD 69KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03516	110.9288	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03014	110.3358	BASE CASE
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.036	110.2427	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03599	110.2174	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05061	109.6834	SPP-AEPW-32
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05061	109.6325	SPP-AEPW-32
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03516	109.4731	SPP-SWPS-05
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03516	109.4022	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03313	108.7663	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03313	108.7663	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05061	107.3429	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0304	107.3142	GEN520997 1-MORLND2
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0304	107.2946	GEN520997 1-MORLND2
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05061	107.2924	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03423	107.2264	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03423	107.203	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04992	107.1893	SPP-SWPS-01
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04081	107.1609	SPP-SWPS-03
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04992	107.1407	SPP-SWPS-01
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04081	107.1286	SPP-SWPS-03
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04066	106.5028	ELK CITY 230KV - SWEETWATER 230KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04066	106.477	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04066	106.471	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04066	106.4444	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03407	105.7011	MOREWOOD SW - NINE MILE 138KV CKT 1
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04066	105.6707	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04066	105.6388	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03149	105.385	MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03407	105.3146	MOORELAND - NINE MILE 138KV CKT 1
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03578	103.1093	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03578	103.0847	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04066	102.9356	SPP-SWPS-02A
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04066	102.9047	SPP-SWPS-02A
FDNS	09ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04618	102.4336	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	1		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03149	101.6465	ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03578	101.3925	DEWEY - IODINE 138KV CKT 1
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03578	101.368	DEWEY - IODINE 138KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03098	101.1828	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0304	101.0202	GENS20998 1-MORLND3
FDNS	6		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0304	101.0006	GENS20998 1-MORLND3
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03014	100.7424	GENS14805 1-SOONER UNIT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03098	100.317	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03014	100.2311	GENS15787 1-OKLA WIND ENERGY CENTER
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03121	99.9	MINGO - SETAB 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03077	99.6	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03098	99.3	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03014	99.3	GENS20922 1-SLEEPING BEAR
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03014	99.1	GENS14806 1-SOONER UNIT 2
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.11411	129.1802	SPP-AEPW-32
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.11626	127.1768	SPP-SWPS-01
FNLS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.11411	125.9846	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.06562	119.1341	DBL-G1334-WWR
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.06562	119.0848	DBL-BVR-G1334
FNLS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08498	113.8119	DBL-G1334-WWR
FNLS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08498	113.7349	DBL-BVR-G1334
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08788	109.0083	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FNLS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08498	108.9082	DBL-HTCH-BVR
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08788	108.554	SPP-SWPS-04
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0791	108.0021	CONWAY SUB - NICHOLS STATION 115KV CKT 1
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.08813	106.9492	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	6		0 14G	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.08813	106.899	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08788	106.7661	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0791	105.9847	SPP-SWPS-T53
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.06562	105.9683	DBL-HTCH-BVR
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0791	105.832	CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08405	104.8054	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08405	104.1177	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.06762	103.6952	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.06762	103.4183	SPP-SWPS-04
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.06988	103.1283	BASE CASE
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07628	103.065	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08405	102.5008	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07524	102.1197	KINGSMILL INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.05951	101.8825	CONWAY SUB - NICHOLS STATION 115KV CKT 1
FNLS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07628	101.6649	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FNLS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07628	101.3572	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07448	100.7284	DBL-WICH-THI
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.05951	100.2444	SPP-SWPS-T53
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.05951	100.1237	CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07524	100.0827	BOWERS INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.06762	100	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.05723	99.9	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07197	99.4	KINGSMILL INTERCHANGE - LLANO ESTACADO WIND GEN 115KV CKT 1
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07197	99.2	SPP-SWPS-V29
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	351	0.07216	114.4264	DBL-G1334-WWR
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	351	0.07216	114.3425	DBL-BVR-G1334
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.11687	109.031	SPP-AEPW-32
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.11907	107.1692	SPP-SWPS-01
FNLS	00ASGI_14_001		0 19WP	ASGI_14_001	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.11687	105.9813	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	351	0.09551	100.4493	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	351	0.07216	100.4323	DBL-HTCH-BVR
FDNS	6		0 14G	ASGI_14_001	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	351	0.09551	100.3992	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	GRAPEVINE INTERCHANGE (PENN 0257751) 230/115/13.2KV TRANSFORMER CKT 1	112	0.03014	117.3101	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	GRAPEVINE INTERCHANGE (PENN 0257751) 230/115/13.2KV TRANSFORMER CKT 1	112	0.03014	105.0603	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	0.18465	115.9426	DBL-THIS-WWR
FDNS	01ALL		0 14G	ASGI_14_001	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	0.15476	105.3843	DBL-WICH-THI

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	SPSSPTIESB	620	0.41957	169.5845	BASE CASE
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	FROM->TO	SPSSPTIESB	620	0.41139	155.1266	BASE CASE
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	FROM->TO	SPSSPTIESB	620	0.42418	130.1642	BASE CASE
FDNS	6		0 14G	ASGI_14_001	FROM->TO	SPSSPTIESB	620	0.4242	130.0794	BASE CASE
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	SPSSPTIESB1	620	0.40142	159.545	BASE CASE
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	FROM->TO	SPSSPTIESB1	620	0.40588	123.0025	BASE CASE
FDNS	6		0 14G	ASGI_14_001	FROM->TO	SPSSPTIESB1	620	0.4059	122.922	BASE CASE
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	FROM->TO	SPSSPTIESB1	620	0.3939	121.0782	BASE CASE
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	SPSSPTIESC	620	0.40142	159.545	BASE CASE
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	FROM->TO	SPSSPTIESC	620	0.40588	123.0025	BASE CASE
FDNS	6		0 14G	ASGI_14_001	FROM->TO	SPSSPTIESC	620	0.4059	122.922	BASE CASE
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	FROM->TO	SPSSPTIESC	620	0.3939	121.0782	BASE CASE
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	SPSSPTIESC1	620	0.41957	169.5845	BASE CASE
FDNS	00ASGI_14_001		0 19WP	ASGI_14_001	FROM->TO	SPSSPTIESC1	620	0.41139	155.1266	BASE CASE
FDNS	06ASGI_14_001		0 14G	ASGI_14_001	FROM->TO	SPSSPTIESC1	620	0.42418	130.1642	BASE CASE
FDNS	6		0 14G	ASGI_14_001	FROM->TO	SPSSPTIESC1	620	0.4242	130.0794	BASE CASE
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	0.46328	112.8339	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	0.46328	108.8587	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	560	0.45742	111.3376	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	ASGI_14_001	FROM->TO	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	560	0.45742	107.0005	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	353	0.08434	111.5864	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	353	0.07957	106.541	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08434	122.1654	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08434	120.7913	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07957	113.5375	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07957	110.2882	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ASGI_14_001		2 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08511	104.9319	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	6		2 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08511	104.9014	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07957	104.2686	SPP-AEPW-32
FDNS	06ASGI_14_001		2 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08511	104.2382	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	6		2 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08511	104.2085	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00ASGI_14_001		2 19WP	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08697	102.7393	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07841	102.5634	SPP-SWPS-01
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07957	102.3289	SPP-AEPW-32
FDNS	00ASGI_14_001		2 19WP	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08697	101.9875	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07957	101.2091	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07841	100.6944	SPP-SWPS-01
FDNS	00ASGI_14_001		2 19WP	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08169	99.9374	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	09ALL		2 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04618	102.4336	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		2 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03027	100.8351	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		2 14G	ASGI_14_001	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03085	100.7843	DBL-WICH-THI
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	SPSSPTIESB	620	0.34486	136.0029	BASE CASE
FDNS	00ASGI_14_001		2 19WP	ASGI_14_001	FROM->TO	SPSSPTIESB	620	0.35238	132.2354	BASE CASE
FDNS	06ASGI_14_001		2 14G	ASGI_14_001	FROM->TO	SPSSPTIESB	620	0.34836	102.611	BASE CASE
FDNS	6		2 14G	ASGI_14_001	FROM->TO	SPSSPTIESB	620	0.34837	102.5402	BASE CASE
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	SPSSPTIESB1	620	0.32879	124.0382	BASE CASE
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	SPSSPTIESC	620	0.32879	124.0382	BASE CASE
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	SPSSPTIESC1	620	0.34486	136.0029	BASE CASE
FDNS	00ASGI_14_001		2 19WP	ASGI_14_001	FROM->TO	SPSSPTIESC1	620	0.35238	132.2354	BASE CASE
FDNS	06ASGI_14_001		2 14G	ASGI_14_001	FROM->TO	SPSSPTIESC1	620	0.34836	102.611	BASE CASE
FDNS	6		2 14G	ASGI_14_001	FROM->TO	SPSSPTIESC1	620	0.34837	102.5402	BASE CASE
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	0.50472	129.5905	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	0.50472	127.939	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	560	0.4974	127.8193	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	560	0.4974	126.0692	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		2 14G	ASGI_14_001	FROM->TO	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	560	0.42645	101.3684	SPP-SWPS-01
FDNS	00ASGI_14_001		2 19WP	ASGI_14_001	FROM->TO	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	560	0.49241	99.3	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		3 14G	ASGI_14_001	FROM->TO	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	353	0.08203	109.8824	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		3 14G	ASGI_14_001	FROM->TO	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	353	0.07782	104.1765	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		3 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08203	120.7132	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		3 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08203	119.3754	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		3 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07782	111.7636	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		3 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07782	108.8781	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ASGI_14_001		3 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08273	104.0061	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	6		3 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08274	103.9772	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ASGI_14_001		3 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08273	103.349	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	6		3 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08274	103.3207	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		3 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07782	103.3162	SPP-AEPW-32
FDNS	06ALL		3 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07693	101.8366	SPP-SWPS-01
FDNS	00ASGI_14_001		3 19WP	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08439	101.6143	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		3 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07782	101.5641	SPP-AEPW-32
FDNS	00ASGI_14_001		3 19WP	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08439	100.9419	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		3 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07693	100.1617	SPP-SWPS-01
FDNS	06ALL		3 14G	ASGI_14_001	FROM->TO	SPSSPTIESB	620	0.34523	135.574	BASE CASE
FDNS	00ASGI_14_001		3 19WP	ASGI_14_001	FROM->TO	SPSSPTIESB	620	0.35264	132.0635	BASE CASE

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ASGI_14_001		3 14G	ASGI_14_001	FROM->TO	SPSSPTIESB	620	0.34857	102.1304	BASE CASE
FDNS	6		3 14G	ASGI_14_001	FROM->TO	SPSSPTIESB	620	0.34858	102.0588	BASE CASE
FDNS	06ALL		3 14G	ASGI_14_001	FROM->TO	SPSSPTIESB1	620	0.29272	111.4234	BASE CASE
FDNS	06ALL		3 14G	ASGI_14_001	FROM->TO	SPSSPTIESC	620	0.29272	111.4234	BASE CASE
FDNS	06ALL		3 14G	ASGI_14_001	FROM->TO	SPSSPTIESC1	620	0.34523	135.574	BASE CASE
FDNS	00ASGI_14_001		3 19WP	ASGI_14_001	FROM->TO	SPSSPTIESC1	620	0.35264	132.0635	BASE CASE
FDNS	06ASGI_14_001		3 14G	ASGI_14_001	FROM->TO	SPSSPTIESC1	620	0.34857	102.1304	BASE CASE
FDNS	6		3 14G	ASGI_14_001	FROM->TO	SPSSPTIESC1	620	0.34858	102.0588	BASE CASE
FDNS	00ASGI_14_001		4 19WP	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08447	101.6101	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00ASGI_14_001		4 19WP	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08447	100.9399	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00ASGI_14_001		4 19WP	ASGI_14_001	FROM->TO	SPSSPTIESB	620	0.35295	132.0539	BASE CASE
FDNS	00ASGI_14_001		4 19WP	ASGI_14_001	FROM->TO	SPSSPTIESC1	620	0.35295	132.0539	BASE CASE
FDNS	06ALL		5 14G	ASGI_14_001	FROM->TO	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	353	0.08203	109.8824	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		5 14G	ASGI_14_001	FROM->TO	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	353	0.07782	104.1765	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		5 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08203	120.7132	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		5 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08203	119.3754	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		5 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07782	111.7636	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		5 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07782	108.8781	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ASGI_14_001		5 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08273	104.0062	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	6		5 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08274	103.9772	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ASGI_14_001		5 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08273	103.349	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	6		5 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08274	103.3207	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		5 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07782	103.3162	SPP-AEPW-32
FDNS	06ALL		5 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07693	101.8366	SPP-SWPS-01
FDNS	00ASGI_14_001		5 19WP	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08447	101.6101	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		5 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07782	101.5641	SPP-AEPW-32
FDNS	00ASGI_14_001		5 19WP	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08447	100.9399	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		5 14G	ASGI_14_001	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07693	100.1617	SPP-SWPS-01
FDNS	06ALL		5 14G	ASGI_14_001	FROM->TO	SPSSPTIESB	620	0.34523	135.5741	BASE CASE
FDNS	00ASGI_14_001		5 19WP	ASGI_14_001	FROM->TO	SPSSPTIESB	620	0.35295	132.0538	BASE CASE
FDNS	06ASGI_14_001		5 14G	ASGI_14_001	FROM->TO	SPSSPTIESB	620	0.34857	102.1308	BASE CASE
FDNS	6		5 14G	ASGI_14_001	FROM->TO	SPSSPTIESB	620	0.34858	102.0592	BASE CASE
FDNS	06ALL		5 14G	ASGI_14_001	FROM->TO	SPSSPTIESB1	620	0.29272	111.4236	BASE CASE
FDNS	06ALL		5 14G	ASGI_14_001	FROM->TO	SPSSPTIESC	620	0.29272	111.4236	BASE CASE
FDNS	06ALL		5 14G	ASGI_14_001	FROM->TO	SPSSPTIESC1	620	0.34523	135.5741	BASE CASE
FDNS	00ASGI_14_001		5 19WP	ASGI_14_001	FROM->TO	SPSSPTIESC1	620	0.35295	132.0538	BASE CASE
FDNS	06ASGI_14_001		5 14G	ASGI_14_001	FROM->TO	SPSSPTIESC1	620	0.34857	102.1308	BASE CASE
FDNS	6		5 14G	ASGI_14_001	FROM->TO	SPSSPTIESC1	620	0.34858	102.0592	BASE CASE
FDNS	00G13_026		0 24SP	G13_026	FROM->TO	CHARLOTS 161.00 - CROSSTOWN 161KV CKT 1	259	0.03076	107.8842	CROSSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	0		0 24SP	G13_026	FROM->TO	CHARLOTS 161.00 - CROSSTOWN 161KV CKT 1	259	0.03083	104.3702	CROSSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	00G13_026		0 24SP	G13_026	FROM->TO	CHARLOTS 161.00 - CROSSTOWN 161KV CKT 1	259	0.03436	104.1818	NAVY - NORTHEAST 161KV CKT 1
FDNS	0		0 24SP	G13_026	FROM->TO	CHARLOTS 161.00 - CROSSTOWN 161KV CKT 1	259	0.03444	100.6372	NAVY - NORTHEAST 161KV CKT 1
FDNS	00G13_026		0 24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03076	121.9555	CROSSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	0		0 24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03083	118.4053	CROSSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	00G13_026		0 24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03436	118.0021	NAVY - NORTHEAST 161KV CKT 1
FDNS	0		0 24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03444	114.374	NAVY - NORTHEAST 161KV CKT 1
FDNS	00G13_026		0 19SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03098	110.1977	CROSSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	00G13_026		0 24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03386	108.5582	87th STREET - STRANGER CREEK 345KV CKT 1
FDNS	00G13_026		0 24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.04	108.5308	IATAN - STRANGER CREEK 345KV CKT 1
FDNS	0		0 19SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03093	108.0558	CROSSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	00G13_026		0 19SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03462	105.8348	NAVY - NORTHEAST 161KV CKT 1
FDNS	0		0 24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03394	104.8801	87th STREET - STRANGER CREEK 345KV CKT 1
FDNS	0		0 24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.04408	103.9063	IATAN - STRANGER CREEK 345KV CKT 1
FDNS	0		0 19SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03455	103.8685	NAVY - NORTHEAST 161KV CKT 1
FDNS	00G13_026		0 24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03298	103.3896	87th STREET - CRAIG 345KV CKT 1
FDNS	0		0 24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03306	99.8	87th STREET - CRAIG 345KV CKT 1
FDNS	00G13_026		0 19SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03405	99.3	87th STREET - STRANGER CREEK 345KV CKT 1
FDNS	06ALL		0 14G	G13_026	FROM->TO	LAWEASOKLUNI	425	0.03411	187.1	BASE CASE
FDNS	0		0 19WP	G13_026	FROM->TO	LAWEASOKLUNI	425	0.03084	173.3	BASE CASE
FDNS	00G13_026		0 19WP	G13_026	FROM->TO	LAWEASOKLUNI	425	0.03093	172.3	BASE CASE
FDNS	6		0 14G	G13_026	FROM->TO	LAWEASOKLUNI	425	0.03155	161.5	BASE CASE
FDNS	06ALL		0 14G	G13_026	FROM->TO	TUCXFR345230	300	0.04066	110.3	BASE CASE
FDNS	0		2 24SP	G13_026	FROM->TO	CHARLOTS 161.00 - CROSSTOWN 161KV CKT 1	259	0.03083	104.3702	CROSSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	0		2 24SP	G13_026	FROM->TO	CHARLOTS 161.00 - CROSSTOWN 161KV CKT 1	259	0.03084	104.359	CROSSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	0		2 24SP	G13_026	FROM->TO	CHARLOTS 161.00 - CROSSTOWN 161KV CKT 1	259	0.03446	100.6553	NAVY - NORTHEAST 161KV CKT 1
FDNS	0		2 24SP	G13_026	FROM->TO	CHARLOTS 161.00 - CROSSTOWN 161KV CKT 1	259	0.03444	100.6372	NAVY - NORTHEAST 161KV CKT 1
FDNS	0		2 24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03083	118.4053	CROSSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	0		2 24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03084	118.3939	CROSSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	0		2 24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03446	114.3924	NAVY - NORTHEAST 161KV CKT 1
FDNS	0		2 24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03444	114.374	NAVY - NORTHEAST 161KV CKT 1
FDNS	0		2 19SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03093	108.0558	CROSSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	0		2 19SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03093	107.9958	CROSSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	0		2 24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03394	104.8801	87th STREET - STRANGER CREEK 345KV CKT 1
FDNS	0		2 24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03395	104.8693	87th STREET - STRANGER CREEK 345KV CKT 1
FDNS	0		2 24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.0441	103.9394	IATAN - STRANGER CREEK 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY	
FDNS	0		2	24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.04408	103.9062	IATAN - STRANGER CREEK 345KV CKT 1
FDNS	0		2	19SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03456	103.8705	NAVY - NORTHEAST 161KV CKT 1
FDNS	0		2	19SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03455	103.8685	NAVY - NORTHEAST 161KV CKT 1
FDNS	0		2	24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03306	99.8	87th STREET - CRAIG 345KV CKT 1
FDNS	0		2	24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03306	99.8	87th STREET - CRAIG 345KV CKT 1
FDNS	0		2	19WP	G13_026	FROM->TO	LAWEASOKLUNI	425	0.03084	173.3	BASE CASE
FDNS	0	06ALL	2	14G	G13_026	FROM->TO	TUCXFR345230	300	0.04243	133.9	BASE CASE
FDNS	0		2	19WP	G13_026	FROM->TO	TUCXFR345230	300	0.0406	105.2	BASE CASE
FDNS	0		3	19SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03083	107.9542	CROSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	0		3	19SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03447	103.8059	NAVY - NORTHEAST 161KV CKT 1
FDNS	0		4	24SP	G13_026	FROM->TO	CHARLOTS 161.00 - CROSTOWN 161KV CKT 1	259	0.03084	104.3595	CROSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	0		4	24SP	G13_026	FROM->TO	CHARLOTS 161.00 - CROSTOWN 161KV CKT 1	259	0.03445	100.6558	NAVY - NORTHEAST 161KV CKT 1
FDNS	0		4	24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03084	118.3944	CROSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	0		4	24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03445	114.3929	NAVY - NORTHEAST 161KV CKT 1
FDNS	0		4	19SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03082	107.9543	CROSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	0		4	24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03395	104.8693	87th STREET - STRANGER CREEK 345KV CKT 1
FDNS	0		4	24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.0441	103.9393	IATAN - STRANGER CREEK 345KV CKT 1
FDNS	0		4	19SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03447	103.8096	NAVY - NORTHEAST 161KV CKT 1
FDNS	0		4	24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03306	99.8	87th STREET - CRAIG 345KV CKT 1
FDNS	0		5	24SP	G13_026	FROM->TO	CHARLOTS 161.00 - CROSTOWN 161KV CKT 1	259	0.03084	104.3595	CROSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	0		5	24SP	G13_026	FROM->TO	CHARLOTS 161.00 - CROSTOWN 161KV CKT 1	259	0.03445	100.6558	NAVY - NORTHEAST 161KV CKT 1
FDNS	0		5	24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03084	118.3944	CROSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	0		5	24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03445	114.3929	NAVY - NORTHEAST 161KV CKT 1
FDNS	0		5	19SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03082	107.9542	CROSTOWN - GRAND AVENUE WEST 161KV CKT 1
FDNS	0		5	24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03395	104.8693	87th STREET - STRANGER CREEK 345KV CKT 1
FDNS	0		5	24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.0441	103.9393	IATAN - STRANGER CREEK 345KV CKT 1
FDNS	0		5	19SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03447	103.8096	NAVY - NORTHEAST 161KV CKT 1
FDNS	0		5	24SP	G13_026	TO->FROM	CHARLOTS 161.00 - NORTHEAST 161KV CKT 1	259	0.03306	99.8	87th STREET - CRAIG 345KV CKT 1
FDNS	00G13_027		0	14SP	G13_027	TO->FROM	BAILEY COUNTY REC-EARTH INTERCHANGE - PLANT X STATION 115KV CKT 1	160	0.05373	107.4546	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FNSL	00G13_027		0	19WP	G13_027	TO->FROM	BOWERS INTERCHANGE - GRAPEVINE INTERCHANGE 115KV CKT 1	177	0.03727	111.1339	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	06ALL		0	14G	G13_027	TO->FROM	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1	350.6	0.25657	99.4	BUSHLAND_S 230.00 - PLANT X STATION 230KV CKT 1
FDNS	00G13_027		0	19WP	G13_027	FROM->TO	BUSHLAND INTERCHANGE - HILLSIDE 115KV CKT 1	177	0.04539	102.7741	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	00G13_027		0	14SP	G13_027	FROM->TO	BUSHLAND INTERCHANGE - HILLSIDE 115KV CKT 1	160	0.05719	99.9	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	00G13_027		0	19WP	G13_027	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1	168	0.04539	111.7557	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	00G13_027		0	19WP	G13_027	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1	168	0.04539	108.8635	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	00G13_027		0	14SP	G13_027	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1	168	0.05719	99.6	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	06ALL		0	14G	G13_027	TO->FROM	BUSHLAND_S 230.00 - PLANT X STATION 230KV CKT 1	351	0.22197	105.7817	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	06ALL		0	14G	G13_027	TO->FROM	CARGILL SUB - DEAF SMITH REC-#24 115KV CKT 1	96	0.05116	102.9834	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	01ALL		0	14G	G13_027	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	191	0.03093	107.9693	DBL-WICH-THI
FDNS	01ALL		0	14G	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03093	199.6787	DBL-WICH-THI
FDNS	06ALL		0	14G	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.02998	181.0401	DBL-WICH-THI
FDNS	1		0	14G	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03098	177.2242	DBL-WICH-THI
FDNS	06G13_027		0	14G	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03029	163.2185	DBL-WICH-THI
FDNS	6		0	14G	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03034	160.7416	DBL-WICH-THI
FDNS	09ALL		0	14G	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03091	120.1446	DBL-WICH-THI
FDNS	9		0	14G	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03103	117.0156	DBL-WICH-THI
FDNS	13		0	14G	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03111	110.3382	DBL-WICH-THI
FDNS	13ALL		0	14G	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03111	110.0426	DBL-WICH-THI
FDNS	00G13_027		0	19WP	G13_027	FROM->TO	CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1	177	0.04124	106.7568	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	06ALL		0	14G	G13_027	FROM->TO	CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1	160	0.03407	102.651	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	00G13_027		0	19WP	G13_027	TO->FROM	CONWAY SUB - NICHOLS STATION 115KV CKT 1	180	0.04124	113.4292	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	06ALL		0	14G	G13_027	TO->FROM	CONWAY SUB - NICHOLS STATION 115KV CKT 1	175	0.03407	100.6604	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	00G13_027		0	19WP	G13_027	TO->FROM	CONWAY SUB - NICHOLS STATION 115KV CKT 1	180	0.03216	100.5738	SPP-SWPS-03
FNSL	0		0	19WP	G13_027	TO->FROM	CONWAY SUB - NICHOLS STATION 115KV CKT 1	180	0.04152	99.6	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	06ALL		0	14G	G13_027	FROM->TO	CURRY COUNTY INTERCHANGE - DEAF SMITH REC-#20 115KV CKT 1	96	0.05116	126.0252	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	06ALL		0	14G	G13_027	FROM->TO	CURRY COUNTY INTERCHANGE - DEAF SMITH REC-#20 115KV CKT 1	96	0.03854	99.7	BUSHLAND_S 230.00 - PLANT X STATION 230KV CKT 1
FDNS	06ALL		0	14G	G13_027	TO->FROM	DAWN SUB - Panda Energy Substation Hereford 115KV CKT 1	96	0.08002	101.7211	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1
FDNS	06ALL		0	14G	G13_027	FROM->TO	DEAF SMITH REC-#20 - PARMER COUNTY SUB 115KV CKT 1	96	0.05116	116.8507	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	06ALL		0	14G	G13_027	TO->FROM	DEAF SMITH REC-#24 - PARMER COUNTY SUB 115KV CKT 1	96	0.05116	109.7819	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	06ALL		0	14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.09221	113.6094	DBL-G1334-WWR
FDNS	06ALL		0	14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.09221	113.4512	DBL-BVR-G1334
FDNS	06ALL		0	14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.09221	111.4222	DBL-G1334-WWR
FDNS	06ALL		0	14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.09221	111.2774	DBL-BVR-G1334
FDNS	06G13_027		0	14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10369	104.272	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06G13_027		0	14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10369	102.8308	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		0	14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.09221	101.6379	DBL-HTCH-BVR
FDNS	6		0	14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10383	101.3683	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		0	14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.09221	100.6758	DBL-HTCH-BVR
FDNS	6		0	14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10383	100.3985	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0	14G	G13_027	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.04294	113.5345	DBL-WICH-THI
FDNS	1		0	14G	G13_027	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.04312	99.3	DBL-WICH-THI
FDNS	01ALL		0	14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04572	149.3142	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0	14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05167	145.1403	DBL-THIS-WWR
FDNS	01ALL		0	14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04222	131.851	DBL-WICH-THI
FDNS	1		0	14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04585	123.8936	NORTHWEST - TATONGA7 345.00 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	1		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05216	118.7057	DBL-THIS-WWR
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0346	112.0327	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03459	112.011	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	1		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04258	110.6048	DBL-WICH-THI
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0344	110.2912	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04572	110.259	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0344	109.2945	DEWEY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04598	107.9797	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03243	107.8848	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03186	107.5753	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03186	107.5753	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.042	104.1795	SPP-SWPS-03
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0418	104.1273	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0418	104.1248	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03563	104.024	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03451	103.9945	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0418	103.7193	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03451	103.3738	SPP-SWPS-05
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03451	103.3443	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04598	103.1232	SPP-AEPW-32
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0418	102.4116	SPP-SWPS-02A
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04542	102.1136	SPP-SWPS-01
FDNS	01ALL		0 14G	G13_027	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04598	101.8806	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04572	223.4623	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05167	215.0919	DBL-THIS-WWR
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04222	192.1486	DBL-WICH-THI
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04585	189.9648	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05216	179.5262	DBL-THIS-WWR
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03243	165.4563	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04258	164.762	DBL-WICH-THI
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04631	162.1943	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0346	157.4364	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03459	157.4	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0344	155.4729	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04572	154.3388	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0344	153.7454	DEWEY - IODINE 138KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05295	152.6347	DBL-THIS-WWR
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0435	151.7519	DBL-WICH-THI
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03243	151.4218	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04598	150.02	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03186	149.2408	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03186	149.2408	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04631	147.5169	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04631	144.1327	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.042	143.1363	SPP-SWPS-03
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03451	143.0163	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03563	142.7913	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03278	142.7668	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	142.6656	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	142.6613	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	142.3238	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03451	141.9972	SPP-SWPS-05
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03451	141.941	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04598	141.2275	SPP-AEPW-32
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	139.5657	SPP-SWPS-02A
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04542	139.4799	SPP-SWPS-01
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04666	139.3702	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04598	139.0404	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04671	136.6198	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04585	134.4539	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0347	133.9437	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0431	133.6591	SPP-SWPS-03
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0347	131.9406	DEWEY - IODINE 138KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03497	131.8635	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03496	131.8332	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04291	131.8276	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04291	131.7245	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0476	131.1158	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04291	130.4725	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04629	129.5896	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04387	129.1926	DBL-WICH-THI
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03278	128.7757	WOODWARD - WOODWARD 69KV CKT 1
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05344	126.9246	DBL-THIS-WWR
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0322	126.7245	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0322	126.7245	THISTLE7 345.00 - WICHITA 345KV CKT 2

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04392	126.418	DBL-WICH-THI
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04291	125.6416	SPP-SWPS-02A
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04666	125.3432	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03418	124.4625	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03183	124.4581	MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04766	124.4414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05351	123.5519	DBL-THIS-WWR
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0423	123.3967	SPP-SWPS-03
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0421	123.0196	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0421	123.0139	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03594	122.6281	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0421	122.5638	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04671	122.4326	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04666	121.6137	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03589	121.29	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04629	120.9471	SPP-AEPW-32
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03183	120.9326	ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03031	120.801	GENS20997 1-MORLND2
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04291	120.1767	STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04291	120.156	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04291	120.1477	SPP-SWPS-02
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03487	120.1263	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03699	120.0944	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0421	119.9969	SPP-SWPS-02A
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04585	119.8856	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03589	119.5692	DEWEY - IODINE 138KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04572	119.0605	SPP-SWPS-01
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04671	118.8276	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03487	118.8145	SPP-SWPS-05
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03487	118.7619	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04629	118.7219	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03016	118.0897	MINGO - SETAB 345KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03003	117.6771	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03028	117.0838	MINGO - RED WILLOW 345KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03003	117.0609	CARTER JCT - MOORELAND 69KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03003	117.0596	MOORELAND (MOORELND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03031	114.658	GENS20998 1-MORLND3
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0476	113.3102	SPP-AEPW-32
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03418	111.4018	WOODWARD - WOODWARD 69KV CKT 1
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0476	110.9672	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03602	110.9288	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04704	110.9097	SPP-SWPS-01
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03031	110.3358	BASE CASE
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03616	110.2427	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03615	110.2174	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04344	109.8059	SPP-SWPS-03
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04766	109.6325	SPP-AEPW-32
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03602	109.4731	SPP-SWPS-05
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03443	109.4472	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03602	109.4022	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04325	109.0836	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04325	109.0804	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03054	108.9332	GENS20997 1-MORLND2
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03343	108.7663	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03343	108.7663	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04325	108.2144	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03057	107.2946	GENS20997 1-MORLND2
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04766	107.2924	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03447	107.203	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0471	107.1407	SPP-SWPS-01
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04349	107.1286	SPP-SWPS-03
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0433	106.471	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0433	106.4444	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03542	105.7011	MOREWOOD SW - NINE MILE 138KV CKT 1
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0433	105.6388	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04325	105.4788	SPP-SWPS-02A
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03221	105.385	MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	01ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03542	105.3146	MOORELAND - NINE MILE 138KV CKT 1
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03616	105.2089	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03616	103.4918	DEWEY - IODINE 138KV CKT 1
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03619	103.0847	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0433	102.9047	SPP-SWPS-02A
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03054	102.653	GENS20998 1-MORLND3
FDNS	09ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04729	102.4336	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	1		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03221	101.6465	ELK CITY - RED HILLS WIND 138KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03619	101.368	DEWEY - IODINE 138KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0312	101.1828	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03728	101.1728	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	6		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03057	101.0006	GENS20998 1-MORLND3
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03031	100.7424	GENS14805 1-SOONER UNIT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0312	100.317	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03031	100.2311	GENS15787 1-OKLA WIND ENERGY CENTER
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04325	100.0992	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04325	100.0902	SPP-SWPS-02
FDNS	06G13_027		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04325	100.0797	STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03148	99.9	MINGO - SETAB 345KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03106	99.6	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03004	99.5	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.04815	99.4	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0312	99.3	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03031	99.3	GENS20922 1-SLEEPING BEAR
FDNS	06ALL		0 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03031	99.1	GENS14806 1-SOONER UNIT 2
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10301	131.543	DBL-BVR-G1334
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10301	131.4694	DBL-G1334-WWR
FNSL	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.12209	128.2772	SPP-AEPW-32
FDNS	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.1239	127.1999	SPP-SWPS-01
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10496	126.9349	SPP-SWPS-04
FDNS	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.12209	126.8966	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FNSL	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10496	126.8285	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10301	125.8336	DBL-HTCH-BVR
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10496	124.1915	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09503	122.4853	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0943	121.7416	CONWAY SUB - NICHOLS STATION 115KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0943	119.6907	SPP-SWPS-T53
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0943	119.5921	CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.08399	119.1341	DBL-G1334-WWR
FDNS	06ALL		0 14G	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.08399	119.0848	DBL-BVR-G1334
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08991	116.5124	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	116.1131	BASE CASE
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08974	115.2333	KINGSMILL INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1
FNSL	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08991	115.1728	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08991	114.7366	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08802	113.7905	DBL-WICH-THI
FNSL	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10368	113.6691	DBL-G1334-WWR
FNSL	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10368	113.5906	DBL-BVR-G1334
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08974	113.1176	BOWERS INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08578	111.7296	KINGSMILL INTERCHANGE - LLANO ESTACADO WIND GEN 115KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08578	111.6065	SPP-SWPS-V29
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09347	111.5291	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08883	111.4417	DBL-THIS-WWR
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09347	111.2899	SPP-SWPS-05
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09347	111.2588	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	06G13_027		0 14G	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.09566	111.05	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08435	110.6233	GRAY COUNTY INTERCHANGE (WH RHP17221) 115/69/13.2KV TRANSFORMER CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08435	110.5978	GRAY COUNTY INTERCHANGE - HUTCHINSON COUNTY INTERCHANGE S. 115KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08682	110.1872	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08578	109.923	MIDSTREAM ENERGY TAP - NICHOLS STATION 115KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08517	109.8721	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08578	109.6719	LLANO ESTACADO WIND GEN - MIDSTREAM ENERGY TAP 115KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08841	109.1771	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08517	109.1487	BUCKNER7 345.00 - HOLCOMB 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08622	109.0869	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08622	109.0869	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 2
FDNS	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10564	108.8634	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FNSL	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10368	108.7679	DBL-HTCH-BVR
FDNS	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10564	108.3951	SPP-SWPS-04
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08659	108.2653	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08782	107.896	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09493	107.8856	CONWAY SUB - NICHOLS STATION 115KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08477	107.7351	HUTCHINSON COUNTY INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08243	107.7066	MOORELAND - NINE MILE 138KV CKT 1
FNSL	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08243	107.6881	MOREWOOD SW - NINE MILE 138KV CKT 1
FNSL	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08444	107.6742	THISTLE7 345.00 - WICHITA 345KV CKT 1
FNSL	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08444	107.6742	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	107.6637	GENS09416 1-TURK GENERATION
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08964	107.5568	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	107.5372	GENS20947 1-HUGO1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08459	107.4912	Harrington Station East Bus - PRINGLE INTERCHANGE 230KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08459	107.4847	PRINGLE INTERCHANGE (WH ALM12301) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08459	107.4842	SPP-SWPS-K43

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08678	107.4581	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08317	107.4332	DBL-THIS-CLR
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08471	107.3901	FPL SWITCH - MOORELAND 138KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	107.3466	GEN509403 1-PIRKEY GENERATION
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08348	107.3246	NICHOLS STATION (ENRCO 136732) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08348	107.3245	NICHOLS STATION (ENRCO 136731) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08471	107.3162	FPL SWITCH - WOODWARD 138KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	107.3085	GEN509406 1-WELSH #3
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	107.3082	GEN509404 1-WELSH #1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	107.2633	GEN515042 1-SEMINOLE 3G
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08475	107.2545	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08475	107.2524	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	107.1768	GEN501801 1-DOLET HILLS UNIT1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08435	107.1713	GRAY COUNTY INTERCHANGE - KINGSMILL INTERCHANGE 69KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08465	107.1542	G13-034T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08465	107.1542	G13-034T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	107.145	GEN511848 1-SOUTHWESTERN STATION #3
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08459	107.1085	BEAVER CO 345.00 - Hitchland Interchange 345KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08459	107.1085	BEAVER CO 345.00 - Hitchland Interchange 345KV CKT 2
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08289	107.0483	ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08317	107.0331	DBL-IRON-CLR
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	107.025	GEN336153 1-WATERFORD UNIT#3
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	106.9299	GEN515041 1-SEMINOLE 2G
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08393	106.9122	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	106.9101	GEN515226 1-MUSKOGEE 6G
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	106.9053	GEN335831 1-RIVERBEND UNIT#1
FDNS	6	0	14G	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.09579	106.899	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	106.8769	GEN511851 1-COMANCHE #1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08275	106.8668	CIMARRON - NORTHWEST 345KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08434	106.8362	HITCHLAND INTERCHANGE - Hansford County Switch Station 115KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	106.8056	GEN515225 1-MUSKOGEE 5G
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	106.8054	GEN515223 1-MUSKOGEE 4G
FNLS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08393	106.7902	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0839	106.7544	PRINGLE INTERCHANGE - SPEARMAN INTERCHANGE 115KV CKT 1
FNLS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08362	106.7009	CHAN/TASCOS6230.00 - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	106.6991	GEN511843 1-RIVERSIDE STATION #2
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08268	106.683	CHERRY1 - HARRINGTON STATION 230KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	106.6766	GEN520811 1-ANADRR4
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08434	106.6701	Hansford County Switch Station - SPEARMAN INTERCHANGE 115KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08371	106.6696	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	106.6693	GEN520812 1-ANADRR5
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	106.6693	GEN520813 1-ANADRR6
FDNS	0	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10564	106.6242	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	14G	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.08399	105.9683	DBL-HTCH-BVR
FDNS	0	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09493	105.867	SPP-SWPS-T53
FDNS	0	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09493	105.7115	CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08284	104.9789	JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.9295	GEN524471 1-QUAY CNTY 113.800
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0828	104.9246	CLINTON JUNCTION - CLINTON NATURAL GAS TAP 138KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.8981	GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.893	GEN659111 2-LELAND OLDS UNIT2
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.885	GEN645011 1-NEBRASKA CITY 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.8588	GEN560105 1-G08-22 0.6900
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.8334	GEN659103 1-ANTELOPE VALLEY UNIT1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.8334	GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.8313	GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.8176	GEN542957 1-IATAN UNIT #1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08097	104.7368	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08334	104.7109	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07974	104.7001	NEWHART 230 - PLANT X STATION 230KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.6385	GEN539670 4-JUDSON LARGE GENERATOR
FDNS	0	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09565	104.6288	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07743	104.5879	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.5556	GEN645001 1-FORT CALHOUN 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08182	104.5388	CHILDRESS - HOLLIS TAP 138KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.5155	GEN542962 2-IATAN UNIT #2
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07856	104.4965	BUSHLAND S 230.00 - NEWHART 230 230KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.4511	GEN524895 1-SAN JUAN MESA WIND GEN
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08182	104.4414	HOLLIS TAP - WELLINGTON 138KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.3842	GEN645012 2-NEBRASKA CITY 2
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.3404	EASTDC - WELSH 345KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.3347	GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.195	GEN560331 1-G10-46 13.800
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.0479	GEN640009 1-COOPER NUCLEAR STATION
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08182	104.0383	SHAMROCK (SHAMRCK2) 138/69/14.4KV TRANSFORMER CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08182	104.024	SHAMROCK - WELLINGTON 138KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	104.0057	GEN524295 1-SPNSPUR_WND10.6900
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07816	103.9984	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09565	103.9823	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08058	103.9316	CHILDRESS - LAKE PAULINE 138KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.08496	103.6952	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08182	103.6868	SHAMROCK (SHAMRCK1) 115/69/14.4KV TRANSFORMER CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08182	103.6815	MCLEAN RURAL SUB - SHAMROCK 115KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08166	103.6462	CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	103.4548	GEN524286 1-CLR_3 0.6900
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08182	103.4437	MCCLELLAN SUB - MCLEAN RURAL SUB 115KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.08496	103.4183	SPP-SWPS-04
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08182	103.3485	KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08153	103.3465	LAWTON EASTSIDE - SUNNYSIDE 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	103.0885	GEN40011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08388	103.0131	BASE CASE
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07701	103.0105	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	103.007	GEN40010 1-GERALD GENTLEMAN STATION UNIT 1
FNSL	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0905	102.942	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	102.9366	GEN527883 1-CUNNINGHAM GEN #3 22 KV
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	102.8459	GEN525492 1-PLANT X GEN #2
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08182	102.7845	SPP-SWPS-T54
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	102.7773	GEN525493 1-PLANT X GEN #3
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	102.3903	GEN528361 1-MADDOX GEN #1
FDNS	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09565	102.361	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09034	102.0036	KINGSMILL INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.07424	101.8825	CONWAY SUB - NICHOLS STATION 115KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	101.719	GEN531447 1-HOLCOMB GENERATOR
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	101.6794	GEN527161 1-MUSTANG GEN #1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	101.6794	GEN527162 1-MUSTANG GEN #2
FNSL	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0905	101.5487	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07609	101.4865	GRACEMONT - MINCO 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	101.4439	GEN523461 1-BLACKHAWK GEN #1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	101.4312	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	101.4006	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	101.3639	GEN523462 1-BLACKHAWK GEN #2
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	101.245	GEN527163 1-MUSTANG GEN #3 22 KV
FNSL	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0905	101.2328	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08229	101.0371	BOWERS INTERCHANGE - GRAPEVINE INTERCHANGE 115KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07609	100.9729	CIMARRON - MINCO 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	100.7227	GEN560738 1-G13_016_2 18.000
FNSL	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08861	100.6643	DBL-WICH-THI
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	100.6054	GEN525844 1-ANTELOPE_CT118.000
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	100.4253	GEN527166 1-MUSTANG_6 118.000
FDNS	06ALL		0 14G	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.07424	100.2444	SPP-SWPS-T53
FDNS	06ALL		0 14G	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.07424	100.1237	CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	100.0732	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09034	100	BOWERS INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1
FDNS	06ALL		0 14G	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.08496	100	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	99.9	GEN525494 1-PLANT X GEN #4 20 KV
FDNS	06ALL		0 14G	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.07055	99.9	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	99.8	GEN526333 1-JONES GEN #3 21 KV
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	99.8	GEN526334 1-JONES_4 116.500
FDNS	06G13_027		0 14G	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.09566	99.6	SPP-AEPW-32
FDNS	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08636	99.3	KINGSMILL INTERCHANGE - LLANO ESTACADO WIND GEN 115KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08332	99.3	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	0		0 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08636	99.1	SPP-SWPS-V29
FDNS	06ALL		0 14G	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	351	0.09221	114.4264	DBL-G1334-WWR
FDNS	06ALL		0 14G	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	351	0.09221	114.3425	DBL-BVR-G1334
FDNS	00G13_027		0 19WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.10609	112.0389	DBL-BVR-G1334
FDNS	00G13_027		0 19WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.10609	111.9748	DBL-G1334-WWR
FNSL	0		0 19WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.12504	108.293	SPP-AEPW-32
FDNS	0		0 19WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.12689	107.1898	SPP-SWPS-01
FDNS	0		0 19WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.12504	106.9601	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.10609	106.5719	DBL-HTCH-BVR
FDNS	00G13_027		0 19WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.10691	106.5646	SPP-SWPS-04
FNSL	00G13_027		0 19WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.10691	106.4388	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	06G13_027		0 14G	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	351	0.10369	105.0305	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.10691	104.0954	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	00G13_027		0 19WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.09743	101.9794	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL		0 14G	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	351	0.09221	100.4323	DBL-HTCH-BVR
FDNS	6		0 14G	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	351	0.10383	100.3992	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00G13_027		0 19WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.09771	99.4	BOWERS INTERCHANGE - Graves Sub 115KV CKT 1
FDNS	00G13_027		0 14SP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE (PENN 0257751) 230/115/13.2KV TRANSFORMER CKT 1	112	0.03061	132.8268	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	00G13_027		0 14WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE (PENN 0257751) 230/115/13.2KV TRANSFORMER CKT 1	112	0.03001	131.1219	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	00G13_027	0	14SP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE (PENN 0257751) 230/115/13.2KV TRANSFORMER CKT 1	112	0.03061	126.7277	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	00G13_027	0	14WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE (PENN 0257751) 230/115/13.2KV TRANSFORMER CKT 1	112	0.03001	125.9047	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	0	0	14SP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE (PENN 0257751) 230/115/13.2KV TRANSFORMER CKT 1	112	0.03074	122.2525	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	0	0	14WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE (PENN 0257751) 230/115/13.2KV TRANSFORMER CKT 1	112	0.03014	120.7135	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	06ALL	0	14G	G13_027	FROM->TO	GRAPEVINE INTERCHANGE (PENN 0257751) 230/115/13.2KV TRANSFORMER CKT 1	112	0.03741	117.3101	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	0	0	14SP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE (PENN 0257751) 230/115/13.2KV TRANSFORMER CKT 1	112	0.03074	117.0903	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	0	0	14WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE (PENN 0257751) 230/115/13.2KV TRANSFORMER CKT 1	112	0.03014	116.0809	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	06ALL	0	14G	G13_027	FROM->TO	GRAPEVINE INTERCHANGE (PENN 0257751) 230/115/13.2KV TRANSFORMER CKT 1	112	0.03741	105.0603	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	06G13_027	0	14G	G13_027	FROM->TO	GRAPEVINE INTERCHANGE (PENN 0257751) 230/115/13.2KV TRANSFORMER CKT 1	112	0.03774	99.3	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01ALL	0	14G	G13_027	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03093	210.1048	DBL-WICH-THI
FDNS	06ALL	0	14G	G13_027	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.02998	191.4074	DBL-WICH-THI
FDNS	1	0	14G	G13_027	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03098	187.6431	DBL-WICH-THI
FDNS	06G13_027	0	14G	G13_027	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03029	173.6857	DBL-WICH-THI
FDNS	6	0	14G	G13_027	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03034	171.2108	DBL-WICH-THI
FDNS	09ALL	0	14G	G13_027	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03091	130.6427	DBL-WICH-THI
FDNS	9	0	14G	G13_027	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03103	127.507	DBL-WICH-THI
FDNS	13	0	14G	G13_027	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03111	120.8648	DBL-WICH-THI
FDNS	13ALL	0	14G	G13_027	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03111	120.569	DBL-WICH-THI
FDNS	00G13_027	0	19WP	G13_027	FROM->TO	Harrington Station Mid Bus - NICHOLS STATION 230KV CKT 2	684	0.05322	100.1138	HARRINGTON STATION - NICHOLS STATION 230KV CKT 1
FNSL	00G13_027	0	19WP	G13_027	TO->FROM	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1	361	0.10665	99.5	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	TO->FROM	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1	361	0.10665	99.3	SPP-SWPS-04
FDNS	01ALL	0	14G	G13_027	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	0.19147	115.9426	DBL-THIS-WWR
FDNS	01ALL	0	14G	G13_027	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	0.16331	105.3843	DBL-WICH-THI
FDNS	06ALL	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.1016	119.2134	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	06ALL	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08365	117.1633	SPP-SWPS-K37
FDNS	06ALL	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08365	117.1632	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08365	117.0946	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.1016	116.0884	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	06ALL	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08365	114.4309	SPP-SWPS-K37
FDNS	06ALL	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08365	114.4308	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08365	114.3925	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10581	113.4382	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	06G13_027	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08363	112.9598	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06G13_027	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08363	112.9315	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06G13_027	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08363	112.9315	SPP-SWPS-K37
FDNS	06ALL	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10581	111.6052	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	6	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08364	110.7764	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	6	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08364	110.7484	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	6	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08364	110.7483	SPP-SWPS-K37
FDNS	06G13_027	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08363	110.0738	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06G13_027	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08363	110.0626	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06G13_027	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08363	110.0626	SPP-SWPS-K37
FDNS	06ALL	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.09219	108.8519	BUSHLAND_S 230.00 - PLANT X STATION 230KV CKT 1
FDNS	06G13_027	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10176	108.4378	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	06G13_027	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10582	108.3751	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	6	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08364	107.9791	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	6	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08364	107.965	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	6	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08364	107.965	SPP-SWPS-K37
FDNS	06ALL	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.09219	106.7103	BUSHLAND_S 230.00 - PLANT X STATION 230KV CKT 1
FDNS	06G13_027	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10582	106.5584	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	06G13_027	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10176	106.2453	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	6	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10584	105.4701	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	6	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.1018	105.4199	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	6	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10584	103.7243	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	6	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.1018	103.391	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	06ALL	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08619	102.6587	LAMB COUNTY INTERCHANGE - PLANT X STATION 115KV CKT 1
FDNS	06ALL	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.0758	101.2233	PLANT X STATION - SUNDOWN INTERCHANGE 230KV CKT 1
FDNS	06ALL	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08619	100.9126	LAMB COUNTY INTERCHANGE - PLANT X STATION 115KV CKT 1
FDNS	06ALL	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.0758	99.8	PLANT X STATION - SUNDOWN INTERCHANGE 230KV CKT 1
FDNS	06G13_027	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.09232	99.6	BUSHLAND_S 230.00 - PLANT X STATION 230KV CKT 1
FDNS	06NR	0	14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04224	99.2	SUNDOWN INTERCHANGE - WOLFFORTH INTERCHANGE 230KV CKT 1
FDNS	00G13_027	0	19WP	G13_027	FROM->TO	SPSSPTIESB	620	0.40565	179.6921	BASE CASE
FDNS	06ALL	0	14G	G13_027	FROM->TO	SPSSPTIESB	620	0.4213	169.5845	BASE CASE
FDNS	0	0	19WP	G13_027	FROM->TO	SPSSPTIESB	620	0.40801	154.8739	BASE CASE
FDNS	06G13_027	0	14G	G13_027	FROM->TO	SPSSPTIESB	620	0.42532	135.7145	BASE CASE
FDNS	6	0	14G	G13_027	FROM->TO	SPSSPTIESB	620	0.42593	130.0794	BASE CASE
FDNS	00G13_027	0	14WP	G13_027	FROM->TO	SPSSPTIESB	620	0.43306	124.4641	BASE CASE
FDNS	06ALL	0	14G	G13_027	FROM->TO	SPSSPTIESB1	620	0.37974	159.545	BASE CASE
FDNS	00G13_027	0	19WP	G13_027	FROM->TO	SPSSPTIESB1	620	0.37116	143.133	BASE CASE
FDNS	06G13_027	0	14G	G13_027	FROM->TO	SPSSPTIESB1	620	0.38363	128.0117	BASE CASE
FDNS	6	0	14G	G13_027	FROM->TO	SPSSPTIESB1	620	0.38421	122.922	BASE CASE
FDNS	0	0	19WP	G13_027	FROM->TO	SPSSPTIESB1	620	0.37335	120.8545	BASE CASE
FDNS	06ALL	0	14G	G13_027	FROM->TO	SPSSPTIESC	620	0.37974	159.545	BASE CASE
FDNS	00G13_027	0	19WP	G13_027	FROM->TO	SPSSPTIESC	620	0.37116	143.133	BASE CASE
FDNS	06G13_027	0	14G	G13_027	FROM->TO	SPSSPTIESC	620	0.38363	128.0117	BASE CASE

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	6		0 14G	G13_027	FROM->TO	SPSSPPTIESC	620	0.38421	122.922	BASE CASE	
FDNS	0		0 19WP	G13_027	FROM->TO	SPSSPPTIESC	620	0.37335	120.8545	BASE CASE	
FDNS	00G13_027		0 19WP	G13_027	FROM->TO	SPSSPPTIESC1	620	0.40565	179.6921	BASE CASE	
FDNS	06ALL		0 14G	G13_027	FROM->TO	SPSSPPTIESC1	620	0.4213	169.5845	BASE CASE	
FDNS	0		0 19WP	G13_027	FROM->TO	SPSSPPTIESC1	620	0.40801	154.8739	BASE CASE	
FDNS	06G13_027		0 14G	G13_027	FROM->TO	SPSSPPTIESC1	620	0.42532	135.7145	BASE CASE	
FDNS	6		0 14G	G13_027	FROM->TO	SPSSPPTIESC1	620	0.42593	130.0794	BASE CASE	
FDNS	00G13_027		0 14WP	G13_027	FROM->TO	SPSSPPTIESC1	620	0.43306	124.4641	BASE CASE	
FDNS	06ALL		0 14G	G13_027	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	0.38117	112.8339	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	
FDNS	06ALL		0 14G	G13_027	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	0.38117	108.8587	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	
FDNS	06ALL		0 14G	G13_027	FROM->TO	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	560	0.37634	111.3376	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	
FDNS	06ALL		0 14G	G13_027	FROM->TO	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	560	0.37634	107.0005	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	
FDNS	00G13_027		0 14SP	G13_027	FROM->TO	YOAKUM COUNTY INTERCHANGE (PENN C010585) 230/115/13.2KV TRANSFORMER CKT 2	150	0.02999	102.3354	YOAKUM COUNTY INTERCHANGE (GE M100899) 230/115/13.2KV TRANSFORMER CKT 1	
FDNS	00G13_027		0 14SP	G13_027	FROM->TO	YOAKUM COUNTY INTERCHANGE (PENN C010585) 230/115/13.2KV TRANSFORMER CKT 2	150	0.02999	99.5	YOAKUM COUNTY INTERCHANGE (GE M100899) 230/115/13.2KV TRANSFORMER CKT 1	
FDNS	00G13_027		2 14SP	G13_027	TO->FROM	BAILEY COUNTY REC-EARTH INTERCHANGE - PLANT X STATION 115KV CKT 1	160	0.05034	101.2274	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1	
FDNS	00G13_027		2 19WP	G13_027	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1	168	0.04174	99.4	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1	
FDNS	06ALL		2 14G	G13_027	FROM->TO	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	353	0.08288	111.5864	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	06ALL		2 14G	G13_027	FROM->TO	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	353	0.07507	106.541	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	09ALL		2 14G	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03091	120.1446	DBL-WICH-THI	
FDNS	9		2 14G	G13_027	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03103	117.0156	DBL-WICH-THI	
FNSL	0		2 19WP	G13_027	TO->FROM	CONWAY SUB - NICHOLS STATION 115KV CKT 1	180	0.04152	99.6	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	
FDNS	06ALL		2 14G	G13_027	FROM->TO	CURRY COUNTY INTERCHANGE - DEAF SMITH REC-#20 115KV CKT 1	96	0.04886	110.7884	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1	
FDNS	06ALL		2 14G	G13_027	FROM->TO	DEAF SMITH REC-#20 - PARMER COUNTY SUB 115KV CKT 1	96	0.04886	101.906	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1	
FDNS	06ALL		2 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08288	122.1654	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	06ALL		2 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08288	120.7913	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00G13_027		2 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08575	114.5413	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	06ALL		2 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07507	113.5375	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	00G13_027		2 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08575	113.2324	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	00G13_027		2 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.078	112.8821	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06ALL		2 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07507	110.2882	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	00G13_027		2 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.078	109.0466	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FDNS	06G13_027		2 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08354	107.0786	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	06G13_027		2 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08354	106.3271	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	6		2 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08364	104.9014	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	06ALL		2 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07507	104.2686	SPP-AEPW-32	
FDNS	6		2 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08364	104.2085	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	06ALL		2 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07507	103.0501	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FDNS	00G13_027		2 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.078	103.0459	SPP-AEPW-32	
FDNS	0		2 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08628	102.6288	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FDNS	06ALL		2 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07413	102.5634	SPP-SWPS-01	
FDNS	06ALL		2 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07507	102.3289	SPP-AEPW-32	
FDNS	0		2 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08628	101.8817	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1	
FNSL	00G13_027		2 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.078	101.7585	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FNSL	00G13_027		2 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.0771	101.374	SPP-SWPS-01	
FDNS	06ALL		2 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07507	101.2091	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FDNS	00G13_027		2 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.078	100.971	SPP-AEPW-32	
FDNS	06ALL		2 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07413	100.6944	SPP-SWPS-01	
FDNS	0		2 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07847	99.80622	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1	
FNSL	00G13_027		2 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.078	99.8	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FNSL	00G13_027		2 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.0771	99.4	SPP-SWPS-01	
FDNS	09ALL		2 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04729	102.4336	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	06ALL		2 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03417	100.8351	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	06ALL		2 14G	G13_027	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0344	100.7843	DBL-WICH-THI	
FNSL	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.12209	128.2772	SPP-AEPW-32	
FDNS	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.1239	127.1999	SPP-SWPS-01	
FDNS	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.12209	126.8967	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1	
FDNS	00G13_027		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10007	116.9447	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1	
FDNS	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10564	108.8634	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1	
FNSL	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10368	108.7679	DBL-HTCH-BVR	
FDNS	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10564	108.3951	SPP-SWPS-04	
FDNS	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09493	107.8856	CONWAY SUB - NICHOLS STATION 115KV CKT 1	
FDNS	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10564	106.6242	POTTER COUNTY INTERCHANGE (WAKU 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	
FDNS	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09493	105.867	SPP-SWPS-T53	
FDNS	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09493	105.7114	CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1	
FDNS	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09565	104.6288	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	
FDNS	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09565	103.9823	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1	
FDNS	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08388	103.0131	BASE CASE	
FNSL	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0905	102.942	NORTHWEST - TATONGA7 345.00 345KV CKT 1	
FDNS	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09565	102.361	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1	
FDNS	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09034	102.0036	KINGSMILL INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1	
FNSL	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0905	101.5487	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1	
FNSL	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0905	101.2328	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1	
FNSL	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08861	100.6644	DBL-WICH-THI	
FDNS	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09034	100	BOWERS INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1	
FDNS	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08636	99.3	KINGSMILL INTERCHANGE - LLANO ESTACADO WIND GEN 115KV CKT 1	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	0		2 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08636	99.1	SPP-SWPS-V29
FNSL	0		2 19WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.12504	108.293	SPP-AEPW-32
FDNS	0		2 19WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.12689	107.1898	SPP-SWPS-01
FDNS	0		2 19WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.12504	106.9602	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	0		2 14SP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE (PENN 0257751) 230/115/13.2KV TRANSFORMER CKT 1	112	0.03074	122.2525	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	0		2 14WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE (PENN 0257751) 230/115/13.2KV TRANSFORMER CKT 1	112	0.03014	120.7135	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	0		2 14SP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE (PENN 0257751) 230/115/13.2KV TRANSFORMER CKT 1	112	0.03074	117.0903	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	0		2 14WP	G13_027	FROM->TO	GRAPEVINE INTERCHANGE (PENN 0257751) 230/115/13.2KV TRANSFORMER CKT 1	112	0.03014	116.0809	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	09ALL		2 14G	G13_027	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03091	130.6427	DBL-WICH-THI
FDNS	9		2 14G	G13_027	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03103	127.507	DBL-WICH-THI
FDNS	06ALL		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08451	115.9431	SPP-SWPS-K37
FDNS	06ALL		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08451	115.943	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08451	115.9347	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10757	114.4266	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	06ALL		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10086	113.8713	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	06ALL		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08451	113.6168	SPP-SWPS-K37
FDNS	06ALL		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08451	113.6167	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08451	113.5966	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10757	112.7957	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	06G13_027		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08439	112.5624	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06G13_027		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08439	112.5328	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06G13_027		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08439	112.5327	SPP-SWPS-K37
FDNS	06ALL		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10086	111.6111	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	6		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08439	110.4372	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	6		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08439	110.4148	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	6		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08439	110.4148	SPP-SWPS-K37
FDNS	06G13_027		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08439	109.8608	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06G13_027		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08439	109.8461	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06G13_027		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08439	109.8461	SPP-SWPS-K37
FDNS	06G13_027		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10748	109.5167	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	6		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08439	107.808	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	6		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08439	107.7999	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	6		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08439	107.7999	SPP-SWPS-K37
FDNS	06G13_027		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10748	107.7556	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	6		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10749	106.6471	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	06G13_027		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10089	105.6449	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	6		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10749	104.9215	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	06ALL		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.09183	104.4358	BUSHLAND_S 230.00 - PLANT X STATION 230KV CKT 1
FDNS	06G13_027		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10089	103.7759	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	06ALL		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.09183	102.9064	BUSHLAND_S 230.00 - PLANT X STATION 230KV CKT 1
FDNS	6		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10091	102.8242	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	6		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.10091	101.0267	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	06ALL		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.07694	100.987	PLANT X STATION - SUNDOWN INTERCHANGE 230KV CKT 1
FDNS	06ALL		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.0866	100.7345	LAMB COUNTY INTERCHANGE - PLANT X STATION 115KV CKT 1
FDNS	06ALL		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.07694	99.8	PLANT X STATION - SUNDOWN INTERCHANGE 230KV CKT 1
FDNS	06ALL		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.0866	99.4	LAMB COUNTY INTERCHANGE - PLANT X STATION 115KV CKT 1
FDNS	00NR		2 14SP	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.06952	99.3	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	06NR		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04283	99.3	SUNDOWN INTERCHANGE - WOLFORTH INTERCHANGE 230KV CKT 1
FDNS	06NR		2 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.04442	99.2	LAMB COUNTY INTERCHANGE - PLANT X STATION 115KV CKT 1
FDNS	0		2 19WP	G13_027	FROM->TO	SPSSPTIESB	620	0.40801	154.8739	BASE CASE
FDNS	00G13_027		2 19WP	G13_027	FROM->TO	SPSSPTIESB	620	0.35756	154.1538	BASE CASE
FDNS	06ALL		2 14G	G13_027	FROM->TO	SPSSPTIESB	620	0.35573	136.0029	BASE CASE
FDNS	0		2 19WP	G13_027	FROM->TO	SPSSPTIESB	620	0.35924	132.0154	BASE CASE
FDNS	06G13_027		2 14G	G13_027	FROM->TO	SPSSPTIESB	620	0.35878	107.3301	BASE CASE
FDNS	6		2 14G	G13_027	FROM->TO	SPSSPTIESB	620	0.35925	102.5402	BASE CASE
FDNS	00G13_027		2 14WP	G13_027	FROM->TO	SPSSPTIESB	620	0.36517	101.5966	BASE CASE
FDNS	06ALL		2 14G	G13_027	FROM->TO	SPSSPTIESB1	620	0.31662	124.0382	BASE CASE
FDNS	0		2 19WP	G13_027	FROM->TO	SPSSPTIESB1	620	0.37335	120.8545	BASE CASE
FDNS	00G13_027		2 19WP	G13_027	FROM->TO	SPSSPTIESB1	620	0.32325	115.3811	BASE CASE
FDNS	06ALL		2 14G	G13_027	FROM->TO	SPSSPTIESC	620	0.31662	124.0382	BASE CASE
FDNS	0		2 19WP	G13_027	FROM->TO	SPSSPTIESC	620	0.37335	120.8545	BASE CASE
FDNS	00G13_027		2 19WP	G13_027	FROM->TO	SPSSPTIESC	620	0.32325	115.3811	BASE CASE
FDNS	0		2 19WP	G13_027	FROM->TO	SPSSPTIESC1	620	0.40801	154.8739	BASE CASE
FDNS	00G13_027		2 19WP	G13_027	FROM->TO	SPSSPTIESC1	620	0.35756	154.1538	BASE CASE
FDNS	06ALL		2 14G	G13_027	FROM->TO	SPSSPTIESC1	620	0.35573	136.0029	BASE CASE
FDNS	0		2 19WP	G13_027	FROM->TO	SPSSPTIESC1	620	0.35924	132.0154	BASE CASE
FDNS	06G13_027		2 14G	G13_027	FROM->TO	SPSSPTIESC1	620	0.35878	107.3301	BASE CASE
FDNS	6		2 14G	G13_027	FROM->TO	SPSSPTIESC1	620	0.35925	102.5402	BASE CASE
FDNS	00G13_027		2 14WP	G13_027	FROM->TO	SPSSPTIESC1	620	0.36517	101.5966	BASE CASE
FDNS	06ALL		2 14G	G13_027	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	0.41086	129.5905	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL		2 14G	G13_027	FROM->TO	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1	560	0.41086	127.939	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	06ALL		2 14G	G13_027	FROM->TO	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	560	0.4049	127.8193	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		2 14G	G13_027	FROM->TO	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	560	0.4049	126.0692	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		2 14G	G13_027	FROM->TO	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2	560	0.34499	101.3684	SPP-SWPS-01
FDNS	00G13_027		2 14SP	G13_027	FROM->TO	YOAKUM COUNTY INTERCHANGE (PENN C010585) 230/115/13.2KV TRANSFORMER CKT 2	150	0.03037	102.9016	YOAKUM COUNTY INTERCHANGE (GE M100899) 230/115/13.2KV TRANSFORMER CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	00G13_027		2 14SP	G13_027	FROM->TO	YOAKUM COUNTY INTERCHANGE (PENN C010585) 230/115/13.2KV TRANSFORMER CKT 2	150	0.03037	100	YOAKUM COUNTY INTERCHANGE (GE M100899) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		3 19WP	G13_027	FROM->TO	BUSHLAND INTERCHANGE - HILLSIDE 115KV CKT 1	177	0.07355	147.1854	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		3 19SP	G13_027	FROM->TO	BUSHLAND INTERCHANGE - HILLSIDE 115KV CKT 1	160	0.07476	115.4873	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		3 19WP	G13_027	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1	168	0.07355	160.1937	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		3 19WP	G13_027	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1	168	0.07355	155.2882	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		3 19SP	G13_027	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1	168	0.07476	116.1178	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		3 19SP	G13_027	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1	168	0.07476	111.2486	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	06ALL		3 14G	G13_027	FROM->TO	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	353	0.08066	109.8824	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		3 14G	G13_027	FROM->TO	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	353	0.07425	104.1765	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	0		3 19WP	G13_027	TO->FROM	COULTER INTERCHANGE - HILLSIDE 115KV CKT 1	191	0.07355	127.1848	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	06ALL		3 14G	G13_027	FROM->TO	CURRY COUNTY INTERCHANGE - DEAF SMITH REC-#20 115KV CKT 1	96	0.04302	101.6337	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	06ALL		3 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08066	120.7132	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		3 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08066	119.3754	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G13_027		3 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.0832	113.0557	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G13_027		3 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.0832	111.8328	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		3 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07425	111.7636	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		3 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07425	108.8781	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06G13_027		3 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08127	106.0837	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06G13_027		3 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08127	105.3736	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	6		3 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08136	103.9772	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	6		3 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08136	103.3207	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		3 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07425	103.3162	SPP-AEPW-32
FDNS	00G13_027		3 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07675	101.8804	SPP-AEPW-32
FDNS	06ALL		3 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07379	101.8366	SPP-SWPS-01
FDNS	06ALL		3 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07425	101.5641	SPP-AEPW-32
FDNS	0		3 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08365	101.5066	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	0		3 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08365	100.8385	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G13_027		3 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07628	100.3496	SPP-SWPS-01
FDNS	06ALL		3 14G	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07379	100.1617	SPP-SWPS-01
FDNS	00G13_027		3 19WP	G13_027	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07675	100	SPP-AEPW-32
FDNS	00G13_027		3 19WP	G13_027	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09481	112.1519	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.0751	110.2551	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.0751	110.2551	SPP-SWPS-K37
FDNS	06ALL		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.0751	110.2504	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.0751	108.2282	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.0751	108.2086	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.0751	108.2086	SPP-SWPS-K37
FDNS	06G13_027		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.07492	108.081	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06G13_027		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.07492	108.081	SPP-SWPS-K37
FDNS	06G13_027		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.07492	108.0634	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	6		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.07491	106.391	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	6		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.07491	106.391	SPP-SWPS-K37
FDNS	6		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.07491	106.3681	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06G13_027		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.07492	105.6441	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06G13_027		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.07492	105.6381	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	06G13_027		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.07492	105.6381	SPP-SWPS-K37
FDNS	06ALL		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08726	105.6205	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	6		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.07491	103.9182	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
FDNS	06ALL		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08726	103.9092	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	6		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.07491	103.9082	LAMB COUNTY INTERCHANGE (WH ALM20172) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	6		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.07491	103.9082	SPP-SWPS-K37
FDNS	06ALL		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08516	101.1795	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	06ALL		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08516	100.1903	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	06G13_027		3 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08722	99.4	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	00G13_027		3 14SP	G13_027	FROM->TO	ROOSEVELT COUNTY INTERCHANGE (ABB LMM60042) 230/115/13.2KV TRANSFORMER CKT 1	252	0.03015	110.3109	OASIS INTERCHANGE - Roosevelt County Interchange SWITCH #4K33 230KV CKT 1
FDNS	00G13_027		3 14SP	G13_027	FROM->TO	ROOSEVELT COUNTY INTERCHANGE (ABB LMM60042) 230/115/13.2KV TRANSFORMER CKT 1	252	0.03015	108.8586	OASIS INTERCHANGE - Roosevelt County Interchange SWITCH #4K33 230KV CKT 1
FDNS	0		3 14SP	G13_027	FROM->TO	ROOSEVELT COUNTY INTERCHANGE (ABB LMM60042) 230/115/13.2KV TRANSFORMER CKT 1	252	0.03013	107.3697	OASIS INTERCHANGE - Roosevelt County Interchange SWITCH #4K33 230KV CKT 1
FDNS	0		3 14SP	G13_027	FROM->TO	ROOSEVELT COUNTY INTERCHANGE (ABB LMM60042) 230/115/13.2KV TRANSFORMER CKT 1	252	0.03013	105.9228	OASIS INTERCHANGE - Roosevelt County Interchange SWITCH #4K33 230KV CKT 1
FDNS	00G13_027		3 19WP	G13_027	FROM->TO	SPSSPTIESB	620	0.35668	153.6886	BASE CASE
FDNS	06ALL		3 14G	G13_027	FROM->TO	SPSSPTIESB	620	0.35384	135.574	BASE CASE
FDNS	0		3 19WP	G13_027	FROM->TO	SPSSPTIESB	620	0.35811	131.8393	BASE CASE
FDNS	06G13_027		3 14G	G13_027	FROM->TO	SPSSPTIESB	620	0.35674	106.8714	BASE CASE
FDNS	6		3 14G	G13_027	FROM->TO	SPSSPTIESB	620	0.35719	102.0588	BASE CASE
FDNS	00G13_027		3 14WP	G13_027	FROM->TO	SPSSPTIESB	620	0.36329	101.4098	BASE CASE
FDNS	06ALL		3 14G	G13_027	FROM->TO	SPSSPTIESB1	620	0.27965	111.4234	BASE CASE
FDNS	00G13_027		3 19WP	G13_027	FROM->TO	SPSSPTIESB1	620	0.28526	105.6318	BASE CASE
FDNS	06ALL		3 14G	G13_027	FROM->TO	SPSSPTIESC	620	0.27965	111.4234	BASE CASE
FDNS	00G13_027		3 19WP	G13_027	FROM->TO	SPSSPTIESC	620	0.28526	105.6318	BASE CASE
FDNS	00G13_027		3 19WP	G13_027	FROM->TO	SPSSPTIESC1	620	0.35668	153.6886	BASE CASE
FDNS	06ALL		3 14G	G13_027	FROM->TO	SPSSPTIESC1	620	0.35384	135.574	BASE CASE
FDNS	0		3 19WP	G13_027	FROM->TO	SPSSPTIESC1	620	0.35811	131.8393	BASE CASE
FDNS	06G13_027		3 14G	G13_027	FROM->TO	SPSSPTIESC1	620	0.35674	106.8714	BASE CASE
FDNS	6		3 14G	G13_027	FROM->TO	SPSSPTIESC1	620	0.35719	102.0588	BASE CASE
FDNS	00G13_027		3 14WP	G13_027	FROM->TO	SPSSPTIESC1	620	0.36329	101.4098	BASE CASE
FDNS	0		4 19WP	G13_027	FROM->TO	BUSHLAND INTERCHANGE - HILLSIDE 115KV CKT 1	177	0.07361	147.1439	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL		5 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08516	100.1903	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	06G13_027		5 14G	G13_027	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	252	0.08722	99.4	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	00G13_027		5 14SP	G13_027	FROM->TO	ROOSEVELT COUNTY INTERCHANGE (ABB LMM60042) 230/115/13.2KV TRANSFORMER CKT 1	252	0.03015	110.3109	OASIS INTERCHANGE - Roosevelt County Interchange SWITCH #4K33 230KV CKT 1
FDNS	00G13_027		5 14SP	G13_027	FROM->TO	ROOSEVELT COUNTY INTERCHANGE (ABB LMM60042) 230/115/13.2KV TRANSFORMER CKT 1	252	0.03015	108.8586	OASIS INTERCHANGE - Roosevelt County Interchange SWITCH #4K33 230KV CKT 1
FDNS	0		5 14SP	G13_027	FROM->TO	ROOSEVELT COUNTY INTERCHANGE (ABB LMM60042) 230/115/13.2KV TRANSFORMER CKT 1	252	0.03013	107.3697	OASIS INTERCHANGE - Roosevelt County Interchange SWITCH #4K33 230KV CKT 1
FDNS	0		5 14SP	G13_027	FROM->TO	ROOSEVELT COUNTY INTERCHANGE (ABB LMM60042) 230/115/13.2KV TRANSFORMER CKT 1	252	0.03013	105.9228	OASIS INTERCHANGE - Roosevelt County Interchange SWITCH #4K33 230KV CKT 1
FDNS	00G13_027		5 19WP	G13_027	FROM->TO	SPSSPPTIESB	620	0.35701	153.6647	BASE CASE
FDNS	06ALL		5 14G	G13_027	FROM->TO	SPSSPPTIESB	620	0.35384	135.5741	BASE CASE
FDNS	0		5 19WP	G13_027	FROM->TO	SPSSPPTIESB	620	0.35842	131.8291	BASE CASE
FDNS	06G13_027		5 14G	G13_027	FROM->TO	SPSSPPTIESB	620	0.35674	106.872	BASE CASE
FDNS	6		5 14G	G13_027	FROM->TO	SPSSPPTIESB	620	0.35719	102.0592	BASE CASE
FDNS	00G13_027		5 14WP	G13_027	FROM->TO	SPSSPPTIESB	620	0.36329	101.4099	BASE CASE
FDNS	06ALL		5 14G	G13_027	FROM->TO	SPSSPPTIESB1	620	0.27965	111.4236	BASE CASE
FDNS	00G13_027		5 19WP	G13_027	FROM->TO	SPSSPPTIESB1	620	0.28552	105.6294	BASE CASE
FDNS	06ALL		5 14G	G13_027	FROM->TO	SPSSPPTIESC	620	0.27965	111.4236	BASE CASE
FDNS	00G13_027		5 19WP	G13_027	FROM->TO	SPSSPPTIESC	620	0.28552	105.6294	BASE CASE
FDNS	00G13_027		5 19WP	G13_027	FROM->TO	SPSSPPTIESC1	620	0.35701	153.6647	BASE CASE
FDNS	06ALL		5 14G	G13_027	FROM->TO	SPSSPPTIESC1	620	0.35384	135.5741	BASE CASE
FDNS	0		5 19WP	G13_027	FROM->TO	SPSSPPTIESC1	620	0.35842	131.8291	BASE CASE
FDNS	06G13_027		5 14G	G13_027	FROM->TO	SPSSPPTIESC1	620	0.35674	106.872	BASE CASE
FDNS	6		5 14G	G13_027	FROM->TO	SPSSPPTIESC1	620	0.35719	102.0592	BASE CASE
FDNS	00G13_027		5 14WP	G13_027	FROM->TO	SPSSPPTIESC1	620	0.36329	101.4099	BASE CASE
FDNS	01ALL		0 14G	G13_035	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	191	0.03685	107.9693	DBL-WICH-THI
FDNS	01NR		0 14G	G13_035	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	191	0.04337	99.4	DBL-WICH-THI
FDNS	01ALL		0 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03685	199.6787	DBL-WICH-THI
FDNS	01NR		0 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.04337	184.7319	DBL-WICH-THI
FDNS	06ALL		0 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03589	181.0401	DBL-WICH-THI
FDNS	01G13_035		0 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03689	178.7275	DBL-WICH-THI
FDNS	1		0 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.0369	177.2242	DBL-WICH-THI
FDNS	00NR		0 19WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.04457	171.8864	DBL-WICH-THI
FDNS	00NR		0 14WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.04375	165.7839	DBL-WICH-THI
FDNS	6		0 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03626	160.7416	DBL-WICH-THI
FDNS	00NR		0 14SP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.04209	141.902	DBL-WICH-THI
FNSL	00G13_035		0 19WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03588	121.3279	DBL-WICH-THI
FDNS	09ALL		0 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03682	120.1446	DBL-WICH-THI
FDNS	9		0 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03695	117.0156	DBL-WICH-THI
FDNS	00G13_035		0 14WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03578	115.3457	DBL-WICH-THI
FNSL	0		0 19WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03587	115.2381	DBL-WICH-THI
FDNS	13		0 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03703	110.3382	DBL-WICH-THI
FDNS	13ALL		0 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03703	110.0426	DBL-WICH-THI
FDNS	0		0 14WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03578	109.5441	DBL-WICH-THI
FDNS	00NR		0 19SP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.04297	104.7144	DBL-WICH-THI
FDNS	01ALL		0 14G	G13_035	TO->FROM	EL RENO - ROMAN NOSE 138KV CKT 1	153	0.03982	104.1229	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 14WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03098	102.0834	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00NR		0 14WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03098	101.0872	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.05474	113.5345	DBL-WICH-THI
FDNS	00NR		0 19WP	G13_035	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.06242	105.2397	DBL-WICH-THI
FDNS	01NR		0 14G	G13_035	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.05932	103.2561	DBL-WICH-THI
FDNS	00NR		0 14SP	G13_035	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.05976	101.7612	DBL-WICH-THI
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.05492	100.151	DBL-WICH-THI
FDNS	1		0 14G	G13_035	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.05493	99.3	DBL-WICH-THI
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.11095	149.3142	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.09446	145.1403	DBL-THIS-WWR
FDNS	01G13_035		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.11104	132.1883	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.07595	131.851	DBL-WICH-THI
FDNS	01NR		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.10681	125.8962	DBL-THIS-WWR
FDNS	1		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.11108	123.8936	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.09492	120.4549	DBL-THIS-WWR
FDNS	1		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.09495	118.7057	DBL-THIS-WWR
FDNS	01NR		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.09099	116.3776	DBL-WICH-THI
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.07408	116.3222	DBL-HTCH-BVR
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06862	112.0327	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0686	112.011	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.07629	111.942	DBL-WICH-THI
FDNS	1		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.07631	110.6048	DBL-WICH-THI
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06229	110.4229	DEWEY - TALOGA 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06992	110.2912	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.11095	110.259	G11 051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05961	110.0042	GENS20922 1-SLEEPING BEAR
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.07408	109.4252	DBL-BVR-G1334
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06992	109.2945	DEWEY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06542	108.8666	G14 007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06051	107.9797	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06709	107.8848	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06347	107.5753	THISTLE7 345.00 - WICHITA 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06347	107.5753	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06016	107.5067	FT SUPPLY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05961	107.1315	BASE CASE
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06542	106.9333	BORDER 7345.00 - G14 007T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06016	106.658	IODINE - MOORELAND 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.07408	106.5759	DBL-G1334-WWR
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05961	106.5561	GENS20997 1-MORLND2
FDNS	00NR		0 19WP	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.10836	106.2985	DBL-THIS-WWR
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06542	105.6755	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05961	104.3305	GENS15389 1-TLGAWND1 34.500
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05939	104.1795	SPP-SWPS-03
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05939	104.1273	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05939	104.1248	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05954	104.024	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06216	103.9945	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06193	103.8783	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05939	103.7193	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06216	103.3738	SPP-SWPS-05
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06216	103.3443	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05721	103.2043	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06051	103.1232	SPP-AEPW-32
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06046	103.0567	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05961	103.0302	GENS14805 1-SOONER UNIT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06193	102.9775	SPP-SWPS-04
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06193	102.9193	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06046	102.6188	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05983	102.5417	MOORELAND - TALOGA 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05939	102.4116	SPP-SWPS-02A
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06041	102.184	MINGO - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05896	102.177	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06065	102.1136	SPP-SWPS-01
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06046	102.1102	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05961	102.0431	GENS14806 1-SOONER UNIT 2
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06188	102.0328	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06051	101.8806	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06054	101.6781	MINGO - RED WILLOW 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06013	101.6723	SPP-MKEC-08
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06188	101.67	CARTER JCT - MOORELAND 69KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06188	101.6694	MOORELAND (MOORELND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06024	101.6372	AXTELL - POST ROCK 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05961	101.633	GENS21120 1-BUFBEAR2
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06068	101.611	BENTON - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06026	101.4602	HOLCOMB - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0617	101.4553	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0617	101.4553	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 2
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06001	101.3401	FLATRDG3 - HARPER 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05961	101.318	GENS20947 1-HUGO1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05961	101.2433	GENS15225 1-MUSKOGEE 5G
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05961	101.2379	GENS15226 1-MUSKOGEE 6G
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05961	101.2281	GENS15223 1-MUSKOGEE 4G
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05961	101.2204	GENS506087 1-G11-007 0.6900
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0601	101.1889	FLATRDG3 - THISTLE4 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0601	101.1885	THISTLE7 345.00 (THISTLE T1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05976	101.1756	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1
FDNS	00NR		0 19WP	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.09151	101.1283	DBL-WICH-THI
FDNS	01NR		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.08154	99.5	DBL-HTCH-BVR
FDNS	01ALL		0 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05524	99.1	SAND RDG 138138.00 - WAKITA 138 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11095	223.4623	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.09446	215.0919	DBL-THIS-WWR
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11104	204.9274	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.10681	193.0201	DBL-THIS-WWR
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07595	192.1486	DBL-WICH-THI
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11108	189.9648	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.09492	182.8347	DBL-THIS-WWR
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.09495	179.5262	DBL-THIS-WWR
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.09099	175.4379	DBL-WICH-THI
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07629	167.2384	DBL-WICH-THI
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07408	166.1976	DBL-HTCH-BVR
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06709	165.4563	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07631	164.762	DBL-WICH-THI
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11154	162.1943	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.10836	161.8807	DBL-THIS-WWR
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	158.6726	GENS15787 1-OKLA WIND ENERGY CENTER
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06862	157.4364	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0686	157.4	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	156.1601	BASE CASE
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06992	155.4729	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06229	155.2509	DEWEY - TALOGA 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11095	154.3388	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07408	154.1483	DBL-BVR-G1334
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.09151	153.9364	DBL-WICH-THI
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06992	153.7454	DEWEY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	152.9057	GEN520922 1-SLEEPING BEAR
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.09575	152.6347	DBL-THIS-WWR
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06542	151.8019	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07723	151.7519	DBL-WICH-THI
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06709	151.4218	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06735	151.2577	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06051	150.02	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06347	149.2408	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06347	149.2408	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07408	148.6126	DBL-G1334-WWR
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06542	148.5541	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06016	147.8637	FT SUPPLY - IODINE 138KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11154	147.5169	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06542	146.4074	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06016	146.2644	IODINE - MOORELAND 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08154	145.9761	DBL-HTCH-BVR
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	144.4838	GEN520997 1-MORLND2
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	143.7718	GEN515389 1-TLGAWND1 34.500
FDNS	00G13_035		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.1133	143.5513	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05939	143.1363	SPP-SWPS-03
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06216	143.0163	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05954	142.7913	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06744	142.7668	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06193	142.7406	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05939	142.6656	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05939	142.6613	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05939	142.3238	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07014	142.286	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06216	141.9972	SPP-SWPS-05
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06216	141.941	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06051	141.2275	SPP-AEPW-32
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06046	141.2037	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06193	141.1339	SPP-SWPS-04
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06193	141.0396	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	140.9971	GEN514805 1-SOONER UNIT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05983	140.7084	MOORELAND - TALOGA 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	140.6636	BASE CASE
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	140.621	GEN515787 1-OKLA WIND ENERGY CENTER
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07014	140.5419	DEWEY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05721	140.5178	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06046	140.4199	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06889	140.3828	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06887	140.3505	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06041	139.6572	MINGO - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06188	139.5694	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05939	139.5657	SPP-SWPS-02A
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06046	139.4878	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06065	139.4799	SPP-SWPS-01
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05896	139.4335	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	139.2564	GEN514806 1-SOONER UNIT 2
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06051	139.0404	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06188	138.953	CARTER JCT - MOORELAND 69KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06188	138.9516	MOORELAND (MOORELND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06054	138.7255	MINGO - RED WILLOW 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06617	138.7026	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06617	138.7026	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 2
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06013	138.6765	SPP-MKEC-08
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	138.6414	GEN521120 1-BUFBEAR2
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06024	138.6061	AXTELL - POST ROCK 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07723	138.5903	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06068	138.5455	BENTON - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06026	138.3378	HOLCOMB - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06001	138.071	FLATRDG3 - HARPER 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0744	137.9852	DBL-HTCH-BVR
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	137.9825	GEN520947 1-HUGO1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0626	137.9519	DEWEY - TALOGA 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	137.9407	GEN520997 1-MORLND2
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	137.8681	GEN515225 1-MUSKOGEE 5G

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	137.8586	GEN515226 1-MUSKOGEE 6G
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	137.8412	GEN515223 1-MUSKOGEE 4G
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	137.8385	GEN560687 1-G11-007 0.6900
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05976	137.8118	SMOKYHLL6 230.00 - SUMMIT 230KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06001	137.8051	FLATRDG3 - THISTLE4 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06001	137.8044	THISTLE7 345.00 (THISTLE T1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.10627	137.6586	DBL-THIS-WWR
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06735	137.1812	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06073	137.0533	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11193	136.6198	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.10698	136.3982	DBL-THIS-WWR
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06565	136.2972	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	136.0896	GEN520922 1-SLEEPING BEAR
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11104	135.8049	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	135.747	NC1_GEN-NEBRASKA CITY 1
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.09074	135.5839	DBL-WICH-THI
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07442	135.3103	DBL-HTCH-BVR
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06373	134.5266	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06373	134.5266	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08154	134.5017	DBL-BVR-G1334
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11108	134.4539	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.10765	134.3533	DBL-THIS-WWR
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07022	133.9437	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05971	133.7814	MIDLNT4 138.00 - PECKHAM TAP 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05971	133.781	NEWKIRK4 - PECKHAM TAP 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05928	133.7096	BRANTLEY - MORWOOD 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05928	133.7046	MOREWOOD SW - MORWOOD 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05971	133.692	KILDARE4 - NEWKIRK4 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.6747	GEN542962 2-IATAN UNIT #2
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06049	133.6591	SPP-SWPS-03
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.6489	GEN562074 1-G11_049_3 0.6900
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.6263	GEN524295 1-SPNSPUR_WND10.6900
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05893	133.6155	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05971	133.5709	CRESWELL - MIDLNT4 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05965	133.5581	DELAWARE - NORTHEAST STATION 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05937	133.5273	FREEDOM - WEST 69KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.4702	GEN645001 1-FORT CALHOUN 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05927	133.4534	NOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.4514	GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.4511	GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.4272	GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05893	133.4115	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05821	133.362	WOODWARD - WOODWARD EHV 138KV CKT 2
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05887	133.3342	DOVER - TWIN LAKES 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	133.3276	GEN515787 1-OKLA WIND ENERGY CENTER
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.2988	GEN562017 1-G11_022_3 0.6900
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.2893	GEN645011 1-NEBRASKA CITY 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.2712	GEN527162 1-MUSTANG GEN #2
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.2711	GEN527161 1-MUSTANG GEN #1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05906	133.2619	CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.2598	GEN560121 1-G08-47 0.5750
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.2559	GEN562432 1-G13-030 0.6900
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05524	133.2365	SAND RDG_138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.2335	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05887	133.2279	DOVER - DOVER SW 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05937	133.2271	BUFFALO - WEST 69KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.171	GEN659111 2-LELAND OLDS UNIT2
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.0824	GEN539670 4-JUDSON LARGE GENERATOR
FNSL	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.0282	GEN659103 1-ANTELOPE VALLEY UNIT1
FNSL	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	133.0282	GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	132.9283	GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06565	132.8562	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05937	132.8264	BUFBEAR2 - BUFFALO 69KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	132.7915	GEN645012 2-NEBRASKA CITY 2
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	132.7439	EASTDC - WELSH 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	132.7086	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	132.7043	GEN520997 1-MORLND2
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	132.5881	GEN640009 1-COOPER NUCLEAR STATION
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05942	132.5002	LYDIA - VALLIANT 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05942	132.4905	SPP-AEPW-01
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05973	132.4376	OPENSKY 345.00 - RANCH 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	132.4321	GEN526331 1-JONES GEN #1 22 KV
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05973	132.4191	RANCH 345.00 - SOONER 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	132.3726	GEN515449 1-CRSRDW11 0.6900
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	132.3648	GEN527902 1-HOBBS PLANT #2 (CT)

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	132.343	GENS27901 1-HOBBS PLANT #1 (CT)
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	132.312	BASE CASE
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	132.2597	GENS15450 1-CRSRDW21 0.6900
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	132.1995	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	132.1642	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	132.0764	GENS26332 1-JONES GEN #2 21 KV
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	132.018	GENS26334 1-JONES 4 116.500
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	131.991	GENS62443 1-G13-034 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07022	131.9406	DEWEY - IODINE 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06899	131.8635	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06897	131.8332	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0605	131.8276	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0605	131.7245	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05973	131.6384	OPENSKY 345.00 - ROSE HILL 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05996	131.4425	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05635	131.4178	SANDY_CN_138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.09061	131.4088	DBL-WICH-THI
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06041	131.2187	FT SUPPLY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	131.1542	GENS62472 1-G13_035_3 0.6900
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	130.9532	GENS62078 1-G11_051_3 0.6900
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	130.8753	GENS23971 1-HARRINGTON GEN #1 24 KV
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	130.875	GENS23972 1-HARRINGTON GEN #2 24 KV
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	130.862	GENS23973 1-HARRINGTON GEN #3 24 KV
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	130.8602	GENS27903 1-HOBBS PLANT #3 (ST)
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06565	130.7324	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	130.596	SPP-SWPS-03
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0605	130.4725	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	130.2766	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	130.2716	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0627	130.0824	DEWEY - TALOGA 138KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08154	129.9578	DBL-G1334-WWR
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05977	129.849	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	129.7656	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06041	129.6492	IODINE - MOORELAND 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06081	129.5896	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	129.5672	GENS659118 1-LARAMIE RIVER UNIT1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	129.1188	GENS60648 1-G0721_G1402 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	128.9535	GENS20922 1-SLEEPING BEAR
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	128.9299	GENS15389 1-TLGAWN1 34.500
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06744	128.7757	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05761	128.591	EL RENO - ROMAN NOSE 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05745	128.4023	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06217	128.3663	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	128.3103	GENS25561 1-TOLK GEN #1 24 KV
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06573	128.3019	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06073	128.2988	SPP-AEPW-32
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05761	128.213	ROMAN NOSE - SOUTHARD 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06242	127.9072	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	127.7518	GENS25562 1-TOLK GEN #2 24 KV
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	127.7303	GENS14805 1-SOONER UNIT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	127.4905	GENS31447 1-HOLCOMB GENERATOR
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05761	127.3763	DEWEY - SOUTHARD 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	127.2913	GENS15397 1-OUSPRT 1 34.500
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	127.1614	SPP-SWPS-02A
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06072	127.1491	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	00NR		0 14WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07663	127.0856	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06217	126.7894	SPP-SWPS-04
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06381	126.7245	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06381	126.7245	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06217	126.6592	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06242	126.5491	SPP-SWPS-05
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06242	126.4951	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07765	126.418	DBL-WICH-THI
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06088	126.3936	SPP-SWPS-01
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0744	126.39	DBL-BVR-G1334
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06072	126.3599	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0592	126.3239	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.09141	126.162	DBL-WICH-THI
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	126.1289	GENS60175 1-G0744_G1403 0.6900
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06073	126.0353	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05996	125.9884	VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0555	125.9633	RENFROW4 138.00 - SAND RDG 138138.00 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	125.9207	GENS14806 1-SOONER UNIT 2
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0605	125.6416	SPP-SWPS-02A
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0727	125.6239	FLATRDG3 - HARPER 138KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05635	125.5501	BYRON_138 138.00 - SANDY_CN_138138.00 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06067	125.5261	MINGO - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05318	125.5087	WOODWARD - WOODWARD EHV 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06072	125.4517	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06214	125.1813	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06038	125.0099	SPP-MKEC-08
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	124.8935	GENS21120 1-BUFBEAR2
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06573	124.8463	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06092	124.8221	BENTON - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	124.8186	GENS60221 1-G07-62-1 0.6900
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	124.8186	GENS60222 1-G07-62-2 0.6900
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	124.8186	GENS60223 1-G07-62-3 0.6900
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	124.8186	GENS60224 1-G07-62-4 0.6900
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0605	124.7764	AXTELL - POST ROCK 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	124.6326	GENS20947 1-HUGO1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06016	124.5845	MOORELAND - TALOGA 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06214	124.5604	CARTER JCT - MOORELAND 69KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06214	124.5584	MOORELAND (MOORELAND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06081	124.5287	MINGO - RED WILLOW 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06026	124.4766	FLATRDG3 - HARPER 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	124.4685	GENS15225 1-MUSKOGEE 5G
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06884	124.4625	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	124.4585	GENS15226 1-MUSKOGEE 6G
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05615	124.4581	MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05635	124.4457	BYRON_138 138.00 - C_CITY_138 138.00 138KV CKT 1
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06218	124.4414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	124.4405	GENS15223 1-MUSKOGEE 4G
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06051	124.3715	HOLCOMB - SETAB 345KV CKT 1
FDNS	00NR		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07738	124.1449	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0605	123.9205	FT SUPPLY - IODINE 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07442	123.9059	DBL-BVR-G1334
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05635	123.8493	C_CITY_138 138.00 - KNOBHILL 138KV CKT 1
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07864	123.7749	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05578	123.6142	DOVER SW - OKEENE 138KV CKT 1
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0963	123.5519	DBL-THIS-WWR
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0597	123.3967	SPP-SWPS-03
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05969	123.0196	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05969	123.0139	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06573	122.7373	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	122.6281	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05969	122.5638	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11193	122.4326	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0605	122.3559	IODINE - MOORELAND 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	122.2762	NC1_GEN-NEBRASKA CITY 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0744	121.9713	DBL-G1334-WWR
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	121.4255	GENS15389 1-TLGAWND1 34.500
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05753	121.3965	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07141	121.29	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	120.9507	GENS15393 1-OGEWND2G
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06081	120.9471	SPP-AEPW-32
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05615	120.9326	ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	00G13_035		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0631	120.8952	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06225	120.8629	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06127	120.801	GENS20997 1-MORLND2
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	120.7824	GENS15365 1-CENT 21 34.500
FDNS	01NR		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0722	120.6859	EASTDC - WELSH 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	120.4528	GENS14805 1-SOONER UNIT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05953	120.3378	BRANTLEY - MORWOOD 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05953	120.3329	MOREWOOD SW - MORWOOD 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05989	120.3071	DELAWARE - NORTHEAST STATION 345KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0605	120.1767	STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05919	120.1656	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0605	120.156	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0605	120.1477	SPP-SWPS-02
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	120.1288	GENS45001 1-FORT CALHOUN 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06251	120.1263	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05962	120.1153	BUFFALO - WEST 69KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0609	120.0944	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	120.0669	GENS62017 1-G11_022_3 0.6900
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	120.0452	GENS42962 2-IATAN UNIT #2
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05845	120.0447	WOODWARD - WOODWARD EHV 138KV CKT 2
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05913	120.0414	DOVER - TWIN LAKES 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	120.0091	GENS60121 1-G08-47 0.5750
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	120.0074	GENS62432 1-G13-030 0.6900
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05952	120.0021	KNOBHILL (KNOBHILL4) 138/69/13.2KV TRANSFORMER CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05969	119.9969	SPP-SWPS-02A
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.9796	GEN527161 1-MUSTANG GEN #1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.9796	GEN527162 1-MUSTANG GEN #2
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05913	119.9368	DOVER - DOVER SW 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.9322	GEN645011 1-NEBRASKA CITY 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05919	119.9259	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0601	119.9187	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.8926	GEN659111 2-LELAND OLDS UNIT2
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.8041	GEN539670 4-JUDSON LARGE GENERATOR
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.7524	GEN659103 1-ANTELOPE VALLEY UNIT1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.7524	GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.7393	GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.739	GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05962	119.7322	BUFBEAR2 - BUFFALO 69KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.7175	GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05931	119.698	CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06081	119.6531	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.6234	GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05993	119.6002	OPENSKY 345.00 - RANCH 345.00 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05993	119.5846	RANCH 345.00 - SOONER 345KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07141	119.5692	DEWEY - IODINE 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.5587	EASTDC - WELSH 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.5533	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07442	119.5251	DBL-G1334-WWR
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.474	GEN562443 1-G13-034 0.6900
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.417	GEN645012 2-NEBRASKA CITY 2
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05965	119.3997	LYDIA - VALLIANT 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.3965	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05965	119.3916	SPP-AEPW-01
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	119.2924	GEN562023 1-G11_020_3 0.6900
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	119.2924	GEN562026 1-G11_019_3 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06225	119.2901	SPP-SWPS-04
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.2436	GEN515449 1-CRSRDW11 0.6900
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.1781	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0566	119.1702	SANDY_CN 138138.00 - WAKITA 138 138.00 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.1701	GEN515450 1-CRSRDW21 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06225	119.1697	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.165	GEN640009 1-COOPER NUCLEAR STATION
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.1564	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05928	119.1054	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	119.0886	GEN526331 1-JONES GEN #1 22 KV
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06096	119.0605	SPP-SWPS-01
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05372	118.9235	IMO TAP - MEN TAP 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06081	118.8882	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	118.8262	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06251	118.8145	SPP-SWPS-05
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	118.8087	GEN526334 1-JONES_4 116.500
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05559	118.8024	RENFROW4 138.00 - SAND RDG 138138.00 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	118.7903	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06251	118.7619	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05993	118.7458	OPENSKY 345.00 - ROSE HILL 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06081	118.7219	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	118.7162	GEN526332 1-JONES GEN #2 21 KV
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	118.6398	GEN514806 1-SOONER UNIT 2
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05372	118.1896	CLEO CORNER - MEN TAP 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06076	118.0897	MINGO - SETAB 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06081	118.0356	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	117.9976	GEN562472 1-G13_035_3 0.6900
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	117.8637	GEN562078 1-G11_051_3 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06046	117.6872	SPP-MKEC-08
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	117.6788	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06223	117.6771	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	117.6704	GEN521120 1-BUFBEAR2
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	117.5264	GEN523971 1-HARRINGTON GEN #1 24 KV
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	117.5262	GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	117.5127	GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.061	117.4788	BENTON - WICHITA 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06059	117.4262	AXTELL - POST ROCK 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	117.3752	GEN520947 1-HUGO1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	117.2391	GEN515225 1-MUSKOGEE 5G
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	117.2291	GEN515226 1-MUSKOGEE 6G
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	117.2104	GEN515223 1-MUSKOGEE 4G
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06034	117.1766	FLATRDG3 - HARPER 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0609	117.0838	MINGO - RED WILLOW 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06223	117.0609	CARTER JCT - MOORELAND 69KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06223	117.0596	MOORELAND (MOORELND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06027	116.9882	MOORELAND - TALOGA 138KV CKT 1
FNSL	00G13_035		0 14WPP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.11359	116.8628	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	116.316	GEN659118 1-LARAMIE RIVER UNIT1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	116.0947	GEN560648 1-G0721_G1402 0.6900
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05788	115.8763	EL RENO - ROMAN NOSE 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	115.799	GEN515397 1-OUSPR1 34.500
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05788	115.4921	ROMAN NOSE - SOUTHARD 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	115.0164	NC1_GEN-NEBRASKA CITY 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05788	114.663	DEWEY - SOUTHARD 138KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06127	114.658	GEN520998 1-MORLND3
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	114.6255	GEN525561 1-TOLK GEN #1 24 KV
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05423	114.5576	CEDARDALE - OKEENE 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	114.3399	GEN531447 1-HOLCOMB GENERATOR
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0601	114.085	VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	114.0763	GEN560221 1-G07-62-1 0.6900
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	114.0763	GEN560222 1-G07-62-2 0.6900
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	114.0763	GEN560223 1-G07-62-3 0.6900
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	114.0763	GEN560224 1-G07-62-4 0.6900
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	113.9396	GEN525562 1-TOLK GEN #2 24 KV
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05423	113.8594	CEDARDALE - MOORELAND 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0566	113.5886	BYRON_138 138.00 - SANDY_CN 138138.00 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06016	113.0285	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05927	112.9325	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.9084	GEN645001 1-FORT CALHOUN 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	112.8666	GEN560175 1-G0744_G1403 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.8665	GEN562017 1-G11_022_3 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0597	112.8652	BUFFALO - WEST 69KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06025	112.8643	CIMARRON - MATHWSN7 345.00 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.8282	GEN542962 2-IATAN UNIT #2
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05921	112.8211	DOVER - TWIN LAKES 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.8138	GEN560121 1-G08-47 0.5750
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.8038	GEN562432 1-G13-030 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05961	112.7603	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05927	112.7247	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05921	112.7153	DOVER - DOVER SW 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.7129	GEN645011 1-NEBRASKA CITY 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.699	GEN659111 2-LELAND OLDS UNIT2
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.6361	GEN515449 1-CRSRDW11 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.6096	GEN539670 4-JUDSON LARGE GENERATOR
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.586	GEN515450 1-CRSRDW21 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.5606	GEN659103 1-ANTELOPE VALLEY UNIT1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.5606	GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06001	112.5155	OPENSKY 345.00 - RANCH 345.00 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.5044	GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.5041	GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06001	112.5005	RANCH 345.00 - SOONER 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05306	112.4988	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0597	112.4836	BUFBEAR2 - BUFFALO 69KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.4834	GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.4818	GEN527161 1-MUSTANG GEN #1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.4818	GEN527162 1-MUSTANG GEN #2
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0594	112.4776	CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0566	112.4386	BYRON_138 138.00 - C_CITY_138 138.00 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05643	112.3706	MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.3378	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.2778	GEN562443 1-G13-034 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05973	112.263	LYDIA - VALLIANT 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05973	112.2555	SPP-AEPW-01
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.2001	GEN645012 2-NEBRASKA CITY 2
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05669	112.1661	SANDY_CN_138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.1272	GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	112.1146	EASTDC - WELSH 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0534	112.0532	WOODWARD - WOODWARD EHV 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	111.9423	GEN640009 1-COOPER NUCLEAR STATION
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	111.9024	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0566	111.8555	C_CITY_138 138.00 - KNOBHILL 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05428	111.8303	KNOBHILL - MOORELAND 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05306	111.7686	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	111.7136	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	111.6922	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06001	111.6589	OPENSKY 345.00 - ROSE HILL 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	111.6147	GEN526331 1-JONES GEN #1 22 KV
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	111.5613	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	111.5256	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05606	111.4783	DOVER SW - OKEENE 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	111.4321	GEN562472 1-G13_035_3 0.6900
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06884	111.4018	WOODWARD - WOODWARD 69KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	111.3511	GEN526334 1-JONES_4 116.500
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	111.2922	GEN562078 1-G11_051_3 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	111.2223	GEN526332 1-JONES GEN #2 21 KV
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06366	110.9288	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	110.7502	GEN515393 1-OGEWND2G
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	110.7488	GEN515365 1-CENT 21 34.500
FDNS	00G13_035		0 14SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11233	110.4798	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06127	110.3358	BASE CASE
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07018	110.2427	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	110.2419	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07016	110.2174	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	110.0659	GEN523971 1-HARRINGTON GEN #1 24 KV
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	110.0657	GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	110.0523	GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07369	109.9866	FPLATRDG3 - HARPER 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	109.974	GEN560648 1-G0721_G1402 0.6900
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06218	109.6325	SPP-AEPW-32
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06366	109.4731	SPP-SWPS-05
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06366	109.4022	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	109.3157	GEN562023 1-G11_020_3 0.6900
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05985	109.3157	GEN562026 1-G11_019_3 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	108.8662	GEN659118 1-LARAMIE RIVER UNIT1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06505	108.7663	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06505	108.7663	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05797	108.7034	EL RENO - ROMAN NOSE 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05643	108.6495	ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05797	108.3176	ROMAN NOSE - SOUTHARD 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	108.3089	GEN515397 1-OUSPR1 34.500
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	107.6586	GEN560175 1-G0744_G1403 0.6900
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05402	107.6422	IMO TAP - MEN TAP 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05797	107.4818	DEWEY - SOUTHARD 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	107.4363	GEN525561 1-TOLK GEN #1 24 KV
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06153	107.2946	GEN520997 1-MORLND2
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06218	107.2924	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06913	107.203	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06016	107.1705	VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06233	107.1407	SPP-SWPS-01
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06088	107.1286	SPP-SWPS-03
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	106.921	GEN531447 1-HOLCOMB GENERATOR
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05402	106.9056	CLEO CORNER - MEN TAP 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	106.6926	GEN525562 1-TOLK GEN #2 24 KV
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	106.6725	GEN560221 1-G07-62-1 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	106.6725	GEN560222 1-G07-62-2 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	106.6725	GEN560223 1-G07-62-3 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	106.6725	GEN560224 1-G07-62-4 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05669	106.6058	BYRON_138 138.00 - SANDY_CN_138138.00 138KV CKT 1
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06089	106.471	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06089	106.4444	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05224	105.7011	MOREWOOD SW - NINE MILE 138KV CKT 1
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06089	105.6388	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05669	105.463	BYRON_138 138.00 - C_CITY_138 138.00 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05653	105.385	MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05347	105.3293	WOODWARD - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05224	105.3146	MOORELAND - NINE MILE 138KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	104.9492	EASTDC - WELSH 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05669	104.8604	C_CITY_138 138.00 - KNOBHILL 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05616	104.5341	DOVER SW - OKEENE 138KV CKT 1
FDNS	00G13_035		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11346	103.9553	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00G13_035		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0631	103.9331	SPP-AEPW-32
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05899	103.8313	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	103.5893	GEN515393 1-OGEWND2G
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	103.5795	GEN515365 1-CENT 21 34.500
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07172	103.0847	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05454	102.9611	CEDARDALE - OKEENE 138KV CKT 1
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06089	102.9047	SPP-SWPS-02A
FDNS	09ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11252	102.4336	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05454	102.2805	CEDARDALE - MOORELAND 138KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	102.1768	GEN562023 1-G11_020_3 0.6900
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05994	102.1768	GEN562026 1-G11_019_3 0.6900
FDNS	00G13_035		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06324	101.8331	SPP-SWPS-01
FDNS	00G13_035		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.0631	101.6636	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05653	101.6465	ELK CITY - RED HILLS WIND 138KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05718	101.4841	RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07172	101.368	DEWEY - IODINE 138KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06213	101.1828	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05337	101.1783	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1
FDNS	00NR		0 24SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.13507	101.0359	DBL-TGA-MATT
FDNS	6		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06153	101.0006	GEN520998 1-MORLND3
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05412	100.753	IMO TAP - MEN TAP 138KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06127	100.7424	GEN514805 1-SOONER UNIT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05337	100.4487	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06213	100.317	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05456	100.2958	KNOBHILL - MOORELAND 138KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06127	100.2311	GEN515787 1-OKLA WIND ENERGY CENTER
FDNS	1		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05412	100	CLEO CORNER - MEN TAP 138KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06208	99.9	MINGO - SETAB 345KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06065	99.8	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06133	99.6	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06132	99.5	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07753	99.4	SPP-SWPS-02
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07753	99.4	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07753	99.4	STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06213	99.3	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06127	99.3	GEN520922 1-SLEEPING BEAR
FDNS	00NR		0 19SP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07572	99.2	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	00NR		0 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07307	99.1	GEN562483 1-G13_027_3 0.6900
FDNS	06ALL		0 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06127	99.1	GEN514806 1-SOONER UNIT 2
FDNS	01ALL		0 14G	G13_035	TO->FROM	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	124	0.03353	113.7639	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01G13_035		0 14G	G13_035	TO->FROM	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	124	0.03332	102.056	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		0 14G	G13_035	TO->FROM	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	124	0.03607	101.9055	DBL-THIS-WWR
FDNS	00NR		0 19WP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.03559	123.8977	DBL-WICH-THI
FDNS	00NR		0 19WP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.03726	121.8815	DBL-THIS-WWR
FDNS	00NR		0 19SP	G13_035	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.04092	103.5969	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.03687	103.961	DBL-WICH-THI
FDNS	00NR		0 19WP	G13_035	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.03856	101.8511	DBL-THIS-WWR
FDNS	01ALL		0 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03685	210.1048	DBL-WICH-THI
FDNS	01NR		0 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.04337	195.1119	DBL-WICH-THI
FDNS	06ALL		0 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03589	191.4074	DBL-WICH-THI
FDNS	01G13_035		0 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03689	189.137	DBL-WICH-THI
FDNS	1		0 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.0369	187.6431	DBL-WICH-THI
FDNS	00NR		0 19WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.04457	183.0286	DBL-WICH-THI
FDNS	00NR		0 14WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.04375	175.9168	DBL-WICH-THI
FDNS	6		0 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03626	171.2108	DBL-WICH-THI
FDNS	00NR		0 14SP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.04209	156.6064	DBL-WICH-THI
FNSL	00G13_035		0 19WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03588	132.614	DBL-WICH-THI
FDNS	09ALL		0 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03682	130.6427	DBL-WICH-THI
FDNS	9		0 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03695	127.507	DBL-WICH-THI
FNSL	0		0 19WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03587	126.5274	DBL-WICH-THI
FDNS	00G13_035		0 14WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03578	125.5767	DBL-WICH-THI
FDNS	13		0 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03703	120.8648	DBL-WICH-THI
FDNS	13ALL		0 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03703	120.569	DBL-WICH-THI
FDNS	0		0 14WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03578	119.7794	DBL-WICH-THI
FDNS	00NR		0 19SP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.04297	119.3712	DBL-WICH-THI
FDNS	00NR		0 19WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03013	99.5	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	0.47504	115.9426	DBL-THIS-WWR
FDNS	01ALL		0 14G	G13_035	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	0.4202	105.3843	DBL-WICH-THI
FDNS	01NR		0 14G	G13_035	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	0.5438	101.9159	DBL-THIS-WWR
FDNS	00G13_035		0 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.04026	109.8091	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00G13_035		0 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.04026	108.0379	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00G13_035		0 14WP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03588	103.5377	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		0 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.04011	102.5796	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00G13_035		0 14WP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03588	102.172	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		0 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.04011	100.6386	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03821	100.4665	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00G13_035		0 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03889	100.3708	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G13_035	TO->FROM	ROMAN NOSE - SOUTHARD 138KV CKT 1	153	0.03982	107.5531	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G13_035	FROM->TO	SPSSPPTIESB	620	0.03764	160.7052	BASE CASE
FDNS	00NR		0 14WP	G13_035	FROM->TO	SPSSPPTIESB	620	0.04688	114.034	BASE CASE
FDNS	06ALL		0 14G	G13_035	FROM->TO	SPSSPPTIESB1	620	0.06388	159.545	BASE CASE
FDNS	00NR		0 19WP	G13_035	FROM->TO	SPSSPPTIESB1	620	0.13078	153.8462	BASE CASE
FDNS	00G13_035		0 19WP	G13_035	FROM->TO	SPSSPPTIESB1	620	0.06988	130.2609	BASE CASE
FDNS	6		0 14G	G13_035	FROM->TO	SPSSPPTIESB1	620	0.06836	122.922	BASE CASE
FDNS	0		0 19WP	G13_035	FROM->TO	SPSSPPTIESB1	620	0.07002	120.8545	BASE CASE
FDNS	00NR		0 14WP	G13_035	FROM->TO	SPSSPPTIESB1	620	0.13792	106.8303	BASE CASE
FDNS	06ALL		0 14G	G13_035	FROM->TO	SPSSPPTIESC	620	0.06388	159.545	BASE CASE
FDNS	00NR		0 19WP	G13_035	FROM->TO	SPSSPPTIESC	620	0.13078	153.8462	BASE CASE
FDNS	00G13_035		0 19WP	G13_035	FROM->TO	SPSSPPTIESC	620	0.06988	130.2609	BASE CASE

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	6		0 14G	G13_035	FROM->TO	SPSSPTTIESC	620	0.06836	122.922	BASE CASE
FDNS	0		0 19WP	G13_035	FROM->TO	SPSSPTTIESC	620	0.07002	120.8545	BASE CASE
FDNS	00NR		0 14WP	G13_035	FROM->TO	SPSSPTTIESC	620	0.13792	106.8303	BASE CASE
FDNS	00NR		0 19WP	G13_035	FROM->TO	SPSSPTTIESC1	620	0.03764	160.7052	BASE CASE
FDNS	00NR		0 14WP	G13_035	FROM->TO	SPSSPTTIESC1	620	0.04688	114.034	BASE CASE
FDNS	06ALL		0 14G	G13_035	FROM->TO	TUCXFR345230	300	0.03945	110.3	BASE CASE
FDNS	00NR		0 19WP	G13_035	TO->FROM	WOODWARD - WOODWARD EHV 138KV CKT 1	287	0.09086	99.4	DBL-THIS-WWR
FDNS	00NR		0 14WP	G13_035	FROM->TO	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1	134	0.03332	99.3	FPL SWITCH - MOORELAND 138KV CKT 1
FDNS	06ALL		2 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03129	154.2784	DBL-WICH-THI
FDNS	6		2 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03158	139.5688	DBL-WICH-THI
FDNS	09ALL		2 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03682	120.1446	DBL-WICH-THI
FDNS	9		2 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03695	117.0156	DBL-WICH-THI
FNSL	0		2 19WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03587	115.2381	DBL-WICH-THI
FDNS	0		2 14WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03578	109.5441	DBL-WICH-THI
FDNS	0		2 19WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.0313	99.3	DBL-WICH-THI
FDNS	09ALL		2 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11252	102.4336	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		2 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08608	100.8351	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		2 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06291	100.7843	DBL-WICH-THI
FDNS	06ALL		2 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03129	164.7545	DBL-WICH-THI
FDNS	6		2 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03158	150.0928	DBL-WICH-THI
FDNS	09ALL		2 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03682	130.6427	DBL-WICH-THI
FDNS	9		2 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03695	127.507	DBL-WICH-THI
FNSL	0		2 19WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03587	126.5274	DBL-WICH-THI
FDNS	0		2 14WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03578	119.7794	DBL-WICH-THI
FDNS	0		2 19WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.0313	110.7446	DBL-WICH-THI
FDNS	0		2 14WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03106	105.8668	DBL-WICH-THI
FDNS	0		2 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.04011	102.5796	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		2 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03741	101.1584	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		2 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.04011	100.6386	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		2 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03741	99.2	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	06ALL		2 14G	G13_035	FROM->TO	SPSSPTTIESB1	620	0.05048	124.0382	BASE CASE
FDNS	0		2 19WP	G13_035	FROM->TO	SPSSPTTIESB1	620	0.07002	120.8545	BASE CASE
FDNS	06ALL		2 14G	G13_035	FROM->TO	SPSSPTTIESC	620	0.05048	124.0382	BASE CASE
FDNS	0		2 19WP	G13_035	FROM->TO	SPSSPTTIESC	620	0.07002	120.8545	BASE CASE
FDNS	06ALL		2 14G	G13_035	FROM->TO	TUCXFR345230	300	0.03836	133.9	BASE CASE
FDNS	0		2 19WP	G13_035	FROM->TO	TUCXFR345230	300	0.03608	105.2	BASE CASE
FDNS	06ALL		3 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03178	156.582	DBL-WICH-THI
FDNS	6		3 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03206	141.6971	DBL-WICH-THI
FNSL	0		3 19WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03185	100.5171	DBL-WICH-THI
FDNS	06ALL		3 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03178	167.066	DBL-WICH-THI
FDNS	6		3 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03206	152.2207	DBL-WICH-THI
FNSL	0		3 19WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03185	111.9375	DBL-WICH-THI
FDNS	0		3 14WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03157	106.9253	DBL-WICH-THI
FDNS	0		3 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03724	101.2189	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		3 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03724	99.2	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FNSL	0		4 19WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03187	100.5106	DBL-WICH-THI
FNSL	0		4 19WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03187	111.9313	DBL-WICH-THI
FDNS	01NR		5 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03681	165.2748	DBL-WICH-THI
FDNS	06ALL		5 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03178	156.582	DBL-WICH-THI
FDNS	00NR		5 19WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03913	148.4452	DBL-WICH-THI
FDNS	00NR		5 14WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.0374	142.892	DBL-WICH-THI
FDNS	6		5 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03206	141.6971	DBL-WICH-THI
FDNS	00NR		5 14SP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03556	123.3252	DBL-WICH-THI
FNSL	0		5 19WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03187	100.5106	DBL-WICH-THI
FDNS	00NR		5 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03234	118.5274	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00NR		5 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03234	115.4809	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00NR		5 14WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03365	102.4035	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00NR		5 14WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03365	101.2458	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00NR		5 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03392	100.7208	DBL-WICH-THI
FDNS	00NR		5 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03392	99.9	DBL-WICH-THI
FDNS	00NR		5 14SP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03554	99.33924	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01NR		5 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.08336	99.1	DBL-THIS-WWR
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08336	144.0245	DBL-THIS-WWR
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07287	134.8485	DBL-WICH-THI
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06498	109.1999	DBL-HTCH-BVR
FDNS	00NR		5 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07149	101.7043	DBL-WICH-THI
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06498	101.4367	DBL-BVR-G133
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06074	101.1896	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06147	99.5	FINNEY SWITCHING STATION - Hitcland Interchange 345KV CKT 1
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05984	99.5	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	00NR		5 19WP	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.09785	99.3	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05988	99.2	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01NR		5 14G	G13_035	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05931	99.2	GENS14806 1-SOONER UNIT 2
FDNS	01NR		5 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03681	175.7056	DBL-WICH-THI
FDNS	06ALL		5 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03178	167.066	DBL-WICH-THI

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	00NR		5 19WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03913	159.6062	DBL-WICH-THI
FDNS	00NR		5 14WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.0374	153.0492	DBL-WICH-THI
FDNS	6		5 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03206	152.2207	DBL-WICH-THI
FDNS	00NR		5 14SP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03556	138.122	DBL-WICH-THI
FNSL	0		5 19WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03187	111.9313	DBL-WICH-THI
FDNS	0		5 14WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03157	106.9253	DBL-WICH-THI
FDNS	00NR		5 19SP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03732	103.5135	DBL-WICH-THI
FDNS	0		5 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03724	101.2189	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		5 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03724	99.2	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		5 14SP	G13_035	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05588	99.1	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		5 19WP	G13_035	FROM->TO	SPSSPTIESB1	620	0.07936	109.9846	BASE CASE
FDNS	00NR		5 19WP	G13_035	FROM->TO	SPSSPTIESC	620	0.07936	109.9846	BASE CASE
FDNS	01NR		6 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03657	164.3855	DBL-WICH-THI
FDNS	00NR		6 19WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03888	147.6227	DBL-WICH-THI
FDNS	00NR		6 14WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03717	142.0729	DBL-WICH-THI
FDNS	00NR		6 14SP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03532	122.6438	DBL-WICH-THI
FDNS	00NR		6 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03147	117.2683	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00NR		6 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03147	114.2758	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00NR		6 14WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03269	100.8641	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00NR		6 14WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03269	99.68924	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00NR		6 19WP	G13_035	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.03285	99.3	DBL-WICH-THI
FDNS	01NR		6 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.09294	111.2034	DBL-THIS-WWR
FDNS	01NR		6 14G	G13_035	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.08131	105.4076	DBL-WICH-THI
FDNS	01NR		6 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03657	174.8123	DBL-WICH-THI
FDNS	00NR		6 19WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03888	158.7771	DBL-WICH-THI
FDNS	00NR		6 14WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03717	152.2253	DBL-WICH-THI
FDNS	00NR		6 14SP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03532	137.4361	DBL-WICH-THI
FDNS	00NR		6 19SP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03707	102.8923	DBL-WICH-THI
FDNS	00NR		6 19WP	G13_035	FROM->TO	SPSSPTIESB1	620	0.07904	109.8507	BASE CASE
FDNS	00NR		6 19WP	G13_035	FROM->TO	SPSSPTIESC	620	0.07904	109.8507	BASE CASE
FDNS	01NR		7 14G	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03657	164.3711	DBL-WICH-THI
FDNS	00NR		7 19WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03888	147.6101	DBL-WICH-THI
FDNS	00NR		7 14WP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03716	142.0595	DBL-WICH-THI
FDNS	00NR		7 14SP	G13_035	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03532	122.6354	DBL-WICH-THI
FDNS	01NR		7 14G	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03657	174.7977	DBL-WICH-THI
FDNS	00NR		7 19WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03888	158.7643	DBL-WICH-THI
FDNS	00NR		7 14WP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03716	152.2119	DBL-WICH-THI
FDNS	00NR		7 14SP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03532	137.4276	DBL-WICH-THI
FDNS	00NR		7 19SP	G13_035	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03707	102.8831	DBL-WICH-THI
FDNS	00NR		7 19WP	G13_035	FROM->TO	SPSSPTIESB1	620	0.07903	109.8402	BASE CASE
FDNS	00NR		7 19WP	G13_035	FROM->TO	SPSSPTIESC	620	0.07903	109.8402	BASE CASE
FDNS	06ALL		0 14G	G14_001	FROM->TO	TUCXFR345230	300	0.04073	110.3	BASE CASE
FDNS	06ALL		2 14G	G14_001	FROM->TO	TUCXFR345230	300	0.04224	133.9	BASE CASE
FDNS	0		2 19WP	G14_001	FROM->TO	TUCXFR345230	300	0.04013	105.2	BASE CASE
FDNS	01NR		0 14G	G14_002	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	191	0.03381	99.4	DBL-WICH-THI
FDNS	01NR		0 14G	G14_002	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03381	184.7319	DBL-WICH-THI
FDNS	00NR		0 19WP	G14_002	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03477	171.8864	DBL-WICH-THI
FDNS	00NR		0 14WP	G14_002	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.0343	165.7839	DBL-WICH-THI
FDNS	00NR		0 14SP	G14_002	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03263	141.902	DBL-WICH-THI
FDNS	00NR		0 19SP	G14_002	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03317	104.7144	DBL-WICH-THI
FDNS	01ALL		0 14G	G14_002	TO->FROM	EL RENO - ROMAN NOSE 138KV CKT 1	153	0.03982	104.1229	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.04172	113.5345	DBL-WICH-THI
FDNS	00NR		0 19WP	G14_002	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.04884	105.2397	DBL-WICH-THI
FDNS	01NR		0 14G	G14_002	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.04631	103.2561	DBL-WICH-THI
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.04188	101.8506	DBL-WICH-THI
FDNS	00NR		0 14SP	G14_002	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.0464	101.7612	DBL-WICH-THI
FDNS	1		0 14G	G14_002	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.04191	99.3	DBL-WICH-THI
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.11095	149.3142	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0692	145.1403	DBL-THIS-WWR
FDNS	01G14_002		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.11104	132.1883	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05409	131.851	DBL-WICH-THI
FDNS	01NR		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.08155	125.8962	DBL-THIS-WWR
FDNS	1		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.11108	123.8936	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0696	123.6552	DBL-THIS-WWR
FDNS	1		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06969	118.7057	DBL-THIS-WWR
FDNS	01NR		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06913	116.3776	DBL-WICH-THI
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05423	116.3222	DBL-HTCH-BVR
FDNS	01G14_002		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05439	114.3113	DBL-WICH-THI
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04897	112.0327	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04896	112.011	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	1		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05446	110.6048	DBL-WICH-THI
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04426	110.4229	DEWEY - TALOGA 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04878	110.2912	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	110.0042	GEN520922 1-SLEEPING BEAR
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05423	109.4252	DBL-BVR-G1334

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04878	109.2945	DEWEY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04683	108.8666	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04154	107.9797	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04713	107.8848	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0448	107.5753	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0448	107.5753	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04232	107.5067	FT SUPPLY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	107.1315	BASE CASE
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04683	106.9333	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04232	106.658	IODINE - MOORELAND 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05423	106.5759	DBL-G1334-WWR
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	106.5561	GEN520997 1-MORLND2
FDNS	00NR		0 19WP	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.08272	106.2985	DBL-THIS-WWR
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04683	105.6755	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	104.3305	GEN515389 1-TLGAWND1 34.500
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04067	104.1795	SPP-SWPS-03
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04069	104.1273	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04069	104.1248	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0413	104.024	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04392	103.9945	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04399	103.8783	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04069	103.7193	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04392	103.3738	SPP-SWPS-05
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04392	103.3443	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04008	103.2043	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04154	103.1232	SPP-AEPW-32
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04262	103.0567	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	103.0302	GEN514805 1-SOONER UNIT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04399	102.9775	SPP-SWPS-04
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04399	102.9193	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04262	102.6188	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04253	102.5417	MOORELAND - TALOGA 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04069	102.4116	SPP-SWPS-02A
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04257	102.184	MINGO - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04156	102.177	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04168	102.1136	SPP-SWPS-01
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04262	102.1102	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	102.0431	GEN514806 1-SOONER UNIT 2
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04354	102.0328	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04154	101.8806	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04268	101.6781	MINGO - RED WILLOW 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04232	101.6723	SPP-MKEC-08
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04354	101.67	CARTER JCT - MOORELAND 69KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04354	101.6694	MOORELAND (MOORELND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04246	101.6372	AXTELL - POST ROCK 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	101.633	GEN521120 1-BUFBEAR2
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04269	101.611	BENTON - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04245	101.4602	HOLCOMB - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04371	101.4553	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04371	101.4553	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 2
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04222	101.3401	FLATRDG3 - HARPER 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	101.318	GEN520947 1-HUGO1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	101.2433	GEN515225 1-MUSKOGEE 5G
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	101.2379	GEN515226 1-MUSKOGEE 6G
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	101.2281	GEN515223 1-MUSKOGEE 4G
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	101.2204	GEN506087 1-G11-007 0.6900
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04231	101.1889	FLATRDG3 - THISTLE4 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04231	101.1885	THISTLE7 345.00 (THISTLE T1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04203	101.1756	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1
FDNS	00NR		0 19WP	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06946	101.1283	DBL-WICH-THI
FDNS	01NR		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0617	99.5	DBL-HTCH-BVR
FDNS	01ALL		0 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03865	99.1	SAND RDG_138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11095	223.4623	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0692	215.0919	DBL-THIS-WWR
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11104	204.9274	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08155	193.0201	DBL-THIS-WWR
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05409	192.1486	DBL-WICH-THI
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11108	189.9648	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0696	188.8479	DBL-THIS-WWR
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06969	179.5262	DBL-THIS-WWR
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06913	175.4379	DBL-WICH-THI
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05439	171.6033	DBL-WICH-THI
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05423	166.1976	DBL-HTCH-BVR
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04713	165.4563	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05446	164.762	DBL-WICH-THI

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11154	162.1943	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.08272	161.8807	DBL-THIS-WWR
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	158.6726	GENS15787 1-OKLA WIND ENERGY CENTER
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04897	157.4364	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04896	157.4	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	156.1601	BASE CASE
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04878	155.4729	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04426	155.2509	DEWEY - TALOGA 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05423	154.1483	DBL-BVR-G1334
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06946	153.9364	DBL-WICH-THI
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04878	153.7454	DEWEY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	152.9057	GENS20922 1-SLEEPING BEAR
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07049	152.6347	DBL-THIS-WWR
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04683	151.8019	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05537	151.7519	DBL-WICH-THI
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04713	151.4218	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04739	151.2577	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04154	150.02	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0448	149.2408	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0448	149.2408	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05423	148.6126	DBL-G1334-WWR
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04683	148.5541	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04232	147.8637	FT SUPPLY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04683	146.4074	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04232	146.2644	IODINE - MOORELAND 138KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0617	145.9761	DBL-HTCH-BVR
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	144.4838	GENS20997 1-MORLND2
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	143.7718	GENS15389 1-TLGAWND1 34.500
FDNS	00G14_002		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.1133	143.5513	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04067	143.1363	SPP-SWPS-03
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04392	143.0163	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0413	142.7913	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04748	142.7668	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04399	142.7406	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04069	142.6656	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04069	142.6613	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	142.4582	DBL-HTCH-BVR
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04069	142.3238	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.049	142.286	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04392	141.9972	SPP-SWPS-05
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04392	141.941	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04154	141.2275	SPP-AEPW-32
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04262	141.2037	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04399	141.1339	SPP-SWPS-04
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04399	141.0396	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	140.9971	GENS14805 1-SOONER UNIT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04253	140.7084	MOORELAND - TALOGA 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	140.6636	BASE CASE
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	140.621	GENS15787 1-OKLA WIND ENERGY CENTER
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.049	140.5419	DEWEY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04008	140.5178	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04262	140.4199	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04925	140.3828	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04924	140.3505	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04257	139.6572	MINGO - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04354	139.5694	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04069	139.5657	SPP-SWPS-02A
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04262	139.4878	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04168	139.4799	SPP-SWPS-01
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04156	139.4335	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	139.2564	GENS14806 1-SOONER UNIT 2
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04154	139.0404	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04354	138.953	CARTER JCT - MOORELAND 69KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04354	138.9516	MOORELAND (MOORELND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04268	138.7255	MINGO - RED WILLOW 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04371	138.7026	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04371	138.7026	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 2
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04232	138.6765	SPP-MKEC-08
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	138.6414	GENS21120 1-BUFBEAR2
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04246	138.6061	AXTELL - POST ROCK 345KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05826	138.5903	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04269	138.5455	BENTON - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04245	138.3378	HOLCOMB - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04222	138.071	FLATRDG3 - HARPER 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	137.9825	GENS20947 1-HUGO1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01G14_002	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04456	137.9519	DEWEY - TALOGA 138KV CKT 1
FDNS	01G14_002	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	137.9407	GEN520997 1-MORLND2
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	137.8681	GEN515225 1-MUSKOGEE 5G
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	137.8586	GEN515226 1-MUSKOGEE 6G
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	137.8412	GEN515223 1-MUSKOGEE 4G
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	137.8385	GEN506087 1-G11-007 0.6900
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04203	137.8118	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04231	137.8051	FLATRDG3 - THISTLE4 138.00 138KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04231	137.8044	THISTLE7 345.00 (THISTLE T1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR	0	14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08107	137.6586	DBL-THIS-WWR
FDNS	01G14_002	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04739	137.1812	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01G14_002	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04176	137.0533	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	6	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11193	136.6198	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR	0	14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.08177	136.3982	DBL-THIS-WWR
FDNS	01G14_002	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04705	136.2972	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	01G14_002	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	136.0896	GEN520922 1-SLEEPING BEAR
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	135.747	NC1_GEN-NEBRASKA CITY 1
FDNS	00NR	0	14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06897	135.5839	DBL-WICH-THI
FDNS	1	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05458	135.3103	DBL-HTCH-BVR
FDNS	01G14_002	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04505	134.5266	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01G14_002	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04505	134.5266	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01NR	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06617	134.5017	DBL-BVR-G1334
FDNS	00NR	0	19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08201	134.3533	DBL-THIS-WWR
FDNS	1	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04907	133.9437	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.7814	MIDLTNT4 138.00 - PECKHAM TAP 138KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.781	NEWKIRK4 - PECKHAM TAP 138KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04167	133.7096	BRANTLEY - MORWOOD 138KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04167	133.7046	MOREWOOD SW - MORWOOD 138KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.692	KILDARE4 - NEWKIRK4 138KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.6747	GEN542962 2-IATAN UNIT #2
FDNS	06ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04178	133.6591	SPP-SWPS-03
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.6489	GEN562074 1-G11_049_3 0.6900
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.6263	GEN524295 1-SPNSPUR_WND10.6900
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04158	133.6155	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.5709	CRESWELL - MIDLTNT4 138.00 138KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04189	133.5581	DELAWARE - NORTHEAST STATION 345KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04176	133.5273	FREEDOM - WEST 69KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.4702	GEN645001 1-FORT CALHOUN 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04171	133.4534	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.4514	GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.4511	GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.4272	GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04158	133.4115	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04094	133.362	WOODWARD - WOODWARD EHV 138KV CKT 2
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04156	133.3342	DOVER - TWIN LAKES 138KV CKT 1
FDNS	1	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	133.3276	GEN515787 1-OKLA WIND ENERGY CENTER
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.2988	GEN562017 1-G11_022_3 0.6900
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.2893	GEN645011 1-NEBRASKA CITY 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.2712	GEN527162 1-MUSTANG GEN #2
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.2711	GEN527161 1-MUSTANG GEN #1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04182	133.2619	CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.2598	GEN560121 1-G08-47 0.5750
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.2559	GEN562432 1-G13-030 0.6900
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03865	133.2365	SAND RDG 138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.2335	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04156	133.2279	DOVER - DOVER SW 138KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04176	133.2271	BUFFALO - WEST 69KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.171	GEN659111 2-LELAND OLDS UNIT2
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.0824	GEN539670 4-JUDSON LARGE GENERATOR
FNSL	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.0282	GEN659103 1-ANTELOPE VALLEY UNIT1
FNSL	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.0282	GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.9283	GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	01G14_002	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04705	132.8562	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04176	132.8264	BUFFEAR2 - BUFFALO 69KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.7915	GEN645012 2-NEBRASKA CITY 2
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.7439	EASTDC - WELSH 345KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.7086	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	1	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	132.7043	GEN520997 1-MORLND2
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.5881	GEN640009 1-COOPER NUCLEAR STATION
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0417	132.5002	LYDIA - VALLIANT 345KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0417	132.4905	SPP-AEPW-01
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04155	132.4376	OPENSKY 345.00 - RANCH 345.00 345KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.4321	GEN526331 1-JONES GEN #1 22 KV
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04155	132.4191	RANCH 345.00 - SOONER 345KV CKT 1
FDNS	01ALL	0	14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.3726	GEN515449 1-CRSDRW11 0.6900

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.3648	GENS27902 1-HOBBS PLANT #2 (CT)
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.343	GENS27901 1-HOBBS PLANT #1 (CT)
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	132.312	BASE CASE
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.2597	GENS15450 1-CRSRDW21 0.6900
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.1995	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.1642	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.0764	GENS26332 1-JONES GEN #2 21 KV
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.018	GENS26334 1-JONES_4 116.500
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	131.991	GENS62443 1-G13-034 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04907	131.9406	DEWEY - IODINE 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04934	131.8635	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04933	131.8332	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	131.8276	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	131.7245	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04155	131.6384	OPENSKY 345.00 - ROSE HILL 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04081	131.4425	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03952	131.4178	SANDY_CN 138138.00 - WAKITA 138 138.00 138KV CKT 1
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06884	131.4088	DBL-WICH-THI
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04257	131.2187	FT SUPPLY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	131.1542	GENS62472 1-G13_035_3 0.6900
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	130.9532	GENS62078 1-G11_051_3 0.6900
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	130.8753	GENS23971 1-HARRINGTON GEN #1 24 KV
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	130.875	GENS23972 1-HARRINGTON GEN #2 24 KV
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	130.862	GENS23973 1-HARRINGTON GEN #3 24 KV
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	130.8602	GENS27903 1-HOBBS PLANT #3 (ST)
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	130.7765	DBL-BVR-G1334
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04705	130.7324	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0409	130.596	SPP-SWPS-03
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	130.4725	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04091	130.2766	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04091	130.2716	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04466	130.0824	DEWEY - TALOGA 138KV CKT 1
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0617	129.9578	DBL-G1334-WWR
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04153	129.849	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04091	129.7656	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04257	129.6492	IODINE - MOORELAND 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04184	129.5896	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	129.5672	GEN659118 1-LARAMIE RIVER UNIT1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	129.1188	GENS60648 1-G0721_G1402 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	128.9535	GENS20922 1-SLEEPING BEAR
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	128.9299	GENS15389 1-TLGAWND1 34.500
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04748	128.7757	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04072	128.591	EL RENO - ROMAN NOSE 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04032	128.4023	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04422	128.3663	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	128.3103	GENS25561 1-TOLK GEN #1 24 KV
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04713	128.3019	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04176	128.2988	SPP-AEPW-32
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04072	128.213	ROMAN NOSE - SOUTHARD 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04418	127.9072	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	127.7518	GENS25562 1-TOLK GEN #2 24 KV
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	127.7303	GENS14805 1-SOONER UNIT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	127.4905	GENS31447 1-HOLCOMB GENERATOR
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04072	127.3763	DEWEY - SOUTHARD 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	127.2913	GENS15397 1-OUSPR1 34.500
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04091	127.1614	SPP-SWPS-02A
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04288	127.1491	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	00NR		0 14WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05772	127.0856	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04422	126.7894	SPP-SWPS-04
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04514	126.7245	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04514	126.7245	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04422	126.6592	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04418	126.5491	SPP-SWPS-05
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04418	126.4951	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	6		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05579	126.418	DBL-WICH-THI
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0419	126.3936	SPP-SWPS-01
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04288	126.3599	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	126.3239	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	126.2768	DBL-G1334-WWR
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06935	126.162	DBL-WICH-THI
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	126.1289	GENS60175 1-G0744_G1403 0.6900
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04176	126.0353	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04081	125.9884	VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03891	125.9633	RENFROW4 138.00 - SAND RDG 138138.00 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	125.9207	GENS14806 1-SOONER UNIT 2

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	125.6416	SPP-SWPS-02A
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0549	125.6239	FLATRDG3 - HARPER 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03952	125.5501	BYRON 138 138.00 - SANDY_CN 138138.00 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04283	125.5261	MINGO - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03741	125.5087	WOODWARD - WOODWARD EHV 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04288	125.4517	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0438	125.1813	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04257	125.0099	SPP-MKEC-08
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	124.8935	GEN521120 1-BUFBEAR2
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04713	124.8463	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04293	124.8221	BENTON - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	124.8186	GEN560221 1-G07-62-1 0.6900
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	124.8186	GEN560222 1-G07-62-2 0.6900
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	124.8186	GEN560223 1-G07-62-3 0.6900
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	124.8186	GEN560224 1-G07-62-4 0.6900
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04272	124.7764	AXTELL - POST ROCK 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	124.6326	GEN520947 1-HUGO1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04286	124.5845	MOORELAND - TALOGA 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0438	124.5604	CARTER JCT - MOORELAND 69KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0438	124.5584	MOORELAND (MOORELAND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04295	124.5287	MINGO - RED WILLOW 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04246	124.4766	FLATRDG3 - HARPER 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	124.4685	GEN515225 1-MUSKOGEE 5G
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04888	124.4625	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	124.4585	GEN515226 1-MUSKOGEE 6G
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03927	124.4581	MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03952	124.4457	BYRON 138 138.00 - C_CITY 138 138.00 138KV CKT 1
FDNS	6		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04321	124.4414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	124.4405	GEN515223 1-MUSKOGEE 4G
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0427	124.3715	HOLCOMB - SETAB 345KV CKT 1
FDNS	00NR		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05847	124.1449	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04266	123.9205	FT SUPPLY - IODINE 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05458	123.9059	DBL-BVR-G1334
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03952	123.8493	C_CITY 138 138.00 - KNOBHILL 138KV CKT 1
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05935	123.7749	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03943	123.6142	DOVER SW - OKEENE 138KV CKT 1
FDNS	6		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07104	123.5519	DBL-THIS-WWR
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04098	123.3967	SPP-SWPS-03
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04099	123.0196	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04099	123.0139	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04713	122.7373	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04162	122.6281	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04099	122.5638	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04266	122.3559	IODINE - MOORELAND 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	122.2762	NC1_GEN-NEBRASKA CITY 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	121.4255	GEN515389 1-TLGAWND1 34.500
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04041	121.3965	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05027	121.29	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	120.9507	GEN515393 1-0GEWND2G
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04184	120.9471	SPP-AEPW-32
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03927	120.9326	ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	00G14_002		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.04381	120.8952	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04431	120.8629	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04358	120.801	GEN520997 1-MORLND2
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	120.7824	GEN515365 1-CENT 21 34.500
FDNS	01NR		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.6859	EASTDC - WELSH 345KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	120.4528	GEN514805 1-SOONER UNIT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	120.3378	BRANTLEY - MORWOOD 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	120.3329	MOREWOOD SW - MORWOOD 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04212	120.3071	DELAWARE - NORTHEAST STATION 345KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	120.1767	STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04183	120.1656	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	120.156	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	120.1477	SPP-SWPS-02
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	120.1288	GEN645001 1-FORT CALHOUN 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04427	120.1263	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.042	120.1153	BUFFALO - WEST 69KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04267	120.0944	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	120.0669	GEN562017 1-G11_022_3 0.6900
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	120.0452	GEN542962 2-IATAN UNIT #2
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04118	120.0447	WOODWARD - WOODWARD EHV 138KV CKT 2
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04182	120.0414	DOVER - TWIN LAKES 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	120.0091	GEN560121 1-G08-47 0.5750
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	120.0074	GEN562432 1-G13-030 0.6900
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04196	120.0021	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04099	119.9969	SPP-SWPS-02A
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.9796	GEN527161 1-MUSTANG GEN #1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.9796	GEN527162 1-MUSTANG GEN #2
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04182	119.9368	DOVER - DOVER SW 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.9322	GEN645011 1-NEBRASKA CITY 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04183	119.9259	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04095	119.9187	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.8926	GEN659111 2-LELAND OLDS UNIT2
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.8041	GEN539670 4-JUDSON LARGE GENERATOR
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.7524	GEN659103 1-ANTELOPE VALLEY UNIT1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.7524	GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.7393	GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.739	GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.042	119.7322	BUFBEAR2 - BUFFALO 69KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.7175	GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04207	119.698	CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04297	119.6531	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.6234	GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04175	119.6002	OPENSKY 345.00 - RANCH 345.00 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04175	119.5846	RANCH 345.00 - SOONER 345KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05027	119.5692	DEWEY - IODINE 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.5587	EASTDC - WELSH 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.5533	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05458	119.5251	DBL-G1334-WWR
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.474	GEN562443 1-G13-034 0.6900
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.417	GEN645012 2-NEBRASKA CITY 2
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04193	119.3997	LYDIA - VALLIANT 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.3965	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04193	119.3916	SPP-AEPW-01
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	119.2924	GEN562023 1-G11_020_3 0.6900
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	119.2924	GEN562026 1-G11_019_3 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04431	119.2901	SPP-SWPS-04
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.2436	GEN515449 1-CRSRDW11 0.6900
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.1781	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03978	119.1702	SANDY_CN 138138.00 - WAKITA 138 138.00 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.1701	GEN515450 1-CRSRDW21 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04431	119.1697	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.165	GEN640009 1-COOPER NUCLEAR STATION
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.1564	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04189	119.1054	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.0886	GEN526331 1-JONES GEN #1 22 KV
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04198	119.0605	SPP-SWPS-01
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03796	118.9235	IMO TAP - MEN TAP 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04297	118.8882	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	118.8262	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04427	118.8145	SPP-SWPS-05
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	118.8087	GEN526334 1-JONES_4 116.500
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.039	118.8024	RENFROW4 138.00 - SAND RDG 138138.00 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	118.7903	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04427	118.7619	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04175	118.7458	OPENSKY 345.00 - ROSE HILL 345KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04184	118.7219	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	118.7162	GEN526332 1-JONES GEN #2 21 KV
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	118.6398	GEN514806 1-SOONER UNIT 2
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03796	118.1896	CLEO CORNER - MEN TAP 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04292	118.0897	MINGO - SETAB 345KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04297	118.0356	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	117.9976	GEN562472 1-G13_035_3 0.6900
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	117.8637	GEN562078 1-G11_051_3 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04265	117.6872	SPP-MKEC-08
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	117.6788	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04389	117.6771	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	117.6704	GEN521120 1-BUFBEAR2
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	117.5264	GEN523971 1-HARRINGTON GEN #1 24 KV
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	117.5262	GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	117.5127	GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04301	117.4788	BENTON - WICHITA 345KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04281	117.4262	AXTELL - POST ROCK 345KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	117.3752	GEN520947 1-HUGO1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	117.2391	GEN515225 1-MUSKOGEE 5G
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	117.2291	GEN515226 1-MUSKOGEE 6G
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	117.2104	GEN515223 1-MUSKOGEE 4G
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04255	117.1766	FLATRDG3 - HARPER 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04304	117.0838	MINGO - RED WILLOW 345KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04389	117.0609	CARTER JCT - MOORELAND 69KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04389	117.0596	MOORELAND (MOORELND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04297	116.9882	MOORELAND - TALOGA 138KV CKT 1
FNSL	00G14_002		0 14WPP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.11359	116.8628	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	116.316	GEN659118 1-LARAMIE RIVER UNIT1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	116.0947	GEN560648 1-G0721_G1402 0.6900
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04099	115.8763	EL RENO - ROMAN NOSE 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	115.799	GEN515397 1-OUSPR1 34.500
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04099	115.4921	ROMAN NOSE - SOUTHARD 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	115.0164	NC1_GEN-NEBRASKA CITY 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04099	114.663	DEWEY - SOUTHARD 138KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04358	114.658	GEN520998 1-MORLND3
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	114.6255	GEN525561 1-TOLK GEN #1 24 KV
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03845	114.5576	CEDARDALE - OKEENE 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	114.3399	GEN531447 1-HOLCOMB GENERATOR
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04095	114.085	VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	114.0763	GEN560221 1-G07-62-1 0.6900
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	114.0763	GEN560222 1-G07-62-2 0.6900
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	114.0763	GEN560223 1-G07-62-3 0.6900
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	114.0763	GEN560224 1-G07-62-4 0.6900
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	113.9396	GEN525562 1-TOLK GEN #2 24 KV
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03845	113.8594	CEDARDALE - MOORELAND 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03978	113.5886	BYRON_138 138.00 - SANDY_CN 138138.00 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04101	113.0285	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	112.9325	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.9084	GEN645001 1-FORT CALHOUN 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	112.8666	GEN560175 1-G0744_G1403 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.8665	GEN562017 1-G11_022_3 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04209	112.8652	BUFFALO - WEST 69KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.043	112.8643	CIMARRON - MATHWSN7 345.00 345KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.8282	GEN542962 2-IATAN UNIT #2
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04191	112.8211	DOVER - TWIN LAKES 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.8138	GEN560121 1-G08-47 0.5750
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.8038	GEN562432 1-G13-030 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04205	112.7603	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	112.7247	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04191	112.7153	DOVER - DOVER SW 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.7129	GEN645011 1-NEBRASKA CITY 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.699	GEN659111 2-LELAND OLDS UNIT2
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.6361	GEN515449 1-CRSRDW11 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.6096	GEN539670 4-JUDSON LARGE GENERATOR
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.586	GEN515450 1-CRSRDW21 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.5606	GEN659103 1-ANTELOPE VALLEY UNIT1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.5606	GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04183	112.5155	OPENSKY 345.00 - RANCH 345.00 345KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.5044	GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.5041	GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04183	112.5005	RANCH 345.00 - SOONER 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03746	112.4988	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04209	112.4836	BUFBEAR2 - BUFFALO 69KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.4834	GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.4818	GEN527161 1-MUSTANG GEN #1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.4818	GEN527162 1-MUSTANG GEN #2
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04216	112.4776	CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03978	112.4386	BYRON_138 138.00 - C_CITY_138 138.00 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03956	112.3706	MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.3378	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.2778	GEN562443 1-G13-034 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04201	112.263	LYDIA - VALLIANT 345KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04201	112.2555	SPP-AEPW-01
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.2001	GEN645012 2-NEBRASKA CITY 2
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03987	112.1661	SANDY_CN_138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.1272	GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.1146	EASTDC - WELSH 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03763	112.0532	WOODWARD - WOODWARD EHV 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.9423	GEN640009 1-COOPER NUCLEAR STATION
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.9024	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03978	111.8555	C_CITY_138 138.00 - KNOBHILL 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03813	111.8303	KNOBHILL - MOORELAND 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03746	111.7686	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.7136	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.6922	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04183	111.6589	OPENSKY 345.00 - ROSE HILL 345KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.6147	GEN526331 1-JONES GEN #1 22 KV
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.5613	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.5256	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03972	111.4783	DOVER SW - OKEENE 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.4321	GEN562472 1-G13_035_3 0.6900
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04888	111.4018	WOODWARD - WOODWARD 69KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.3511	GEN526334 1-JONES_4 116.500
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.2922	GEN562078 1-G11_051_3 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.2223	GEN526332 1-JONES GEN #2 21 KV
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04542	110.9288	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	110.7502	GEN515393 1-OGEWND2G
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	110.7488	GEN515365 1-CENT 21 34.500
FDNS	00G14_002		0 14SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11233	110.4798	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04358	110.3358	BASE CASE
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05054	110.2427	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	110.2419	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05052	110.2174	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	110.0659	GEN523971 1-HARRINGTON GEN #1 24 KV
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	110.0657	GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	110.0523	GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05551	109.9866	FLATRDG3 - HARPER 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	109.974	GEN560648 1-G0721_G1402 0.6900
FDNS	6		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04321	109.6325	SPP-AEPW-32
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04542	109.4731	SPP-SWPS-05
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04542	109.4022	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	109.3157	GEN562023 1-G11_020_3 0.6900
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	109.3157	GEN562026 1-G11_019_3 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	108.8662	GEN659118 1-LARAMIE RIVER UNIT1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04637	108.7663	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04637	108.7663	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04108	108.7034	EL RENO - ROMAN NOSE 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03956	108.6495	ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04108	108.3176	ROMAN NOSE - SOUTHARD 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	108.3089	GEN515397 1-OUSPR1 34.500
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	107.6586	GEN560175 1-G0744_G1403 0.6900
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03826	107.6422	IMO TAP - MEN TAP 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04108	107.4818	DEWEY - SOUTHARD 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	107.4363	GEN525561 1-TOLK GEN #1 24 KV
FDNS	6		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04384	107.2946	GEN520997 1-MORLND2
FDNS	6		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04321	107.2924	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	6		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04917	107.203	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04101	107.1705	VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	6		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04335	107.1407	SPP-SWPS-01
FDNS	6		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	107.1286	SPP-SWPS-03
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	106.921	GEN531447 1-HOLCOMB GENERATOR
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03826	106.9056	CLEO CORNER - MEN TAP 138KV CKT 1
FNSL	00G14_002		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07188	106.8113	DBL-THIS-WWR
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	106.6926	GEN525562 1-TOLK GEN #2 24 KV
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	106.6725	GEN560221 1-G07-62-1 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	106.6725	GEN560222 1-G07-62-2 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	106.6725	GEN560223 1-G07-62-3 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	106.6725	GEN560224 1-G07-62-4 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03987	106.6058	BYRON_138 138.00 - SANDY_CN_138138.00 138KV CKT 1
FDNS	6		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04219	106.471	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	6		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04219	106.4444	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03628	105.7011	MOREWOOD SW - NINE MILE 138KV CKT 1
FDNS	6		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04219	105.6388	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03987	105.463	BYRON_138 138.00 - C_CITY_138 138.00 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03965	105.385	MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0377	105.3293	WOODWARD - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03628	105.3146	MOORELAND - NINE MILE 138KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.9492	EASTDC - WELSH 345KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03987	104.8604	C_CITY_138 138.00 - KNOBHILL 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03981	104.5341	DOVER SW - OKEENE 138KV CKT 1
FDNS	00G14_002		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11346	103.9553	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00G14_002		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.04381	103.9331	SPP-AEPW-32
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04187	103.8313	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	103.5893	GEN515393 1-OGEWND2G
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	103.5795	GEN515365 1-CENT 21 34.500
FDNS	6		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05057	103.0847	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03876	102.9611	CEDARDALE - OKEENE 138KV CKT 1
FDNS	6		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04219	102.9047	SPP-SWPS-02A
FDNS	09ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11252	102.4336	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03876	102.2805	CEDARDALE - MOORELAND 138KV CKT 1
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	102.1768	GEN562023 1-G11_020_3 0.6900
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	102.1768	GEN562026 1-G11_019_3 0.6900
FDNS	00G14_002		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.04395	101.8331	SPP-SWPS-01
FDNS	00G14_002		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.04381	101.6636	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03965	101.6465	ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04059	101.4841	RENFROW4 138.00 - SAND RDG 138138.00 138KV CKT 1
FDNS	6		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05057	101.368	DEWEY - IODINE 138KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04429	101.1828	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03776	101.1783	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1
FDNS	00NR		0 24SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.13507	101.0359	DBL-TGA-MATT
FDNS	6		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04384	101.0006	GENS20998 1-MORLND3
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03836	100.753	IMO TAP - MEN TAP 138KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04358	100.7424	GENS14805 1-SOONER UNIT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03776	100.4487	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04429	100.317	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03841	100.2958	KNOBHILL - MOORELAND 138KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04358	100.2311	GENS15787 1-OKLA WIND ENERGY CENTER
FDNS	1		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03836	100	CLEO CORNER - MEN TAP 138KV CKT 1
FNSL	00G14_002		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05609	99.9	DBL-WICH-THI
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04424	99.9	MINGO - SETAB 345KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04325	99.8	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04358	99.6	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	99.5	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05845	99.4	SPP-SWPS-02
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05845	99.4	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05845	99.4	STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04429	99.3	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04358	99.3	GENS20922 1-SLEEPING BEAR
FDNS	00NR		0 19SP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05713	99.2	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	00NR		0 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	99.1	GENS62483 1-G13_027_3 0.6900
FDNS	06ALL		0 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04358	99.1	GENS14806 1-SOONER UNIT 2
FDNS	01ALL		0 14G	G14_002	TO->FROM	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	124	0.03353	113.7639	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01G14_002		0 14G	G14_002	TO->FROM	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	124	0.03332	102.056	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19SP	G14_002	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.03024	103.5969	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01NR		0 14G	G14_002	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03381	195.1119	DBL-WICH-THI
FDNS	00NR		0 19WP	G14_002	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03477	183.0286	DBL-WICH-THI
FDNS	00NR		0 14WP	G14_002	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.0343	175.9168	DBL-WICH-THI
FDNS	00NR		0 14SP	G14_002	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03263	156.6064	DBL-WICH-THI
FDNS	00NR		0 19SP	G14_002	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03317	119.3712	DBL-WICH-THI
FDNS	00NR		0 19WP	G14_002	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03013	99.5	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	0.58125	115.9426	DBL-THIS-WWR
FDNS	01ALL		0 14G	G14_002	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	0.53652	105.3843	DBL-WICH-THI
FDNS	01G14_002		0 14G	G14_002	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	0.58044	103.447	DBL-THIS-WWR
FDNS	01NR		0 14G	G14_002	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	0.65001	101.9159	DBL-THIS-WWR
FDNS	00G14_002		0 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05356	109.8091	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00G14_002		0 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05356	108.0379	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00G14_002		0 14WP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.04921	103.5377	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		0 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05342	102.5796	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00G14_002		0 14WP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.04921	102.172	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		0 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05342	100.6386	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05151	100.4665	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00G14_002		0 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05174	100.3708	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_002	TO->FROM	ROMAN NOSE - SOUTHARD 138KV CKT 1	153	0.03982	107.5531	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 14WP	G14_002	FROM->TO	SPSSPTIESB	620	0.03492	114.034	BASE CASE
FDNS	06ALL		0 14G	G14_002	FROM->TO	SPSSPTIESB1	620	0.03171	159.545	BASE CASE
FDNS	00NR		0 19WP	G14_002	FROM->TO	SPSSPTIESB1	620	0.10088	153.8462	BASE CASE
FDNS	00G14_002		0 19WP	G14_002	FROM->TO	SPSSPTIESB1	620	0.03998	130.2609	BASE CASE
FDNS	6		0 14G	G14_002	FROM->TO	SPSSPTIESB1	620	0.03619	122.922	BASE CASE
FDNS	0		0 19WP	G14_002	FROM->TO	SPSSPTIESB1	620	0.04012	120.8545	BASE CASE
FDNS	00NR		0 14WP	G14_002	FROM->TO	SPSSPTIESB1	620	0.10586	106.8303	BASE CASE
FDNS	06ALL		0 14G	G14_002	FROM->TO	SPSSPTIESC	620	0.03171	159.545	BASE CASE
FDNS	00NR		0 19WP	G14_002	FROM->TO	SPSSPTIESC	620	0.10088	153.8462	BASE CASE
FDNS	00G14_002		0 19WP	G14_002	FROM->TO	SPSSPTIESC	620	0.03998	130.2609	BASE CASE
FDNS	6		0 14G	G14_002	FROM->TO	SPSSPTIESC	620	0.03619	122.922	BASE CASE
FDNS	0		0 19WP	G14_002	FROM->TO	SPSSPTIESC	620	0.04012	120.8545	BASE CASE
FDNS	00NR		0 14WP	G14_002	FROM->TO	SPSSPTIESC	620	0.10586	106.8303	BASE CASE
FDNS	00NR		0 14WP	G14_002	FROM->TO	SPSSPTIESC1	620	0.03492	114.034	BASE CASE
FDNS	06ALL		0 14G	G14_002	FROM->TO	TUCXFR345230	300	0.04211	110.3	BASE CASE
FDNS	00NR		0 19WP	G14_002	TO->FROM	WOODWARD - WOODWARD EHV 138KV CKT 1	287	0.06933	99.4	DBL-THIS-WWR
FDNS	09ALL		2 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11252	102.4336	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		2 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08608	100.8351	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		2 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04565	100.7843	DBL-WICH-THI
FDNS	0		2 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05342	102.5796	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		2 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05161	101.1584	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		2 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05342	100.6386	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		2 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05161	99.2	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		2 19WP	G14_002	FROM->TO	SPSSPTIESB1	620	0.04012	120.8545	BASE CASE
FDNS	0		2 19WP	G14_002	FROM->TO	SPSSPTIESC	620	0.04012	120.8545	BASE CASE
FDNS	06ALL		2 14G	G14_002	FROM->TO	TUCXFR345230	300	0.0422	133.9	BASE CASE

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	0		2 19WP	G14_002	FROM->TO	TUCXFR345230	300	0.03998	105.2		BASE CASE
FDNS	0		3 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05148	101.2189		NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		3 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05148	99.2		NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		5 19WP	G14_002	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03078	148.4452		DBL-WICH-THI
FDNS	01NR		5 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06394	99.1		DBL-THIS-WWR
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06394	144.0245		DBL-THIS-WWR
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05562	134.8485		DBL-WICH-THI
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04937	109.1999		DBL-HTCH-BVR
FDNS	00NR		5 19WP	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05458	101.7043		DBL-WICH-THI
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04937	101.4367		DBL-BVR-G133
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04606	101.1896		LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04672	99.5		FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04537	99.5		POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04544	99.2		G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01NR		5 14G	G14_002	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04498	99.2		GENS14806 1-SOONER UNIT 2
FDNS	00NR		5 19WP	G14_002	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03078	159.6062		DBL-WICH-THI
FDNS	0		5 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05148	101.2189		NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		5 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05148	99.2		NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		5 14SP	G14_002	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	0.0696	99.1		NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		5 19WP	G14_002	FROM->TO	SPSSPTIESB1	620	0.06149	109.9846		BASE CASE
FDNS	00NR		5 19WP	G14_002	FROM->TO	SPSSPTIESC	620	0.06149	109.9846		BASE CASE
FDNS	00NR		6 19WP	G14_002	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03059	147.6227		DBL-WICH-THI
FDNS	01NR		6 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.07123	111.2034		DBL-THIS-WWR
FDNS	01NR		6 14G	G14_002	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06201	105.4076		DBL-WICH-THI
FDNS	00NR		6 19WP	G14_002	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03059	158.7771		DBL-WICH-THI
FDNS	00NR		6 19WP	G14_002	FROM->TO	SPSSPTIESB1	620	0.06124	109.8507		BASE CASE
FDNS	00NR		6 19WP	G14_002	FROM->TO	SPSSPTIESC	620	0.06124	109.8507		BASE CASE
FDNS	00NR		7 19WP	G14_002	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03058	147.6101		DBL-WICH-THI
FDNS	00NR		7 19WP	G14_002	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03058	158.7643		DBL-WICH-THI
FDNS	00NR		7 19WP	G14_002	FROM->TO	SPSSPTIESB1	620	0.06124	109.8402		BASE CASE
FDNS	00NR		7 19WP	G14_002	FROM->TO	SPSSPTIESC	620	0.06124	109.8402		BASE CASE
FDNS	01NR		0 14G	G14_003	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	191	0.03381	99.4		DBL-WICH-THI
FDNS	01NR		0 14G	G14_003	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03381	184.7319		DBL-WICH-THI
FDNS	00NR		0 19WP	G14_003	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03477	171.8864		DBL-WICH-THI
FDNS	00NR		0 14WP	G14_003	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.0343	165.7839		DBL-WICH-THI
FDNS	00NR		0 14SP	G14_003	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03263	141.902		DBL-WICH-THI
FDNS	00NR		0 19SP	G14_003	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03317	104.7144		DBL-WICH-THI
FDNS	01ALL		0 14G	G14_003	TO->FROM	EL RENO - ROMAN NOSE 138KV CKT 1	153	0.03982	104.1229		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.04172	113.5345		DBL-WICH-THI
FDNS	00NR		0 19WP	G14_003	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.04884	105.2397		DBL-WICH-THI
FDNS	01NR		0 14G	G14_003	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.04631	103.2561		DBL-WICH-THI
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.04188	101.8506		DBL-WICH-THI
FDNS	00NR		0 14SP	G14_003	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.0464	101.7612		DBL-WICH-THI
FDNS	1		0 14G	G14_003	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.04191	99.3		DBL-WICH-THI
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.11095	149.3142		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0692	145.1403		DBL-THIS-WWR
FDNS	01G14_003		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.11104	132.1883		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05409	131.851		DBL-WICH-THI
FDNS	01NR		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.08155	125.8962		DBL-THIS-WWR
FDNS	1		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.11108	123.8936		NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0696	123.6552		DBL-THIS-WWR
FDNS	1		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06969	118.7057		DBL-THIS-WWR
FDNS	01NR		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06913	116.3776		DBL-WICH-THI
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05423	116.3222		DBL-HTCH-BVR
FDNS	01G14_003		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05439	114.3113		DBL-WICH-THI
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04897	112.0327		THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04896	112.011		THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	1		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05446	110.6048		DBL-WICH-THI
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04426	110.4229		DEWEY - TALOGA 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04878	110.2912		IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	110.0042		GENS20922 1-SLEEPING BEAR
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05423	109.4252		DBL-BVR-G1334
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04878	109.2945		DEWEY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04683	108.8666		G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04154	107.9797		LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04713	107.8848		WOODWARD - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0448	107.5753		THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0448	107.5753		THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04232	107.5067		FT SUPPLY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	107.1315		BASE CASE
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04683	106.9333		BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04232	106.658		IODINE - MOORELAND 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05423	106.5759		DBL-G1334-WWR
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	106.5561		GENS20997 1-MORLND2
FDNS	00NR		0 19WP	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.08272	106.2985		DBL-THIS-WWR

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04683	105.6755	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	104.3305	GEN515389 1-TLGAWND1 34.500
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04067	104.1795	SPP-SWPS-03
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04069	104.1273	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04069	104.1248	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0413	104.024	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04392	103.9945	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04399	103.8783	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04069	103.7193	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04392	103.3738	SPP-SWPS-05
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04392	103.3443	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04008	103.2043	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04154	103.1232	SPP-AEPW-32
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04262	103.0567	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	103.0302	GEN514805 1-SOONER UNIT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04399	102.9775	SPP-SWPS-04
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04399	102.9193	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04262	102.6188	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04253	102.5417	MOORELAND - TALOGA 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04069	102.4116	SPP-SWPS-02A
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04257	102.184	MINGO - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04156	102.177	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04168	102.1136	SPP-SWPS-01
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04262	102.1102	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	102.0431	GEN514806 1-SOONER UNIT 2
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04354	102.0328	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04154	101.8806	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04268	101.6781	MINGO - RED WILLOW 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04232	101.6723	SPP-MKEC-08
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04354	101.67	CARTER JCT - MOORELAND 69KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04354	101.6694	MOORELAND (MOORELND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04246	101.6372	AXTELL - POST ROCK 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	101.633	GEN521120 1-BUFBEAR2
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04269	101.611	BENTON - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04245	101.4602	HOLCOMB - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04371	101.4553	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04371	101.4553	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 2
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04222	101.3401	FLATRDG3 - HARPER 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	101.318	GEN520947 1-HUGO1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	101.2433	GEN515225 1-MUSKOGEE 5G
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	101.2379	GEN515226 1-MUSKOGEE 6G
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	101.2281	GEN515223 1-MUSKOGEE 4G
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04192	101.2204	GEN506087 1-G11-007 0.6900
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04231	101.1889	FLATRDG3 - THISTLE4 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04231	101.1885	THISTLE7 345.00 (THISTLE T1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04203	101.1756	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1
FDNS	00NR		0 19WP	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06946	101.1283	DBL-WICH-THI
FDNS	01NR		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0617	99.5	DBL-HTCH-BVR
FDNS	01ALL		0 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03865	99.1	SAND RDG_138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11095	223.4623	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0692	215.0919	DBL-THIS-WWR
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11104	204.9274	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08155	193.0201	DBL-THIS-WWR
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05409	192.1486	DBL-WICH-THI
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11108	189.9648	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0696	188.8479	DBL-THIS-WWR
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06969	179.5262	DBL-THIS-WWR
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06913	175.4379	DBL-WICH-THI
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05439	171.6033	DBL-WICH-THI
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05423	166.1976	DBL-HTCH-BVR
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04713	165.4563	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05446	164.762	DBL-WICH-THI
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11154	162.1943	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.08272	161.8807	DBL-THIS-WWR
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	158.6726	GEN515787 1-OKLA WIND ENERGY CENTER
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04897	157.4364	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04896	157.4	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	156.1601	BASE CASE
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04878	155.4729	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04426	155.2509	DEWEY - TALOGA 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05423	154.1483	DBL-BVR-G1334
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06946	153.9364	DBL-WICH-THI
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04878	153.7454	DEWEY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	152.9057	GEN520922 1-SLEEPING BEAR
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07049	152.6347	DBL-THIS-WWR

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04683	151.8019	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05537	151.7519	DBL-WICH-THI
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04713	151.4218	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04739	151.2577	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04154	150.02	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0448	149.2408	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0448	149.2408	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05423	148.6126	DBL-G1334-WWR
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04683	148.5541	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04232	147.8637	FT SUPPLY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04683	146.4074	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04232	146.2644	IODINE - MOORELAND 138KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0617	145.9761	DBL-HTCH-BVR
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	144.4838	GENS20997 1-MORLND2
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	143.7718	GENS15389 1-TLGAWND1 34.500
FDNS	00G14_003		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.1133	143.5513	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04067	143.1363	SPP-SWPS-03
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04392	143.0163	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0413	142.7913	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04748	142.7668	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04399	142.7406	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04069	142.6656	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04069	142.6613	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	142.4582	DBL-HTCH-BVR
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04069	142.3238	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.049	142.286	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04392	141.9972	SPP-SWPS-05
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04392	141.941	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04154	141.2275	SPP-AEPW-32
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04262	141.2037	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04399	141.1339	SPP-SWPS-04
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04399	141.0396	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	140.9971	GENS14805 1-SOONER UNIT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04253	140.7084	MOORELAND - TALOGA 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	140.6636	BASE CASE
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	140.621	GENS15787 1-OKLA WIND ENERGY CENTER
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.049	140.5419	DEWEY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04008	140.5178	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04262	140.4199	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04925	140.3828	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04924	140.3505	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04257	139.6572	MINGO - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04354	139.5694	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04069	139.5657	SPP-SWPS-02A
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04262	139.4878	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04168	139.4799	SPP-SWPS-01
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04156	139.4335	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	139.2564	GENS14806 1-SOONER UNIT 2
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04154	139.0404	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04354	138.953	CARTER JCT - MOORELAND 69KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04354	138.9516	MOORELAND (MOORELND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04268	138.7255	MINGO - RED WILLOW 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04371	138.7026	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04371	138.7026	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 2
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04232	138.6765	SPP-MKEC-08
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	138.6414	GENS21120 1-BUFBEAR2
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04246	138.6061	AXTELL - POST ROCK 345KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05826	138.5903	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04269	138.5455	BENTON - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04245	138.3378	HOLCOMB - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04222	138.071	FLATRDG3 - HARPER 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	137.9825	GENS20947 1-HUGO1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04456	137.9519	DEWEY - TALOGA 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	137.9407	GENS20997 1-MORLND2
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	137.8681	GENS15225 1-MUSKOGEE 5G
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	137.8586	GENS15226 1-MUSKOGEE 6G
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	137.8412	GENS15223 1-MUSKOGEE 4G
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	137.8385	GENS60687 1-G11-007 0.6900
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04203	137.8118	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04231	137.8051	FLATRDG3 - THISTLE4 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04231	137.8044	THISTLE7 345.00 (THISTLE T1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08107	137.6586	DBL-THIS-WWR
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04739	137.1812	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04176	137.0533	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	6		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11193	136.6198	NORTHWEST - TATONGA7 345.00 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.08177	136.3982	DBL-THIS-WWR
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04705	136.2972	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	136.0896	GENS20922 1-SLEEPING BEAR
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	135.747	NC1_GEN-NEBRASKA CITY 1
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06897	135.5839	DBL-WICH-THI
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05458	135.3103	DBL-HTCH-BVR
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04505	134.5266	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04505	134.5266	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06117	134.5017	DBL-BVR-G1334
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08201	134.3533	DBL-THIS-WWR
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04907	133.9437	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.7814	MIDLNT4 138.00 - PECKHAM TAP 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.781	NEWKIRK4 - PECKHAM TAP 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04167	133.7096	BRANTLEY - MORWOOD 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04167	133.7046	MOREWOOD SW - MORWOOD 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.692	KILDARE4 - NEWKIRK4 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.6747	GENS42962 2-IATAN UNIT #2
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04178	133.6591	SPP-SWPS-03
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.6489	GENS62074 1-G11_049_3 0.6900
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.6263	GENS24295 1-SPNSPUR_WND10.6900
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04158	133.6155	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.5709	CRESWELL - MIDLNT4 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04189	133.5581	DELAWARE - NORTHEAST STATION 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04176	133.5273	FREEDOM - WEST 69KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.4702	GEN645001 1-FORT CALHOUN 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04171	133.4534	KNOBHILL (KNOBHILL) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.4514	GENS32653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.4511	GENS32652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.4272	GENS32651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04158	133.4115	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04094	133.362	WOODWARD - WOODWARD EHV 138KV CKT 2
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04156	133.3342	DOVER - TWIN LAKES 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	133.3276	GENS15787 1-OKLA WIND ENERGY CENTER
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.2988	GENS62017 1-G11_022_3 0.6900
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.2893	GEN645011 1-NEBRASKA CITY 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.2712	GENS27162 1-MUSTANG GEN #2
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.2711	GENS27161 1-MUSTANG GEN #1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04182	133.2619	CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.2598	GENS60121 1-G08-47 0.5750
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.2559	GENS62432 1-G13-030 0.6900
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03865	133.2365	SAND RDG 138138.00 - WAKITA 138 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.2335	GENS32751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04156	133.2279	DOVER - DOVER SW 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04176	133.2271	BUFFALO - WEST 69KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.171	GEN659111 2-LELAND OLDS UNIT2
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.0824	GENS39670 4-JUDSON LARGE GENERATOR
FNSL	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.0282	GEN659103 1-ANTELOPE VALLEY UNIT1
FNSL	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	133.0282	GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.9283	GENS27163 1-MUSTANG GEN #3 22 KV
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04705	132.8562	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04176	132.8264	BUFFBEAR2 - BUFFALO 69KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.7915	GEN645012 2-NEBRASKA CITY 2
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.7439	EASTDC - WELSH 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.7086	GENS27882 1-CUNNINGHAM GEN #2 20 KV
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	132.7043	GENS20997 1-MORLND2
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.5881	GEN640009 1-COOPER NUCLEAR STATION
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0417	132.5002	LYDIA - VALLIANT 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0417	132.4905	SPP-AEPW-01
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04155	132.4376	OPENSKY 345.00 - RANCH 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.4321	GENS26331 1-JONES GEN #1 22 KV
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04155	132.4191	RANCH 345.00 - SOONER 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.3726	GENS15449 1-CRSRDW11 0.6900
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.3648	GENS27902 1-HOBBS PLANT #2 (CT)
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.343	GENS27901 1-HOBBS PLANT #1 (CT)
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	132.312	BASE CASE
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.2597	GENS15450 1-CRSRDW21 0.6900
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.1995	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.1642	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.0764	GENS26332 1-JONES GEN #2 21 KV
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	132.018	GENS26334 1-JONES_4 116.500
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	131.991	GENS62443 1-G13-034 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04907	131.9406	DEWEY - IODINE 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04934	131.8635	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04933	131.8332	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	131.8276	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	131.7245	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04155	131.6384	OPENSKY 345.00 - ROSE HILL 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04081	131.4425	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03952	131.4178	SANDY_CN 138138.00 - WAKITA 138 138.00 138KV CKT 1
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06884	131.4088	DBL-WICH-THI
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04257	131.2187	FT SUPPLY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	131.1542	GEN562472 1-G13_035_3 0.6900
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	130.9532	GEN562078 1-G11_051_3 0.6900
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	130.8753	GEN523971 1-HARRINGTON GEN #1 24 KV
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	130.875	GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	130.862	GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	130.8602	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	130.7765	DBL-BVR-G1334
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04705	130.7324	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0409	130.596	SPP-SWPS-03
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	130.4725	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04091	130.2766	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04091	130.2716	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04466	130.0824	DEWEY - TALOGA 138KV CKT 1
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0617	129.9578	DBL-G1334-WWR
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04153	129.849	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04091	129.7656	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04257	129.6492	IODINE - MOORELAND 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04184	129.5896	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	129.5672	GEN659118 1-LARAMIE RIVER UNIT1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	129.1188	GEN560648 1-G0721_G1402 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	128.9535	GEN520922 1-SLEEPING BEAR
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	128.9299	GEN515389 1-TLGAWND1 34.500
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04748	128.7757	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04072	128.591	EL RENO - ROMAN NOSE 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04032	128.4023	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04422	128.3663	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	128.3103	GEN525561 1-TOLK GEN #1 24 KV
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04713	128.3019	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04176	128.2988	SPP-AEPW-32
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04072	128.213	ROMAN NOSE - SOUTHARD 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04418	127.9072	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	127.7518	GEN525562 1-TOLK GEN #2 24 KV
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	127.7303	GEN514805 1-SOONER UNIT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	127.4905	GEN531447 1-HOLCOMB GENERATOR
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04072	127.3763	DEWEY - SOUTHARD 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	127.2913	GEN515397 1-OUSPR1 34.500
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04091	127.1614	SPP-SWPS-02A
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04288	127.1491	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	00NR		0 14WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05772	127.0856	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04422	126.7894	SPP-SWPS-04
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04514	126.7245	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04514	126.7245	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04422	126.6592	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04418	126.5491	SPP-SWPS-05
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04418	126.4951	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	6		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05579	126.418	DBL-WICH-THI
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0419	126.3936	SPP-SWPS-01
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04288	126.3599	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	126.3239	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	126.2768	DBL-G1334-WWR
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06935	126.162	DBL-WICH-THI
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	126.1289	GEN560175 1-G0744_G1403 0.6900
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04176	126.0353	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04081	125.9884	VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03891	125.9633	RENFROW4 138.00 - SAND RDG 138138.00 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	125.9207	GEN514806 1-SOONER UNIT 2
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	125.6416	SPP-SWPS-02A
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0549	125.6239	FLATRDG3 - HARPER 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03952	125.5501	BYRON 138 138.00 - SANDY_CN 138138.00 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04283	125.5261	MINGO - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03741	125.5087	WOODWARD - WOODWARD EHV 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04288	125.4517	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0438	125.1813	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04257	125.0099	SPP-MKEC-08
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	124.8935	GEN521120 1-BUFBEAR2
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04713	124.8463	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04293	124.8221	BENTON - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	124.8186	GEN560221 1-G07-62-1 0.6900
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	124.8186	GEN560222 1-G07-62-2 0.6900

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	124.8186	GEN560223 1-G07-62-3 0.6900
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	124.8186	GEN560224 1-G07-62-4 0.6900
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04272	124.7764	AXTELL - POST ROCK 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	124.6326	GEN520947 1-HUGO1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04286	124.5845	MOORELAND - TALOGA 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0438	124.5604	CARTER JCT - MOORELAND 69KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0438	124.5584	MOORELAND (MOORELAND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04295	124.5287	MINGO - RED WILLOW 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04246	124.4766	FLATRDG3 - HARPER 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	124.4685	GEN515225 1-MUSKOGEE 5G
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04888	124.4625	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	124.4585	GEN515226 1-MUSKOGEE 6G
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03927	124.4581	MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03952	124.4457	BYRON_138 138.00 - C_CITY 138 138.00 138KV CKT 1
FDNS	6		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04321	124.4414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	124.4405	GEN515223 1-MUSKOGEE 4G
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0427	124.3715	HOLCOMB - SETAB 345KV CKT 1
FDNS	00NR		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05847	124.1449	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04266	123.9205	FT SUPPLY - IODINE 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05458	123.9059	DBL-BVR-G1334
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03952	123.8493	C_CITY_138 138.00 - KNOBHILL 138KV CKT 1
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05935	123.7749	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03943	123.6142	DOVER SW - OKEENE 138KV CKT 1
FDNS	6		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.07104	123.5519	DBL-THIS-WWR
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04098	123.3967	SPP-SWPS-03
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04099	123.0196	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04099	123.0139	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04713	122.7373	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04162	122.6281	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04099	122.5638	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04266	122.3559	IODINE - MOORELAND 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	122.2762	NC1_GEN-NEBRASKA CITY 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	121.4255	GEN515389 1-TLGAWND1 34.500
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04041	121.3965	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05027	121.29	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	120.9507	GEN515393 1-OGEWND2G
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04184	120.9471	SPP-AEPW-32
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03927	120.9326	ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	00G14_003		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.04381	120.8952	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04431	120.8629	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04358	120.801	GEN520997 1-MORLND2
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	120.7824	GEN515365 1-CENT 21 34.500
FDNS	01NR		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05452	120.6859	EASTDC - WELSH 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	120.4528	GEN514805 1-SOONER UNIT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	120.3378	BRANTLEY - MORWOOD 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	120.3329	MOREWOOD SW - MORWOOD 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04212	120.3071	DELAWARE - NORTHEAST STATION 345KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	120.1767	STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04183	120.1656	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	120.156	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0418	120.1477	SPP-SWPS-02
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	120.1288	GEN645001 1-FORT CALHOUN 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04427	120.1263	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.042	120.1153	BUFFALO - WEST 69KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04267	120.0944	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	120.0669	GEN562017 1-G11_022_3 0.6900
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	120.0452	GEN542962 2-IATAN UNIT #2
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04118	120.0447	WOODWARD - WOODWARD EHV 138KV CKT 2
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04182	120.0414	DOVER - TWIN LAKES 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	120.0091	GEN560121 1-G08-47 0.5750
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	120.0074	GEN562432 1-G13-030 0.6900
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04196	120.0021	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04099	119.9969	SPP-SWPS-02A
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.9796	GEN527161 1-MUSTANG GEN #1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.9796	GEN527162 1-MUSTANG GEN #2
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04182	119.9368	DOVER - DOVER SW 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.9322	GEN645011 1-NEBRASKA CITY 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03883	119.9259	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04095	119.9187	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.8926	GEN659111 2-LELAND OLDS UNIT2
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.8041	GEN539670 4-JUDSON LARGE GENERATOR
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.7524	GEN659103 1-ANTELOPE VALLEY UNIT1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.7524	GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.7393	GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.739	GEN532652 1-JEFFREY ENERGY CENTER UNIT 2

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.042	119.7322	BUFBEAR2 - BUFFALO 69KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.7175	GENS32651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04207	119.698	CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04297	119.6531	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.6234	GENS27163 1-MUSTANG GEN #3 22 KV
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04175	119.6002	OPENSKY 345.00 - RANCH 345.00 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04175	119.5846	RANCH 345.00 - SOONER 345KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05027	119.5692	DEWEY - IODINE 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.5587	EASTDC - WELSH 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.5533	GENS32751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05458	119.5251	DBL-G1334-WWR
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.474	GENS62443 1-G13-034 0.6900
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.417	GEN645012 2-NEBRASKA CITY 2
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04193	119.3997	LYDIA - VALLIANT 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.3965	GENS27882 1-CUNNINGHAM GEN #2 20 KV
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04193	119.3916	SPP-AEPW-01
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	119.2924	GENS62023 1-G11_020_3 0.6900
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	119.2924	GENS62026 1-G11_019_3 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04431	119.2901	SPP-SWPS-04
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.2436	GENS15449 1-CRSRDW11 0.6900
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.1781	GENS27902 1-HOBBS PLANT #2 (CT)
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03978	119.1702	SANDY_CN 138138.00 - WAKITA 138 138.00 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.1701	GENS15450 1-CRSRDW21 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04431	119.1697	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.165	GEN640009 1-COOPER NUCLEAR STATION
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.1564	GENS27901 1-HOBBS PLANT #1 (CT)
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04189	119.1054	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	119.0886	GENS26331 1-JONES GEN #1 22 KV
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04198	119.0605	SPP-SWPS-01
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03796	118.9235	IMO TAP - MEN TAP 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04297	118.8882	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	118.8262	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04427	118.8145	SPP-SWPS-05
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	118.8087	GENS26334 1-JONES 4 116.500
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.039	118.8024	RENFROWA 138.00 - SAND RDG 138138.00 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	118.7903	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04427	118.7619	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04175	118.7458	OPENSKY 345.00 - ROSE HILL 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04184	118.7219	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	118.7162	GENS26332 1-JONES GEN #2 21 KV
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	118.6398	GENS14806 1-SOONER UNIT 2
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03796	118.1896	CLEO CORNER - MEN TAP 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04292	118.0897	MINGO - SETAB 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04297	118.0356	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	117.9976	GENS62472 1-G13_035_3 0.6900
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	117.8637	GENS62078 1-G11_051_3 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04265	117.6872	SPP-MKEC-08
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	117.6788	GENS27903 1-HOBBS PLANT #3 (ST)
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04389	117.6771	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	117.6704	GENS21120 1-BUFBEAR2
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	117.5264	GENS23971 1-HARRINGTON GEN #1 24 KV
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	117.5262	GENS23972 1-HARRINGTON GEN #2 24 KV
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	117.5127	GENS23973 1-HARRINGTON GEN #3 24 KV
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04301	117.4788	BENTON - WICHITA 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04281	117.4262	AXTELL - POST ROCK 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	117.3752	GENS20947 1-HUGO1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	117.2391	GENS15225 1-MUSKOGEE 5G
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	117.2291	GENS15226 1-MUSKOGEE 6G
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	117.2104	GENS15223 1-MUSKOGEE 4G
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04255	117.1766	FLATRDG3 - HARPER 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04304	117.0838	MINGO - RED WILLOW 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04389	117.0609	CARTER JCT - MOORELAND 69KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04389	117.0596	MOORELAND (MOORELND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04297	116.9882	MOORELAND - TALOGA 138KV CKT 1
FNSL	00G14_003		0 14WPP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.11359	116.8628	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	116.316	GEN659118 1-LARAMIE RIVER UNIT1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	116.0947	GENS60648 1-G0721_G1402 0.6900
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04099	115.8763	EL RENO - ROMAN NOSE 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	115.799	GENS15397 1-OU SPRT 1 34.500
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04099	115.4921	ROMAN NOSE - SOUTHARD 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	115.0164	NC1_GEN-NEBRASKA CITY 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04099	114.663	DEWEY - SOUTHARD 138KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04358	114.658	GENS20998 1-MORLND3
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	114.6255	GENS25561 1-TOLK GEN #1 24 KV
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03845	114.5576	CEDARDALE - OKEENE 138KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	114.3399	GEN531447 1-HOLCOMB GENERATOR
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04095	114.085	VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	114.0763	GEN560221 1-G07-62-1 0.6900
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	114.0763	GEN560222 1-G07-62-2 0.6900
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	114.0763	GEN560223 1-G07-62-3 0.6900
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	114.0763	GEN560224 1-G07-62-4 0.6900
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	113.9396	GEN525562 1-TOLK GEN #2 24 KV
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03845	113.8594	CEDARDALE - MOORELAND 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03978	113.5886	BYRON_138 138.00 - SANDY_CN_138138.00 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04101	113.0285	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	112.9325	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.9084	GEN645001 1-FORT CALHOUN 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	112.8666	GEN560175 1-G0744_G1403 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.8665	GEN562017 1-G11_022_3 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04209	112.8652	BUFFALO - WEST 69KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.043	112.8643	CIMARRON - MATHWSN7 345.00 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.8282	GEN542962 2-IATAN UNIT #2
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04191	112.8211	DOVER - TWIN LAKES 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.8138	GEN560121 1-G08-47 0.5750
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.8038	GEN562432 1-G13-030 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04205	112.7603	KNOBHILL (KNOBHILL) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04192	112.7247	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04191	112.7153	DOVER - DOVER SW 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.7129	GEN645011 1-NEBRASKA CITY 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.699	GEN659111 2-LELAND OLDS UNIT2
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.6361	GEN515449 1-CRSRDW11 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.6096	GEN539670 4-JUDSON LARGE GENERATOR
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.586	GEN515450 1-CRSRDW21 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.5606	GEN659103 1-ANTELOPE VALLEY UNIT1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.5606	GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04183	112.5155	OPENSKY 345.00 - RANCH 345.00 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.5044	GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.5041	GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04183	112.5005	RANCH 345.00 - SOONER 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03746	112.4988	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04209	112.4836	BUFBEAR2 - BUFFALO 69KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.4834	GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.4818	GEN527161 1-MUSTANG GEN #1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.4818	GEN527162 1-MUSTANG GEN #2
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04216	112.4776	CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03978	112.4386	BYRON_138 138.00 - C_CITY_138 138.00 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03956	112.3706	MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.3378	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.2778	GEN562443 1-G13-034 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04201	112.263	LYDIA - VALLIANT 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04201	112.2555	SPP-AEPW-01
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.2001	GEN645012 2-NEBRASKA CITY 2
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03987	112.1661	SANDY_CN_138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.1272	GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	112.1146	EASTDC - WELSH 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03763	112.0532	WOODWARD - WOODWARD EHV 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.9423	GEN640009 1-COOPER NUCLEAR STATION
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.9024	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03978	111.8555	C_CITY_138 138.00 - KNOBHILL 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03813	111.8303	KNOBHILL - MOORELAND 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03746	111.7686	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.7136	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.6922	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04183	111.6589	OPENSKY 345.00 - ROSE HILL 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.6147	GEN526331 1-JONES GEN #1 22 KV
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.5613	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.5256	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03972	111.4783	DOVER SW - OKEENE 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.4321	GEN562472 1-G13_035_3 0.6900
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04888	111.4018	WOODWARD - WOODWARD 69KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.3511	GEN526334 1-JONES_4 116.500
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.2922	GEN562078 1-G11_051_3 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	111.2223	GEN526332 1-JONES GEN #2 21 KV
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04542	110.9288	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	110.7502	GEN515393 1-OGEWIND2G
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	110.7488	GEN515365 1-CENT 21 34.500
FDNS	00G14_003		0 14SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11233	110.4798	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04358	110.3358	BASE CASE
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05054	110.2427	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	110.2419	GEN527903 1-HOBBS PLANT #3 (ST)

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05052	110.2174	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	110.0659	GEN523971 1-HARRINGTON GEN #1 24 KV
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	110.0657	GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	110.0523	GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05551	109.9866	FPLTRDG3 - HARPER 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	109.9774	GEN560648 1-G0721_G1402 0.6900
FDNS	6		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04321	109.6325	SPP-AEPW-32
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04542	109.4731	SPP-SWPS-05
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04542	109.4022	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	109.3157	GEN562023 1-G11_020_3 0.6900
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	109.3157	GEN562026 1-G11_019_3 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	108.8662	GEN659118 1-LARAMIE RIVER UNIT1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04637	108.7663	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04637	108.7663	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04108	108.7034	EL RENO - ROMAN NOSE 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03956	108.6495	ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04108	108.3176	ROMAN NOSE - SOUTHARD 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	108.3089	GEN515397 1-OU5PRT 1 34.500
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	107.6586	GEN560175 1-G0744_G1403 0.6900
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03826	107.6422	IMO TAP - MEN TAP 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04108	107.4818	DEWEY - SOUTHARD 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	107.4363	GEN525561 1-TOLK GEN #1 24 KV
FDNS	6		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04384	107.2946	GEN520997 1-MORLND2
FDNS	6		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04321	107.2924	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	6		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04917	107.203	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04101	107.1705	VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	6		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04335	107.1407	SPP-SWPS-01
FDNS	6		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	107.1286	SPP-SWPS-03
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	106.921	GEN531447 1-HOLCOMB GENERATOR
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03826	106.9056	CLEO CORNER - MEN TAP 138KV CKT 1
FNSL	00G14_003		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.07188	106.8113	DBL-THIS-WWR
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	106.6926	GEN525562 1-TOLK GEN #2 24 KV
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	106.6725	GEN560221 1-G07-62-1 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	106.6725	GEN560222 1-G07-62-2 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	106.6725	GEN560223 1-G07-62-3 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	106.6725	GEN560224 1-G07-62-4 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03987	106.6058	BYRON_138 138.00 - SANDY_CN_138138.00 138KV CKT 1
FDNS	6		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04219	106.471	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	6		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04219	106.4444	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03628	105.7011	MOREWOOD SW - NINE MILE 138KV CKT 1
FDNS	6		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04219	105.6388	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03987	105.463	BYRON_138 138.00 - C_CITY_138 138.00 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03965	105.385	MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0377	105.3293	WOODWARD - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03628	105.3146	MOORELAND - NINE MILE 138KV CKT 1
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.9492	EASTDC - WELSH 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03987	104.8604	C_CITY_138 138.00 - KNOBHILL 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03981	104.5341	DOVER SW - OKEENE 138KV CKT 1
FDNS	00G14_003		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11346	103.9553	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00G14_003		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.04381	103.9331	SPP-AEPW-32
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04187	103.8313	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	103.5893	GEN515393 1-OGEWIND2G
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	103.5795	GEN515365 1-CENT 21 34.500
FDNS	6		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05057	103.0847	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03876	102.9611	CEDARDALE - OKEENE 138KV CKT 1
FDNS	6		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04219	102.9047	SPP-SWPS-02A
FDNS	09ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11252	102.4336	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03876	102.2805	CEDARDALE - MOORELAND 138KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	102.1768	GEN562023 1-G11_020_3 0.6900
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	102.1768	GEN562026 1-G11_019_3 0.6900
FDNS	00G14_003		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.04395	101.8331	SPP-SWPS-01
FDNS	00G14_003		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.04381	101.6636	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03965	101.6465	ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04059	101.4841	RENFROW4 138.00 - SAND RDG 138138.00 138KV CKT 1
FDNS	6		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05057	101.368	DEWEY - IODINE 138KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04429	101.1828	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03776	101.1783	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1
FDNS	00NR		0 24SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.13507	101.0359	DBL-TGA-MATT
FDNS	6		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04384	101.0006	GEN520998 1-MORLND3
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03836	100.753	IMO TAP - MEN TAP 138KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04358	100.7424	GEN514805 1-SOONER UNIT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03776	100.4487	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04429	100.317	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03841	100.2958	KNOBHILL - MOORELAND 138KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04358	100.2311	GEN51787 1-OKLA WIND ENERGY CENTER

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	1		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03836	100	CLEO CORNER - MEN TAP 138KV CKT 1
FNSL	00G14_003		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05609	99.9	DBL-WICH-THI
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04424	99.9	MINGO - SETAB 345KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04325	99.8	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04358	99.6	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04217	99.5	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05845	99.4	SPP-SWPS-02
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05845	99.4	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05845	99.4	STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04429	99.3	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04358	99.3	GENS20922 1-SLEEPING BEAR
FDNS	00NR		0 19SP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05713	99.2	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	00NR		0 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	99.1	GENS62483 1-G13_027_3 0.6900
FDNS	06ALL		0 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04358	99.1	GENS14806 1-SOONER UNIT 2
FDNS	01ALL		0 14G	G14_003	TO->FROM	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	124	0.03353	113.7639	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01G14_003		0 14G	G14_003	TO->FROM	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	124	0.03332	102.056	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 19SP	G14_003	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.03024	103.5969	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01NR		0 14G	G14_003	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03381	195.1119	DBL-WICH-THI
FDNS	00NR		0 19WP	G14_003	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03477	183.0286	DBL-WICH-THI
FDNS	00NR		0 14WP	G14_003	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.0343	175.9168	DBL-WICH-THI
FDNS	00NR		0 14SP	G14_003	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03263	156.6064	DBL-WICH-THI
FDNS	00NR		0 19SP	G14_003	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03317	119.3712	DBL-WICH-THI
FDNS	00NR		0 19WP	G14_003	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03013	99.5	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	0.58125	115.9426	DBL-THIS-WWR
FDNS	01ALL		0 14G	G14_003	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	0.53652	105.3843	DBL-WICH-THI
FDNS	01G14_003		0 14G	G14_003	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	0.58044	103.447	DBL-THIS-WWR
FDNS	01NR		0 14G	G14_003	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	0.65001	101.9159	DBL-THIS-WWR
FDNS	00G14_003		0 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05356	109.8091	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00G14_003		0 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05356	108.0379	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00G14_003		0 14WP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.04921	103.5377	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		0 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05342	102.5796	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00G14_003		0 14WP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.04921	102.172	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		0 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05342	100.6386	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05151	100.4665	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00G14_003		0 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05174	100.3708	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_003	TO->FROM	ROMAN NOSE - SOUTHARD 138KV CKT 1	153	0.03982	107.5531	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00NR		0 14WP	G14_003	FROM->TO	SPSSPTTIESB	620	0.03492	114.034	BASE CASE
FDNS	06ALL		0 14G	G14_003	FROM->TO	SPSSPTTIESB1	620	0.03171	159.545	BASE CASE
FDNS	00NR		0 19WP	G14_003	FROM->TO	SPSSPTTIESB1	620	0.10088	153.8462	BASE CASE
FDNS	00G14_003		0 19WP	G14_003	FROM->TO	SPSSPTTIESB1	620	0.03998	130.2609	BASE CASE
FDNS	6		0 14G	G14_003	FROM->TO	SPSSPTTIESB1	620	0.03619	122.922	BASE CASE
FDNS	0		0 19WP	G14_003	FROM->TO	SPSSPTTIESB1	620	0.04012	120.8545	BASE CASE
FDNS	00NR		0 14WP	G14_003	FROM->TO	SPSSPTTIESB1	620	0.10586	106.8303	BASE CASE
FDNS	06ALL		0 14G	G14_003	FROM->TO	SPSSPTTIESC	620	0.03171	159.545	BASE CASE
FDNS	00NR		0 19WP	G14_003	FROM->TO	SPSSPTTIESC	620	0.10088	153.8462	BASE CASE
FDNS	00G14_003		0 19WP	G14_003	FROM->TO	SPSSPTTIESC	620	0.03998	130.2609	BASE CASE
FDNS	6		0 14G	G14_003	FROM->TO	SPSSPTTIESC	620	0.03619	122.922	BASE CASE
FDNS	0		0 19WP	G14_003	FROM->TO	SPSSPTTIESC	620	0.04012	120.8545	BASE CASE
FDNS	00NR		0 14WP	G14_003	FROM->TO	SPSSPTTIESC	620	0.10586	106.8303	BASE CASE
FDNS	00NR		0 14WP	G14_003	FROM->TO	SPSSPTTIESC1	620	0.03492	114.034	BASE CASE
FDNS	06ALL		0 14G	G14_003	FROM->TO	TUCXFR345230	300	0.04211	110.3	BASE CASE
FDNS	00NR		0 19WP	G14_003	TO->FROM	WOODWARD - WOODWARD EHV 138KV CKT 1	287	0.06933	99.4	DBL-THIS-WWR
FDNS	09ALL		2 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.11252	102.4336	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		2 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08608	100.8351	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		2 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04565	100.7843	DBL-WICH-THI
FDNS	0		2 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05342	102.5796	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		2 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05161	101.1584	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		2 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05342	100.6386	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		2 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05161	99.2	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		2 19WP	G14_003	FROM->TO	SPSSPTTIESB1	620	0.04012	120.8545	BASE CASE
FDNS	0		2 19WP	G14_003	FROM->TO	SPSSPTTIESC	620	0.04012	120.8545	BASE CASE
FDNS	06ALL		2 14G	G14_003	FROM->TO	TUCXFR345230	300	0.0422	133.9	BASE CASE
FDNS	0		2 19WP	G14_003	FROM->TO	TUCXFR345230	300	0.03998	105.2	BASE CASE
FDNS	0		3 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05148	101.2189	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	0		3 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05148	99.2	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00NR		5 19WP	G14_003	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03078	148.4452	DBL-WICH-THI
FDNS	01NR		5 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06394	99.1	DBL-THIS-WWR
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06394	144.0245	DBL-THIS-WWR
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05562	134.8485	DBL-WICH-THI
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04937	109.1999	DBL-HTCH-BVR
FDNS	00NR		5 19WP	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05458	101.7043	DBL-WICH-THI
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04937	101.4367	DBL-BVR-G133
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04606	101.1896	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04672	99.5	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04537	99.5	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04544	99.2	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1	
FDNS	01NR		5 14G	G14_003	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04498	99.2	GEN514806 1-SOONER UNIT 2	
FDNS	00NR		5 19WP	G14_003	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03078	159.6062	DBL-WICH-THI	
FDNS	0		5 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05148	101.2189	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	0		5 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	0.05148	99.2	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		5 14SP	G14_003	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	0.0696	99.1	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	00NR		5 19WP	G14_003	FROM->TO	SPSSPTTIESB1	620	0.06149	109.9846	BASE CASE	
FDNS	00NR		5 19WP	G14_003	FROM->TO	SPSSPTTIESC	620	0.06149	109.9846	BASE CASE	
FDNS	00NR		6 19WP	G14_003	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03059	147.6227	DBL-WICH-THI	
FDNS	01NR		6 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.07123	111.2034	DBL-THIS-WWR	
FDNS	01NR		6 14G	G14_003	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06201	105.4076	DBL-WICH-THI	
FDNS	00NR		6 19WP	G14_003	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03059	158.7771	DBL-WICH-THI	
FDNS	00NR		6 19WP	G14_003	FROM->TO	SPSSPTTIESB1	620	0.06124	109.8507	BASE CASE	
FDNS	00NR		6 19WP	G14_003	FROM->TO	SPSSPTTIESC	620	0.06124	109.8507	BASE CASE	
FDNS	00NR		7 19WP	G14_003	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03058	147.6101	DBL-WICH-THI	
FDNS	00NR		7 19WP	G14_003	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03058	158.7643	DBL-WICH-THI	
FDNS	00NR		7 19WP	G14_003	FROM->TO	SPSSPTTIESB1	620	0.06124	109.8402	BASE CASE	
FDNS	00NR		7 19WP	G14_003	FROM->TO	SPSSPTTIESC	620	0.06124	109.8402	BASE CASE	
FDNS	09ALL_BPS		0 14G	G14_004	TO->FROM	BAILEYVILLE N.M. STATION (NEMAHA MARSHALL R - SMITTYVILLE N.M. COOP (NEMAHA MARSHA	92	0.26148	101.4984	GREENLEAF - KNOB HILL 115KV CKT 1	
FDNS	09ALL_BPS		0 14G	G14_004	TO->FROM	BAILEYVILLE N.M. STATION (NEMAHA MARSHALL R - SMITTYVILLE N.M. COOP (NEMAHA MARSHA	92	0.26148	101.4645	SPP-WR-339	
FDNS	09ALL_BPS		0 14G	G14_004	FROM->TO	BAILEYVILLE N.M. STATION (NEMAHA MARSHALL R - SOUTH SENECA 115KV CKT 1	92	0.26148	100	GREENLEAF - KNOB HILL 115KV CKT 1	
FDNS	09ALL_BPS		0 14G	G14_004	FROM->TO	BAILEYVILLE N.M. STATION (NEMAHA MARSHALL R - SOUTH SENECA 115KV CKT 1	92	0.26148	99.9	SPP-WR-339	
FDNS	09ALL		0 14G	G14_004	TO->FROM	BEATRICE - HARBINE 115KV CKT 1	99	0.69061	106.5135	KNOB HILL - STEELE CITY 115KV CKT 1	
FDNS	09ALL_BPS		0 14G	G14_004	FROM->TO	MARSHALL 115.00 - SMITTYVILLE N.M. COOP (NEMAHA MARSHALL R.E. 115KV CKT 1	92	0.26148	102.6769	GREENLEAF - KNOB HILL 115KV CKT 1	
FDNS	09ALL_BPS		0 14G	G14_004	FROM->TO	MARSHALL 115.00 - SMITTYVILLE N.M. COOP (NEMAHA MARSHALL R.E. 115KV CKT 1	92	0.26148	102.6431	SPP-WR-339	
FDNS	09ALL_BPS		0 14G	G14_004	FROM->TO	MARSHALL 115.00 - SMITTYVILLE N.M. COOP (NEMAHA MARSHALL R.E. 115KV CKT 1	92	0.1786	99.7	KELLY - S1399 5 161KV CKT 1	
FDNS	06ALL		0 14G	G14_004	FROM->TO	TUCXFR345230	300	0.03879	110.3	BASE CASE	
FDNS	09ALL_BPS		2 14G	G14_004	TO->FROM	BAILEYVILLE N.M. STATION (NEMAHA MARSHALL R - SMITTYVILLE N.M. COOP (NEMAHA MARSHA	92	0.26148	101.4984	GREENLEAF - KNOB HILL 115KV CKT 1	
FDNS	09ALL_BPS		2 14G	G14_004	TO->FROM	BAILEYVILLE N.M. STATION (NEMAHA MARSHALL R - SMITTYVILLE N.M. COOP (NEMAHA MARSHA	92	0.26148	101.4645	SPP-WR-339	
FDNS	09ALL_BPS		2 14G	G14_004	FROM->TO	BAILEYVILLE N.M. STATION (NEMAHA MARSHALL R - SOUTH SENECA 115KV CKT 1	92	0.26148	100	GREENLEAF - KNOB HILL 115KV CKT 1	
FDNS	09ALL_BPS		2 14G	G14_004	FROM->TO	BAILEYVILLE N.M. STATION (NEMAHA MARSHALL R - SOUTH SENECA 115KV CKT 1	92	0.26148	99.9	SPP-WR-339	
FDNS	09ALL		2 14G	G14_004	TO->FROM	BEATRICE - HARBINE 115KV CKT 1	99	0.69061	106.5135	KNOB HILL - STEELE CITY 115KV CKT 1	
FDNS	09ALL_BPS		2 14G	G14_004	FROM->TO	MARSHALL 115.00 - SMITTYVILLE N.M. COOP (NEMAHA MARSHALL R.E. 115KV CKT 1	92	0.26148	102.6768	GREENLEAF - KNOB HILL 115KV CKT 1	
FDNS	09ALL_BPS		2 14G	G14_004	FROM->TO	MARSHALL 115.00 - SMITTYVILLE N.M. COOP (NEMAHA MARSHALL R.E. 115KV CKT 1	92	0.26148	102.643	SPP-WR-339	
FDNS	09ALL_BPS		2 14G	G14_004	FROM->TO	MARSHALL 115.00 - SMITTYVILLE N.M. COOP (NEMAHA MARSHALL R.E. 115KV CKT 1	92	0.1786	99.7	KELLY - S1399 5 161KV CKT 1	
FDNS	06ALL		2 14G	G14_004	FROM->TO	TUCXFR345230	300	0.04034	133.9	BASE CASE	
FDNS	06ALL		0 14G	G14_005	FROM->TO	LAWEASOKLUNI	425	0.08997	187.1	BASE CASE	
FDNS	0		0 19WP	G14_005	FROM->TO	LAWEASOKLUNI	425	0.07815	173.3	BASE CASE	
FDNS	6		0 14G	G14_005	FROM->TO	LAWEASOKLUNI	425	0.08741	161.5	BASE CASE	
FDNS	0		0 14WP	G14_005	FROM->TO	LAWEASOKLUNI	425	0.08248	131.8	BASE CASE	
FDNS	0		0 14SP	G14_005	FROM->TO	LAWEASOKLUNI	425	0.08243	113	BASE CASE	
FDNS	0		0 19SP	G14_005	FROM->TO	LAWEASOKLUNI	425	0.07191	99.7	BASE CASE	
FDNS	06ALL		0 14G	G14_005	FROM->TO	TUCXFR345230	300	0.05668	110.3	BASE CASE	
FDNS	0		2 19WP	G14_005	FROM->TO	LAWEASOKLUNI	425	0.07815	173.3	BASE CASE	
FDNS	06ALL		2 14G	G14_005	FROM->TO	LAWEASOKLUNI	425	0.0576	155.1	BASE CASE	
FDNS	0		2 19WP	G14_005	FROM->TO	LAWEASOKLUNI	425	0.05515	146.9	BASE CASE	
FDNS	0		2 14WP	G14_005	FROM->TO	LAWEASOKLUNI	425	0.08248	131.8	BASE CASE	
FDNS	6		2 14G	G14_005	FROM->TO	LAWEASOKLUNI	425	0.05576	131.1	BASE CASE	
FDNS	0		2 14SP	G14_005	FROM->TO	LAWEASOKLUNI	425	0.08243	113	BASE CASE	
FDNS	0		2 14WP	G14_005	FROM->TO	LAWEASOKLUNI	425	0.05205	108.9	BASE CASE	
FDNS	0		2 19SP	G14_005	FROM->TO	LAWEASOKLUNI	425	0.07191	99.7	BASE CASE	
FDNS	06ALL		2 14G	G14_005	FROM->TO	TUCXFR345230	300	0.06124	133.9	BASE CASE	
FDNS	0		2 19WP	G14_005	FROM->TO	TUCXFR345230	300	0.05923	105.2	BASE CASE	
FDNS	06ALL		3 14G	G14_005	FROM->TO	LAWEASOKLUNI	425	0.06046	157	BASE CASE	
FDNS	0		3 19WP	G14_005	FROM->TO	LAWEASOKLUNI	425	0.05773	147.9	BASE CASE	
FDNS	6		3 14G	G14_005	FROM->TO	LAWEASOKLUNI	425	0.0587	132.5	BASE CASE	
FDNS	0		3 14WP	G14_005	FROM->TO	LAWEASOKLUNI	425	0.05475	107.5	BASE CASE	
FDNS	06ALL		3 14G	G14_005	FROM->TO	TUCXFR345230	300	0.04244	101.6	BASE CASE	
FDNS	0		4 19WP	G14_005	FROM->TO	LAWEASOKLUNI	425	0.05757	147.9	BASE CASE	
FDNS	06ALL		5 14G	G14_005	FROM->TO	LAWEASOKLUNI	425	0.06046	157	BASE CASE	
FDNS	0		5 19WP	G14_005	FROM->TO	LAWEASOKLUNI	425	0.05757	147.9	BASE CASE	
FDNS	6		5 14G	G14_005	FROM->TO	LAWEASOKLUNI	425	0.0587	132.5	BASE CASE	
FDNS	0		5 14WP	G14_005	FROM->TO	LAWEASOKLUNI	425	0.05475	107.5	BASE CASE	
FDNS	00NR		5 14SP	G14_005	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	0.03012	99.1	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	
FDNS	06ALL		5 14G	G14_005	FROM->TO	TUCXFR345230	300	0.04244	101.6	BASE CASE	
FDNS	09ALL_BPS		0 14G	G14_006	TO->FROM	BAILEYVILLE N.M. STATION (NEMAHA MARSHALL R - SMITTYVILLE N.M. COOP (NEMAHA MARSHA	92	0.16369	101.4984	GREENLEAF - KNOB HILL 115KV CKT 1	
FDNS	09ALL_BPS		0 14G	G14_006	TO->FROM	BAILEYVILLE N.M. STATION (NEMAHA MARSHALL R - SMITTYVILLE N.M. COOP (NEMAHA MARSHA	92	0.16369	101.4645	SPP-WR-339	
FDNS	09ALL_BPS		0 14G	G14_006	FROM->TO	BAILEYVILLE N.M. STATION (NEMAHA MARSHALL R - SOUTH SENECA 115KV CKT 1	92	0.16369	100	GREENLEAF - KNOB HILL 115KV CKT 1	
FDNS	09ALL_BPS		0 14G	G14_006	FROM->TO	BAILEYVILLE N.M. STATION (NEMAHA MARSHALL R - SOUTH SENECA 115KV CKT 1	92	0.16369	99.9	SPP-WR-339	
FDNS	09ALL		0 14G	G14_006	TO->FROM	BEATRICE - HARBINE 115KV CKT 1	99	0.69061	106.5135	KNOB HILL - STEELE CITY 115KV CKT 1	
FDNS	09ALL_BPS		0 14G	G14_006	FROM->TO	MARSHALL 115.00 - SMITTYVILLE N.M. COOP (NEMAHA MARSHALL R.E. 115KV CKT 1	92	0.16369	102.6769	GREENLEAF - KNOB HILL 115KV CKT 1	
FDNS	09ALL_BPS		0 14G	G14_006	FROM->TO	MARSHALL 115.00 - SMITTYVILLE N.M. COOP (NEMAHA MARSHALL R.E. 115KV CKT 1	92	0.16369	102.6431	SPP-WR-339	
FDNS	09ALL_BPS		0 14G	G14_006	FROM->TO	MARSHALL 115.00 - SMITTYVILLE N.M. COOP (NEMAHA MARSHALL R.E. 115KV CKT 1	92	0.11593	99.7	KELLY - S1399 5 161KV CKT 1	
FDNS	06ALL		0 14G	G14_006	FROM->TO	TUCXFR345230	300	0.03868	110.3	BASE CASE	
FDNS	09ALL_BPS		2 14G	G14_006	TO->FROM	BAILEYVILLE N.M. STATION (NEMAHA MARSHALL R - SMITTYVILLE N.M. COOP (NEMAHA MARSHA	92	0.16369	101.4984	GREENLEAF - KNOB HILL 115KV CKT 1	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	09ALL_BPS		2 14G	G14_006	TO->FROM	BAILEYVILLE N.M. STATION (NEMAHA MARSHALL R - SMITTYVILLE N.M. COOP (NEMAHA MARSHA	92	0.16369	101.4645	SPP-WR-339
FDNS	09ALL_BPS		2 14G	G14_006	FROM->TO	BAILEYVILLE N.M. STATION (NEMAHA MARSHALL R - SOUTH SENECA 115KV CKT 1	92	0.16369	100	GREENLEAF - KNOB HILL 115KV CKT 1
FDNS	09ALL_BPS		2 14G	G14_006	FROM->TO	BAILEYVILLE N.M. STATION (NEMAHA MARSHALL R - SOUTH SENECA 115KV CKT 1	92	0.16369	99.9	SPP-WR-339
FDNS	09ALL		2 14G	G14_006	TO->FROM	BEATRICE - HARBINE 115KV CKT 1	99	0.69061	106.5135	KNOB HILL - STEELE CITY 115KV CKT 1
FDNS	09ALL_BPS		2 14G	G14_006	FROM->TO	MARSHALL 115.00 - SMITTYVILLE N.M. COOP (NEMAHA MARSHALL R.E. 115KV CKT 1	92	0.16369	102.6768	GREENLEAF - KNOB HILL 115KV CKT 1
FDNS	09ALL_BPS		2 14G	G14_006	FROM->TO	MARSHALL 115.00 - SMITTYVILLE N.M. COOP (NEMAHA MARSHALL R.E. 115KV CKT 1	92	0.16369	102.643	SPP-WR-339
FDNS	09ALL_BPS		2 14G	G14_006	FROM->TO	MARSHALL 115.00 - SMITTYVILLE N.M. COOP (NEMAHA MARSHALL R.E. 115KV CKT 1	92	0.11593	99.7	KELLY - S1399 5 161KV CKT 1
FDNS	06ALL		2 14G	G14_006	FROM->TO	TUCXFR345230	300	0.04024	133.9	BASE CASE
FDNS	0		2 19WP	G14_006	FROM->TO	TUCXFR345230	300	0.03857	105.2	BASE CASE
FDNS	06ALL		0 14G	G14_007	TO->FROM	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1	350.6	0.08374	99.4	BUSHLAND_S 230.00 - PLANT X STATION 230KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	BUSHLAND_S 230.00 - PLANT X STATION 230KV CKT 1	351	0.06921	105.7817	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	191	0.0307	107.9693	DBL-WICH-THI
FDNS	01ALL		0 14G	G14_007	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.0307	199.6787	DBL-WICH-THI
FDNS	1		0 14G	G14_007	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03075	177.2242	DBL-WICH-THI
FDNS	06G14_007		0 14G	G14_007	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03006	163.8029	DBL-WICH-THI
FDNS	6		0 14G	G14_007	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03011	160.7416	DBL-WICH-THI
FDNS	09ALL		0 14G	G14_007	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03067	120.1446	DBL-WICH-THI
FDNS	9		0 14G	G14_007	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03079	117.0156	DBL-WICH-THI
FDNS	13		0 14G	G14_007	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03088	110.3382	DBL-WICH-THI
FDNS	13ALL		0 14G	G14_007	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03087	110.0426	DBL-WICH-THI
FDNS	06ALL		0 14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.043	113.6094	DBL-G1334-WWR
FDNS	06ALL		0 14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.043	113.4512	DBL-BVR-G1334
FDNS	06ALL		0 14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.043	111.4222	DBL-G1334-WWR
FDNS	06ALL		0 14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.043	111.2774	DBL-BVR-G1334
FDNS	06G14_007		0 14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07613	104.7266	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06G14_007		0 14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07613	103.1928	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		0 14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.043	101.6379	DBL-HTCH-BVR
FDNS	6		0 14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07626	101.3683	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		0 14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.043	100.6758	DBL-HTCH-BVR
FDNS	6		0 14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07626	100.3985	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.04406	113.5345	DBL-WICH-THI
FDNS	1		0 14G	G14_007	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.04425	99.3	DBL-WICH-THI
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05271	149.3142	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0606	145.1403	DBL-THIS-WWR
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04852	131.851	DBL-WICH-THI
FDNS	1		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05284	123.8936	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	1		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06109	118.7057	DBL-THIS-WWR
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03095	116.3222	DBL-HTCH-BVR
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04161	112.0327	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04159	112.011	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	1		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04888	110.6048	DBL-WICH-THI
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03595	110.4229	DEWEY - TALOGA 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04141	110.2912	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05271	110.259	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03499	110.0042	GEN520922 1-SLEEPING BEAR
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03095	109.4252	DBL-BVR-G1334
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04141	109.2945	DEWEY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.08402	108.8666	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0555	107.9797	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03946	107.8848	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03819	107.5753	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03819	107.5753	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03515	107.5067	FT SUPPLY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03499	107.1315	BASE CASE
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03515	106.658	IODINE - MOORELAND 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03095	106.5759	DBL-G1334-WWR
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03499	106.5561	GEN520997 1-MORLND2
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03499	104.3305	GEN515389 1-TLGAWND1 34.500
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04236	104.1795	SPP-SWPS-03
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04225	104.1273	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04225	104.1248	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03883	104.024	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03935	103.9945	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03169	103.8783	POTTER COUNTY INTERCHANGE (WAAK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04225	103.7193	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03935	103.3738	SPP-SWPS-05
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03935	103.3443	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03285	103.2043	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0555	103.1232	SPP-AEPW-32
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03581	103.0567	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03499	103.0302	GEN514805 1-SOONER UNIT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03169	102.9775	SPP-SWPS-04
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03169	102.9193	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03581	102.6188	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03471	102.5417	MOORELAND - TALOGA 138KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.04225	102.4116	SPP-SWPS-02A
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03595	102.184	MINGO - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0345	102.177	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05659	102.1136	SPP-SWPS-01
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03581	102.1102	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03499	102.0431	GENS14806 1-SOONER UNIT 2
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03629	102.0328	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0555	101.8806	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03607	101.6781	MINGO - RED WILLOW 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03541	101.6723	SPP-MKEC-08
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03629	101.67	CARTER JCT - MOORELAND 69KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03629	101.6694	MOORELAND (MOORELND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03557	101.6372	AXTELL - POST ROCK 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03499	101.633	GENS21120 1-BUFBEAR2
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0359	101.611	BENTON - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03577	101.4602	HOLCOMB - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0344	101.4553	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0344	101.4553	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 2
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03533	101.3401	FLATRDG3 - HARPER 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03499	101.318	GENS20947 1-HUGO1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03499	101.2433	GENS15225 1-MUSKOGEE 5G
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03499	101.2379	GENS15226 1-MUSKOGEE 6G
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03499	101.2281	GENS15223 1-MUSKOGEE 4G
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03499	101.2204	GENS50687 1-G11-007 0.6900
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03536	101.1889	FLATRDG3 - THISTLE4 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03536	101.1885	THISTLE7 345.00 (THISTLE T1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.03516	101.1756	SMOKYHLE 230.00 - SUMMIT 230KV CKT 1
FDNS	01ALL		0 14G	G14_007	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.0311	99.1	SAND RDG 138138.00 - WAKITA 138 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05271	223.4623	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0606	215.0919	DBL-THIS-WWR
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04852	192.1486	DBL-WICH-THI
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05284	189.9648	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06109	179.5262	DBL-THIS-WWR
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03095	166.1976	DBL-HTCH-BVR
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03946	165.4563	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04888	164.762	DBL-WICH-THI
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0533	162.1943	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	158.6726	GENS15787 1-OKLA WIND ENERGY CENTER
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04161	157.4364	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04159	157.4	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	156.1601	BASE CASE
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04141	155.4729	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03595	155.2509	DEWEY - TALOGA 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05271	154.3388	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03095	154.1483	DBL-BVR-G1334
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04141	153.7454	DEWEY - IODINE 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	152.9057	GENS20922 1-SLEEPING BEAR
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06189	152.6347	DBL-THIS-WWR
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08402	151.8019	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0498	151.7519	DBL-WICH-THI
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03946	151.4218	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0555	150.02	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03819	149.2408	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03819	149.2408	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03095	148.6126	DBL-G1334-WWR
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03515	147.8637	FT SUPPLY - IODINE 138KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0533	147.5169	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03515	146.2644	IODINE - MOORELAND 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	144.4838	GENS20997 1-MORLND2
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0533	144.1327	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	143.7718	GENS15389 1-TLGAWND1 34.500
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04236	143.1363	SPP-SWPS-03
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03935	143.0163	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03883	142.7913	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03981	142.7668	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03169	142.7406	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	142.6656	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	142.6613	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	142.3238	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03935	141.9972	SPP-SWPS-05
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03935	141.941	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0555	141.2275	SPP-AEPW-32
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03581	141.2037	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03169	141.1339	SPP-SWPS-04
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03169	141.0396	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	140.9971	GEN514805 1-SOONER UNIT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03471	140.7084	MOORELAND - TALOGA 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03285	140.5178	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05366	140.4227	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03581	140.4199	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03595	139.6572	MINGO - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03629	139.5694	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04225	139.5657	SPP-SWPS-02A
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03581	139.4878	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05659	139.4799	SPP-SWPS-01
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0345	139.4335	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	139.2564	GEN514806 1-SOONER UNIT 2
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0555	139.0404	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03629	138.953	CARTER JCT - MOORELAND 69KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03629	138.9516	MOORELAND (MOORELND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	138.7255	MINGO - RED WILLOW 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0344	138.7026	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0344	138.7026	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 2
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03541	138.6765	SPP-MKEC-08
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	138.6414	GEN521120 1-BUFBEAR2
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03557	138.6061	AXTELL - POST ROCK 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0359	138.5455	BENTON - WICHITA 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03577	138.3378	HOLCOMB - SETAB 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03533	138.071	FLATRDG3 - HARPER 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	137.9825	GEN520947 1-HUGO1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	137.8681	GEN515225 1-MUSKOGEE 5G
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	137.8586	GEN515226 1-MUSKOGEE 6G
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	137.8412	GEN515223 1-MUSKOGEE 4G
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	137.8385	GEN560687 1-G11-007 0.6900
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03516	137.8118	SMOKYHLE 230.00 - SUMMIT 230KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03536	137.8051	FLATRDG3 - THISTLE4 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03536	137.8044	THISTLE7 345.00 (THISTLE T1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0537	136.6198	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	135.747	NC1_GEN-NEBRASKA CITY 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0313	135.3103	DBL-HTCH-BVR
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05284	134.4539	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04171	133.9437	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03506	133.7814	MIDLTNT4 138.00 - PECKHAM TAP 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03506	133.781	NEWKIRK4 - PECKHAM TAP 138KV CKT 1
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05714	133.7431	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0351	133.7096	BRANTLEY - MORWOOD 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0351	133.7046	MOREWOOD SW - MORWOOD 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03506	133.692	KILDARE4 - NEWKIRK4 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.6747	GEN542962 2-IATAN UNIT #2
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04346	133.6591	SPP-SWPS-03
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.6489	GEN562074 1-G11_049_3 0.6900
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.6263	GEN524295 1-SPNSPUR_WND10.6900
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03394	133.6155	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03506	133.5709	CRESWELL - MIDLTNT4 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.035	133.5581	DELAWARE - NORTHEAST STATION 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03479	133.5273	FREEDOM - WEST 69KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.4702	GEN645001 1-FORT CALHOUN 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0347	133.4534	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.4514	GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.4511	GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.4272	GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03394	133.4115	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03416	133.362	WOODWARD - WOODWARD EHV 138KV CKT 2
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0343	133.3342	DOVER - TWIN LAKES 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	133.3276	GEN515787 1-OKLA WIND ENERGY CENTER
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.2988	GEN562017 1-G11_022_3 0.6900
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.2893	GEN645011 1-NEBRASKA CITY 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.2712	GEN527162 1-MUSTANG GEN #2
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.2711	GEN527161 1-MUSTANG GEN #1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03318	133.2619	CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.2598	GEN560121 1-G08-47 0.5750
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.2559	GEN562432 1-G13-030 0.6900
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0311	133.2365	SAND RDG 138/138.00 - WAKITA 138 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.2335	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0343	133.2279	DOVER - DOVER SW 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03479	133.2271	BUFFALO - WEST 69KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.171	GEN659111 2-LELAND OLDS UNIT2
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.0824	GEN539670 4-JUDSON LARGE GENERATOR
FNSL	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.0282	GEN659103 1-ANTELOPE VALLEY UNIT1
FNSL	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	133.0282	GEN659107 2-ANTELOPE VALLEY UNIT2

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	132.9283	GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03479	132.8264	BUFBEAR2 - BUFFALO 69KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	132.7915	GEN645012 2-NEBRASKA CITY 2
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	132.7439	EASTDC - WELSH 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	132.7086	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	132.7043	GEN520997 1-MORLND2
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	132.5881	GEN640009 1-COOPER NUCLEAR STATION
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0347	132.5002	LYDIA - VALLIANT 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0347	132.4905	SPP-AEPW-01
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03504	132.4376	OPENSKY 345.00 - RANCH 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	132.4321	GEN526331 1-JONES GEN #1 22 KV
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03504	132.4191	RANCH 345.00 - SOONER 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	132.3726	GEN515449 1-CRSRDW11 0.6900
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	132.3648	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	132.343	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	132.312	BASE CASE
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	132.2597	GEN515450 1-CRSRDW21 0.6900
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	132.1995	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	132.1642	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	132.0764	GEN526332 1-JONES GEN #2 21 KV
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	132.018	GEN526334 1-JONES 4 116.500
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	131.991	GEN562443 1-G13-034 0.6900
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04171	131.9406	DEWEY - IODINE 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04198	131.8635	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04196	131.8332	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04337	131.8276	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04337	131.7245	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03504	131.6384	OPENSKY 345.00 - ROSE HILL 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0348	131.4425	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0321	131.4178	SANDY_CN 138138.00 - WAKITA 138 138.00 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	131.1542	GEN562472 1-G13_035 3 0.6900
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	130.9532	GEN562078 1-G11_051_3 0.6900
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	130.8753	GEN523971 1-HARRINGTON GEN #1 24 KV
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	130.875	GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	130.862	GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	130.8602	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04337	130.4725	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05018	130.1989	DBL-WICH-THI
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03636	130.0824	DEWEY - TALOGA 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05581	129.5896	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	129.5672	GEN659118 1-LARAMIE RIVER UNIT1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	129.1188	GEN560648 1-G0721_G1402 0.6900
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	128.9535	GEN520922 1-SLEEPING BEAR
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03981	128.7757	WOODWARD - WOODWARD 69KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03358	128.591	EL RENO - ROMAN NOSE 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	128.3103	GEN525561 1-TOLK GEN #1 24 KV
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.08432	128.3019	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03358	128.213	ROMAN NOSE - SOUTHARD 138KV CKT 1
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06238	128.2006	DBL-THIS-WWR
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	127.7518	GEN525562 1-TOLK GEN #2 24 KV
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	127.4905	GEN531447 1-HOLCOMB GENERATOR
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03358	127.3763	DEWEY - SOUTHARD 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	127.2913	GEN515397 1-OUSPRT 1 34.500
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03852	126.7245	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03852	126.7245	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05022	126.418	DBL-WICH-THI
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05366	126.4133	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	126.1289	GEN560175 1-G0744_G1403 0.6900
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0348	125.9884	VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04337	125.6416	SPP-SWPS-02A
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0321	125.5501	BYRON 138 138.00 - SANDY_CN 138138.00 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0312	125.5087	WOODWARD - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	124.8186	GEN560221 1-G07-62-1 0.6900
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	124.8186	GEN560222 1-G07-62-2 0.6900
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	124.8186	GEN560223 1-G07-62-3 0.6900
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	124.8186	GEN560224 1-G07-62-4 0.6900
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04121	124.4625	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0362	124.4581	MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0321	124.4457	BYRON 138 138.00 - C CITY 138 138.00 138KV CKT 1
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05718	124.4414	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03549	123.9205	FT SUPPLY - IODINE 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0313	123.9059	DBL-BVR-G1334
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0321	123.8493	C CITY 138 138.00 - KNOBHILL 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03159	123.6142	DOVER SW - OKEENE 138KV CKT 1
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06244	123.5519	DBL-THIS-WWR

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04267	123.3967	SPP-SWPS-03
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04256	123.0196	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04256	123.0139	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05366	122.645	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03914	122.6281	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04256	122.5638	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0537	122.4326	G11_051T 345.00 - TATONGA 7 345.00 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03549	122.3559	IODINE - MOORELAND 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	121.4255	GEN515389 1-TLGAWND1 34.500
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03317	121.3965	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0429	121.29	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	120.9507	GEN515393 1-0GEWWD2G
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05581	120.9471	SPP-AEPW-32
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0362	120.9326	ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03201	120.8629	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03665	120.801	GEN520997 1-MORLND2
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	120.7824	GEN515365 1-CENT 21 34.500
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	120.4528	GEN514805 1-SOONER UNIT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04337	120.1767	STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04337	120.156	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04337	120.1477	SPP-SWPS-02
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03971	120.1263	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04019	120.0944	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04256	119.9969	SPP-SWPS-02A
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05284	119.8856	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03615	119.6531	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0429	119.5692	DEWEY - IODINE 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0313	119.5251	DBL-G1334-WWR
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	119.2924	GEN562023 1-G11_020_3 0.6900
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03499	119.2924	GEN562026 1-G11_019_3 0.6900
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03201	119.2901	SPP-SWPS-04
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03201	119.1697	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03482	119.1054	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0569	119.0605	SPP-SWPS-01
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03615	118.8882	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0537	118.8276	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03971	118.8145	SPP-SWPS-05
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03144	118.8024	RENFROW4 138.00 - SAND RDG 138138.00 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03971	118.7619	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05581	118.7219	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	118.6398	GEN514806 1-SOONER UNIT 2
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0363	118.0897	MINGO - SETAB 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03615	118.0356	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03574	117.6872	SPP-MKEC-08
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03664	117.6771	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	117.6704	GEN521120 1-BUFBEAR2
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	117.4788	BENTON - WICHITA 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03591	117.4262	AXTELL - POST ROCK 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	117.3752	GEN520947 1-HUGO1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	117.2391	GEN515225 1-MUSKOGEE 5G
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	117.2291	GEN515226 1-MUSKOGEE 6G
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	117.2104	GEN515223 1-MUSKOGEE 4G
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03566	117.1766	FLATRDG3 - HARPER 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03642	117.0838	MINGO - RED WILLOW 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03664	117.0609	CARTER JCT - MOORELAND 69KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03664	117.0596	MOORELAND (MOORELND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03515	116.9882	MOORELAND - TALOGA 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	115.0164	NC1_GEN-NEBRASKA CITY 1
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05714	114.7968	SPP-AEPW-32
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03665	114.658	GEN520998 1-MORLND3
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03056	114.5576	CEDARDALE - OKEENE 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03056	113.8594	CEDARDALE - MOORELAND 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.035	113.0285	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03429	112.9325	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.9084	GEN645001 1-FORT CALHOUN 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.8665	GEN562017 1-G11_022_3 0.6900
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03512	112.8652	BUFFALO - WEST 69KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03595	112.8643	CIMARRON - MATHWSN7 345.00 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.8282	GEN542962 2-IATAN UNIT #2
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03465	112.8211	DOVER - TWIN LAKES 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.8138	GEN560121 1-G08-47 0.5750
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.8038	GEN562432 1-G13-030 0.6900
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03504	112.7603	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03429	112.7247	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03465	112.7153	DOVER - DOVER SW 138KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.7129	GEN645011 1-NEBRASKA CITY 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.699	GEN659111 2-LELAND OLDS UNIT2
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.6361	GEN515449 1-CRSDW11 0.6900
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.6096	GEN539670 4-JUDSON LARGE GENERATOR
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.586	GEN515450 1-CRSDW21 0.6900
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05714	112.5829	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.5606	GEN659103 1-ANTELOPE VALLEY UNIT1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.5606	GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03532	112.5155	OPENSKY 345.00 - RANCH 345.00 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.5044	GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.5041	GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03532	112.5005	RANCH 345.00 - SOONER 345KV CKT 1
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05823	112.4958	SPP-SWPS-01
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03512	112.4836	BUFBEAR2 - BUFFALO 69KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.4834	GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.4818	GEN527161 1-MUSTANG GEN #1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.4818	GEN527162 1-MUSTANG GEN #2
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03353	112.4776	CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.3378	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.2778	GEN562443 1-G13-034 0.6900
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03501	112.263	LYDIA - VALLIANT 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03501	112.2555	SPP-AEPW-01
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.2001	GEN645012 2-NEBRASKA CITY 2
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03245	112.1661	SANDY_CN_138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.1272	GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	112.1146	EASTDC - WELSH 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	111.9423	GEN640009 1-COOPER NUCLEAR STATION
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	111.9024	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03032	111.8303	KNOBHILL - MOORELAND 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	111.7136	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	111.6922	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03532	111.6589	OPENSKY 345.00 - ROSE HILL 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	111.6147	GEN526331 1-JONES GEN #1 22 KV
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	111.5613	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	111.5256	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	111.4321	GEN562472 1-G13_035_3 0.6900
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04121	111.4018	WOODWARD - WOODWARD 69KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	111.3511	GEN526334 1-JONES_4 116.500
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	111.2922	GEN562078 1-G11_051_3 0.6900
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	111.2223	GEN526332 1-JONES GEN #2 21 KV
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04086	110.9288	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04382	110.5027	SPP-SWPS-03
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03665	110.3358	BASE CASE
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04147	110.268	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04317	110.2427	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	110.2419	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04316	110.2174	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	110.0659	GEN523971 1-HARRINGTON GEN #1 24 KV
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	110.0657	GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	110.0523	GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	109.974	GEN560648 1-G0721_G1402 0.6900
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04372	109.7653	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04372	109.7555	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05718	109.6325	SPP-AEPW-32
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03688	109.6041	GEN520997 1-MORLND2
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04086	109.4731	SPP-SWPS-05
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04086	109.4022	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04372	108.905	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	108.8662	GEN659118 1-LARAMIE RIVER UNIT1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03976	108.7663	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03976	108.7663	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03393	108.7034	EL RENO - ROMAN NOSE 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03393	108.3176	ROMAN NOSE - SOUTHARD 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	108.3089	GEN515397 1-OUSPR1 34.500
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	107.6586	GEN560175 1-G0744_G1403 0.6900
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03393	107.4818	DEWEY - SOUTHARD 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	107.4363	GEN525561 1-TOLK GEN #1 24 KV
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0369	107.2946	GEN520997 1-MORLND2
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05718	107.2924	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0415	107.203	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.035	107.1705	VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05827	107.1407	SPP-SWPS-01
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04385	107.1286	SPP-SWPS-03
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	106.921	GEN531447 1-HOLCOMB GENERATOR
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	106.6926	GEN525562 1-TOLK GEN #2 24 KV

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	106.6725	GEN560221 1-G07-62-1 0.6900
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	106.6725	GEN560222 1-G07-62-2 0.6900
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	106.6725	GEN560223 1-G07-62-3 0.6900
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	106.6725	GEN560224 1-G07-62-4 0.6900
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03245	106.6058	BYRON_138 138.00 - SANDY_CN_138138.00 138KV CKT 1
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04375	106.471	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04375	106.4444	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04372	106.147	SPP-SWPS-02A
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04318	106.0595	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03757	105.7011	MOREWOOD SW - NINE MILE 138KV CKT 1
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04375	105.6388	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03245	105.463	BYRON_138 138.00 - C_CITY_138 138.00 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03658	105.385	MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0315	105.3293	WOODWARD - WOODWARD EHV 138KV CKT 1
FDNS	01ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03757	105.3146	MOORELAND - NINE MILE 138KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03245	104.8604	C_CITY_138 138.00 - KNOBHILL 138KV CKT 1
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	104.5677	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03197	104.5341	DOVER SW - OKEENE 138KV CKT 1
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04318	104.3432	DEWEY - IODINE 138KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03663	103.8313	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	103.5893	GEN515393 1-0GEWIND2G
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	103.5795	GEN515365 1-CENT 21 34.500
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.06393	103.4132	DBL-THIS-WWR
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03688	103.3244	GEN520998 1-MORLND3
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04321	103.0847	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04375	102.9047	SPP-SWPS-02A
FDNS	09ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05428	102.4336	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	102.1768	GEN562023 1-G11_020_3 0.6900
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03531	102.1768	GEN562026 1-G11_019_3 0.6900
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04049	101.8747	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03658	101.6465	ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03303	101.4841	RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04321	101.368	DEWEY - IODINE 138KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03747	101.1828	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	6		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0369	101.0006	GEN520998 1-MORLND3
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04372	100.7694	STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04372	100.7604	SPP-SWPS-02
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0303	100.753	IMO TAP - MEN TAP 138KV CKT 1
FDNS	06G14_007		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04372	100.7499	STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03665	100.7424	GEN514805 1-SOONER UNIT 1
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	100.352	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03747	100.317	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03665	100.2311	GEN515787 1-OKLA WIND ENERGY CENTER
FDNS	1		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0303	100	CLEO CORNER - MEN TAP 138KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03762	99.9	MINGO - SETAB 345KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03619	99.8	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	185	0.05503	99.7	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0371	99.6	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03616	99.5	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03747	99.3	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03665	99.3	GEN520922 1-SLEEPING BEAR
FDNS	06ALL		0 14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03665	99.1	GEN514806 1-SOONER UNIT 2
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05229	130.5641	DBL-G1334-WWR
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05229	130.3114	DBL-BVR-G1334
FNSL	0		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09254	128.2772	SPP-AEPW-32
FDNS	0		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08882	127.1999	SPP-SWPS-01
FDNS	0		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09254	126.8966	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05784	126.3541	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05784	126.3227	SPP-SWPS-04
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05229	124.7697	DBL-HTCH-BVR
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05784	123.2129	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05336	120.9508	CONWAY SUB - NICHOLS STATION 115KV CKT 1
FDNS	06ALL		0 14G	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.03914	119.1341	DBL-G1334-WWR
FDNS	06ALL		0 14G	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.03914	119.0848	DBL-BVR-G1334
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05336	118.8926	SPP-SWPS-T53
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05336	118.7999	CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05435	116.3869	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	115.3425	BASE CASE
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05435	114.9795	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05435	114.7079	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05076	114.5049	KINGSMILL INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1
FNSL	0		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05298	113.6691	DBL-G1334-WWR
FNSL	0		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05298	113.5906	DBL-BVR-G1334
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05197	113.5414	DBL-WICH-THI
FDNS	00G14_007		0 19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05076	112.385	BOWERS INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	00G14_007	0	14G	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.07037	111.7296	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.055	111.4965	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05338	111.2606	DBL-THIS-WWR
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.055	111.1429	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04855	111.0484	KINGSMILL INTERCHANGE - LLANO ESTACADO WIND GEN 115KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04855	110.9271	SPP-SWPS-V29
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.055	110.758	SPP-SWPS-05
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0477	109.9104	GRAY COUNTY INTERCHANGE - HUTCHINSON COUNTY INTERCHANGE S. 115KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0477	109.9065	GRAY COUNTY INTERCHANGE (WH RHP17221) 115/69/13.2KV TRANSFORMER CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04887	109.4425	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0483	109.2497	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04855	109.2171	MIDSTREAM ENERGY TAP - NICHOLS STATION 115KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04855	108.9559	LLANO ESTACADO WIND GEN - MIDSTREAM ENERGY TAP 115KV CKT 1
FDNS	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05854	108.8634	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FNSL	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05298	108.7679	DBL-HTCH-BVR
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0483	108.5271	BUCKNER7 345.00 - HOLCOMB 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04965	108.4218	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1
FDNS	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05854	108.3951	SPP-SWPS-04
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04789	108.2782	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04789	108.2782	BEAVER CO 345.00 - G13-034T 345.00 345KV CKT 2
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05142	107.9412	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1
FDNS	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05402	107.8856	CONWAY SUB - NICHOLS STATION 115KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04694	107.0854	MOORELAND - NINE MILE 138KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04829	107.0687	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04829	107.0687	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04694	107.0664	MOREWOOD SW - NINE MILE 138KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04798	107.0098	HUTCHINSON COUNTY INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	106.9927	GEN509416 1-TURK GENERATION
FDNS	6	0	14G	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.07049	106.899	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	106.8657	GEN520947 1-HUGO1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04875	106.8582	FPL SWITCH - MOORELAND 138KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04781	106.7906	Harrington Station East Bus - PRINGLE INTERCHANGE 230KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04781	106.7904	PRINGLE INTERCHANGE (WH ALM12301) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04781	106.7899	SPP-SWPS-K43
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04676	106.7859	DBL-THIS-CLR
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04876	106.6719	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	106.6699	GEN509403 1-PIRKEY GENERATION
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04875	106.6696	THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	106.6311	GEN509406 1-WELSH #3
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	106.6308	GEN509404 1-WELSH #1
FDNS	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05854	106.6242	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04721	106.6194	NICHOLS STATION (ENRCO 136731) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04721	106.6194	NICHOLS STATION (ENRCO 136732) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	106.5786	GEN515042 1-SEMINOLE 3G
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04875	106.5784	FPL SWITCH - WOODWARD 138KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	106.4976	GEN501801 1-DOLET HILLS UNIT1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04257	106.4571	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0477	106.4513	GRAY COUNTY INTERCHANGE - KINGSMILL INTERCHANGE 69KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04748	106.3961	G13-034T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04748	106.3961	G13-034T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04747	106.3819	BEAVER CO 345.00 - Hitchland Interchange 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04747	106.3819	BEAVER CO 345.00 - Hitchland Interchange 345KV CKT 2
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04704	106.3689	ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04676	106.3673	DBL-IRON-CLR
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	106.3457	GEN336153 1-WATERFORD UNIT#3
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	106.3248	GEN511848 1-SOUTHWESTERN STATION #3
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04772	106.2531	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	106.2234	GEN335831 1-RIVERBEND UNIT#1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	106.2218	GEN515226 1-MUSKOGEE 6G
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	106.2039	GEN515041 1-SEMINOLE 2G
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	106.1974	GEN511851 1-COMANCHE #1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04666	106.179	CIMARRON - NORTHWEST 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04362	106.1693	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04772	106.1521	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	106.1157	GEN515223 1-MUSKOGEE 4G
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	106.1157	GEN515225 1-MUSKOGEE 5G
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04402	106.1124	TOLK STATION EAST - TUCO INTERCHANGE 230KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04763	106.1086	HITCHLAND INTERCHANGE - Hansford County Switch Station 115KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04741	106.0838	PRINGLE INTERCHANGE - SPEARMAN INTERCHANGE 115KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04758	106.0227	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04685	106.0219	CHERRY1 - HARRINGTON STATION 230KV CKT 1
FNSL	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04729	106.0103	CHAN/TASCO56230.00 - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	106.0075	GEN511843 1-RIVERSIDE STATION #2
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	105.9871	GEN520811 1-ANADRK4
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	105.9741	GEN520812 1-ANADRK5

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	105.974	GENS20813 1-ANADRR6
FDNS	06ALL	0	14G	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.03914	105.9683	DBL-HTCH-BVR
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04772	105.9682	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04758	105.9655	DEWEY - IODINE 138KV CKT 1
FDNS	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05402	105.867	SPP-SWPS-T53
FDNS	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05402	105.7115	CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1
FDNS	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07045	104.6288	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	104.2873	GENS60729 1-G13_013_3 0.6900
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04673	104.2217	CLINTON JUNCTION - CLINTON NATURAL GAS TAP 138KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	104.1935	GENS24471 1-QUAY_CNTY 113.800
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	104.1855	GENS32653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	104.1786	GEN645011 1-NEBRASKA CITY 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	104.1774	GEN659111 2-LELAND OLDS UNIT2
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04675	104.1613	NEWHART 230 - PLANT X STATION 230KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	104.1351	GENS32651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	104.1208	GENS60105 1-G08-22 0.6900
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	104.1172	GEN659103 1-ANTELOPE VALLEY UNIT1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	104.1172	GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	104.1057	GENS42957 1-IATAN UNIT #1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04506	104.0782	BUSHLAND INTERCHANGE - DEAF SMITH COUNTY INTERCHANGE 230KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04605	104.0769	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	104.0345	GENS62483 1-G13_027_3 0.6900
FDNS	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07045	103.9823	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	103.9136	GENS39670 4-JUDSON LARGE GENERATOR
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0463	103.8987	CHILDRESS - HOLLIS TAP 138KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04414	103.8696	BUSHLAND_5 230.00 - NEWHART 230 230KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	103.8393	GEN645001 1-FORT CALHOUN 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	103.8013	GENS42962 2-IATAN UNIT #2
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0463	103.8013	HOLLIS TAP - WELLINGTON 138KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	103.6994	GENS24895 1-SAN JUAN MESA WIND GEN
FDNS	06ALL	0	14G	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.04359	103.6952	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	103.6668	GEN645012 2-NEBRASKA CITY 2
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	103.6229	GENS32652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	103.5577	GENS32751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	103.5528	EASTDC - WELSH 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0455	103.5169	DEAF SMITH COUNTY INTERCHANGE - PLANT X STATION 230KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	103.4631	GENS60331 1-G10-46 13.800
FDNS	06ALL	0	14G	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.04359	103.4183	SPP-SWPS-04
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0463	103.4114	SHAMROCK (SHAMRCK2) 138/69/14.4KV TRANSFORMER CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0463	103.3991	SHAMROCK - WELLINGTON 138KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.03933	103.368	SWISHER COUNTY INTERCHANGE - TUCO INTERCHANGE 230KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04561	103.3438	CHILDRESS - LAKE PAULINE 138KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	103.338	GEN640009 1-COOPER NUCLEAR STATION
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	103.2846	GENS24295 1-SPNSPUR_WND10.6900
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0463	103.063	SHAMROCK (SHAMRCK1) 115/69/14.4KV TRANSFORMER CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0463	103.0582	MCLEAN RURAL SUB - SHAMROCK 115KV CKT 1
FDNS	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04771	103.0131	BASE CASE
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04597	102.9512	CLINTON JUNCTION - ELK CITY 138KV CKT 1
FNLS	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05497	102.942	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0463	102.8252	MCLELLAN SUB - MCLEAN RURAL SUB 115KV CKT 1
FDNS	00G14_007	0	14WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07107	102.7888	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	102.7411	GENS24286 1-CLR_3 0.6900
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0463	102.7312	KIRBY SWITCHING STATION - MCLELLAN SUB 115KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04526	102.6705	LAWTON EASTSIDE - SUNNYSIDE 345KV CKT 1
FNLS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	102.6673	GEN659118 1-LARAMIE RIVER UNIT1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	102.5766	GENS27883 1-CUNNINGHAM GEN #3 22 KV
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	102.4009	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04169	102.33	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	102.2991	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.0463	102.1411	SPP-SWPS-T54
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	102.0757	GENS25492 1-PLANT X GEN #2
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	102.0046	GENS25493 1-PLANT X GEN #3
FDNS	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05138	102.0036	KINGSMILL INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1
FDNS	06ALL	0	14G	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.03946	101.8825	CONWAY SUB - NICHOLS STATION 115KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	101.5794	GENS28361 1-MADDOX GEN #1
FNLS	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05497	101.5487	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FNLS	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05497	101.2328	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	100.9969	GENS31447 1-HOLCOMB GENERATOR
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	100.8398	GENS27161 1-MUSTANG GEN #1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	100.8398	GENS27162 1-MUSTANG GEN #2
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	100.7264	GENS23461 1-BLACKHAWK GEN #1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04025	100.719	GRACEMONT - MINCO 345KV CKT 1
FNLS	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05258	100.6643	DBL-WICH-THI
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	100.6458	GENS23462 1-BLACKHAWK GEN #2
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	100.5779	GENS27902 1-HOBBS PLANT #2 (CT)

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	100.546	GENS27901 1-HOBBS PLANT #1 (CT)
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	100.3865	GENS27163 1-MUSTANG GEN #3 22 KV
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04654	100.2989	BOWERS INTERCHANGE - GRAPEVINE INTERCHANGE 115KV CKT 1
FDNS	06ALL	0	14G	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.03946	100.2444	SPP-SWPS-T53
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04025	100.2177	CIMARRON - MINCO 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	100.179	GENS62490 1-G14_007_4 0.6900
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	100.179	GENS62492 1-G14_007_5 0.6900
FDNS	06ALL	0	14G	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.03946	100.1237	CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1
FDNS	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05138	100	BOWERS INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1
FDNS	06ALL	0	14G	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.04359	100	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	14G	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.03995	99.9	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	06G14_007	0	14G	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	351	0.07037	99.9	SPP-AEPW-32
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	99.8	GENS60738 1-G13_016_2 18.000
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	99.7	GENS25844 1-ANTELOPE_CT118.000
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	99.5	GENS27166 1-MUSTANG_6 118.000
FDNS	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04914	99.3	KINGSMILL INTERCHANGE - LLANO ESTACADO WIND GEN 115KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04713	99.2	GENS27882 1-CUNNINGHAM GEN #2 20 KV
FDNS	0	0	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04914	99.1	SPP-SWPS-V29
FDNS	06ALL	0	14G	G14_007	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	351	0.043	114.4264	DBL-G1334-WWR
FDNS	06ALL	0	14G	G14_007	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	351	0.043	114.3425	DBL-BVR-G1334
FDNS	00G14_007	0	19WP	G14_007	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.05384	110.9267	DBL-G1334-WWR
FDNS	00G14_007	0	19WP	G14_007	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.05384	110.6762	DBL-BVR-G1334
FDNS	0	0	19WP	G14_007	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.09481	108.293	SPP-AEPW-32
FDNS	0	0	19WP	G14_007	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.091	107.1898	SPP-SWPS-01
FDNS	0	0	19WP	G14_007	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.09481	106.9601	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.05905	106.1053	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.05905	106.0706	SPP-SWPS-04
FDNS	06G14_007	0	14G	G14_007	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	351	0.07613	105.8922	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00G14_007	0	19WP	G14_007	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.05384	105.0563	DBL-HTCH-BVR
FDNS	00G14_007	0	19WP	G14_007	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.05905	102.9159	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	06ALL	0	14G	G14_007	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	351	0.043	100.4323	DBL-HTCH-BVR
FDNS	6	0	14G	G14_007	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	351	0.07626	100.3992	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00G14_007	0	14SP	G14_007	TO->FROM	HALE CO INTERCHANGE - TUCO INTERCHANGE 115KV CKT 1	96	0.03484	100	KRESS INTERCHANGE - SWISHER COUNTY INTERCHANGE 115KV CKT 1
FDNS	00G14_007	0	14SP	G14_007	TO->FROM	HALE CO INTERCHANGE - TUCO INTERCHANGE 115KV CKT 1	96	0.03484	99.9	SWISHER COUNTY INTERCHANGE (GE M101686) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	01ALL	0	14G	G14_007	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.0307	210.1048	DBL-WICH-THI
FDNS	1	0	14G	G14_007	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03075	187.6431	DBL-WICH-THI
FDNS	06G14_007	0	14G	G14_007	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03006	174.2568	DBL-WICH-THI
FDNS	6	0	14G	G14_007	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03011	171.2108	DBL-WICH-THI
FDNS	09ALL	0	14G	G14_007	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03067	130.6427	DBL-WICH-THI
FDNS	9	0	14G	G14_007	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03079	127.507	DBL-WICH-THI
FDNS	13	0	14G	G14_007	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03088	120.8648	DBL-WICH-THI
FDNS	13ALL	0	14G	G14_007	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03087	120.569	DBL-WICH-THI
FDNS	01ALL	0	14G	G14_007	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	0.20386	115.9426	DBL-THIS-WWR
FDNS	01ALL	0	14G	G14_007	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	0.16796	105.3843	DBL-WICH-THI
FDNS	00G14_007	0	19WP	G14_007	FROM->TO	SPSSPPTIESB	620	0.3529	182.2627	BASE CASE
FDNS	06ALL	0	14G	G14_007	FROM->TO	SPSSPPTIESB	620	0.35796	169.5845	BASE CASE
FDNS	0	0	19WP	G14_007	FROM->TO	SPSSPPTIESB	620	0.35525	154.8739	BASE CASE
FDNS	06G14_007	0	14G	G14_007	FROM->TO	SPSSPPTIESB	620	0.36203	136.1501	BASE CASE
FDNS	6	0	14G	G14_007	FROM->TO	SPSSPPTIESB	620	0.3626	130.0794	BASE CASE
FDNS	00G14_007	0	14WP	G14_007	FROM->TO	SPSSPPTIESB	620	0.3703	126.8032	BASE CASE
FDNS	00G14_007	0	14SP	G14_007	FROM->TO	SPSSPPTIESB	620	0.37464	101.8741	BASE CASE
FDNS	06ALL	0	14G	G14_007	FROM->TO	SPSSPPTIESB1	620	0.37842	159.545	BASE CASE
FDNS	00G14_007	0	19WP	G14_007	FROM->TO	SPSSPPTIESB1	620	0.37322	148.1719	BASE CASE
FDNS	06G14_007	0	14G	G14_007	FROM->TO	SPSSPPTIESB1	620	0.38235	129.0893	BASE CASE
FDNS	6	0	14G	G14_007	FROM->TO	SPSSPPTIESB1	620	0.3829	122.922	BASE CASE
FDNS	0	0	19WP	G14_007	FROM->TO	SPSSPPTIESB1	620	0.37541	120.8545	BASE CASE
FDNS	06ALL	0	14G	G14_007	FROM->TO	SPSSPPTIESC	620	0.37842	159.545	BASE CASE
FDNS	00G14_007	0	19WP	G14_007	FROM->TO	SPSSPPTIESC	620	0.37322	148.1719	BASE CASE
FDNS	06G14_007	0	14G	G14_007	FROM->TO	SPSSPPTIESC	620	0.38235	129.0893	BASE CASE
FDNS	6	0	14G	G14_007	FROM->TO	SPSSPPTIESC	620	0.3829	122.922	BASE CASE
FDNS	0	0	19WP	G14_007	FROM->TO	SPSSPPTIESC	620	0.37541	120.8545	BASE CASE
FDNS	00G14_007	0	19WP	G14_007	FROM->TO	SPSSPPTIESC1	620	0.3529	182.2627	BASE CASE
FDNS	06ALL	0	14G	G14_007	FROM->TO	SPSSPPTIESC1	620	0.35796	169.5845	BASE CASE
FDNS	0	0	19WP	G14_007	FROM->TO	SPSSPPTIESC1	620	0.35525	154.8739	BASE CASE
FDNS	06G14_007	0	14G	G14_007	FROM->TO	SPSSPPTIESC1	620	0.36203	136.1501	BASE CASE
FDNS	6	0	14G	G14_007	FROM->TO	SPSSPPTIESC1	620	0.3626	130.0794	BASE CASE
FDNS	00G14_007	0	14WP	G14_007	FROM->TO	SPSSPPTIESC1	620	0.3703	126.8032	BASE CASE
FDNS	00G14_007	0	14SP	G14_007	FROM->TO	SPSSPPTIESC1	620	0.37464	101.8741	BASE CASE
FDNS	00G14_007	0	24SP	G14_007	FROM->TO	TUCO INTERCHANGE (GE M102345) 230/115/13.2KV TRANSFORMER CKT 1	252	0.03712	115.3886	TUCO INTERCHANGE (ENRCO 136401) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0	0	24SP	G14_007	FROM->TO	TUCO INTERCHANGE (GE M102345) 230/115/13.2KV TRANSFORMER CKT 1	252	0.03708	111.2681	TUCO INTERCHANGE (ENRCO 136401) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	00G14_007	0	24SP	G14_007	FROM->TO	TUCO INTERCHANGE (GE M102345) 230/115/13.2KV TRANSFORMER CKT 1	252	0.03712	110.7207	TUCO INTERCHANGE (ENRCO 136401) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0	0	24SP	G14_007	FROM->TO	TUCO INTERCHANGE (GE M102345) 230/115/13.2KV TRANSFORMER CKT 1	252	0.03708	106.7285	TUCO INTERCHANGE (ENRCO 136401) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	0	14G	G14_007	FROM->TO	TUCXFR345230	300	0.20829	110.3	BASE CASE
FDNS	06ALL	2	14G	G14_007	FROM->TO	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	353	0.10672	111.5864	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL	2	14G	G14_007	FROM->TO	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	353	0.08818	106.541	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY	
FDNS	09ALL		2	14G	G14_007	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03067	120.1446	DBL-WICH-THI
FDNS	9		2	14G	G14_007	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03079	117.0156	DBL-WICH-THI
FDNS	06ALL		2	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10672	122.1654	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		2	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10672	120.7913	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007		2	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.1079	119.4454	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007		2	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08922	118.1096	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00G14_007		2	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.1079	117.9975	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		2	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08818	113.5375	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00G14_007		2	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08922	113.5249	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL		2	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08818	110.2882	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06G14_007		2	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.1074	108.1049	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06G14_007		2	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.1074	107.3143	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007		2	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08922	106.8998	SPP-AEPW-32
FDNS	00G14_007		2	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.09014	105.4192	SPP-SWPS-01
FDNS	6		2	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10749	104.9014	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007		2	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08922	104.5134	SPP-AEPW-32
FDNS	06ALL		2	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08818	104.2686	SPP-AEPW-32
FDNS	6		2	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10749	104.2085	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007		2	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.09014	103.1206	SPP-SWPS-01
FDNS	0		2	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.1084	102.6288	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		2	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08914	102.5634	SPP-SWPS-01
FDNS	06ALL		2	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08818	102.3289	SPP-AEPW-32
FDNS	0		2	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.1084	101.8817	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007		2	14WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10873	101.4855	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		2	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08914	100.6944	SPP-SWPS-01
FDNS	00G14_007		2	14WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10873	100.6445	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	0		2	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08965	99.80622	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00G14_007		2	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.11122	99.2	CHISHOLM7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	09ALL		2	14G	G14_007	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05428	102.4336	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FNLS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09254	128.2772	SPP-AEPW-32
FDNS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08882	127.1999	SPP-SWPS-01
FDNS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09254	126.8967	OKLAUNION - TUCCO INTERCHANGE 345KV CKT 1
FDNS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05854	108.8634	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FNLS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05298	108.7679	DBL-HTCH-BVR
FDNS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05854	108.3951	SPP-SWPS-04
FDNS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05402	107.8856	CONWAY SUB - NICHOLS STATION 115KV CKT 1
FDNS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05854	106.6242	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05402	105.867	SPP-SWPS-T53
FDNS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05402	105.7114	CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1
FDNS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07045	104.6288	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.07045	103.9823	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04771	103.0131	BASE CASE
FNLS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05497	102.942	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05138	102.0036	KINGSMILL INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1
FNLS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05497	101.5487	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FNLS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05497	101.2328	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FNLS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05258	100.6644	DBL-WICH-THI
FDNS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.05138	100	BOWERS INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1
FDNS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04914	99.3	KINGSMILL INTERCHANGE - LLANO ESTACADO WIND GEN 115KV CKT 1
FDNS	0		2	19WP	G14_007	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.04914	99.1	SPP-SWPS-V29
FNLS	0		2	19WP	G14_007	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.09481	108.293	SPP-AEPW-32
FDNS	0		2	19WP	G14_007	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.091	107.1898	SPP-SWPS-01
FDNS	0		2	19WP	G14_007	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.09481	106.9602	OKLAUNION - TUCCO INTERCHANGE 345KV CKT 1
FDNS	09ALL		2	14G	G14_007	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03067	130.6427	DBL-WICH-THI
FDNS	9		2	14G	G14_007	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03079	127.507	DBL-WICH-THI
FDNS	0		2	19WP	G14_007	FROM->TO	SPSSPTIESB	620	0.35525	154.8739	BASE CASE
FDNS	00G14_007		2	19WP	G14_007	FROM->TO	SPSSPTIESB	620	0.25524	153.073	BASE CASE
FDNS	06ALL		2	14G	G14_007	FROM->TO	SPSSPTIESB	620	0.24725	136.0029	BASE CASE
FDNS	0		2	19WP	G14_007	FROM->TO	SPSSPTIESB	620	0.25663	132.0154	BASE CASE
FDNS	06G14_007		2	14G	G14_007	FROM->TO	SPSSPTIESB	620	0.25034	107.1141	BASE CASE
FDNS	6		2	14G	G14_007	FROM->TO	SPSSPTIESB	620	0.25077	102.5402	BASE CASE
FDNS	00G14_007		2	14WP	G14_007	FROM->TO	SPSSPTIESB	620	0.25892	100.4258	BASE CASE
FDNS	06ALL		2	14G	G14_007	FROM->TO	SPSSPTIESB1	620	0.26794	124.0382	BASE CASE
FDNS	0		2	19WP	G14_007	FROM->TO	SPSSPTIESB1	620	0.37541	120.8545	BASE CASE
FDNS	00G14_007		2	19WP	G14_007	FROM->TO	SPSSPTIESB1	620	0.27434	116.9549	BASE CASE
FDNS	06ALL		2	14G	G14_007	FROM->TO	SPSSPTIESB1	620	0.26794	124.0382	BASE CASE
FDNS	0		2	19WP	G14_007	FROM->TO	SPSSPTIESC	620	0.37541	120.8545	BASE CASE
FDNS	00G14_007		2	19WP	G14_007	FROM->TO	SPSSPTIESC	620	0.27434	116.9549	BASE CASE
FDNS	0		2	19WP	G14_007	FROM->TO	SPSSPTIESC1	620	0.35525	154.8739	BASE CASE
FDNS	00G14_007		2	19WP	G14_007	FROM->TO	SPSSPTIESC1	620	0.25524	153.073	BASE CASE
FDNS	06ALL		2	14G	G14_007	FROM->TO	SPSSPTIESC1	620	0.24725	136.0029	BASE CASE
FDNS	0		2	19WP	G14_007	FROM->TO	SPSSPTIESC1	620	0.25663	132.0154	BASE CASE
FDNS	06G14_007		2	14G	G14_007	FROM->TO	SPSSPTIESC1	620	0.25034	107.1141	BASE CASE
FDNS	6		2	14G	G14_007	FROM->TO	SPSSPTIESC1	620	0.25077	102.5402	BASE CASE
FDNS	00G14_007		2	14WP	G14_007	FROM->TO	SPSSPTIESC1	620	0.25892	100.4258	BASE CASE

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	0	2	24SP	G14_007	FROM->TO	TUCO INTERCHANGE (GE M102345) 230/115/13.2KV TRANSFORMER CKT 1	252	0.03708	111.2681	TUCO INTERCHANGE (ENRCO 136401) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0	2	24SP	G14_007	FROM->TO	TUCO INTERCHANGE (GE M102345) 230/115/13.2KV TRANSFORMER CKT 1	252	0.03708	106.7285	TUCO INTERCHANGE (ENRCO 136401) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	06ALL	2	14G	G14_007	FROM->TO	TUCXFR345230	300	0.16389	133.9	BASE CASE
FDNS	0	2	19WP	G14_007	FROM->TO	TUCXFR345230	300	0.16473	105.2	BASE CASE
FDNS	06ALL	3	14G	G14_007	FROM->TO	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	353	0.10441	109.8824	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL	3	14G	G14_007	FROM->TO	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	353	0.08586	104.1765	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	3	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10441	120.7132	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL	3	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10441	119.3754	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007	3	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10539	117.822	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007	3	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10539	116.4527	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007	3	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08684	114.8853	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	3	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08586	111.7636	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00G14_007	3	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08684	111.1017	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	3	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08586	108.8781	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06G14_007	3	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10502	107.0567	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06G14_007	3	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10502	106.3151	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007	3	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08684	105.3785	SPP-AEPW-32
FDNS	6	3	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10511	103.9772	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007	3	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08745	103.9541	SPP-SWPS-01
FDNS	6	3	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10511	103.3207	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL	3	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08586	103.3162	SPP-AEPW-32
FDNS	00G14_007	3	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08684	103.2734	SPP-AEPW-32
FDNS	00G14_007	3	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08745	101.9404	SPP-SWPS-01
FDNS	06ALL	3	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08646	101.8366	SPP-SWPS-01
FDNS	06ALL	3	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08586	101.5641	SPP-AEPW-32
FDNS	0	3	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10594	101.5066	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007	3	14WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10627	100.902	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	0	3	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10594	100.8385	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL	3	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08646	100.1617	SPP-SWPS-01
FDNS	00G14_007	3	14WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10627	100.1005	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007	3	19WP	G14_007	FROM->TO	SPSSPTIESB	620	0.25655	152.9713	BASE CASE
FDNS	06ALL	3	14G	G14_007	FROM->TO	SPSSPTIESB	620	0.2495	135.574	BASE CASE
FDNS	0	3	19WP	G14_007	FROM->TO	SPSSPTIESB	620	0.25823	131.8393	BASE CASE
FDNS	06G14_007	3	14G	G14_007	FROM->TO	SPSSPTIESB	620	0.25241	106.7254	BASE CASE
FDNS	6	3	14G	G14_007	FROM->TO	SPSSPTIESB	620	0.25285	102.0588	BASE CASE
FDNS	00G14_007	3	14WP	G14_007	FROM->TO	SPSSPTIESB	620	0.26083	100.9041	BASE CASE
FDNS	06ALL	3	14G	G14_007	FROM->TO	SPSSPTIESB1	620	0.23506	111.4234	BASE CASE
FDNS	00G14_007	3	19WP	G14_007	FROM->TO	SPSSPTIESB1	620	0.24001	106.8878	BASE CASE
FDNS	06ALL	3	14G	G14_007	FROM->TO	SPSSPTIESC	620	0.23506	111.4234	BASE CASE
FDNS	00G14_007	3	19WP	G14_007	FROM->TO	SPSSPTIESC	620	0.24001	106.8878	BASE CASE
FDNS	00G14_007	3	19WP	G14_007	FROM->TO	SPSSPTIESC1	620	0.25655	152.9713	BASE CASE
FDNS	06ALL	3	14G	G14_007	FROM->TO	SPSSPTIESC1	620	0.2495	135.574	BASE CASE
FDNS	0	3	19WP	G14_007	FROM->TO	SPSSPTIESC1	620	0.25823	131.8393	BASE CASE
FDNS	06G14_007	3	14G	G14_007	FROM->TO	SPSSPTIESC1	620	0.25241	106.7254	BASE CASE
FDNS	6	3	14G	G14_007	FROM->TO	SPSSPTIESC1	620	0.25285	102.0588	BASE CASE
FDNS	00G14_007	3	14WP	G14_007	FROM->TO	SPSSPTIESC1	620	0.26083	100.9041	BASE CASE
FDNS	06ALL	3	14G	G14_007	FROM->TO	TUCXFR345230	300	0.1281	101.6	BASE CASE
FDNS	00G14_007	4	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10547	117.8146	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007	4	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10547	116.4484	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007	4	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08691	114.8363	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00G14_007	4	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08691	111.1272	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00G14_007	4	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08691	105.3674	SPP-AEPW-32
FDNS	00G14_007	4	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08752	103.9429	SPP-SWPS-01
FDNS	00G14_007	4	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08691	103.2688	SPP-AEPW-32
FDNS	00G14_007	4	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08752	101.9366	SPP-SWPS-01
FDNS	0	4	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10602	101.5024	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	0	4	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10602	100.8366	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007	4	19WP	G14_007	FROM->TO	SPSSPTIESB	620	0.25688	152.9457	BASE CASE
FDNS	0	4	19WP	G14_007	FROM->TO	SPSSPTIESB	620	0.25855	131.8291	BASE CASE
FDNS	00G14_007	4	19WP	G14_007	FROM->TO	SPSSPTIESB1	620	0.24026	106.8817	BASE CASE
FDNS	00G14_007	4	19WP	G14_007	FROM->TO	SPSSPTIESC	620	0.24026	106.8817	BASE CASE
FDNS	00G14_007	4	19WP	G14_007	FROM->TO	SPSSPTIESC1	620	0.25688	152.9457	BASE CASE
FDNS	0	4	19WP	G14_007	FROM->TO	SPSSPTIESC1	620	0.25855	131.8291	BASE CASE
FDNS	06ALL	5	14G	G14_007	FROM->TO	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	353	0.10441	109.8824	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL	5	14G	G14_007	FROM->TO	CHISHOLM6 230.00 - ELK CITY 230KV 230KV CKT 1	353	0.08586	104.1765	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	5	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10441	120.7132	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL	5	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10441	119.3754	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007	5	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10547	117.8146	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007	5	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10547	116.4484	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007	5	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08691	114.8363	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	5	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08586	111.7636	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	00G14_007	5	19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08691	111.1272	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	5	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08586	108.8781	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06G14_007	5	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10502	107.0567	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06G14_007	5	14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10502	106.3151	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	00G14_007		5 19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08691	105.3674	SPP-AEPW-32
FDNS	6		5 14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10511	103.9772	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007		5 19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08752	103.9429	SPP-SWPS-01
FDNS	6		5 14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10511	103.3207	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		5 14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08586	103.3162	SPP-AEPW-32
FDNS	00G14_007		5 19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08691	103.2688	SPP-AEPW-32
FDNS	00G14_007		5 19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08752	101.9366	SPP-SWPS-01
FDNS	06ALL		5 14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08646	101.8366	SPP-SWPS-01
FDNS	06ALL		5 14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08586	101.5641	SPP-AEPW-32
FDNS	0		5 19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10602	101.5024	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007		5 14WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10627	100.902	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	0		5 19WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10602	100.8365	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	06ALL		5 14G	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08646	100.1617	SPP-SWPS-01
FDNS	00G14_007		5 14WP	G14_007	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.10627	100.1005	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	00G14_007		5 19WP	G14_007	FROM->TO	SPSSPTTIESB	620	0.25688	152.9456	BASE CASE
FDNS	06ALL		5 14G	G14_007	FROM->TO	SPSSPTTIESB	620	0.2495	135.5741	BASE CASE
FDNS	0		5 19WP	G14_007	FROM->TO	SPSSPTTIESB	620	0.25855	131.8291	BASE CASE
FDNS	00G14_007		5 14G	G14_007	FROM->TO	SPSSPTTIESB	620	0.25241	106.726	BASE CASE
FDNS	6		5 14G	G14_007	FROM->TO	SPSSPTTIESB	620	0.25285	102.0592	BASE CASE
FDNS	00G14_007		5 14WP	G14_007	FROM->TO	SPSSPTTIESB	620	0.26083	100.9042	BASE CASE
FDNS	06ALL		5 14G	G14_007	FROM->TO	SPSSPTTIESB1	620	0.23506	111.4236	BASE CASE
FDNS	00G14_007		5 19WP	G14_007	FROM->TO	SPSSPTTIESB1	620	0.24026	106.8816	BASE CASE
FDNS	06ALL		5 14G	G14_007	FROM->TO	SPSSPTTIESC	620	0.23506	111.4236	BASE CASE
FDNS	00G14_007		5 19WP	G14_007	FROM->TO	SPSSPTTIESC	620	0.24026	106.8816	BASE CASE
FDNS	00G14_007		5 19WP	G14_007	FROM->TO	SPSSPTTIESC1	620	0.25688	152.9456	BASE CASE
FDNS	06ALL		5 14G	G14_007	FROM->TO	SPSSPTTIESC1	620	0.2495	135.5741	BASE CASE
FDNS	0		5 19WP	G14_007	FROM->TO	SPSSPTTIESC1	620	0.25855	131.8291	BASE CASE
FDNS	06G14_007		5 14G	G14_007	FROM->TO	SPSSPTTIESC1	620	0.25241	106.726	BASE CASE
FDNS	6		5 14G	G14_007	FROM->TO	SPSSPTTIESC1	620	0.25285	102.0592	BASE CASE
FDNS	00G14_007		5 14WP	G14_007	FROM->TO	SPSSPTTIESC1	620	0.26083	100.9042	BASE CASE
FDNS	06ALL		5 14G	G14_007	FROM->TO	TUCXFR345230	300	0.1281	101.6	BASE CASE
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.16032	156.5549	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.16029	153.1161	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.16032	150.9718	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.16029	145.9727	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.09209	114.062	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.09197	113.8255	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.09209	112.3527	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.09197	111.9664	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.09197	107.5912	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.09209	107.1453	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.09197	106.234	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.09209	105.8919	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.09097	100.5969	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.09137	99.8	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.09137	99.8	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.09129	99.4	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.09129	99.4	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.09097	99.4	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.09097	99.2	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	168	0.10845	99.1	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.16009	156.3181	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		0 19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.16006	152.8822	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.16009	150.7204	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		0 19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.16006	145.7221	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		0 19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09164	113.5037	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09152	113.2683	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09164	111.8027	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09152	111.4183	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09152	107.0641	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09164	106.6205	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09152	105.7136	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09164	105.3732	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09053	100.1047	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09092	99.3	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09092	99.3	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FNLS	0		0 19WP	G14_012	TO->FROM	CONWAY SUB - NICHOLS STATION 230KV CKT 1	180	0.04013	99.6	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82189	99.5	SPP-SWPS-T42
FDNS	0		0 19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81771	99.5	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82189	99.4	MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.8049	99.2	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82189	99.1	MADDOX STATION - MONUMENT SUB 115KV CKT 1
FNLS	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.12048	128.2772	SPP-AEPW-32
FDNS	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.12236	127.1999	SPP-SWPS-01
FDNS	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.12048	126.8966	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FNSL	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09991	113.6691	DBL-G1334-WWR
FNSL	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09991	113.5906	DBL-BVR-G1334
FDNS	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10206	108.8634	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FNSL	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09991	108.7679	DBL-HTCH-BVR
FDNS	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10206	108.3951	SPP-SWPS-04
FDNS	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09174	107.8856	CONWAY SUB - NICHOLS STATION 115KV CKT 1
FDNS	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10206	106.6242	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09174	105.867	SPP-SWPS-T53
FDNS	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09174	105.7115	CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1
FDNS	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09331	104.6288	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09331	103.9823	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08105	103.0131	BASE CASE
FNSL	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08764	102.942	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09331	102.361	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08729	102.0036	KINGSMILL INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1
FNSL	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08764	101.5487	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FNSL	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08764	101.2328	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FNSL	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08576	100.6643	DBL-WICH-THI
FDNS	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08729	100	BOWERS INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1
FDNS	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08345	99.3	KINGSMILL INTERCHANGE - LLANO ESTACADO WIND GEN 115KV CKT 1
FDNS	0		0 19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08345	99.1	SPP-SWPS-V29
FNSL	0		0 19WP	G14_012	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.12339	108.293	SPP-AEPW-32
FDNS	0		0 19WP	G14_012	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.12531	107.1898	SPP-SWPS-01
FDNS	0		0 19WP	G14_012	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.12339	106.9601	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	0		0 19SP	G14_012	TO->FROM	JAL SUB - TEAGUE SUB 115KV CKT 1	160	0.04161	99.4	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07505	192.8339	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07505	190.3651	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07505	167.896	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04194	166.6717	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07505	165.64	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03852	163.7829	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03852	163.7353	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04194	160.3281	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03852	155.6316	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03852	152.5081	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04194	152.4948	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07015	152.1454	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03852	152.1228	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07015	152.1198	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07118	148.7092	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07015	145.9248	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03852	145.9031	LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03852	144.6562	SPP-SWPS-T39
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03852	144.3856	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07118	143.653	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07015	143.5352	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07015	143.2208	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07015	140.2063	LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07015	139.4835	SPP-SWPS-T39
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07015	139.0744	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07118	138.2489	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04887	135.5795	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08587	134.9666	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07072	134.6787	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07072	134.6581	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.0717	134.3121	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.05227	132.355	KIOWA 7345.00 (UPDATE DATA) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04564	132.0737	CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04564	132.0662	EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.11238	131.402	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.11238	131.3123	SPP-SWPS-T84
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.0717	130.2725	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06663	129.6048	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.09529	129.4947	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.0496	129.3834	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07072	129.1949	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04564	128.7782	CROSSROADS 345.00 - TOLK STATION 345KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04652	128.7678	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.11238	128.6373	DRINKARD SUB - DRINKARD TAP 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04564	128.5976	TOLK STATION (ABBXL844501) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04717	128.5969	CHAVES COUNTY INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08639	128.3464	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04848	128.2225	RDRUNNER 3115.00 - RED_BLUFF 3115.00 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.05155	128.1556	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04835	127.9585		GENS28560 1-DOLLARHIDE 112.470
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.0789	127.9487		POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04835	127.8345		GENS28546 1-S_JAL 112.470
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07072	127.5618		COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04823	127.4901		MADDOX STATION - PEARL SUB 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07072	127.3149		LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04717	127.2892		OASIS INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04835	127.0648		GENS27882 1-CUNNINGHAM GEN #2 20 KV
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04835	126.9212		GENS27903 1-HOBBS PLANT #3 (ST)
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07639	126.8986		CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07639	126.892		EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06663	126.7545		DRINKARD SUB - DRINKARD TAP 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.11238	125.794		DRINKARD TAP - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.0717	125.6346		IMC #1 TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08136	125.4956		PCA INTERCHANGE - REDDY 3115.00 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04835	125.4607		BASE CASE
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08104	125.3846		GENS28560 1-DOLLARHIDE 112.470
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08111	125.3517		MADDOX STATION - PEARL SUB 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08104	125.3091		GENS28546 1-S_JAL 112.470
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08115	125.143		CUNNINGHAM STATION - REDDY 3115.00 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08497	125.1051		SPP-SWPS-T13
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08497	124.699		SOUTH HOBBS SUB - SWITCH 4J44 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08497	124.6986		SWITCH 4J44 - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07072	124.1087		LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07072	123.6454		SPP-SWPS-T39
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08104	123.3021		BASE CASE
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07072	123.2976		WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04577	122.5332		AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04848	122.3777		LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.05144	122.3078		MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.05144	122.2466		SPP-SWPS-T42
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.05144	121.8542		MADDOX STATION - MONUMENT SUB 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08043	120.9392		OXY PERMIAN SUB - SANGER SWITCHING STATION 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08043	120.939		MADDOX STATION - SANGER SWITCHING STATION 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.11265	120.9234		DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.11265	120.8428		SPP-SWPS-T84
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08539	120.4195		SPP-SWPS-T42
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08539	120.3936		MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08096	120.3117		LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04835	119.866		GENS62495 1-G14_012_2 18.000
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04835	119.866		GENS62496 1-G14_012_3 18.000
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08539	119.7377		MADDOX STATION - MONUMENT SUB 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.08614	119.5231		CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.08139	119.4123		BASE CASE
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.11265	118.8684		DRINKARD SUB - DRINKARD TAP 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.09553	117.8868		CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03463	117.459		LIVSTNRIDGE3115.00 - SAGE_BRUSH 3115.00 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.11265	116.7182		DRINKARD TAP - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07943	116.3705		POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07359	116.0928		AGAVE_RHILL3115.00 - RDRUNNER 3115.00 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04835	115.5919		GENS62497 1-G14_012_4 18.000
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.08683	114.6304		CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07359	113.7125		AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.08146	113.5124		MADDOX STATION - PEARL SUB 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03964	113.4795		ANDREWS 6345.00 (UPDATE REGD) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03964	113.4795		ANDREWS 6345.00 (UPDATE2) 345/115/13.2KV TRANSFORMER CKT 2
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.0817	113.4215		PCA INTERCHANGE - REDDY 3115.00 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.08531	113.3572		SPP-SWPS-T13
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07659	113.1743		CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07659	113.1716		EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.08531	113.0877		SOUTH HOBBS SUB - SWITCH 4J44 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.08531	113.0874		SWITCH 4J44 - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08104	112.8282		GENS62495 1-G14_012_2 18.000
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08104	112.8282		GENS62496 1-G14_012_3 18.000
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.08573	109.8449		MADDOX STATION - MONUMENT SUB 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06794	109.549		ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06783	109.4407		ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.08126	109.3707		LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04577	109.3391		OCHOA SUB - PNDEROSATP 3115.00 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07371	106.3613		AGAVE_RHILL3115.00 - RDRUNNER 3115.00 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.05748	105.3895		LIVSTNRIDGE3115.00 - SAGE_BRUSH 3115.00 115KV CKT 1
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08104	105.1269		GENS62497 1-G14_012_4 18.000
FDNS	0		0 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07359	104.8351		OCHOA SUB - PNDEROSATP 3115.00 115KV CKT 1
FDNS	0		0 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07371	103.8007		AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1
FDNS	0		0 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160</				

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY			
							(MVA)	TDF	(% MVA)					
FDNS	0		0	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.08139	100.9969	GEN562495 1-G14_012_2 18.000
FDNS	0		0	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.08139	100.9969	GEN562496 1-G14_012_3 18.000
FDNS	0		0	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.03463	100.7691	LAGARTO 3115.00 - SAGE BRUSH 3115.00 115KV CKT 1
FDNS	0		0	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.07359	100.2055	PNDEROSATP 3115.00 - WHITTEN SUB 115KV CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.06828	99.4	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.06817	99.3	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07505	179.4211	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07505	176.9907	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.07505	155.9102	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04194	154.399	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.07505	153.7228	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03852	151.9679	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03852	151.925	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04194	148.214	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03852	144.0623	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07015	141.1835	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07015	141.1597	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03852	141.0424	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03852	140.6727	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04194	140.6692	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07118	137.1978	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07015	135.241	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03852	134.7461	LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03852	133.558	SPP-SWPS-T39
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03852	133.2887	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07015	132.9744	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07015	132.6759	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07118	132.3348	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07015	129.8828	LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07015	129.2035	SPP-SWPS-T39
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07015	128.8018	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07118	127.2604	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.07072	124.8931	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.07072	124.8771	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08587	124.1913	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04887	124.1107	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.0717	124.0237	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.05227	121.2072	KIOWA 7345.00 (UPDATE DATA) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.11238	121.1428	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.11238	121.0388	SPP-SWPS-T84
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04564	120.7063	CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04564	120.6993	EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.0717	120.1336	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.07072	119.6388	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.09529	119.0505	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.06663	118.6239	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.11238	118.3379	DRINKARD SUB - DRINKARD TAP 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.06663	118.201	SPP-SWPS-T84
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.0496	118.1281	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.07072	118.0837	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.07072	117.8475	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08639	117.8302	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04564	117.5895	CROSSROADS 345.00 - TOLK STATION 345KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04652	117.5198	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04564	117.4243	TOLK STATION (ABBXLN844501) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04717	117.3507	CHAVES COUNTY INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.0789	117.321	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.05155	117.1077	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04848	116.98	RDRUNNER 3115.00 - RED_BLUFF 3115.00 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04835	116.8326	GEN528560 1-DOLLARHIDE 112.470
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04835	116.7341	GEN528546 1-S_JAL 112.470
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04823	116.338	MADDOX STATION - PEARL SUB 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07639	116.2872	CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07639	116.2812	EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04835	115.8794	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.0717	115.7819	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.06663	115.7373	DRINKARD SUB - DRINKARD TAP 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.11238	115.484	DRINKARD TAP - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08136	115.2827	PCA INTERCHANGE - REDDY 3115.00 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08104	114.9701	GEN528560 1-DOLLARHIDE 112.470
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08111	114.9453	MADDOX STATION - PEARL SUB 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08104	114.923	GEN528546 1-S_JAL 112.470
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.07072	114.8377	LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08497	114.7485	SPP-SWPS-T13
FDNS	0		0	19SP	G14_012	TO->FROM								

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY				
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.07072	114.4074	SPP-SWPS-T39
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08497	114.36	SOUTH HOBBS SUB - SWITCH 4J44 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08497	114.3596	SWITCH 4J44 - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.07072	114.0596	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04835	113.6245	BASE CASE
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08104	112.1882	BASE CASE
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.11265	111.7433	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.11265	111.6529	SPP-SWPS-T84
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04848	111.2583	LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.05144	111.2179	MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.05144	111.152	SPP-SWPS-T42
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04577	111.0222	AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.05144	110.7399	MADDOX STATION - MONUMENT SUB 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08043	110.5879	OXY PERMIAN SUB - SANGER SWITCHING STATION 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08043	110.5877	MADDOX STATION - SANGER SWITCHING STATION 115KV CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.08614	110.0783	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08539	110.0573	SPP-SWPS-T42
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08539	110.0338	MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08096	109.9185	LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.11265	109.6536	DRINKARD SUB - DRINKARD TAP 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08539	109.3835	MADDOX STATION - MONUMENT SUB 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04835	108.6559	GEN562495 1-G14_012_2 18.000
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04835	108.6559	GEN562496 1-G14_012_3 18.000
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.09553	108.5705	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.11265	107.4987	DRINKARD TAP - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.07943	106.8003	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03463	106.0459	LIVSTNRIDGE3115.00 - SAGE BRUSH 3115.00 115KV CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.08683	105.3312	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07359	105.2031	AGAVE_RHILL3115.00 - RDRUNNER 3115.00 115KV CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04835	104.279	GEN562497 1-G14_012_4 18.000
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.0817	104.2203	PCA INTERCHANGE - REDDY 3115.00 115KV CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.08146	104.1895	MADDOX STATION - PEARL SUB 115KV CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.08531	104.0816	SPP-SWPS-T13
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.08531	103.8195	SOUTH HOBBS SUB - SWITCH 4J44 115KV CKT 1
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.08531	103.8192	SWITCH 4J44 - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07359	102.9318	AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08104	102.3974	GEN562495 1-G14_012_2 18.000
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08104	102.3974	GEN562496 1-G14_012_3 18.000
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03964	102.2223	ANDREWS 6345.00 (UPDATE REQD) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03964	102.2223	ANDREWS 6345.00 (UPDATE2) 345/115/13.2KV TRANSFORMER CKT 2
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.08139	102.0441	BASE CASE
FDNS	0		0	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.08126	100.0723	LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.06794	99.2	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.06783	99.1	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		0	19SP	G14_012	FROM->TO	National Enrichment Plant Tap - TEAGUE SUB 115KV CKT 1				160	0.04161	103.3878	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		0	19SP	G14_012	FROM->TO	National Enrichment Plant Tap - TEAGUE SUB 115KV CKT 1				160	0.04161	102.2308	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		0	19WP	G14_012	FROM->TO	SPSSPTIESB				620	0.4087	154.8739	BASE CASE
FDNS	0		0	19WP	G14_012	FROM->TO	SPSSPTIESB1				620	0.3775	120.8545	BASE CASE
FDNS	0		0	19WP	G14_012	FROM->TO	SPSSPTIESC				620	0.3775	120.8545	BASE CASE
FDNS	0		0	19WP	G14_012	FROM->TO	SPSSPTIESC1				620	0.4087	154.8739	BASE CASE
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.16032	156.5549	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.16029	153.1161	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.16032	150.9718	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.16029	145.9727	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.09209	114.062	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.09197	113.8255	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.09209	112.3527	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.09197	111.9664	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.09197	107.5912	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.09209	107.1453	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.09197	106.234	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.09209	105.8919	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.09097	100.5969	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.09137	99.8	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.09129	99.4	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.09129	99.4	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.09097	99.4	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.09097	99.2	IMC #1 TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2				168	0.10845	99.1	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 2				168	0.16009	156.3181	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		2	19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 2				168	0.16006	152.8822	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1				168	0.16009	150.7204	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		2	19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1				168	0.16006	145.7221	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		2	19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1				168	0.09164	113.5036	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09152	113.2683	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09164	111.8027	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09152	111.4183	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09152	107.0641	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09164	106.6205	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09152	105.7136	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09164	105.3732	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09053	100.1047	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09092	99.3	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	168	0.09092	99.3	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FNSL	0		2	19WP	G14_012	TO->FROM	CONWAY SUB - NICHOLS STATION 115KV CKT 1	180	0.04013	99.6	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08641	102.6288	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08641	101.8817	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.07909	99.80622	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82189	99.5	SPP-SWPS-T42
FDNS	0		2	19WP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	529	0.81771	99.5	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82189	99.4	MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.8049	99.2	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	G14_012T 230.00 - HOBBS INTERCHANGE 230KV CKT 1	478	0.82189	99.1	MADDOX STATION - MONUMENT SUB 115KV CKT 1
FNSL	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.12048	128.2772	SPP-AEPW-32
FDNS	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.12236	127.1999	SPP-SWPS-01
FDNS	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.12048	126.8967	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10206	108.8634	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FNSL	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09991	108.7679	DBL-HTCH-BVR
FDNS	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10206	108.3951	SPP-SWPS-04
FDNS	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09174	107.8856	CONWAY SUB - NICHOLS STATION 115KV CKT 1
FDNS	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.10206	106.6242	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09174	105.8674	SPP-SWPS-T53
FDNS	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09174	105.7114	CONWAY SUB - KIRBY SWITCHING STATION 115KV CKT 1
FDNS	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09331	104.6288	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09331	103.9823	BORDER 7345.00 - G14_007T 345.00 345KV CKT 1
FDNS	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08105	103.0131	BASE CASE
FNSL	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08764	102.942	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.09331	102.361	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08729	102.0036	KINGSMILL INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1
FNSL	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08764	101.5487	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FNSL	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08764	101.2328	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FNSL	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08576	100.6644	DBL-WICH-THI
FDNS	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08729	100	BOWERS INTERCHANGE - MCCULLOUGH SUB 69KV CKT 1
FDNS	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08345	99.3	KINGSMILL INTERCHANGE - LLANO ESTACADO WIND GEN 115KV CKT 1
FDNS	0		2	19WP	G14_012	TO->FROM	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1	361	0.08345	99.1	SPP-SWPS-V29
FNSL	0		2	19WP	G14_012	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.12339	108.293	SPP-AEPW-32
FDNS	0		2	19WP	G14_012	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.12531	107.1898	SPP-SWPS-01
FDNS	0		2	19WP	G14_012	FROM->TO	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1	361	0.12339	106.9602	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	JAL SUB - TEAGUE SUB 115KV CKT 1	160	0.04161	99.4	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07505	192.8338	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07505	190.3651	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06374	182.3938	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06374	180.9	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07505	167.886	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04194	166.6717	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04182	166.5472	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07505	165.64	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03852	163.7829	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03852	163.7353	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03839	163.6349	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03839	163.5875	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04194	160.3281	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04182	160.2164	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06318	159.5219	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06318	158.1	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03852	155.6316	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03839	155.5593	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03852	152.5081	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04194	152.4948	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04182	152.3962	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03839	152.3803	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07015	152.1454	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03852	152.1228	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07015	152.1198	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03839	152.0542	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07118	148.7093	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07015	145.9248	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03852	145.9031	LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03839	145.7861	LEA ROAD SUB - WARD SUB 115KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY			
							(MVA)	TDF	(% MVA)					
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.03852	144.6562	SPP-SWPS-T39
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.03839	144.5397	SPP-SWPS-T39
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.03852	144.3856	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.03839	144.2696	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.07118	143.653	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.07015	143.5352	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.07015	143.2208	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.07015	140.2063	LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.07015	139.4835	SPP-SWPS-T39
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.07015	139.0744	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.07118	138.2489	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04887	135.5795	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04869	135.4963	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.08587	134.9666	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.07072	134.6787	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.07072	134.6581	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.0717	134.3122	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.05181	132.3883	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.05227	132.355	KIOWA 7345.00 (UPDATE DATA) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.05206	132.2836	KIOWA 7345.00 (UPDATE DATA) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04564	132.0737	CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1
FNSL	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04553	132.0728	CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04564	132.0662	EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1
FNSL	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04553	132.0653	EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.11238	131.402	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.11238	131.3122	SPP-SWPS-T84
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04343	130.622	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04343	130.593	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.0717	130.2725	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.06663	129.6048	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.06642	129.5192	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.09529	129.4947	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.0496	129.3834	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FNSL	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04941	129.3436	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.06663	129.197	SPP-SWPS-T84
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.07072	129.1949	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.06642	129.1143	SPP-SWPS-T84
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04564	128.7782	CROSSROADS 345.00 - TOLK STATION 345KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04652	128.7678	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04638	128.7022	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.11238	128.6373	DRINKARD SUB - DRINKARD TAP 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04564	128.5976	TOLK STATION (ABBXL844501) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04717	128.597	CHAVES COUNTY INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1
FNSL	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04553	128.5184	CROSSROADS 345.00 - TOLK STATION 345KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04553	128.5164	TOLK STATION (ABBXL844501) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04703	128.5101	CHAVES COUNTY INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.08639	128.3464	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04848	128.2225	RDRUNNER 3115.00 - RED_BLUFF 3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.05155	128.1556	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04831	128.1339	RDRUNNER 3115.00 - RED_BLUFF 3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.05131	128.065	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04835	127.9585	GENS28560 1-DOLLARHIDE 112.470
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.0789	127.9486	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04819	127.8743	GENS28560 1-DOLLARHIDE 112.470
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04835	127.8345	GENS28546 1-S_JAL 112.470
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04819	127.7504	GENS28546 1-S_JAL 112.470
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.07072	127.5618	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04823	127.4901	MADDOX STATION - PEARL SUB 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04806	127.3992	MADDOX STATION - PEARL SUB 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.07072	127.3149	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04717	127.2892	OASIS INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.05181	127.223	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FNSL	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04703	127.1953	OASIS INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04835	127.0648	GENS27882 1-CUNNINGHAM GEN #2 20 KV
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04835	126.9212	GENS27903 1-HOBBS PLANT #3 (ST)
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.07639	126.8986	CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.07639	126.8919	EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04819	126.8631	GENS27903 1-HOBBS PLANT #3 (ST)
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.06663	126.7546	DRINKARD SUB - DRINKARD TAP 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.06642	126.6696	DRINKARD SUB - DRINKARD TAP 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.11238	125.794	DRINKARD TAP - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.0717	125.6346	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.08136	125.4956	PCA INTERCHANGE - REDDY 3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04835	125.4621	BASE CASE
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.08104	125.3846	GEN

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY			
							(MVA)	TDF	(% MVA)					
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04819	125.3773	BASE CASE
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.08111	125.3517	MADDOX STATION - PEARL SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.08104	125.3091	GENS28546 1-5 JAL 112.470
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.08115	125.143	CUNNINGHAM STATION - REDDY 3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.08497	125.1051	SPP-SWPS-T13
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04343	124.8782	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.08497	124.6991	SOUTH HOBBS SUB - SWITCH 4J44 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.08497	124.6986	SWITCH 4J44 - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.07072	124.1087	LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.07072	123.6454	SPP-SWPS-T39
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.08104	123.3027	BASE CASE
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.07072	123.2976	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04343	122.6561	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04577	122.5332	AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04561	122.4841	AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04848	122.3777	LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04343	122.3625	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.05144	122.3078	MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04831	122.2943	LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.05144	122.2466	SPP-SWPS-T42
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.05127	122.2236	MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.05127	122.1619	SPP-SWPS-T42
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.05144	121.8534	MADDOX STATION - MONUMENT SUB 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.05225	121.7838	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.05181	121.6075	IMC_#1_TP_3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.05127	121.5013	MADDOX STATION - MONUMENT SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.08043	120.9392	OXY PERMIAN SUB - SANGER SWITCHING STATION 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.08043	120.939	MADDOX STATION - SANGER SWITCHING STATION 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.11265	120.9234	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.11265	120.8428	SPP-SWPS-T84
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.08539	120.4195	SPP-SWPS-T42
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.08539	120.3936	MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.08096	120.3117	LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04835	119.8666	GENS62495 1-G14_012_2 18.000
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04835	119.8666	GENS62496 1-G14_012_3 18.000
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04819	119.8103	GENS62495 1-G14_012_2 18.000
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04819	119.8103	GENS62496 1-G14_012_3 18.000
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.08539	119.7377	MADDOX STATION - MONUMENT SUB 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.08614	119.5231	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04343	119.4793	LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.08139	119.4123	BASE CASE
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.11265	118.8684	DRINKARD SUB - DRINKARD TAP 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04343	118.3557	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.04388	117.8893	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.09553	117.8868	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.04388	117.868	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.05225	117.6337	IMC_#1_TP_3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.03463	117.459	LIVSTNRIDGE3115.00 - SAGE_BRUSH 3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.03453	117.3984	LIVSTNRIDGE3115.00 - SAGE_BRUSH 3115.00 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.11265	116.7182	DRINKARD TAP - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04343	116.539	SPP-SWPS-T39
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.07943	116.3705	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.07359	116.0928	AGAVE_RHILL3115.00 - RDRUNNER 3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04835	115.5919	GENS62497 1-G14_012_4 18.000
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.04819	115.5328	GENS62497 1-G14_012_4 18.000
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.08683	114.6304	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.07359	113.7124	AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.06108	113.6	TOLK STATION EAST 230/24.0KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.08146	113.5124	MADDOX STATION - PEARL SUB 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.03964	113.4795	ANDREWS 6345.00 (UPDATE REQD) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.03964	113.4795	ANDREWS 6345.00 (UPDATE2) 345/115/13.2KV TRANSFORMER CKT 2
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.0817	113.4215	PCA INTERCHANGE - REDDY 3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.0395	113.4085	ANDREWS 6345.00 (UPDATE REQD) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	160	0.0395	113.4085	ANDREWS 6345.00 (UPDATE2) 345/115/13.2KV TRANSFORMER CKT 2
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.08531	113.3572	SPP-SWPS-T13
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.07659	113.1743	CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.07659	113.1716	EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00	115KV	CKT 1	177	0.08531	113.0877	SOUTH HOBBS SUB - SWITCH 4J44 115KV CKT 1
FDNS	0		2	19WP	G14_012	FROM->TO								

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06196	111.0404	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1	
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.04388	110.8355	COOPER RANCH SUB - OIL CENTER 3115.00 115KV CKT 1	
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.04388	110.5899	LEA ROAD SUB - OIL CENTER 3115.00 115KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07224	110.5	KIOWA 7345.00 (UPDATE DATA) 345/115/13.2KV TRANSFORMER CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	110.4647	GENS25561 1-TOLK GEN #1 24 KV	
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.08573	109.8449	MADDOX STATION - MONUMENT SUB 115KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06794	109.549	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06783	109.4407	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2	
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.08126	109.3707	LIVSTRNDRIDGE3115.00 - WIPP SUB 115KV CKT 1	
FDNS	0		2 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04577	109.3392	OCHOA SUB - PNDEROSATP 3115.00 115KV CKT 1	
FDNS	0		2 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04561	109.2722	OCHOA SUB - PNDEROSATP 3115.00 115KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.09118	109.0328	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.05804	108.1417	CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.05804	108.1	EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	108.0259	GENS27903 1-HOBBS PLANT #3 (ST)	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	108	PLUM POINT 500/23.0KV TRANSFORMER CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	107.7	EASTDC - WELSH 345KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	107.7	WHITE BLUFF 500/26.0KV TRANSFORMER CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	107.5354	GENS27882 1-CUNNINGHAM GEN #2 20 KV	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	107.5	8CAJUN2 500/24.0KV TRANSFORMER CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	107.5	LAWRENCE ENERGY CENTER UNIT 5 - LAWRENCE HILL 230KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	107.5	LAWRENCE ENERGY CENTER UNIT 5 230/24.0KV TRANSFORMER CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	107.5	OKLAUN - OKLAUNION 345KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	107.5	SIBLEYPL 161.00 161/22.0KV TRANSFORMER CKT 1	
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.04388	107.3961	LEA ROAD SUB - WARD SUB 115KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.09118	107.0106	DRINKARD SUB - DRINKARD TAP 115KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	106.9317	GENS28560 1-DOLLARHIDE 112.470	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	106.914	GENS27901 1-HOBBS PLANT #1 (CT)	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.09118	106.8971	SPP-SWPS-T84	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	106.892	GENS27902 1-HOBBS PLANT #2 (CT)	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	106.8504	GENS28546 1-S_JAL 112.470	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	106.7164	GENS23973 1-HARRINGTON GEN #3 24 KV	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	106.7082	GENS23972 1-HARRINGTON GEN #2 24 KV	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	106.7079	GENS23971 1-HARRINGTON GEN #1 24 KV	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	106.7	RODEMACHER 230/22.0KV TRANSFORMER CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	106.7	SEMINOLE 138/20.9KV TRANSFORMER CKT 1	
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.04388	106.5867	WARD SUB - WHITTEN SUB 115KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	106.5402	GENS26332 1-JONES GEN #2 21 KV	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	106.5391	GENS26331 1-JONES GEN #1 22 KV	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	106.4	SOUTHWEST 161/20.0KV TRANSFORMER CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.05742	106.4	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06765	106.3832	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	106.3755	GENS27884 1-CUNNINGHAM GEN #4 22 KV	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	106.3705	GENS27166 1-MUSTANG_6 118.000	
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07371	106.3613	AGAVE_RHILL3115.00 - RDRUNNER 3115.00 115KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	106.3487	GENS25494 1-PLANT X GEN #4 20 KV	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	106.1986	GENS27163 1-MUSTANG GEN #3 22 KV	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.05804	106.1543	CROSSROADS 345.00 - TOLK STATION 345KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.05804	106.1	TOLK STATION (ABBXNL844501) 345/230/13.2KV TRANSFORMER CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06393	106.0666	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	105.9947	GENS28361 1-MADDOX GEN #1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	105.9301	GENS27883 1-CUNNINGHAM GEN #3 22 KV	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	105.9271	GENS27161 1-MUSTANG GEN #1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	105.927	GENS27162 1-MUSTANG GEN #2	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	105.904	GENS27164 1-MUSTANG GEN #4 22 KV	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	105.8947	GENS32751 1-WOLF CREEK GENERATING STATION UNIT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	105.8566	GENS26333 1-JONES GEN #3 21 KV	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	105.8566	GENS26334 1-JONES_4 116.500	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06173	105.8001	RDRUNNER 3115.00 - RED_BLUFF 3115.00 115KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	105.7262	ARKANSAS NUCLEAR ONE - FT SMITH 500KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	105.6454	GENS27165 1-Mustang Gen #5	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	105.6246	GENS25844 1-ANTELOPE_CT118.000	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.05748	105.3895	LIVSTRNDRIDGE3115.00 - SAGE_BRUSH 3115.00 115KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.09118	105.2113	DRINKARD TAP - WEST HOBBS SWITCHING STATION 115KV CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.08104	105.1269	GENS62497 1-G14_012_4 18.000	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07359	104.8351	OCHOA SUB - PNDEROSATP 3115.00 115KV CKT 1	
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	104.6	TOLK STATION EAST 230/24.0KV TRANSFORMER CKT 1	
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	104.3928	BASE CASE	
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	104.3	GRAND GULF 500/22.0KV TRANSFORMER CKT 1	
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	103.8914	BASE CASE	
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07371	103.8007	AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1	
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.09095	103.6832	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1	
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	103.6059	GENS25562 1-TOLK GEN #2 24 KV	
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.04388	103.4354	SPP-SWPS-T39	
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.09095	103.1	SPP-SWPS-T84	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.09095	102.1585	DRINKARD SUB - DRINKARD TAP 115KV CKT 1
FDNS	0		2 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04577	102.116	PNDEROSATP 3115.00 - WHITTEN SUB 115KV CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.07068	102.1	KIOWA 7345.00 (UPDATE DATA) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04561	102.0447	PNDEROSATP 3115.00 - WHITTEN SUB 115KV CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	102.0206	GEN562495 1-G14_012_2 18.000
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	102.0206	GEN562496 1-G14_012_3 18.000
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	102.0064	GEN525561 1-TOLK GEN #1 24 KV
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06164	101.9032	AGAVE_RHILL3115.00 - RDRUNNER 3115.00 115KV CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	101.8044	8SHELBY TN 500.00 - PLUM POINT 500KV CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06542	101.7466	MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	101.6145	AMRN_OUTS3
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06542	101.6	SPP-SWPS-T42
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	101.4408	GEN335831 1-RIVERBEND UNIT#1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	101.4	BUSHLAND INTERCHANGE - G13-031 230.00 230KV CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06173	101.3932	LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06187	101.3414	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06542	101.2258	MADDOX STATION - MONUMENT SUB 115KV CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.08139	100.9969	GEN562495 1-G14_012_2 18.000
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.08139	100.9969	GEN562496 1-G14_012_3 18.000
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	100.9	HARRINGTON STATION 230/24.0KV TRANSFORMER CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	100.9	Harrington Station East Bus 230/24.0KV TRANSFORMER CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	100.9	Harrington Station Mid Bus 230/24.0KV TRANSFORMER CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.09095	100.829	DRINKARD TAP - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	100.8	BATTLE_AXE 3115.00 - RDRUNNER 3115.00 115KV CKT 1
FDNS	0		2 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03463	100.7691	LAGARTO 3115.00 - SAGE_BRUSH 3115.00 115KV CKT 1
FDNS	0		2 24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03453	100.712	LAGARTO 3115.00 - SAGE_BRUSH 3115.00 115KV CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	100.6518	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	100.6	PLUM POINT 500/23.0KV TRANSFORMER CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06118	100.5618	G14_007T 345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.1053	100.5	HOBBS (UPDATE DATA) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	100.4436	GEN562497 1-G14_012_4 18.000
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	100.3667	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	100.3	EASTDC - WELSH 345KV CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	100.3	OKLAUN - OKLAUNION 345KV CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.07359	100.2055	PNDEROSATP 3115.00 - WHITTEN SUB 115KV CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	100.2	8CAJUN2 500/24.0KV TRANSFORMER CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	100.1	G14_012_1 345.00 345/18.0KV TRANSFORMER CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06108	100.1	G14_012_1 345.00 345/18.0KV TRANSFORMER CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	100.1	AMRN_OUTS3
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	100.1	LAWRENCE ENERGY CENTER UNIT 5 - LAWRENCE HILL 230KV CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	100.1	LAWRENCE ENERGY CENTER UNIT 5 230/24.0KV TRANSFORMER CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	100.1	SIBLEYPL 161.00 161/22.0KV TRANSFORMER CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	99.7	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	99.7	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.05806	99.7	CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.05806	99.7	EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06741	99.6	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	99.5	RODEMACHER 230/22.0KV TRANSFORMER CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06828	99.4	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	99.4	GEN523971 1-HARRINGTON GEN #1 24 KV
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	99.4	GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	99.4	GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	99.4	GEN527166 1-MUSTANG 6 118.000
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.05769	99.4	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06817	99.3	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	99.3	GEN526331 1-JONES GEN #1 22 KV
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	99.3	GEN526332 1-JONES GEN #2 21 KV
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06164	99.1	AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	99.1	GEN525494 1-PLANT X GEN #4 20 KV
FDNS	0		2 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06115	99.1	SOUTHWEST 161/20.0KV TRANSFORMER CKT 1
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.07505	179.4211	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.07505	176.9907	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.06374	169.203	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.06374	167.8	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.07505	155.9102	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04194	154.399	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04182	154.2805	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.07505	153.7228	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.03852	151.968	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.03852	151.925	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.03839	151.8277	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.03839	151.7849	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04194	148.214	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04182	148.108	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.06318	147.8761	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY				
FDNS	0		2	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.06318	146.5	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03852	144.0623	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03839	143.9923	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07015	141.1835	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07015	141.1597	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03852	141.0424	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03839	140.922	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03852	140.6727	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04194	140.6692	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03839	140.6063	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04182	140.5759	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07118	137.1979	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07015	135.241	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03852	134.7461	LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03839	134.6364	LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03852	133.558	SPP-SWPS-T39
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03839	133.4488	SPP-SWPS-T39
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03852	133.2887	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.03839	133.18	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07015	132.9744	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07015	132.6759	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07118	132.3348	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07015	129.8828	LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07015	129.2035	SPP-SWPS-T39
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07015	128.8018	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07118	127.2604	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		2	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.07072	124.8931	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		2	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.07072	124.8771	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08587	124.1913	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04887	124.1107	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04869	124.0313	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		2	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.0717	124.0238	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.05227	121.2072	KIOWA 7345.00 (UPDATE DATA) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.11238	121.1428	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.05206	121.1375	KIOWA 7345.00 (UPDATE DATA) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.11238	121.0388	SPP-SWPS-T84
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.05181	120.9862	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04564	120.7063	CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1
FNSL	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04553	120.7034	CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04564	120.6993	EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1
FNSL	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04553	120.6964	EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		2	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.0717	120.1336	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04343	119.8501	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04343	119.827	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		2	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.07072	119.6388	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.09529	119.0505	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.06663	118.6239	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.06642	118.543	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.11238	118.3379	DRINKARD SUB - DRINKARD TAP 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.06663	118.201	SPP-SWPS-T84
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.0496	118.1281	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.06642	118.1227	SPP-SWPS-T84
FNSL	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04941	118.0885	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		2	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.07072	118.0837	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	177	0.07072	117.8475	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.08639	117.8302	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04564	117.5895	CROSSROADS 345.00 - TOLK STATION 345KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04652	117.5198	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04638	117.4575	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04564	117.4243	TOLK STATION (ABBXLN844501) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04717	117.3507	CHAVES COUNTY INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04553	117.3486	TOLK STATION (ABBXLN844501) 345/230/13.2KV TRANSFORMER CKT 1
FNSL	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04553	117.3396	CROSSROADS 345.00 - TOLK STATION 345KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.0789	117.321	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04703	117.2692	CHAVES COUNTY INTERCHANGE - SAN JUAN MESA TAP 230KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.05155	117.1076	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.05131	117.0208	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04848	116.998	RDRUNNER 3115.00 - RED_BLUFF 3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04831	116.8965	RDRUNNER 3115.00 - RED_BLUFF 3115.00 115KV CKT 1
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04835	116.8326	GENS28560 1-DOLLARHIDE 112.470
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04819	116.7531	GENS28560 1-DOLLARHIDE 112.470
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04835	116.7341	GENS28546 1-S_JAL 112.470
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04819	116.6548	GENS28546 1-S_JAL 112.470
FDNS	0		2	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.04823	116.338	MADDOX STATION - PEARL SUB 115KV CKT 1
FDNS	0		2	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00	115KV	CKT 1	160	0.07639	116.2873	CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.07639	116.2812	EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04806	116.2522	MADDOX STATION - PEARL SUB 115KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.05181	115.997	IMC_#1_TP 3115.00 - INTREPDW TP3115.00 115KV CKT 1	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04835	115.8794	GEN527882 1-CUNNINGHAM GEN #2 20 KV	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.0717	115.7819	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.06663	115.7373	DRINKARD SUB - DRINKARD TAP 115KV CKT 1	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.06642	115.6571	DRINKARD SUB - DRINKARD TAP 115KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.11238	115.484	DRINKARD TAP - WEST HOBBS SWITCHING STATION 115KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.08136	115.2827	PCA INTERCHANGE - REDDY 3115.00 115KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.08104	114.9701	GEN528560 1-DOLLARHIDE 112.470	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.08111	114.9453	MADDOX STATION - PEARL SUB 115KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.08104	114.923	GEN528546 1-S_JAL 112.470	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.07072	114.8377	LEA ROAD SUB - WARD SUB 115KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.08497	114.7485	SPP-SWPS-T13	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.08115	114.7448	CUNNINGHAM STATION - REDDY 3115.00 115KV CKT 1	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.07072	114.4073	SPP-SWPS-T39	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.08497	114.36	SOUTH HOBBS SUB - SWITCH 4J44 115KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.08497	114.3596	SWITCH 4J44 - WEST HOBBS SWITCHING STATION 115KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04343	114.3467	BYRD SUB - COOPER RANCH SUB 115KV CKT 1	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.07072	114.0596	WARD SUB - WHITTEN SUB 115KV CKT 1	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04835	113.626	BASE CASE	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04819	113.5465	BASE CASE	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04343	112.2355	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.08104	112.1888	BASE CASE	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04343	111.9559	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.11265	111.7433	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.11265	111.6529	SPP-SWPS-T84	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.05225	111.6072	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04848	111.2583	LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.05144	111.2179	MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04831	111.1798	LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.05144	111.152	SPP-SWPS-T42	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.05127	111.1385	MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.05127	111.0721	SPP-SWPS-T42	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04577	111.0222	AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04561	110.9752	AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.05144	110.7391	MADDOX STATION - MONUMENT SUB 115KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.05181	110.7104	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.08043	110.5879	OXY PERMIAN SUB - SANGER SWITCHING STATION 115KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.08043	110.5877	MADDOX STATION - SANGER SWITCHING STATION 115KV CKT 1	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.05127	110.4071	MADDOX STATION - MONUMENT SUB 115KV CKT 1	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.08614	110.0783	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.08539	110.0573	SPP-SWPS-T42	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.08539	110.0338	MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.08096	109.9185	LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.11265	109.6536	DRINKARD SUB - DRINKARD TAP 115KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.08539	109.3835	MADDOX STATION - MONUMENT SUB 115KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04343	109.2906	LEA ROAD SUB - WARD SUB 115KV CKT 1	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04835	108.6559	GEN562495 1-G14_012_2 18.000	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04835	108.6559	GEN562496 1-G14_012_3 18.000	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04819	108.605	GEN562495 1-G14_012_2 18.000	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04819	108.605	GEN562496 1-G14_012_3 18.000	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.09553	108.5705	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04343	108.2218	WARD SUB - WHITTEN SUB 115KV CKT 1	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.04388	108.2003	BYRD SUB - MONUMENT TAP 115KV CKT 1	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.04388	108.1841	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.05225	107.5927	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.11265	107.4987	DRINKARD TAP - WEST HOBBS SWITCHING STATION 115KV CKT 1	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.07943	106.8003	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04343	106.3949	SPP-SWPS-T39	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.03463	106.0459	LIVSTNRIDGE3115.00 - SAGE_BRUSH 3115.00 115KV CKT 1	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.03453	105.9888	LIVSTNRIDGE3115.00 - SAGE_BRUSH 3115.00 115KV CKT 1	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.08683	105.3312	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.07359	105.2031	AGAVE_RHILL3115.00 - RDRUNNER 3115.00 115KV CKT 1	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04835	104.279	GEN562497 1-G14_012_4 18.000	
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04819	104.2277	GEN562497 1-G14_012_4 18.000	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.0817	104.2203	PCA INTERCHANGE - REDDY 3115.00 115KV CKT 1	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.08146	104.1895	MADDOX STATION - PEARL SUB 115KV CKT 1	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.08531	104.0816	SPP-SWPS-T13	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.08531	103.8195	SOUTH HOBBS SUB - SWITCH 4J44 115KV CKT 1	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.08531	103.8192	SWITCH 4J44 - WEST HOBBS SWITCHING STATION 115KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.06108	103.4	TOLK STATION EAST 230/24.0KV TRANSFORMER CKT 1	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.05225	103.0324	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1	
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.04388	102.993	BYRD SUB - COOPER RANCH SUB 115KV CKT 1	
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.07359	102.9318	AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1	

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.08104	102.3974	GEN562495 1-G14_012_2 18.000
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.08104	102.3974	GEN562496 1-G14_012_3 18.000
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.03964	102.2223	ANDREWS 6345.00 (UPDATE REQD) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.03964	102.2223	ANDREWS 6345.00 (UPDATE2) 345/115/13.2KV TRANSFORMER CKT 2
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.03995	102.1553	ANDREWS 6345.00 (UPDATE REQD) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2 24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.03995	102.1553	ANDREWS 6345.00 (UPDATE2) 345/115/13.2KV TRANSFORMER CKT 2
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.08139	102.0441	BASE CASE
FNLS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.06108	102	GRAND GULF 500/22.0KV TRANSFORMER CKT 1
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.06108	101.5296	GEN525562 1-TOLK GEN #2 24 KV
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.04388	101.4467	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.04388	101.2115	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.06196	100.4475	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.06108	100.249	GEN525561 1-TOLK GEN #1 24 KV
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.07224	100.2	KIOWA 7345.00 (UPDATE DATA) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.08126	100.0723	LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.06794	99.2	ANDREWS 6230.00 (FROM MIDLAND) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.06783	99.1	ANDREWS 6230.00 (FROM BORDEN) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Tap - TEAGUE SUB 115KV CKT 1	160	0.04161	103.3878	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Tap - TEAGUE SUB 115KV CKT 1	160	0.04161	102.2308	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Tap - TEAGUE SUB 115KV CKT 1	160	0.04033	99.8	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		2 19SP	G14_012	FROM->TO	National Enrichment Plant Tap - TEAGUE SUB 115KV CKT 1	160	0.04033	99.1	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		2 19SP	G14_012	TO->FROM	OCHOA SUB - PNDROSATP 3115.00 115KV CKT 1	141	0.1411	100.1883	G14_012T 345.00 - HOBBS 345KV CKT 1
FDNS	0		2 19SP	G14_012	TO->FROM	PNDROSATP 3115.00 - WHITTEN SUB 115KV CKT 1	141	0.1411	118.0939	G14_012T 345.00 - HOBBS 345KV CKT 1
FDNS	0		2 19WP	G14_012	FROM->TO	SPSSPTIESB	620	0.4087	154.8739	BASE CASE
FDNS	0		2 19WP	G14_012	FROM->TO	SPSSPTIESB	620	0.35791	132.0154	BASE CASE
FDNS	0		2 19WP	G14_012	FROM->TO	SPSSPTIESB1	620	0.3775	120.8545	BASE CASE
FDNS	0		2 19WP	G14_012	FROM->TO	SPSSPTIESC	620	0.3775	120.8545	BASE CASE
FDNS	0		2 19WP	G14_012	FROM->TO	SPSSPTIESC1	620	0.4087	154.8739	BASE CASE
FDNS	0		2 19WP	G14_012	FROM->TO	SPSSPTIESC1	620	0.35791	132.0154	BASE CASE
FDNS	0		3 19WP	G14_012	FROM->TO	BUSHLAND INTERCHANGE - HILLSIDE 115KV CKT 1	177	0.05658	147.1854	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	BUSHLAND INTERCHANGE - HILLSIDE 115KV CKT 1	168	0.05773	115.4873	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1	168	0.05658	160.1937	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1	168	0.05658	155.2882	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1	168	0.05773	116.1178	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1	168	0.05773	111.2486	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		3 19WP	G14_012	TO->FROM	COULTER INTERCHANGE - HILLSIDE 115KV CKT 1	191	0.05658	127.1848	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08423	101.5066	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	316	0.08423	100.8385	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04687	179.8895	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04687	178.5	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06676	171.1957	HOBBS - KIOWA 7345.00 345KV CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.0467	156.0989	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.0467	155.5	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04158	130.8255	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03816	128.7677	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03816	128.7168	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04158	125.8587	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03816	123.1722	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03816	120.9994	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03816	120.7123	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04158	120.2193	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.04186	119.5961	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03816	117.8985	LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03816	116.7977	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.03843	115.6514	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.03843	115.6307	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.04186	115.4931	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.03816	115.175	SPP-SWPS-T39
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	111.6	TOLK STATION EAST 230/24.0KV TRANSFORMER CKT 1
FNLS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	110.8	GRAND GULF 500/22.0KV TRANSFORMER CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.04186	110.609	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.03843	110.3056	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	109.7319	GEN525562 1-TOLK GEN #2 24 KV
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04869	109.2131	CUNNINGHAM STATION - POTASH JUNCTION INTERCHANGE 230KV CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.03843	108.7052	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.05262	108.6	KIOWA 7345.00 (UPDATE DATA) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	108.5271	GEN525561 1-TOLK GEN #1 24 KV
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.03843	108.4635	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06647	107.0505	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	106.6	PLUM POINT 500/23.0KV TRANSFORMER CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04551	106.6	EDDY COUNTY INTERCHANGE (ABB AEM30711) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04551	106.554	CROSSROADS 345.00 - EDDY COUNTY INTERCHANGE 345KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	106.3408	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	106.3	EASTDC - WELSH 345KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	106.3	WHITE BLUFF 500/26.0KV TRANSFORMER CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	106.1	LAWRENCE ENERGY CENTER UNIT 5 - LAWRENCE HILL 230KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	106.1	LAWRENCE ENERGY CENTER UNIT 5 230/24.0KV TRANSFORMER CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	106.1	SIBLEYPL 161.00 161/22.0KV TRANSFORMER CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	106	8CAJUN2 500/24.0KV TRANSFORMER CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	106	OKLAUN - OKLAUNION 345KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	105.9223	GENS27882 1-CUNNINGHAM GEN #2 20 KV
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	105.3953	GENS28560 1-DOLLARHIDE 112.470
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	105.3785	GENS27901 1-HOBBS PLANT #1 (CT)
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	105.3572	GENS27902 1-HOBBS PLANT #2 (CT)
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.03843	105.3252	LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	105.3164	GENS28546 1-S_JAL 112.470
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	105.3	SEMINOLE 138/20.9KV TRANSFORMER CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	105.2	RODEMACHER 230/22.0KV TRANSFORMER CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	105.0147	GENS23973 1-HARRINGTON GEN #3 24 KV
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	105.0071	GENS23972 1-HARRINGTON GEN #2 24 KV
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	105.0067	GENS23971 1-HARRINGTON GEN #1 24 KV
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	105	SOUTHWEST 161/20.0KV TRANSFORMER CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06647	104.9879	SPP-SWPS-T84
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04622	104.9	POTASH JUNCTION INTERCHANGE (GE M100747) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	104.8955	GENS26332 1-JONES GEN #2 21 KV
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	104.8944	GENS26331 1-JONES GEN #1 22 KV
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	104.8737	GENS27884 1-CUNNINGHAM GEN #4 22 KV
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04551	104.7448	CROSSROADS 345.00 - TOLK STATION 345KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.06647	104.7425	DRINKARD SUB - DRINKARD TAP 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04551	104.7	TOLK STATION (ABBXN844501) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	104.6735	GENS25494 1-PLANT X GEN #4 20 KV
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.05138	104.5485	CUNNINGHAM STATION - HOBBS INTERCHANGE 230KV CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.03843	104.5269	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	104.502	GENS27166 1-MUSTANG_6 118.000
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	104.4892	GENS28361 1-MADDOX GEN #1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04936	104.4525	CUNNINGHAM STATION - EDDY COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	104.4404	GENS32751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	104.3564	GENS27883 1-CUNNINGHAM GEN #3 22 KV
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	104.3281	GENS27163 1-MUSTANG GEN #3 22 KV
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.0483	104.2515	RDRUNNER 3115.00 - RED_BLUFF 3115.00 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	104.2484	GENS26333 1-JONES GEN #3 21 KV
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	104.2484	GENS26334 1-JONES_4 116.500
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	104.2396	ARKANSAS NUCLEAR ONE - FT SMITH 500KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	104.1619	GENS27161 1-MUSTANG GEN #1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	104.1618	GENS27162 1-MUSTANG GEN #2
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	104.12	GENS25844 1-ANTELOPE_CT118.000
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	104.1	THOMAS HILL 161/22.0KV TRANSFORMER CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	104.0787	GENS27164 1-MUSTANG GEN #4 22 KV
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	102.8723	BASE CASE
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.03843	101.862	SPP-SWPS-T39
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.04824	101.7	GRAND GULF 500/22.0KV TRANSFORMER CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.04824	101.5	TOLK STATION EAST 230/24.0KV TRANSFORMER CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.04824	101.0946	BASE CASE
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04571	100.8795	AGAVE_RHILL3115.00 - RDRUNNER 3115.00 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	100.5079	GENS26295 1-G14_012_2 18.000
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	100.5079	GENS26296 1-G14_012_3 18.000
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.04824	100.5063	GENS25562 1-TOLK GEN #2 24 KV
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	100.4563	AMRN_OUTS3
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04836	100.3838	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	100.2785	8SHELBY TN 500.00 - PLUM POINT 500KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.05123	100.2186	MONUMENT SUB - WEST HOBBS SWITCHING STATION 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	100.2	BUSHLAND INTERCHANGE - G13-031 230.00 230KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.05123	100.1	SPP-SWPS-T42
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	100	GEN335831 1-RIVERBEND UNIT#1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.0483	99.8	LIVSTNRIDGE3115.00 - WIPP SUB 115KV CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06652	99.8	DRINKARD SUB - National Enrichment Plant Sub 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.05123	99.7	MADDOX STATION - MONUMENT SUB 115KV CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	99.7	HARRINGTON STATION 230/24.0KV TRANSFORMER CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	99.7	Harrington Station East Bus 230/24.0KV TRANSFORMER CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	99.7	Harrington Station Mid Bus 230/24.0KV TRANSFORMER CKT 1
FDNS	0		3 19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	160	0.04812	99.6	BATTLE AXE 3115.00 - RDRUNNER 3115.00 115KV CKT 1
FDNS	0		3 19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA 3115.00 115KV CKT 1	177	0.06652	99.3	SPP-SWPS-T84
FDNS	0		3 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04687	166.7228	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		3 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04687	165.4	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		3 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.06676	160.136	HOBBS - KIOWA 7345.00 345KV CKT 1
FDNS	0		3 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.0467	144.4785	KIOWA 7345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		3 19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	177	0.0467	143.9	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		3 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.04158	119.4858	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		3 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.03816	118.107	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		3 19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA 3115.00 115KV CKT 1	160	0.03816	118.0618	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY		
FDNS	0		3	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	160	0.04158	114.6766	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		3	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	160	0.03816	112.7479	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		3	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	160	0.03816	110.6834	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		3	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	160	0.03816	110.41	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		3	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	177	0.04186	109.4354	INTREPDW_TP3115.00 - POTASH JUNCTION INTERCHANGE 115KV CKT 1
FDNS	0		3	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	160	0.04158	109.3666	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FDNS	0		3	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	160	0.03816	107.8127	LEA ROAD SUB - WARD SUB 115KV CKT 1
FDNS	0		3	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	160	0.03816	106.7626	WARD SUB - WHITTEN SUB 115KV CKT 1
FDNS	0		3	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	177	0.03843	106.0374	BYRD SUB - MONUMENT TAP 115KV CKT 1
FDNS	0		3	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	177	0.03843	106.0219	CUNNINGHAM STATION - MONUMENT TAP 115KV CKT 1
FDNS	0		3	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	177	0.04186	105.464	IMC_#1_TP 3115.00 - INTREPDW_TP3115.00 115KV CKT 1
FDNS	0		3	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	160	0.03816	105.1272	SPP-SWPS-T39
FDNS	0		3	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	160	0.04812	101.5	TOLK STATION EAST 230/24.0KV TRANSFORMER CKT 1
FDNS	0		3	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	177	0.03843	100.9118	BYRD SUB - COOPER RANCH SUB 115KV CKT 1
FDNS	0		3	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	177	0.04186	100.8674	IMC_#1_TP 3115.00 - LIVSTNRIDGE3115.00 115KV CKT 1
FNSL	0		3	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	160	0.04812	100.6	GRAND GULF 500/22.0KV TRANSFORMER CKT 1
FDNS	0		3	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	160	0.04812	99.6	GEN525562 1-TOLK GEN #2 24 KV
FDNS	0		3	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	177	0.03843	99.4	COOPER RANCH SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		3	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	177	0.03843	99.2	LEA ROAD SUB - OIL_CENTER 3115.00 115KV CKT 1
FDNS	0		3	19SP	G14_012	TO->FROM	PNDEROSATP 3115.00 - WHITTEN SUB 115KV CKT 1		141	0.15268	112.1334	G14_012T 345.00 - HOBBS 345KV CKT 1
FDNS	0		3	19WP	G14_012	FROM->TO	SPSSPTTIESB		620	0.35381	131.8393	BASE CASE
FDNS	0		3	19WP	G14_012	FROM->TO	SPSSPTTIESC1		620	0.35381	131.8393	BASE CASE
FDNS	0		4	19WP	G14_012	FROM->TO	BUSHLAND INTERCHANGE - HILLSIDE 115KV CKT 1		177	0.05685	147.1439	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		4	19SP	G14_012	FROM->TO	BUSHLAND INTERCHANGE - HILLSIDE 115KV CKT 1		160	0.05797	115.4601	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		4	19WP	G14_012	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1		168	0.05685	160.1517	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		4	19WP	G14_012	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1		168	0.05685	155.2487	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		4	19SP	G14_012	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1		168	0.05797	116.0926	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		4	19SP	G14_012	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1		168	0.05797	111.2239	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		4	24SP	G14_012	TO->FROM	CARLSBAD INTERCHANGE - POTASH JUNCTION INTERCHANGE 115KV CKT 1		96	0.04087	139.5047	KIOWA 7345.00 - NLOV_PLT 7345.00 345KV CKT 1
FDNS	0		4	19WP	G14_012	TO->FROM	COULTER INTERCHANGE - HILLSIDE 115KV CKT 1		191	0.05685	127.1463	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		4	19WP	G14_012	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1		316	0.0843	101.5024	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	0		4	19WP	G14_012	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1		316	0.0843	100.8366	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	0		4	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00 115KV CKT 1	160	0.03518	171.7	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		4	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00 115KV CKT 1	177	0.0348	149.4	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		4	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00 115KV CKT 1	160	0.04819	125.098	ANDREWS 6345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		4	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00 115KV CKT 1	160	0.09948	106.721	G14_012T 345.00 - HOBBS 345KV CKT 1
FDNS	0		4	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00 115KV CKT 1	160	0.0308	105.9647	AGAVE_RHILL3115.00 - RDRUNNER 3115.00 115KV CKT 1
FDNS	0		4	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00 115KV CKT 1	160	0.03331	104.3943	KIOWA 7345.00 (UPDATE DATA) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		4	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00 115KV CKT 1	160	0.04812	103.7507	ANDREWS 6345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		4	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00 115KV CKT 1	160	0.0308	102.0156	AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1
FDNS	0		4	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	160	0.03518	158.6	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		4	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	177	0.0348	137.7	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		4	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	160	0.04819	113.9914	ANDREWS 6345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		4	19WP	G14_012	FROM->TO	SPSSPTTIESB		620	0.35417	131.8291	BASE CASE
FDNS	0		4	19WP	G14_012	FROM->TO	SPSSPTTIESC1		620	0.35417	131.8291	BASE CASE
FDNS	0		5	19WP	G14_012	FROM->TO	BUSHLAND INTERCHANGE - HILLSIDE 115KV CKT 1		177	0.05685	147.1439	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		5	19SP	G14_012	FROM->TO	BUSHLAND INTERCHANGE - HILLSIDE 115KV CKT 1		160	0.05797	115.4601	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		5	19WP	G14_012	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1		168	0.05685	160.1517	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		5	19WP	G14_012	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1		168	0.05685	155.2487	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		5	19SP	G14_012	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1		168	0.05797	116.0926	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		5	19SP	G14_012	FROM->TO	BUSHLAND INTERCHANGE (WH 7001795) 230/115/13.2KV TRANSFORMER CKT 1		168	0.05797	111.2239	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		5	24SP	G14_012	TO->FROM	CARLSBAD INTERCHANGE - POTASH JUNCTION INTERCHANGE 115KV CKT 1		96	0.04087	139.5047	KIOWA 7345.00 - NLOV_PLT 7345.00 345KV CKT 1
FDNS	0		5	19WP	G14_012	TO->FROM	COULTER INTERCHANGE - HILLSIDE 115KV CKT 1		191	0.05685	127.1463	BUSHLAND INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	0		5	19WP	G14_012	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1		316	0.0843	101.5024	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	0		5	19WP	G14_012	FROM->TO	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1		316	0.0843	100.8366	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	0		5	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00 115KV CKT 1	160	0.03518	171.7	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		5	19WP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00 115KV CKT 1	177	0.0348	149.4	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		5	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00 115KV CKT 1	160	0.04819	125.098	ANDREWS 6345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		5	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00 115KV CKT 1	160	0.09948	106.721	G14_012T 345.00 - HOBBS 345KV CKT 1
FDNS	0		5	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00 115KV CKT 1	160	0.0308	105.9647	AGAVE_RHILL3115.00 - RDRUNNER 3115.00 115KV CKT 1
FDNS	0		5	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00 115KV CKT 1	160	0.03331	104.3943	KIOWA 7345.00 (UPDATE DATA) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		5	19SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00 115KV CKT 1	160	0.04812	103.7507	ANDREWS 6345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		5	24SP	G14_012	FROM->TO	National Enrichment Plant Sub - TARGA	3115.00 115KV CKT 1	160	0.0308	102.0156	AGAVE_RHILL3115.00 - OCHOA SUB 115KV CKT 1
FDNS	0		5	19SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	160	0.03518	158.6	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		5	19WP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	177	0.0348	137.7	RDRUNNER 7345.00 (UPDATE LATER) 345/115/13.2KV TRANSFORMER CKT 1
FDNS	0		5	24SP	G14_012	TO->FROM	National Enrichment Plant Tap - TARGA	3115.00 115KV CKT 1	160	0.04819	113.9914	ANDREWS 6345.00 - RDRUNNER 7345.00 345KV CKT 1
FDNS	0		5	19WP	G14_012	FROM->TO	SPSSPTTIESB		620	0.35417	131.8291	BASE CASE
FDNS	0		5	19WP	G14_012	FROM->TO	SPSSPTTIESC1		620	0.35417	131.8291	BASE CASE
FDNS	09ALL		0	14G	G14_013	TO->FROM	BATTLE CREEK - COUNTY LINE 115KV CKT 1		120	0.04367	116.1896	MEADOWGROVE 230.00 - S_NORFOLK 230.00 230KV CKT 1
FDNS	09ALL		0	14G	G14_013	TO->FROM	BATTLE CREEK - COUNTY LINE 115KV CKT 1		120	0.04367	116.1667	S_NORFOLK 345.00 (SNORFOLK) 345/230/13.8KV TRANSFORMER CKT 1
FDNS	09ALL_BPS		0	14G	G14_013	TO->FROM	BATTLE CREEK - COUNTY LINE 115KV CKT 1		120	0.0437	115.8432	MEADOWGROVE 230.00 - S_NORFOLK 230.00 230KV CKT 1
FDNS	09ALL_BPS		0	14G	G14_013	TO->FROM	BATTLE CREEK - COUNTY LINE 115KV CKT 1		120	0.0437	115.8205	S_NORFOLK 345.00 (SNORFOLK) 345/230/13.8KV TRANSFORMER CKT 1
FDNS	09ALL_BPS		0	14G	G14_013	TO->FROM	BATTLE CREEK - COUNTY LINE 115KV CKT 1		120	0.03917	115.5913	HOSKINS - S_NORFOLK 345.00 345KV CKT 1
FDNS	09ALL		0	14G	G14_013	TO->FROM	BATTLE CREEK - COUNTY LINE 115KV CKT 1		120	0.03919	115.2439	HOSKINS - S_NORFOLK 345.00 345KV CKT 1
FDNS	09ALL		0	14G	G14_013	TO->FROM	BATTLE CREEK - COUNTY LINE 115KV CKT 1		120	0.03067	109.2934	KELLY - MEADOWGROVE 230.00 230KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	09G14_013_BPS	2	14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.03918	100.845	HOSKINS - S_NORFOLK 345.00 345KV CKT 1
FDNS	09G14_013	2	14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.03921	100.4782	HOSKINS - S_NORFOLK 345.00 345KV CKT 1
FDNS	09G14_013	2	14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.04368	100.4751	MEADOWGROVE 230.00 - S_NORFOLK 230.00 230KV CKT 1
FDNS	09G14_013	2	14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.04368	100.4567	S_NORFOLK 345.00 (SNORFOLKT) 345/230/13.8KV TRANSFORMER CKT 1
FDNS	09G14_013	2	14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.03921	100.1475	HOSKINS - S_NORFOLK 345.00 345KV CKT 1
FDNS	09G14_013_BPS	2	14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.0437	100.1224	MEADOWGROVE 230.00 - S_NORFOLK 230.00 230KV CKT 1
FDNS	09G14_013_BPS	2	14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.0437	100.1042	S_NORFOLK 345.00 (SNORFOLKT) 345/230/13.8KV TRANSFORMER CKT 1
FDNS	09G14_013	2	14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.04368	100.0657	MEADOWGROVE 230.00 - S_NORFOLK 230.00 230KV CKT 1
FDNS	09G14_013	2	14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.04368	100	S_NORFOLK 345.00 (SNORFOLKT) 345/230/13.8KV TRANSFORMER CKT 1
FDNS	09NR	2	14G	G14_013	TO->FROM	COUNTY LINE - NELIGH 115KV CKT 1	120	0.03518	99.2	HOSKINS - S_NORFOLK 345.00 345KV CKT 1
FDNS	06ALL	2	14G	G14_013	FROM->TO	TUCXFR345230	300	0.04053	133.9	BASE CASE
FDNS	0	2	19WP	G14_013	FROM->TO	TUCXFR345230	300	0.03893	105.2	BASE CASE

I: Power Flow Analysis (Constraints from Category C Contingencies)

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

J: Group 1 Dynamic Stability Analysis Report

See SPP report on next page.



Group 1 Impact Study

DISIS-2014-001

July 2014
Generator Interconnection



Executive Summary

DISIS-2014-001 Interconnection Customers have requested a Definitive Interconnection System Impact Study detailing the impacts of interconnecting the generation projects shown below.

- GEN-2013-035 – 105.6MW wind project using GE 97.4m 1.79MW generators connected to a tap on the Woodward to Tatonga 345kV circuit on the Oklahoma Gas and Electric (OKGE) Transmission System.
- GEN-2014-002 – 10.53MW increase to GEN-2007-021 wind project using GE 97.4m 1.79MW generators connected to the Tatonga 345kV substation on the Oklahoma Gas and Electric (OKGE) Transmission System.
- GEN-2014-003 – 15.84MW increase to GEN-2007-044 wind project using GE 97.4m 1.79MW generators connected to the Tatonga 345kV substation on the Oklahoma Gas and Electric (OKGE) Transmission System.
- GEN-2014-005 – 5.67MW increase to GEN-2011-010 wind project using GE 1.69MW generators connected to the Minco 345kV substation on the Oklahoma Gas and Electric (OKGE) Transmission System.

There are twenty-four (24) previously queued generation projects in the Group 1 area.

A stability analysis and power factor analysis were performed for the addition of the generation projects in Group 1. The analyses were performed on three seasonal models, the modified versions of the 2014 winter peak, the 2015 summer peak, and the 2024 summer peak cases. A total of sixty-two (62) contingencies were evaluated.

GEN-2013-035, GEN-2014-002, GEN-2014-003, and GEN-2014-005 were found to be stable for all conditions studied. The wind turbine generators in GEN-2013-035, GEN-2014-002, GEN-2014-003, and GEN-2014-005 have the capability of pre-contingency voltage recovery, and the post fault voltage recovery was found to be within the criterion of 0.7 pu to 1.2 pu.

A power factor analysis was performed for each interconnection project. All three study cases, 2014 winter, 2015 summer, and 2024 summer peak conditions were used in the analyses. The power factor analyses showed that GEN-2013-035, GEN-2014-002, GEN-2014-003, and GEN-2014-005 will be required to provide the pro-forma standard 0.95 leading (absorbing) to 0.95 lagging (supplying) at their respective Points of Interconnection (POI).

Additionally, a reduced generation analysis has shown that each of the interconnection requests will need some type of reactor support to offset the capacitive effect on the transmission network caused by the project's transmission line and collector system during reduced generation conditions. GEN-2013-035 requires approximately 10Mvars of reactor support, GEN-2014-002 requires approximately 15Mvars of reactor support, GEN-2014-003 requires approximately 32Mvars of reactor support, and GEN-2014-005 requires approximately 13Mvars of reactor support.

The Low Voltage Ride Through (LVRT) analysis showed that none of the interconnection requests in this study tripped offline when their respective POI's were faulted to draw the POI voltage down to 0.0 pu. Therefore, each interconnection request in this study meets the FECR Order #661 requirement.

All generators in the monitored areas remained stable for all of the modeled disturbances.

Nothing in this study should be construed as a guarantee of delivery or transmission service. If the customer wishes to sell power from the facility, a separate request for transmission service must be requested on Southwest Power Pool's OASIS by the Customer.

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1. Introduction

DISIS-2014-001 Interconnection Customers have requested a Definitive Interconnection System Impact Study detailing the impacts of interconnecting the generation projects shown below.

- GEN-2013-035 – 105.61MW wind project using GE 97.4m 1.79MW generators connected to a tap on the Woodward to Tatonga 345kV circuit (G11-051-TAP, 562075) on the Oklahoma Gas and Electric (OKGE) Transmission System.
- GEN-2014-002 – 10.53MW increase to GEN-2007-021 wind project using GE 97.4m 1.79MW generators connected to the Tatonga 345kV substation (515407) on the Oklahoma Gas and Electric (OKGE) Transmission System.
- GEN-2014-003 – 15.84MW increase to GEN-2007-044 wind project using GE 97.4m 1.79MW generators connected to the Tatonga 345kV substation (515407) on the Oklahoma Gas and Electric (OKGE) Transmission System.
- GEN-2014-005 – 5.67MW increase to GEN-2011-010 wind project using GE 1.69MW generators connected to the Minco 345kV substation (514801) on the Oklahoma Gas and Electric (OKGE) Transmission System.

There are twenty-four (24) previously queued generation projects in the Group 1 area. These Interconnection Requests are listed below.

- GEN-2001-014 – 94.5MW of Suzlon 2.1MW wind generators interconnected at the Fort Supply 138kV substation (520920).
- GEN-2001-037 – 102MW of GE 1.5MW wind generators interconnected at a tap on the Moorland – Woodward 138kV circuit (515785).
- GEN-2005-008 – 120MW of GE 1.5MW wind generators interconnected at the Woodward 138kV substation (514785).
- GEN-2006-024S – 18.9MW of Suzlon 2.1MW wind generators interconnected at the Buffalo Bear 69kV substation (521120).
- GEN-2006-046 – 132MW of Mitsubishi 2.4MW wind generators interconnected at the Dewey 138kV substation (514787).
- GEN-2007-021 – 200MW of GE 1.6MW wind generators interconnected at the Tatonga 345kV substation (515407).
- GEN-2007-043 – 200MW of GE 1.6 wind generators interconnected at the Minco 345kV substation (514801).
- GEN-2007-044 – 299.2MW of GE 1.6MW wind generators interconnected at the Tatonga 345kV substation (515407).
- GEN-2007-050 – 170.2MW of Siemens 2.3MW wind generators interconnected at the Woodward EHV 138kV substation (515376).
- GEN-2007-062 – 765MW of GE 1.5MW wind generators interconnected at the Woodward 345kV substation (515375).
- GEN-2008-003 – 101.2MW of Siemens 2.3MW wind generators interconnected at the Woodward EHV 138kV substation (515376).

- GEN-2008-019 – 300MW of Mitsubishi 2.4MW wind generators interconnected at the Tatonga 345kV substation (515407).
- GEN-2008-044 – 197.8MW of Siemens SWT 2.3MW wind generators interconnected at the Tatonga 345kV substation (515407).
- GEN-2010-011 – 29.7MW of Siemens SWT 2.3MW wind generators interconnected at the Tatonga 345kV substation (515407). Addition to GEN-2008-044 34.5kV bus (515450).
- GEN-2010-040 – 298.5MW of RePower 2.05MW wind generators interconnected at the Cimarron 345kV substation (514901).
- GEN-2011-007 – 250.2MW of RePower 2.05MW wind generators interconnected at the Mathewson 345kV substation (515497).
- GEN-2011-010 – 100.8MW of GE 1.6MW wind generators interconnected at the Minco 345kV substation (514801).
- GEN-2011-019 – 299MW of Siemens 2.3MW wind generators interconnected at the Woodward 345kV substation (515375).
- GEN-2011-020 – 299MW of Siemens 2.3MW wind generators interconnected at the Woodward 345kV substation (515375).
- GEN-2011-051 – 104.4MW of Vestas V90 1.8MW wind generators interconnected at a Tap on the Woodward - Tatonga 345kV circuit (G11-051-TAP, 562075).
- GEN-2011-054 – 299MW of Siemens 2.3MW wind generators interconnected at the Cimarron 345kV substation (514901). Addition to GEN-2010-040 345kV circuit (583127).
- GEN-2012-031 – 200.1MW of Siemens 2.3MW wind generators interconnected at the Cimarron 345kV substation (514901). Addition to GEN-2011-054 345kV circuit (583419).
- GEN-2013-025 – 50MW of Vestas V100 VCSS wind generators interconnected at the Mathewson 345kV substation (515497). Addition to Gen-2011-007 34.5kV bus (581006).
- GEN-2013-034 – 73.6MW of Siemens 2.3MW (583803) wind generators interconnected at a Tap on the Beaver County to Woodward double circuit 345kV (G13-034-TAP, 562440).

A stability analysis and a power factor analysis were performed for the addition of the generation projects in Group 1. The analyses were performed on three seasonal models, the modified versions of the 2014 winter peak, the 2015 summer peak, and the 2024 summer peak cases.

The stability analysis determines the impacts of the new interconnecting projects on the stability and voltage recovery of the nearby systems and the ability of the interconnecting projects to meet FERC Order 661A. If problems with stability or voltage recovery are identified, the need for reactive compensation or system upgrades is investigated. The three-phase faults and the single line-to-ground faults listed in **Table 3-1** were used in the stability analysis.

The power factor analysis determines the power factor at the point of interconnection (POI) for the wind interconnection projects for pre-contingency and post-contingency conditions. The contingencies used in the power factor analysis are a subset of the stability analysis contingencies shown in **Table 3-1**.

Nothing in this System Impact Study constitutes a request for transmission service or grants the Interconnection Customer any rights to transmission service.

2. Facilities

Generating Facility

GEN-2013-035 Interconnection Customer's request to interconnect a total of 105.61MW (bus 583823) is comprised of fifty-nine (59) GE 97.4m 1.79MW wind turbine generators and associated interconnection facilities.

GEN-2014-002 Interconnection Customer's request to interconnect a total of 10.53MW (bus 579256) is comprised of one-hundred seventeen (117) GE 97.4m 1.79MW wind turbine generators and associated interconnection facilities. The request is for a generator turbine rate increase from the prior queued GEN-2007-021 interconnection request to interconnect a total of 198.9MW comprised of one-hundred seventeen (117) 1.70MW wind turbine generators and associated interconnection facilities. The combined total of both interconnection requests is 209.43MW.

GEN-2014-003 Interconnection Customer's request to interconnect a total of 15.84MW (bus 579271 and 579275) is comprised of one-hundred seventy-six (176) GE 97.4m 1.79MW wind turbine generators and associated interconnection facilities. The request is for a generator turbine rate increase and quantity reduction from the prior queued GEN-2007-044 interconnection request to interconnect a total of 299.2MW comprised of one-hundred eighty-seven (187) GE 1.60MW wind turbine generators and associated interconnection facilities. The combined total of both interconnection requests is 315.04MW.

GEN-2014-005 Interconnection Customer's request to interconnect a total of 5.67MW (bus 514113) is comprised of sixty-three (63) GE 1.69MW wind turbine generators and associated interconnection facilities. The request is for a generator turbine rate increase from the prior queued GEN-2011-010 interconnection request to interconnect a total of 100.8MW comprised of sixty-three (63) GE 1.60MW wind turbine generators and associated interconnection facilities. The combined total of both interconnection requests is 106.47MW.

Interconnection Facilities

The POI for GEN-2013-035 Interconnection Customer is a tap on the Woodward to Tatonga 345kV circuit (G11-051-TAP, 562075). **Figure 2-1** depicts the one-line diagram of the local transmission system including the POI as well as the power flow model representing the request.

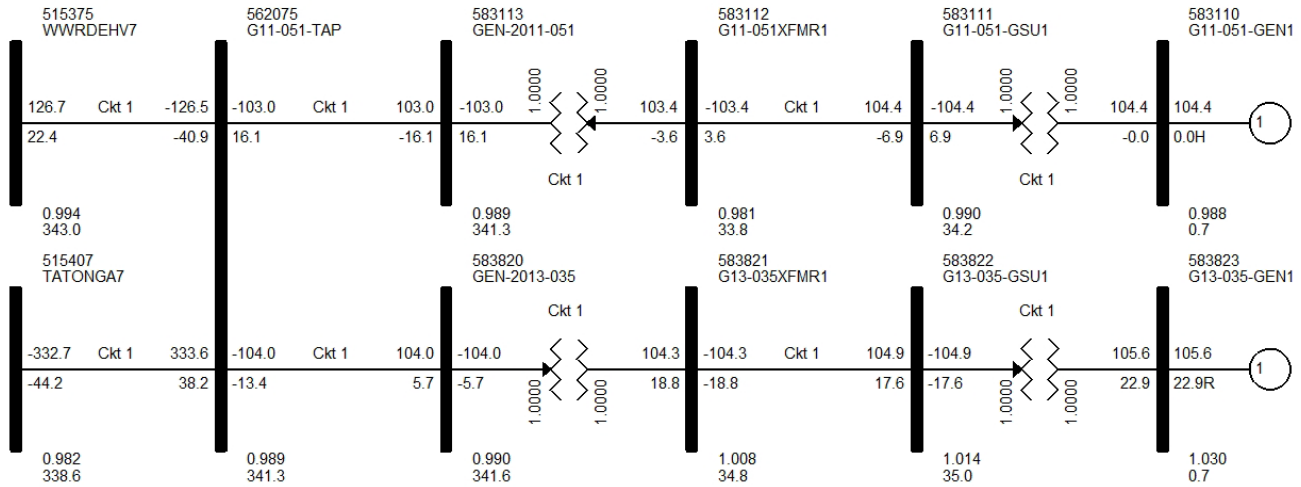


Figure 2-1: Proposed POI Configuration and Request Power Flow Model for GEN-2013-035

The POI for GEN-2014-002 and GEN-2014-003 Interconnection Customers is the Tatonga 345kV substation (515407). **Figure 2-2** depicts the one-line diagram of the local transmission system including the POI as well as the power flow model representing the requests.

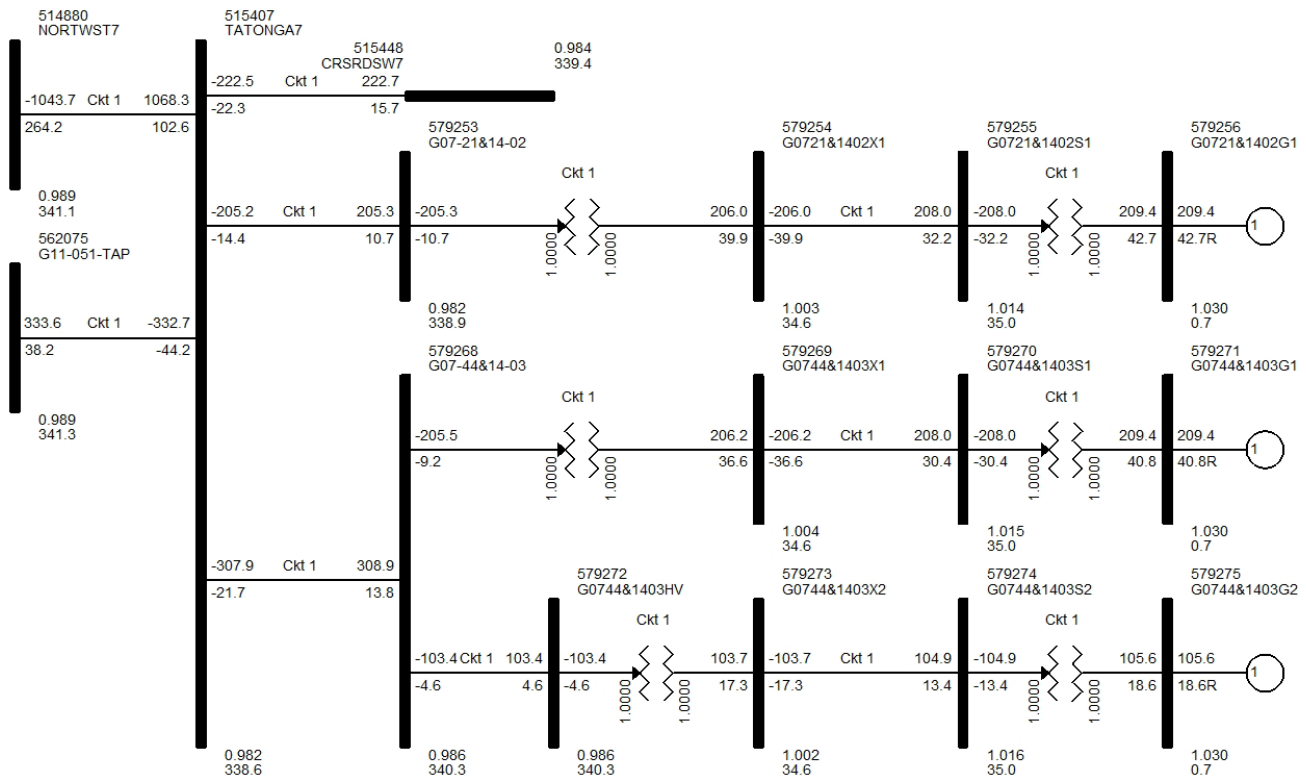


Figure 2-2: Proposed POI Configuration and Request Power Flow Model for GEN-2014-002 and GEN-2014-003

The POI for GEN-2014-005 Interconnection Customer is the Minco 345kV substation (514801).

Figure 2-3 depicts the one-line diagram of the local transmission system including the POI as well as the power flow model representing the request.

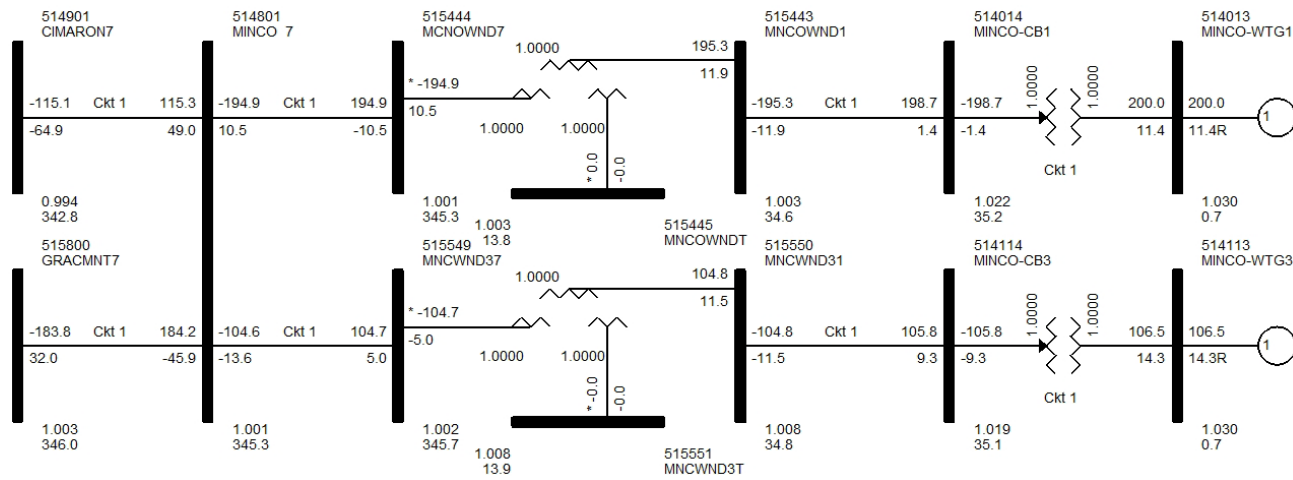


Figure 2-3: Proposed POI Configuration and Request Power Flow Model for GEN-2014-005

3. Stability Analysis

Transient stability analysis is used to determine if the transmission system can maintain angular stability and ensure bus voltages stay within planning criteria bandwidth during and after a disturbance while considering the addition of a generator interconnection request.

Model Preparation

Transient stability analysis was performed using modified versions of the 2013 series of Model Development Working Group (MDWG) dynamic study models including the 2014 winter peak, 2015 summer peak, and the 2024 summer peak seasonal models. The cases are then loaded with prior queued interconnection requests and network upgrades assigned to those interconnection requests. Finally the prior queued and study generation are dispatched into the SPP footprint. Initial simulations are then carried out for a no-disturbance run of twenty (20) seconds to verify the numerical stability of the model.

Disturbances

Sixty-two (62) contingencies were identified for use in this study and are listed in **Table 3-1**. These contingencies included three-phase faults and single-phase line faults at locations defined by SPP. Single-phase line faults were simulated by applying fault impedance to the positive sequence network at the fault location to represent the effect of the negative and zero sequence networks on the positive sequence network. The fault impedance was computed to give a positive sequence voltage at the specified fault location of approximately 60% of pre-fault voltage. This method is in agreement with SPP current practice.

Except for transformer faults, the typical sequence of events for a three-phase and a single-phase fault is as follows:

1. apply fault at particular location
2. continue fault for five (5) cycles, clear the fault by tripping the faulted facility
3. after an additional twenty (20) cycles, re-close the previous facility back into the fault
4. continue fault for five (5) additional cycles
5. trip the faulted facility and remove the fault

Transformer faults are typically modeled as three-phase faults, unless otherwise noted. The sequence of events for a transformer fault is as follows:

1. apply fault for five (5) cycles
2. clear the fault by tripping the affected transformer facility (unless otherwise noted there will be no re-closing into a transformer fault)

Table 3-1: Fault Definitions

Cont. No.	Cont. Name	Description
1	FLT01-3PH	3 phase fault on the G11-051 TAP (562075) to Woodward (515375) 345kV line circuit 1, near G11-051 TAP. a. Apply fault at the G11-051 TAP 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
2	FLT02-3PH	3 phase fault on the G11-051 TAP (562075) to Tatonga (515407) 345kV line circuit 1, near G11-051 TAP. a. Apply fault at the G11-051 TAP 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
3	FLT03-3PH (2014WP/20 15SP Only)	3 phase fault on the Tatonga (515407) to Northwest (514880) 345kV line circuit 1, near Tatonga. a. Apply fault at the Tatonga 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
4	FLT04-3PH	3 phase fault on the Minco (514801) to Cimarron (514901) 345kV line circuit 1, near Minco. a. Apply fault at the Minco 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
5	FLT05-3PH	3 phase fault on the Minco (514801) to Gracemont (515800) 345kV line circuit 1, near Minco. a. Apply fault at the Minco 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
6	FLT06-3PH	3 phase fault on the Cimarron (514901) to Northwest (514880) 345kV line circuit 1, near Cimarron. a. Apply fault at the Cimarron 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
7	FLT07-3PH	3 phase fault on the Cimarron (514901) to Draper (514934) 345kV line circuit 1, near Cimarron. a. Apply fault at the Cimarron 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Table 3-1: Fault Definitions

Cont. No.	Cont. Name	Description
8	FLT08-3PH	3 phase fault on the Cimarron (514901) to Mathewson (515497) 345kV line circuit 1, near Cimarron. a. Apply fault at the Cimarron 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
9	FLT09-3PH	3 phase fault on the Gracemont (515800) to LES (511468) 345kV line circuit 1, near Gracemont. a. Apply fault at the Gracemont 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
10	FLT10-3PH	3 phase fault on the Woodward (515375) to Border (515458) 345kV line circuit 1, near Woodward. a. Apply fault at the Woodward 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
11	FLT11-3PH	3 phase fault on the Woodward (515375) to Thistle (539801) 345kV line circuit 1, near Woodward. a. Apply fault at the Woodward 345kV bus. b. Clear fault after 5 cycles and trip the Woodward (515375) to G12-016-TAP (562286) to Thistle (539801) ckt 1line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
12	FLT12-3PH	3 phase fault on the Woodward (515375) to G13-034-TAP (562440) 345kV line circuit 1, near Woodward. a. Apply fault at the Woodward 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
13	FLT13-3PH	3 phase fault on the Beaver County (580500) to Hitchland (523097) 345kV line circuit 1, near Beaver County. a. Apply fault at the Beaver County 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
14	FLT14-3PH	3 phase fault on the Hitchland (523097) to Finney (523853) 345kV line circuit 1, near Hitchland. a. Apply fault at the Hitchland 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Table 3-1: Fault Definitions

Cont. No.	Cont. Name	Description
15	FLT15-3PH	3 phase fault on the Hitchland (523097) to Potter County (523961) 345kV line circuit 1, near Hitchland. a. Apply fault at the Hitchland 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
16	FLT16-3PH	3 phase fault on the G14-007-TAP (562487) to Tuco (525832) 345kV line circuit 1, near G14-007-TAP. a. Apply fault at the G14-007-TAP 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
17	FLT17-3PH	3 phase fault on the Northwest (514880) to Spring Creek (514881) 345kV line circuit 1, near Northwest. a. Apply fault at the Northwest 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
18	FLT18-3PH	3 phase fault on the Northwest (514880) to Arcadia (514908) 345kV line circuit 1, near Northwest. a. Apply fault at the Northwest 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
19	FLT19-3PH	3 phase fault on the Spring Creek (514881) to Sooner (514803) 345kV line circuit 1, near Spring Creek. a. Apply fault at the Spring Creek 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
20	FLT20-3PH	3 phase fault on the Arcadia (514908) to Redbud (514909) 345kV line circuit 2, near Arcadia, ckt1. a. Apply fault at the Arcadia 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
21	FLT21-3PH	3 phase fault on the Arcadia (514908) to Seminole (515045) 345kV line circuit 1, near Arcadia. a. Apply fault at the Arcadia 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Table 3-1: Fault Definitions

Cont. No.	Cont. Name	Description
22	FLT22-3PH	3 phase fault on the Draper (514934) to Seminole (515045) 345kV line ckt 1, near Draper. a. Apply fault at the Draper 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
23	FLT23-3PH	3 phase fault on the LES (511468) to OKU (511456) 345kV line circuit 1, near LES. a. Apply fault at the LES 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
24	FLT24-3PH	3 phase fault on the LES (511468) to Sunnyside (515136) 345kV line circuit 1, near LES. a. Apply fault at the LES 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
25	FLT25-3PH	3 phase fault on the Woodward (515376) to Woodward (514785) 138kV line circuit 2, near Woodward. a. Apply fault at the Woodward 138kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
26	FLT26-3PH	3 phase fault on the Woodward (515376) to Iodine (514796) 138kV line circuit 1, near Woodward. a. Apply fault at the Woodward 138kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
27	FLT27-3PH	3 phase fault on the Northwest (514879) to Ketch Tap (515828) 138kV line circuit 1, near Northwest. a. Apply fault at the Northwest 138kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
28	FLT28-3PH	3 phase fault on the Northwest (514879) to Braden (514854) 138kV line circuit 1, near Northwest. a. Apply fault at the Northwest 138kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Table 3-1: Fault Definitions

Cont. No.	Cont. Name	Description
29	FLT29-3PH	3 phase fault on the Piedmont (514864) to Richards (514862) 138kV line circuit 1, near Piedmont. a. Apply fault at the Piedmont 138kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
30	FLT30-3PH	3 phase fault on the Northwest (514879) to Lone Oak (514873) 138kV line circuit 1, near Northwest. a. Apply fault at the Northwest 138kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
31	FLT31-3PH	3 phase fault on the Cimarron (514898) to Tuttle Conoco Tap (511425) 138kV line circuit 1, near Cimarron. a. Apply fault at the Cimarron 138kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
32	FLT32-3PH	3 phase fault on the Cimarron (514898) to El Reno (514819) 138kV line circuit 1, near Cimarron. a. Apply fault at the Cimarron 138kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
33	FLT33-3PH	3 phase fault on the Cimarron (514898) to Jensen Tap (514819) 138kV line circuit 1, near Cimarron. a. Apply fault at the Cimarron 138kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
34	FLT34-3PH	3 phase fault on the Cimarron (514898) to Haymaker (514863) 138kV line circuit 1, near Cimarron. a. Apply fault at the Cimarron 138kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
35	FLT35-3PH	3 phase fault on the Cimarron (514898) to Czech Hall (514894) 138kV line circuit 1, near Cimarron. a. Apply fault at the Cimarron 138kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Table 3-1: Fault Definitions

Cont. No.	Cont. Name	Description
36	FLT36-3PH	3 phase fault on the Cimarron (514898) to Sara (514895) 138kV line circuit 1, near Cimarron. a. Apply fault at the Cimarron 138kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
37	FLT37-3PH	3 phase fault on the Gracemont (515802) to Anadarko (520814) 138kV line circuit 1, near Gracemont. a. Apply fault at the Gracemont 138kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
38	FLT38-3PH	3 phase fault on the Gracemont (515802) to Washita (521089) 138kV line circuit 1, near Gracemont. a. Apply fault at the Gracemont 138kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
39	FLT39-3PH	3 phase fault on the Cimarron (514901) 345kV to Cimarron (514898) 138kV/(515715) 13.8kV ckt 1 transformer at the 345kV bus. a. Apply fault at the Cimarron 345kV bus. b. Clear fault after 5 cycles and trip the transformer
40	FLT40-3PH	3 phase fault on the Gracemont (515800) 345kV to Gracemont (515802) 138kV/(515801) 13.8kV ckt 1 transformer at the 345kV bus. a. Apply fault at the Gracemont 345kV bus. b. Clear fault after 5 cycles and trip the transformer
41	FLT41-3PH	3 phase fault on the Woodward (515376) 138kV to Woodward (5115375) 345kV/(515799) 13.8kV ckt 2 transformer at the 138kV bus. a. Apply fault at the Woodward 138kV bus. b. Clear fault after 5 cycles and trip the transformer
42	FLT42-3PH	3 phase fault on the Hitchland (523095) 230kV to Hitchland (523097) 345kV/(523094) 13.2kV ckt 2 transformer at the 230kV bus. a. Apply fault at the Hitchland 230kV bus. b. Clear fault after 5 cycles and trip the transformer
43	FLT43-3PH	3 phase fault on the Arcadia (514907) 138kV to Arcadia (514908) 345kV/(515700) 13.8kV ckt 1 transformer at the 138kV bus. a. Apply fault at the Arcadia 138kV bus. b. Clear fault after 5 cycles and trip the transformer
44	FLT44-3PH	3 phase fault on the Draper (514933) 138kV to Draper (514934) 345kV/(515720) 13.8kV ckt 1 transformer at the 138kV bus. a. Apply fault at the Draper 138kV bus. b. Clear fault after 5 cycles and trip the transformer

Table 3-1: Fault Definitions

Cont. No.	Cont. Name	Description
45	FLT45-3PH	3 phase fault on the LES (511467) 138kV to LES (511468) 345kV/(511411) 13.8kV ckt 2 transformer at the 138kV bus. a. Apply fault at the LES 138kV bus. b. Clear fault after 5 cycles and trip the transformer
46	FLT46-1PH	Northwest (514880) 345kV Stuck Breaker Scenario 1 a. Apply single phase fault at the Northwest (514880) 345kV bus. b. Wait 16 cycles and remove fault. c. Drop Northwest (514880)-Spring Creek (514881) 345kV line. d. Drop Northwest Transformer (514879, 514880, 515743,"1").
47	FLT47-1PH	Northwest (514880) 345kV Stuck Breaker Scenario 2 a. Apply single phase fault at the Northwest (514880) 345kV bus. b. Wait 16 cycles and remove fault. c. Drop Northwest (514880)-Cimarron (514901) 345kV line. d. Drop Northwest Transformer (514879, 514880, 515742,"1").
48	FLT48-1PH	Gracemont (515800) 345kV Stuck Breaker Scenario a. Apply single phase fault at the Gracemont (515800) 345kV bus. b. Wait 16 cycles and remove fault. c. Drop Gracemont (515800)-LES (511468) 345kV line. d. Drop Gracemont Transformer (515800, 515802, 515801 "1").
49	FLT49-1PH	Cimarron (514901) 345kV Stuck Breaker Scenario 1 a. Apply single phase fault at the Cimarron (514901) 345kV bus. b. Wait 16 cycles and remove fault. c. Drop Cimarron (514901)-Draper (514934) 345kV line. d. Drop Cimarron Transformer (514898,514901,515714,"1")
50	FLT50-1PH	Cimarron (514901) 345kV Stuck Breaker Scenario 2 a. Apply single phase fault at the Cimarron (514901) 345kV bus. b. Wait 16 cycles and remove fault. c. Drop Cimarron (514901)-Mathewson (515497) 345kV line. d. Drop Cimarron Transformer (514898, 514901, 515715,"1").
51	FLT51-1PH	Woodward (515375) 345kV Stuck Breaker Scenario 1 a. Apply single phase fault at the Woodward (515375) 345kV bus. b. Wait 16 cycles and remove fault. c. Drop Woodward (515375)-Border (515458) 345kV line. d. Drop Woodward Transformer (515376,515375,515795,"1")
52	FLT52-1PH	Woodward (515375) 345kV Stuck Breaker Scenario 2 a. Apply single phase fault at the Woodward (515375) 345kV bus. b. Wait 16 cycles and remove fault. c. Drop Woodward (515375)-Thistle (539801) 345kV line,ckt 2. d. Drop Woodward Transformer (515376, 515375, 515799, "2")

Table 3-1: Fault Definitions

Cont. No.	Cont. Name	Description
53	FLT53-3PH	Double Circuit Fault 3 phase fault on the Woodward (515375) to G13-034-TAP (562440) 345kV line ckt 1 and ckt 2, near Woodward. a. Apply fault at the Woodward 345kV bus. b. Clear fault after 5 cycles and trip the faulted lines, ckt 1 and ckt 2.
54	FLT54-3PH	Double Circuit Fault 3 phase fault on the Beaver County (580500) to Hitchland (523097) 345kV line ckt 1 and ckt 2, near Beaver County. a. Apply fault at the Beaver County 345kV bus. b. Clear fault after 5 cycles and trip the faulted lines, ckt 1 and ckt 2.
55	FLT55-3PH	Double Circuit Fault 3 phase fault on the Woodward (515375) to Thistle (539801) 345kV line ckt 1 and ckt 2 near Woodward. a. Apply fault at the Woodward 345kV bus. b. Clear fault after 5 cycles and trip the Woodward (515375) to G12-016-TAP (562286) to Thistle (539801) ckt 1 ckt2 lines.
56	FLT56-3PH (2024SP Only)	3 phase fault on the Gracemont (515800) to Chisholm (511553) 345kV line ckt 1, near Gracemont. a. Apply fault at the Gracemont 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
57	FLT57-3PH (2024SP Only)	3 phase fault on the Tatonga (515407) to Woodward (515375) 345kV line circuit 2, near Tatonga. a. Apply fault at the Tatonga 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
58	FLT58-3PH (2024SP Only)	3 phase fault on the Northwest (514880) to Mathewson (515497) 345kV line circuit 1, near Northwest. a. Apply fault at the Northwest 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
59	FLT59-3PH (2024SP Only)	3 phase fault on the Tatonga (515407) to Mathewson (515497) 345kV line circuit 1, near Tatonga. a. Apply fault at the Tatonga 345kV bus. b. Clear fault after 5 cycles and trip the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
60	FLT60-3PH (2024SP Only)	Double Circuit Fault 3 phase fault on the Tatonga (515407) to Mathewson (515497) 345kV line ckt 1 and ckt 2, near Tatonga. a. Apply fault at the Tatonga 345kV bus. b. Clear fault after 5 cycles and trip the faulted lines, ckt 1 and ckt 2.

Table 3-1: Fault Definitions

Cont. No.	Cont. Name	Description
61	FLT61-3PH (2024SP Only)	Double Circuit Fault 3 phase fault on the Cimarron (514901) to Mathewson (515497) 345kV line ckt 1 and ckt 2, near Cimarron. a. Apply fault at the Cimarron 345kV bus. b. Clear fault after 5 cycles and trip the faulted lines, ckt 1 and ckt 2.
62	FLT62-3PH (2024SP Only)	Double Circuit Fault 3 phase fault on the Tatonga (515407) to Woodward (515375) 345kV line ckt 1 and ckt 2, near Tatonga. a. Apply fault at the Tatonga 345kV bus. b. Clear fault after 5 cycles and trip the faulted lines, ckt 1 and ckt 2.

Results

The stability analysis was performed and the results are summarized in **Table 3-2**. The results indicate that the transmission system remained stable for all contingencies studied. The plots will be available upon request.

Table 3-2: Stability Analysis Results

Contingency Number and Name		2014WP	2015SP	2024SP
1	FLT01-3PH	Stable	Stable	Stable
2	FLT02-3PH	Stable	Stable	Stable
3	FLT03-3PH	Stable	Stable	N/A
4	FLT04-3PH	Stable	Stable	Stable
5	FLT05-3PH	Stable	Stable	Stable
6	FLT06-3PH	Stable	Stable	Stable
7	FLT07-3PH	Stable	Stable	Stable
8	FLT08-3PH	Stable	Stable	Stable
9	FLT09-3PH	Stable	Stable	Stable
10	FLT10-3PH	Stable	Stable	Stable
11	FLT11-3PH	Stable	Stable	Stable
12	FLT12-3PH	Stable	Stable	Stable
13	FLT13-3PH	Stable	Stable	Stable
14	FLT14-3PH	Stable	Stable	Stable
15	FLT15-3PH	Stable	Stable	Stable
16	FLT16-3PH	Stable	Stable	Stable
17	FLT17-3PH	Stable	Stable	Stable
18	FLT18-3PH	Stable	Stable	Stable
19	FLT19-3PH	Stable	Stable	Stable
20	FLT20-3PH	Stable	Stable	Stable
21	FLT21-3PH	Stable	Stable	Stable
22	FLT22-3PH	Stable	Stable	Stable
23	FLT23-3PH	Stable	Stable	Stable
24	FLT24-3PH	Stable	Stable	Stable
25	FLT25-3PH	Stable	Stable	Stable
26	FLT26-3PH	Stable	Stable	Stable

Table 3-2: Stability Analysis Results

Contingency Number and Name	2014WP	2015SP	2024SP	
27	FLT27-3PH	Stable	Stable	Stable
28	FLT28-3PH	Stable	Stable	Stable
29	FLT29-3PH	Stable	Stable	Stable
30	FLT30-3PH	Stable	Stable	Stable
31	FLT31-3PH	Stable	Stable	Stable
32	FLT32-3PH	Stable	Stable	Stable
33	FLT33-3PH	Stable	Stable	Stable
34	FLT34-3PH	Stable	Stable	Stable
35	FLT35-3PH	Stable	Stable	Stable
36	FLT36-3PH	Stable	Stable	Stable
37	FLT38-3PH	Stable	Stable	Stable
38	FLT38-3PH	Stable	Stable	Stable
39	FLT39-3PH	Stable	Stable	Stable
40	FLT40-3PH	Stable	Stable	Stable
41	FLT41-3PH	Stable	Stable	Stable
42	FLT42-3PH	Stable	Stable	Stable
43	FLT43-3PH	Stable	Stable	Stable
44	FLT44-3PH	Stable	Stable	Stable
45	FLT45-3PH	Stable	Stable	Stable
46	FLT46-3PH	Stable	Stable	Stable
47	FLT47-3PH	Stable	Stable	Stable
48	FLT48-3PH	Stable	Stable	Stable
49	FLT49-1PH	Stable	Stable	Stable
50	FLT50-1PH	Stable	Stable	Stable
51	FLT51-1PH	Stable	Stable	Stable
52	FLT52-1PH	Stable	Stable	Stable
53	FLT52-1PH	Stable	Stable	Stable
54	FLT54-1PH	Stable	Stable	Stable
55	FLT55-1PH	Stable	Stable	Stable
56	FLT56-3PH (2024SP Only)	N/A	N/A	Stable
57	FLT57-3PH(2024SP Only)	N/A	N/A	Stable
58	FLT58-3PH (2024SP Only)	N/A	N/A	Stable
59	FLT59-3PH (2024SP Only)	N/A	N/A	Stable
60	FLT60-3PH (2024SP Only)	N/A	N/A	Stable
61	FLT61-3PH (2024SP Only)	N/A	N/A	Stable
62	FLT62-3PH (2024SP Only)	N/A	N/A	Stable

FERC LVRT Compliance

FERC Order #661A places specific requirements on wind farms through its Low Voltage Ride Through (LVRT) provisions. For Interconnection Agreements signed after December 31, 2006, wind farms shall stay on line for faults at the point of interconnection (POI) that draw the voltage down at the POI to 0.0 pu.

Fault contingencies were developed to verify that wind farms remain on line when the POI voltage is drawn down to 0.0 pu. These contingencies are shown in **Table 3-3**.

Table 3-3: LVRT Contingencies

Contingency Number and Name		Description
1	FLT01-3PH	3 phase fault on the G11-051 TAP (562075) to Woodward (515375) 345kV line circuit 1, near G11-051 TAP.
2	FLT02-3PH	3 phase fault on the G11-051 TAP (562075) to Tatonga (515407) 345kV line circuit 1, near G11-051 TAP.
3	FLT03-3PH	3 phase fault on the Tatonga (515407) to Northwest (514880) 345kV line circuit 1, near Tatonga.
4	FLT04-3PH	3 phase fault on the Minco (514801) to Cimarron (514901) 345kV line circuit 1, near Minco.
5	FLT05-3PH	3 phase fault on the Minco (514801) to Gracemont (515800) 345kV line circuit 1, near Minco.
60	FLT60-3PH (2024SP Only)	3 phase fault on the Tatonga (515407) to Mathewson (515497) 345kV line circuit 1, near Tatonga.
62	FLT62-3PH (2024SP Only)	3 phase fault on the Tatonga (515407) to Woodward (515375) 345kV line circuit 2, near Tatonga.

The required prior queued project wind farms remained online for the fault contingencies described in this section as well as the fault contingencies described in the Disturbances section of this report. GEN-2013-035, GEN-2014-002, GEN-2014-003, and GEN-2014-005 were found to be in compliance with FERC Order #661A.

4. Power Factor Analysis

The power factor analysis was performed for each wind project included in this study and is designed to demonstrate the reactive power requirements at the point of interconnection (POI). For all wind projects that require reactive power, the final requirement in the GIA will be the pro-forma 95% lagging to 95% leading at the POI.

Model Preparation

For each wind project included in this study, as well as previous queued projects modeled at the same POI, the wind projects were turned off for the power factor analysis. The wind farms were replaced by an equivalent generator located at the POI producing the total MW of the wind farms at that POI and 0.0 var capability.

A var generator without limits was modeled at the wind farm's POI to hold a voltage schedule at the POI consistent with the greater of the voltage schedule in the base case or unity (1.0 pu) voltage.

Disturbances

Each N-1 contingency evaluated in the Stability Analysis found in **Table 3-1** was also included in the determination of the power factor requirements.

Results

The power factor ranges are summarized in **Table 4-1** and the resultant ranges are shown in **Appendix A: Power Factor Analysis Results** for each contingency. Since the analysis showed that reactive power is required for each of the study projects, the final requirement in the Generation Interconnection Agreement (GIA) for each project will be the pro-forma 95% lagging to 95% leading at the POI.

Table 4-1: Summary of Power Factor Analysis at the POI

Request	Capacity	POI	Fuel	Generator	Power Factor at POI	
					Leading (absorbing vars)	Lagging (providing vars)
GEN-2013-035	105.61MW	Tap on the Woodward to Tatonga 345kV circuit (G11-051-TAP, 562075)	Wind	GE 1.79MW	1.000	0.631
GEN-2014-002	10.53MW	Tatonga 345kV substation (515407)	Wind	GE 1.79MW	1.000	0.899
GEN-2014-003	15.84MW	Tatonga 345kV substation (515407)	Wind	GE 1.79MW	1.000	0.899
GEN-2014-005	5.67MW	Minco 345kV substation (514801)	Wind	GE 1.69MW	0.953	0.971

NOTE: 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.

5. Reduced Generation Analysis

Interconnection requests for wind generation projects that interconnect to a 345kV or 230kV bus on the SPP system are analyzed for the capacitive charging effects during reduced generation conditions (unsuitable wind speeds, curtailment, etc.) at the generation site.

Model Preparation

The project generators and capacitors (if any), and all other wind projects that share the same POI, were turned off in the base case. The resulting reactive power injection into the transmission network comes from the capacitance of the project's transmission lines and collector cables. This reactive power injection is measured at the POI. Shunt reactors were added at the study project substation low voltage bus to bring the Mvar flow into the POI down to approximately zero.

Results

A final shunt reactor requirement for each of the studied interconnection requests is shown in **Table 5-1**. One line drawings used in the analysis are shown in **Appendix B: Charging Current Compensation Analysis Results**.

Table 5-1: Summary of Shunt Reactor Requirements

Request	Capacity	POI	Approximate Shunt Reactor Required
GEN-2013-035	105.61MW	Tap on the Woodward to Tatonga 345kV circuit (G11-051-TAP, 562075)	10Mvar
GEN-2014-002	10.53MW increase to GEN-2007-021 (209.43MW facility total)	Tatonga 345kV substation (515407)	15Mvar
GEN-2014-003	15.84MW increase to GEN-2007-044 (315.04MW facility total)	Tatonga 345kV substation (515407)	32Mvar
GEN-2014-005	5.67MW	Minco 345kV substation (514801)	13Mvar

The results shown are for the 2014WP case. The other two cases (2015SP and 2024SP) were almost identical since the generation plant design is the same in all cases.

Note that GEN-2014-002 is a request to increase the power output of GEN-2007-021. A restudy for wind turbine change was performed on GEN-2007-021 in March 2014¹, and in the restudy the reactor analysis showed that approximately 15Mvar of reactors is required for the generation request. Since the collector system and the transmission line to the POI remain unchanged for GEN-2014-002 and GEN-2007-021, the results of this DISIS study reaffirms the need for approximately 15Mvar of reactors.

The situation for GEN-2014-003 is similar. GEN-2014-003 is a request to increase the power output of GEN-2007-044. A restudy for wind turbine change was also performed on GEN-2007-044 in March 2014². The restudy showed that approximately 32Mvar of reactors is required for the generation request. The collector system and the transmission line to the POI remain unchanged for GEN-2014-003 and GEN-2007-044. This DISIS study reaffirms the need for approximately 32Mvar of reactors.

¹ See GEN-2007-021 Impact Restudy for Generator Modification (Turbine Change) dated March 2014.

² See GEN-2007-044 Impact Restudy for Generator Modification (Turbine Change) dated March 2014.

6. Conclusion

DISIS-2014-001 Interconnection Customers have requested a Definitive Interconnection System Impact Study detailing the impacts of interconnecting generation to the SPP Transmission System

GEN-2013-035, GEN-2014-002, GEN-2014-003, and GEN-2014-005 were found to be stable for all contingencies studied. The wind turbine generators in GEN-2013-035, GEN-2014-002, GEN-2014-003, and GEN-2014-005 have the capability of pre-contingency voltage recovery, and the post fault voltage recovery was found to be within the criterion of 0.7 pu to 1.2 pu.

A power factor analysis was performed for each interconnection project. All three study cases, 2014 winter, 2015 summer, and 2024 summer peak conditions were used in the analyses. The power factor analyses showed that GEN-2013-035, GEN-2014-002, GEN-2014-003, and GEN-2014-005 will be required to provide the pro-forma standard 0.95 leading (absorbing) to 0.95 lagging (supplying) at their respective Point of Interconnection (POI).

A reduced generation analysis was done on the interconnection requests. A summary of reactor requirements is shown in **Table 5-1**. The reactor requirements can be implemented by external reactor banks or other means.

The Low Voltage Ride Through (LVRT) analysis showed that none of the interconnection requests in this study tripped offline when their respective POI's were faulted to draw the POI voltage down to 0.0 pu. Therefore, each interconnection request in this study meets the FECR Order #661 requirement.

All generators in the monitored areas remained stable for all of the modeled disturbances.

Any changes to the assumptions made in this study, for example, one or more of the previously queued requests withdraw, may require a re-study at the expense of the Customer.

Nothing in this study should be construed as a guarantee of delivery or transmission service. If the customer wishes to sell power from the facility, a separate request for transmission service must be requested on Southwest Power Pool's OASIS by the Customer.

Appendix A: Power Factor Analysis Results

Table A1: Power Factor Analysis at the GEN-2013-035 POI

DISIS-2014-001 Group 1 POI – Tap on the Woodward to Tatonga 345kV circuit (G11-051-TAP, 562075)		2014 Winter Voltage = 1.000 pu				2015 Summer Voltage = 1.000 pu				2024 Summer Voltage = 1.001 pu			
Cont. No.	Contingency Name	Power @ POI	VARs @ POI	Power Factor		Power @ POI	VARs @ POI	Power Factor		Power @ POI	VARs @ POI	Power Factor	
0	NoFault	105.6	67.6	0.842	LAG	105.6	43.7	0.924	LAG	105.6	6.3	0.998	LAG
1	G11051TAP_WOODWARD_345kV	105.6	23.4	0.976	LAG	105.6	20.8	0.981	LAG	105.6	6.2	0.998	LAG
2	G11051TAP_TATONGA7_345kV	105.6	23.4	0.976	LAG	105.6	17.1	0.987	LAG	105.6	0.9	1.000	LAG
3	TATONGA7_NORTWST7_345kV	105.6	130.0	0.631	LAG	105.6	120.4	0.659	LAG	N/A	N/A	N/A	N/A
4	MINCO7_CIMARON7_345kV	105.6	71.7	0.827	LAG	105.6	47.5	0.912	LAG	105.6	12.5	0.993	LAG
5	MINCO7_GRACEMONT_345kV	105.6	64.0	0.855	LAG	105.6	41.3	0.931	LAG	105.6	6.9	0.998	LAG
6	CIMARON7_NORTWST7_345kV	105.6	69.9	0.834	LAG	105.6	44.2	0.922	LAG	105.6	7.2	0.998	LAG
7	CIMARON7_DRAPER7_345kV	105.6	69.6	0.835	LAG	105.6	44.7	0.921	LAG	105.6	8.1	0.997	LAG
8	CIMARON7_MATHWSN7_345kV	105.6	73.4	0.821	LAG	105.6	47.0	0.914	LAG	105.6	6.4	0.998	LAG
9	GRACEMONT_LES_345kV	105.6	64.7	0.853	LAG	105.6	41.5	0.931	LAG	105.6	6.0	0.998	LAG
10	WOODWARD_BORDER_345kV	105.6	84.4	0.781	LAG	105.6	59.8	0.870	LAG	105.6	21.9	0.979	LAG
11	WOODWARD_THISTLE_345kV	105.6	93.3	0.749	LAG	105.6	68.8	0.838	LAG	105.6	19.6	0.983	LAG
12	WOODWARD_G13034TAP_345kV	105.6	65.8	0.849	LAG	105.6	42.0	0.929	LAG	105.6	3.7	0.999	LAG
13	BEAVERCOUNTY_HITCHLAND_345kV	105.6	73.5	0.821	LAG	105.6	49.9	0.904	LAG	105.6	12.0	0.994	LAG
14	HITCHLAND_FINNEY_345kV	105.6	93.1	0.750	LAG	105.6	58.9	0.873	LAG	105.6	12.1	0.993	LAG
15	HITCHLAND_POTTERCOUNTY_345kV	105.6	68.8	0.838	LAG	105.6	46.0	0.917	LAG	105.6	10.0	0.996	LAG
16	G14007TAP_TUCO_345kV	105.6	83.4	0.785	LAG	105.6	58.5	0.875	LAG	105.6	20.1	0.982	LAG
17	NORTWST7_SPRINGCREEK_345kV	105.6	72.7	0.824	LAG	105.6	52.2	0.897	LAG	105.6	14.1	0.991	LAG
18	NORTWST7_ARCADIA_345kV	105.6	73.9	0.819	LAG	105.6	47.4	0.912	LAG	105.6	8.7	0.997	LAG
19	SPRINGCREEK_SOONER_345kV	105.6	72.4	0.825	LAG	105.6	45.8	0.917	LAG	105.6	9.1	0.996	LAG
20	ARCADIA_REDBUD_345kV	105.6	68.5	0.839	LAG	105.6	44.1	0.923	LAG	105.6	6.5	0.998	LAG
21	ARCADIA_SEMINOLE_345kV	105.6	66.9	0.845	LAG	105.6	43.1	0.926	LAG	105.6	6.5	0.998	LAG
22	DRAPER_SEMINOLE_345kV	105.6	68.4	0.839	LAG	105.6	44.2	0.922	LAG	105.6	8.1	0.997	LAG
23	LES_OKU_345kV	105.6	122.7	0.652	LAG	105.6	86.4	0.774	LAG	105.6	19.3	0.984	LAG
24	LES_SUNNYSIDE_345kV	105.6	76.1	0.811	LAG	105.6	49.9	0.904	LAG	105.6	10.1	0.995	LAG
25	WOODWARD_WOODWARD_138kV	105.6	68.2	0.840	LAG	105.6	44.2	0.922	LAG	105.6	6.5	0.998	LAG

Table A1: Power Factor Analysis at the GEN-2013-035 POI

DISIS-2014-001 Group 1 POI – Tap on the Woodward to Tatonga 345kV circuit (G11-051-TAP, 562075)		2014 Winter Voltage = 1.000 pu				2015 Summer Voltage = 1.000 pu				2024 Summer Voltage = 1.001 pu			
Cont. No.	Contingency Name	Power @ POI	VARs @ POI	Power Factor		Power @ POI	VARs @ POI	Power Factor		Power @ POI	VARs @ POI	Power Factor	
26	WOODWARD_IODINE_138kV	105.6	70.6	0.831	LAG	105.6	46.3	0.916	LAG	105.6	7.4	0.998	LAG
27	NORTWST4_KETCHTAP_138kV	105.6	66.6	0.846	LAG	105.6	42.5	0.928	LAG	105.6	5.0	0.999	LAG
28	NORTWST4_BRADEN_138kV	105.6	66.9	0.845	LAG	105.6	42.7	0.927	LAG	105.6	6.0	0.998	LAG
29	PIEDMONT_RICHARDS_138kV	105.6	67.3	0.843	LAG	105.6	43.4	0.925	LAG	105.6	6.3	0.998	LAG
30	NORTWST4_LONEOAK_138kV	105.6	67.0	0.844	LAG	105.6	42.8	0.927	LAG	105.6	5.9	0.998	LAG
31	CIMARON4_TUTCONTAP_138kV	105.6	67.2	0.844	LAG	105.6	43.2	0.925	LAG	105.6	5.4	0.999	LAG
32	CIMARON4_ELRENO_138kV	105.6	68.4	0.839	LAG	105.6	44.2	0.923	LAG	105.6	6.3	0.998	LAG
33	CIMARON4_JENSENTAP_138kV	105.6	68.4	0.839	LAG	105.6	44.2	0.923	LAG	105.6	6.3	0.998	LAG
34	CIMARON4_HAYMAKER_138kV	105.6	68.6	0.839	LAG	105.6	44.6	0.921	LAG	105.6	6.8	0.998	LAG
35	CIMARON4_CZECHHALL_138kV	105.6	68.9	0.838	LAG	105.6	44.4	0.922	LAG	105.6	6.5	0.998	LAG
36	CIMARON4_SARA4_138kV	105.6	68.0	0.841	LAG	105.6	43.7	0.924	LAG	105.6	6.2	0.998	LAG
37	GRACEMONT_ANADARKO_138kV	105.6	67.7	0.842	LAG	105.6	43.8	0.924	LAG	105.6	6.4	0.998	LAG
38	GRACEMONT_WASHITA_138kV	105.6	67.6	0.842	LAG	105.6	43.7	0.924	LAG	105.6	6.4	0.998	LAG
39	CIMARON7_CIMARON4_345_138kV	105.6	66.4	0.847	LAG	105.6	42.9	0.926	LAG	105.6	5.2	0.999	LAG
40	GRACEMONT_GRACEMONT_345_138kV	105.6	68.2	0.840	LAG	105.6	44.3	0.922	LAG	105.6	6.9	0.998	LAG
41	WOODWARD_WOODWARD_138_345kV	105.6	62.9	0.859	LAG	105.6	38.2	0.940	LAG	105.6	6.4	0.998	LAG
42	HITCHLAND_HITCHLAND_230_345kV	105.6	68.1	0.840	LAG	105.6	44.4	0.922	LAG	105.6	7.2	0.998	LAG
43	ARCADIA_ARCADIA_138_345kV	105.6	67.1	0.844	LAG	105.6	43.6	0.924	LAG	105.6	6.2	0.998	LAG
44	DRAPER_DRAPER7_138_345kV	105.6	67.5	0.843	LAG	105.6	43.6	0.924	LAG	105.6	6.1	0.998	LAG
45	LES_LES_138_345kV	105.6	67.4	0.843	LAG	105.6	43.7	0.924	LAG	105.6	6.1	0.998	LAG
46	GRACEMONT_CHISHOLM_345kV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	105.6	6.6	0.998	LAG
47	TATONGA7_WOODWARD_345kV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	105.6	20.8	0.981	LAG
48	NORTWST7_MATHWSN7_345kV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	105.6	6.4	0.998	LAG
49	TATONGA7_MATHWSN7_345kV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	105.6	27.6	0.967	LAG

Table A2: Power Factor Analysis at the GEN-2014-002 POI

DISIS-2014-001 Group 1 POI – Tap on the Woodward to Tatonga 345kV circuit (G11-051-TAP, 562075)		2014 Winter Voltage = 1.000 pu				2015 Summer Voltage = 1.000 pu				2024 Summer Voltage = 1.001 pu			
Cont. No.	Contingency Name	Power @ POI	VARS @ POI	Power Factor		Power @ POI	VARS @ POI	Power Factor		Power @ POI	VARS @ POI	Power Factor	
0	NoFault	209.4	66.6	0.953	LAG	209.4	45.0	0.978	LAG	209.4	14.6	0.998	LAG
1	G11051TAP_WOODWARD_345kV	209.4	30.1	0.990	LAG	209.4	25.7	0.993	LAG	209.4	14.0	0.998	LAG
2	G11051TAP_TATONGA7_345kV	209.4	15.0	0.997	LAG	209.4	10.7	0.999	LAG	209.4	18.6	0.996	LAG
3	TATONGA7_NORTWST7_345kV	209.4	44.2	0.978	LAG	209.4	39.3	0.983	LAG	N/A	N/A	N/A	N/A
4	MINCO7_CIMARON7_345kV	209.4	70.0	0.948	LAG	209.4	48.0	0.975	LAG	209.4	21.3	0.995	LAG
5	MINCO7_GRACEMONT_345kV	209.4	64.3	0.956	LAG	209.4	43.3	0.979	LAG	209.4	15.5	0.997	LAG
6	CIMARON7_NORTWST7_345kV	209.4	68.3	0.951	LAG	209.4	45.0	0.978	LAG	209.4	15.5	0.997	LAG
7	CIMARON7_DRAPER7_345kV	209.4	68.0	0.951	LAG	209.4	45.5	0.977	LAG	209.4	16.1	0.997	LAG
8	CIMARON7_MATHWSN7_345kV	209.4	72.8	0.944	LAG	209.4	48.7	0.974	LAG	209.4	14.5	0.998	LAG
9	GRACEMONT_LES_345kV	209.4	64.4	0.956	LAG	209.4	43.4	0.979	LAG	209.4	14.1	0.998	LAG
10	WOODWARD_BORDER_345kV	209.4	74.1	0.943	LAG	209.4	51.8	0.971	LAG	209.4	24.5	0.993	LAG
11	WOODWARD_THISTLE_345kV	209.4	87.4	0.923	LAG	209.4	64.1	0.956	LAG	209.4	27.9	0.991	LAG
12	WOODWARD_G13034TAP_345kV	209.4	66.0	0.954	LAG	209.4	44.5	0.978	LAG	209.4	13.3	0.998	LAG
13	BEAVERCOUNTY_HITCHLAND_345kV	209.4	69.1	0.950	LAG	209.4	47.7	0.975	LAG	209.4	18.3	0.996	LAG
14	HITCHLAND_FINNEY_345kV	209.4	80.0	0.934	LAG	209.4	52.9	0.969	LAG	209.4	18.6	0.996	LAG
15	HITCHLAND_POTTERCOUNTY_345kV	209.4	67.2	0.952	LAG	209.4	46.3	0.976	LAG	209.4	17.6	0.996	LAG
16	G14007TAP_TUCO_345kV	209.4	76.4	0.939	LAG	209.4	53.7	0.969	LAG	209.4	25.6	0.993	LAG
17	NORTWST7_SPRINGCREEK_345kV	209.4	70.9	0.947	LAG	209.4	52.7	0.970	LAG	209.4	23.2	0.994	LAG
18	NORTWST7_ARCADIA_345kV	209.4	71.2	0.947	LAG	209.4	47.6	0.975	LAG	209.4	17.0	0.997	LAG
19	SPRINGCREEK_SOONER_345kV	209.4	70.6	0.948	LAG	209.4	46.2	0.977	LAG	209.4	16.8	0.997	LAG
20	ARCADIA_REDBUD_345kV	209.4	67.4	0.952	LAG	209.4	45.4	0.977	LAG	209.4	14.8	0.998	LAG
21	ARCADIA_SEMINOLE_345kV	209.4	65.9	0.954	LAG	209.4	44.4	0.978	LAG	209.4	14.9	0.997	LAG
22	DRAPER_SEMINOLE_345kV	209.4	67.4	0.952	LAG	209.4	45.5	0.977	LAG	209.4	16.7	0.997	LAG
23	LES_OKU_345kV	209.4	102.1	0.899	LAG	209.4	72.9	0.944	LAG	209.4	27.3	0.992	LAG
24	LES_SUNNYSIDE_345kV	209.4	71.9	0.946	LAG	209.4	48.9	0.974	LAG	209.4	18.0	0.996	LAG
25	WOODWARD_WOODWARD_138kV	209.4	66.9	0.953	LAG	209.4	45.2	0.977	LAG	209.4	14.8	0.998	LAG
26	WOODWARD_IODINE_138kV	209.4	68.7	0.950	LAG	209.4	46.8	0.976	LAG	209.4	15.6	0.997	LAG

Table A2: Power Factor Analysis at the GEN-2014-002 POI

DISIS-2014-001 Group 1 POI – Tap on the Woodward to Tatonga 345kV circuit (G11-051-TAP, 562075)		2014 Winter Voltage = 1.000 pu				2015 Summer Voltage = 1.000 pu				2024 Summer Voltage = 1.001 pu			
Cont. No.	Contingency Name	Power @ POI	VARS @ POI	Power Factor		Power @ POI	VARS @ POI	Power Factor		Power @ POI	VARS @ POI	Power Factor	
27	NORTWST4_KETCHTAP_138kV	209.4	65.6	0.954	LAG	209.4	43.8	0.979	LAG	209.4	13.1	0.998	LAG
28	NORTWST4_BRADEN_138kV	209.4	66.0	0.954	LAG	209.4	44.1	0.979	LAG	209.4	14.3	0.998	LAG
29	PIEDMONT_RICHARDS_138kV	209.4	66.4	0.953	LAG	209.4	44.7	0.978	LAG	209.4	14.6	0.998	LAG
30	NORTWST4_LONEOAK_138kV	209.4	66.1	0.954	LAG	209.4	44.1	0.979	LAG	209.4	14.2	0.998	LAG
31	CIMARON4_TUTCONTAP_138kV	209.4	66.3	0.953	LAG	209.4	44.6	0.978	LAG	209.4	13.6	0.998	LAG
32	CIMARON4_ELRENO_138kV	209.4	67.1	0.952	LAG	209.4	45.2	0.978	LAG	209.4	14.4	0.998	LAG
33	CIMARON4_JENSENTAP_138kV	209.4	67.1	0.952	LAG	209.4	45.2	0.978	LAG	209.4	14.4	0.998	LAG
34	CIMARON4_HAYMAKER_138kV	209.4	67.4	0.952	LAG	209.4	45.7	0.977	LAG	209.4	15.1	0.997	LAG
35	CIMARON4_CZECHHALL_138kV	209.4	67.7	0.952	LAG	209.4	45.6	0.977	LAG	209.4	14.7	0.998	LAG
36	CIMARON4_SARA4_138kV	209.4	66.9	0.953	LAG	209.4	45.0	0.978	LAG	209.4	14.4	0.998	LAG
37	GRACEMONT_ANADARKO_138kV	209.4	66.7	0.953	LAG	209.4	45.1	0.978	LAG	209.4	14.7	0.998	LAG
38	GRACEMONT_WASHITA_138kV	209.4	66.7	0.953	LAG	209.4	45.0	0.978	LAG	209.4	14.7	0.998	LAG
39	CIMARON7_CIMARON4_345_138kV	209.4	65.7	0.954	LAG	209.4	44.4	0.978	LAG	209.4	13.3	0.998	LAG
40	GRACEMONT_GRACEMONT_345_138kV	209.4	67.2	0.952	LAG	209.4	45.5	0.977	LAG	209.4	15.3	0.997	LAG
41	WOODWARD_WOODWARD_138_345kV	209.4	64.6	0.956	LAG	209.4	42.8	0.980	LAG	209.4	14.3	0.998	LAG
42	HITCHLAND_HITCHLAND_230_345kV	209.4	66.9	0.953	LAG	209.4	45.4	0.977	LAG	209.4	15.3	0.997	LAG
43	ARCADIA_ARCADIA_138_345kV	209.4	66.3	0.953	LAG	209.4	44.9	0.978	LAG	209.4	14.5	0.998	LAG
44	DRAPER_DRAPER7_138_345kV	209.4	66.6	0.953	LAG	209.4	45.0	0.978	LAG	209.4	14.4	0.998	LAG
45	LES_LES_138_345kV	209.4	66.5	0.953	LAG	209.4	45.0	0.978	LAG	209.4	14.4	0.998	LAG
46	GRACEMONT_CHISHOLM_345kV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	209.4	15.1	0.997	LAG
47	TATONGA7_WOODWARD_345kV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	209.4	20.4	0.995	LAG
48	NORTWST7_MATHWSN7_345kV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	209.4	13.7	0.998	LAG
49	TATONGA7_MATHWSN7_345kV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	209.4	31.0	0.989	LAG

Table A3: Power Factor Analysis at the GEN-2014-003 POI

DISIS-2014-001 Group 1 POI – Tap on the Woodward to Tatonga 345kV circuit (G11-051-TAP, 562075)		2014 Winter Voltage = 1.000 pu				2015 Summer Voltage = 1.000 pu				2024 Summer Voltage = 1.001 pu			
Cont. No.	Contingency Name	Power @ POI	VARS @ POI	Power Factor		Power @ POI	VARS @ POI	Power Factor		Power @ POI	VARS @ POI	Power Factor	
0	NoFault	315.0	100.2	0.953	LAG	315.0	67.7	0.978	LAG	315.0	22.0	0.998	LAG
1	G11051TAP_WOODWARD_345kV	315.0	45.2	0.990	LAG	315.0	38.7	0.993	LAG	315.0	21.0	0.998	LAG
2	G11051TAP_TATONGA7_345kV	315.0	22.6	0.997	LAG	315.0	16.1	0.999	LAG	315.0	28.0	0.996	LAG
3	TATONGA7_NORTWST7_345kV	315.0	66.5	0.978	LAG	315.0	59.1	0.983	LAG	N/A	N/A	N/A	N/A
4	MINCO7_CIMARON7_345kV	315.0	105.3	0.948	LAG	315.0	72.2	0.975	LAG	315.0	32.1	0.995	LAG
5	MINCO7_GRACEMONT_345kV	315.0	96.7	0.956	LAG	315.0	65.2	0.979	LAG	315.0	23.3	0.997	LAG
6	CIMARON7_NORTWST7_345kV	315.0	102.8	0.951	LAG	315.0	67.7	0.978	LAG	315.0	23.3	0.997	LAG
7	CIMARON7_DRAPER7_345kV	315.0	102.2	0.951	LAG	315.0	68.5	0.977	LAG	315.0	24.3	0.997	LAG
8	CIMARON7_MATHWSN7_345kV	315.0	109.6	0.944	LAG	315.0	73.3	0.974	LAG	315.0	21.8	0.998	LAG
9	GRACEMONT_LES_345kV	315.0	96.9	0.956	LAG	315.0	65.2	0.979	LAG	315.0	21.3	0.998	LAG
10	WOODWARD_BORDER_345kV	315.0	111.5	0.943	LAG	315.0	77.9	0.971	LAG	315.0	36.9	0.993	LAG
11	WOODWARD_THISTLE_345kV	315.0	131.5	0.923	LAG	315.0	96.4	0.956	LAG	315.0	41.9	0.991	LAG
12	WOODWARD_G13034TAP_345kV	315.0	99.2	0.954	LAG	315.0	67.0	0.978	LAG	315.0	20.1	0.998	LAG
13	BEAVERCOUNTY_HITCHLAND_345kV	315.0	104.0	0.950	LAG	315.0	71.8	0.975	LAG	315.0	27.5	0.996	LAG
14	HITCHLAND_FINNEY_345kV	315.0	120.3	0.934	LAG	315.0	79.7	0.969	LAG	315.0	28.0	0.996	LAG
15	HITCHLAND_POTTERCOUNTY_345kV	315.0	101.2	0.952	LAG	315.0	69.7	0.976	LAG	315.0	26.4	0.996	LAG
16	G14007TAP_TUCO_345kV	315.0	114.9	0.939	LAG	315.0	80.7	0.969	LAG	315.0	38.5	0.993	LAG
17	NORTWST7_SPRINGCREEK_345kV	315.0	106.6	0.947	LAG	315.0	79.3	0.970	LAG	315.0	34.8	0.994	LAG
18	NORTWST7_ARCADIA_345kV	315.0	107.1	0.947	LAG	315.0	71.7	0.975	LAG	315.0	25.5	0.997	LAG
19	SPRINGCREEK_SOONER_345kV	315.0	106.2	0.948	LAG	315.0	69.4	0.977	LAG	315.0	25.3	0.997	LAG
20	ARCADIA_REDBUD_345kV	315.0	101.4	0.952	LAG	315.0	68.3	0.977	LAG	315.0	22.3	0.998	LAG
21	ARCADIA_SEMINOLE_345kV	315.0	99.2	0.954	LAG	315.0	66.8	0.978	LAG	315.0	22.3	0.997	LAG
22	DRAPER_SEMINOLE_345kV	315.0	101.3	0.952	LAG	315.0	68.4	0.977	LAG	315.0	25.1	0.997	LAG
23	LES_OKU_345kV	315.0	153.6	0.899	LAG	315.0	109.6	0.944	LAG	315.0	41.1	0.992	LAG
24	LES_SUNNYSIDE_345kV	315.0	108.2	0.946	LAG	315.0	73.5	0.974	LAG	315.0	27.1	0.996	LAG
25	WOODWARD_WOODWARD_138kV	315.0	100.6	0.953	LAG	315.0	68.0	0.977	LAG	315.0	22.2	0.998	LAG
26	WOODWARD_IODINE_138kV	315.0	103.4	0.950	LAG	315.0	70.4	0.976	LAG	315.0	23.4	0.997	LAG

Table A3: Power Factor Analysis at the GEN-2014-003 POI

DISIS-2014-001 Group 1 POI – Tap on the Woodward to Tatonga 345kV circuit (G11-051-TAP, 562075)		2014 Winter Voltage = 1.000 pu				2015 Summer Voltage = 1.000 pu				2024 Summer Voltage = 1.001 pu			
Cont. No.	Contingency Name	Power @ POI	VARS @ POI	Power Factor		Power @ POI	VARS @ POI	Power Factor		Power @ POI	VARS @ POI	Power Factor	
27	NORTWST4_KETCHTAP_138kV	315.0	98.7	0.954	LAG	315.0	65.9	0.979	LAG	315.0	19.7	0.998	LAG
28	NORTWST4_BRADEN_138kV	315.0	99.3	0.954	LAG	315.0	66.3	0.979	LAG	315.0	21.5	0.998	LAG
29	PIEDMONT_RICHARDS_138kV	315.0	99.9	0.953	LAG	315.0	67.3	0.978	LAG	315.0	21.9	0.998	LAG
30	NORTWST4_LONEOAK_138kV	315.0	99.5	0.954	LAG	315.0	66.4	0.979	LAG	315.0	21.3	0.998	LAG
31	CIMARON4_TUTCONTAP_138kV	315.0	99.7	0.953	LAG	315.0	67.1	0.978	LAG	315.0	20.5	0.998	LAG
32	CIMARON4_ELRENO_138kV	315.0	100.9	0.952	LAG	315.0	67.9	0.978	LAG	315.0	21.6	0.998	LAG
33	CIMARON4_JENSENTAP_138kV	315.0	100.9	0.952	LAG	315.0	67.9	0.978	LAG	315.0	21.6	0.998	LAG
34	CIMARON4_HAYMAKER_138kV	315.0	101.4	0.952	LAG	315.0	68.8	0.977	LAG	315.0	22.7	0.997	LAG
35	CIMARON4_CZECHHALL_138kV	315.0	101.8	0.952	LAG	315.0	68.5	0.977	LAG	315.0	22.1	0.998	LAG
36	CIMARON4_SARA4_138kV	315.0	100.7	0.953	LAG	315.0	67.7	0.978	LAG	315.0	21.7	0.998	LAG
37	GRACEMONT_ANADARKO_138kV	315.0	100.4	0.953	LAG	315.0	67.8	0.978	LAG	315.0	22.1	0.998	LAG
38	GRACEMONT_WASHITA_138kV	315.0	100.3	0.953	LAG	315.0	67.7	0.978	LAG	315.0	22.1	0.998	LAG
39	CIMARON7_CIMARON4_345_138kV	315.0	98.8	0.954	LAG	315.0	66.8	0.978	LAG	315.0	20.0	0.998	LAG
40	GRACEMONT_GRACEMONT_345_138kV	315.0	101.0	0.952	LAG	315.0	68.5	0.977	LAG	315.0	23.0	0.997	LAG
41	WOODWARD_WOODWARD_138_345kV	315.0	97.2	0.956	LAG	315.0	64.4	0.980	LAG	315.0	21.5	0.998	LAG
42	HITCHLAND_HITCHLAND_230_345kV	315.0	100.7	0.953	LAG	315.0	68.4	0.977	LAG	315.0	23.1	0.997	LAG
43	ARCADIA_ARCADIA_138_345kV	315.0	99.7	0.953	LAG	315.0	67.6	0.978	LAG	315.0	21.8	0.998	LAG
44	DRAPER_DRAPER7_138_345kV	315.0	100.1	0.953	LAG	315.0	67.7	0.978	LAG	315.0	21.6	0.998	LAG
45	LES_LES_138_345kV	315.0	100.1	0.953	LAG	315.0	67.7	0.978	LAG	315.0	21.7	0.998	LAG
46	GRACEMONT_CHISHOLM_345kV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	315.0	22.7	0.997	LAG
47	TATONGA7_WOODWARD_345kV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	315.0	30.7	0.995	LAG
48	NORTWST7_MATHWSN7_345kV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	315.0	20.7	0.998	LAG
49	TATONGA7_MATHWSN7_345kV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	315.0	46.6	0.989	LAG

Table A4: Power Factor Analysis at the GEN-2014-005 POI

DISIS-2014-001 Group 1 POI – Tap on the Woodward to Tatonga 345kV circuit (G11-051-TAP, 562075)		2014 Winter Voltage = 1.000 pu				2015 Summer Voltage = 1.000 pu				2024 Summer Voltage = 1.003 pu			
Cont. No.	Contingency Name	Power @ POI	VARS @ POI	Power Factor		Power @ POI	VARS @ POI	Power Factor		Power @ POI	VARS @ POI	Power Factor	
0	NoFault	106.5	7.9	0.997	LAG	106.5	-1.9	1.000	LEAD	106.5	-7.6	0.997	LEAD
1	G11051TAP_WOODWARD_345kV	106.5	2.8	1.000	LAG	106.5	-4.5	0.999	LEAD	106.5	-8.1	0.997	LEAD
2	G11051TAP_TATONGA7_345kV	106.5	-0.2	1.000	LEAD	106.5	-7.8	0.997	LEAD	106.5	-8.5	0.997	LEAD
3	TATONGA7_NORTWST7_345kV	106.5	16.4	0.988	LAG	106.5	0.7	1.000	LAG	N/A	N/A	N/A	N/A
4	MINCO7_CIMARON7_345kV	106.5	-22.2	0.979	LEAD	106.5	-17.3	0.987	LEAD	106.5	-34.0	0.953	LEAD
5	MINCO7_GRACEMONT_345kV	106.5	26.0	0.972	LAG	106.5	11.7	0.994	LAG	106.5	19.9	0.983	LAG
6	CIMARON7_NORTWST7_345kV	106.5	-10.8	0.995	LEAD	106.5	-13.2	0.992	LEAD	106.5	-5.2	0.999	LEAD
7	CIMARON7_DRAPER7_345kV	106.5	26.1	0.971	LAG	106.5	10.2	0.995	LAG	106.5	-0.6	1.000	LEAD
8	CIMARON7_MATHWSN7_345kV	106.5	24.8	0.974	LAG	106.5	14.0	0.991	LAG	106.5	-5.0	0.999	LEAD
9	GRACEMONT_LES_345kV	106.5	5.7	0.999	LAG	106.5	5.5	0.999	LAG	106.5	-1.9	1.000	LEAD
10	WOODWARD_BORDER_345kV	106.5	7.0	0.998	LAG	106.5	-2.1	1.000	LEAD	106.5	-5.5	0.999	LEAD
11	WOODWARD_THISTLE_345kV	106.5	16.9	0.988	LAG	106.5	4.9	0.999	LAG	106.5	-1.7	1.000	LEAD
12	WOODWARD_G13034TAP_345kV	106.5	7.8	0.997	LAG	106.5	-2.0	1.000	LEAD	106.5	-7.7	0.997	LEAD
13	BEAVERCOUNTY_HITCHLAND_345kV	106.5	8.3	0.997	LAG	106.5	-1.5	1.000	LEAD	106.5	-6.6	0.998	LEAD
14	HITCHLAND_FINNEY_345kV	106.5	14.0	0.991	LAG	106.5	0.8	1.000	LAG	106.5	-6.4	0.998	LEAD
15	HITCHLAND_POTTERCOUNTY_345kV	106.5	7.8	0.997	LAG	106.5	-2.0	1.000	LEAD	106.5	-6.5	0.998	LEAD
16	G14007TAP_TUCO_345kV	106.5	5.7	0.999	LAG	106.5	-2.7	1.000	LEAD	106.5	-3.9	0.999	LEAD
17	NORTWST7_SPRINGCREEK_345kV	106.5	17.5	0.987	LAG	106.5	10.8	0.995	LAG	106.5	5.6	0.999	LAG
18	NORTWST7_ARCADIA_345kV	106.5	24.7	0.974	LAG	106.5	6.8	0.998	LAG	106.5	-3.5	0.999	LEAD
19	SPRINGCREEK_SOONER_345kV	106.5	17.0	0.988	LAG	106.5	3.8	0.999	LAG	106.5	-2.2	1.000	LEAD
20	ARCADIA_REDBUD_345kV	106.5	9.4	0.996	LAG	106.5	-1.4	1.000	LEAD	106.5	-7.3	0.998	LEAD
21	ARCADIA_SEMINOLE_345kV	106.5	10.6	0.995	LAG	106.5	-0.2	1.000	LEAD	106.5	-7.1	0.998	LEAD
22	DRAPER_SEMINOLE_345kV	106.5	12.5	0.993	LAG	106.5	1.5	1.000	LAG	106.5	-3.4	0.999	LEAD
23	LES_OKU_345kV	106.5	23.5	0.977	LAG	106.5	9.6	0.996	LAG	106.5	6.2	0.998	LAG
24	LES_SUNNYSIDE_345kV	106.5	9.5	0.996	LAG	106.5	3.2	1.000	LAG	106.5	-7.9	0.997	LEAD
25	WOODWARD_WOODWARD_138kV	106.5	7.9	0.997	LAG	106.5	-1.9	1.000	LEAD	106.5	-7.6	0.997	LEAD
26	WOODWARD_IODINE_138kV	106.5	7.6	0.997	LAG	106.5	-1.9	1.000	LEAD	106.5	-7.5	0.998	LEAD

Table A4: Power Factor Analysis at the GEN-2014-005 POI

DISIS-2014-001 Group 1 POI – Tap on the Woodward to Tatonga 345kV circuit (G11-051-TAP, 562075)		2014 Winter Voltage = 1.000 pu				2015 Summer Voltage = 1.000 pu				2024 Summer Voltage = 1.003 pu			
Cont. No.	Contingency Name	Power @ POI	VARS @ POI	Power Factor		Power @ POI	VARS @ POI	Power Factor		Power @ POI	VARS @ POI	Power Factor	
27	NORTWST4_KETCHTAP_138kV	106.5	7.4	0.998	LAG	106.5	-3.2	1.000	LEAD	106.5	-9.3	0.996	LEAD
28	NORTWST4_BRADEN_138kV	106.5	8.9	0.997	LAG	106.5	-1.7	1.000	LEAD	106.5	-7.0	0.998	LEAD
29	PIEDMONT_RICHARDS_138kV	106.5	8.3	0.997	LAG	106.5	-1.7	1.000	LEAD	106.5	-7.2	0.998	LEAD
30	NORTWST4_LONEOAK_138kV	106.5	8.6	0.997	LAG	106.5	-2.1	1.000	LEAD	106.5	-7.5	0.998	LEAD
31	CIMARON4_TUTCONTAP_138kV	106.5	7.2	0.998	LAG	106.5	-3.2	1.000	LEAD	106.5	-9.2	0.996	LEAD
32	CIMARON4_ELRENO_138kV	106.5	7.2	0.998	LAG	106.5	-2.8	1.000	LEAD	106.5	-8.2	0.997	LEAD
33	CIMARON4_JENSENTAP_138kV	106.5	7.2	0.998	LAG	106.5	-2.8	1.000	LEAD	106.5	-8.2	0.997	LEAD
34	CIMARON4_HAYMAKER_138kV	106.5	8.4	0.997	LAG	106.5	-2.1	1.000	LEAD	106.5	-7.6	0.997	LEAD
35	CIMARON4_CZECHHALL_138kV	106.5	8.8	0.997	LAG	106.5	-2.1	1.000	LEAD	106.5	-8.0	0.997	LEAD
36	CIMARON4_SARA4_138kV	106.5	9.3	0.996	LAG	106.5	-2.1	1.000	LEAD	106.5	-7.8	0.997	LEAD
37	GRACEMONT_ANADARKO_138kV	106.5	10.3	0.995	LAG	106.5	0.4	1.000	LAG	106.5	-6.7	0.998	LEAD
38	GRACEMONT_WASHITA_138kV	106.5	8.7	0.997	LAG	106.5	-1.1	1.000	LEAD	106.5	-6.8	0.998	LEAD
39	CIMARON7_CIMARON4_345_138kV	106.5	2.8	1.000	LAG	106.5	-4.6	0.999	LEAD	106.5	-8.8	0.997	LEAD
40	GRACEMONT_GRACEMONT_345_138kV	106.5	20.4	0.982	LAG	106.5	10.0	0.996	LAG	106.5	-0.9	1.000	LEAD
41	WOODWARD_WOODWARD_138_345kV	106.5	7.5	0.998	LAG	106.5	-2.2	1.000	LEAD	106.5	-7.6	0.997	LEAD
42	HITCHLAND_HITCHLAND_230_345kV	106.5	7.9	0.997	LAG	106.5	-1.9	1.000	LEAD	106.5	-7.3	0.998	LEAD
43	ARCADIA_ARCADIA_138_345kV	106.5	7.0	0.998	LAG	106.5	-1.7	1.000	LEAD	106.5	-7.7	0.997	LEAD
44	DRAPER_DRAPER7_138_345kV	106.5	7.2	0.998	LAG	106.5	-2.2	1.000	LEAD	106.5	-8.0	0.997	LEAD
45	LES_LES_138_345kV	106.5	6.6	0.998	LAG	106.5	-1.6	1.000	LEAD	106.5	-9.7	0.996	LEAD
46	GRACEMONT_CHISHOLM_345kV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	106.5	6.4	0.998	LAG
47	TATONGA7_WOODWARD_345kV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	106.5	-7.6	0.997	LEAD
48	NORTWST7_MATHWSN7_345kV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	106.5	-2.2	1.000	LEAD
49	TATONGA7_MATHWSN7_345kV	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	106.5	0.5	1.000	LAG

Appendix B: Charging Current Compensation Analysis Results

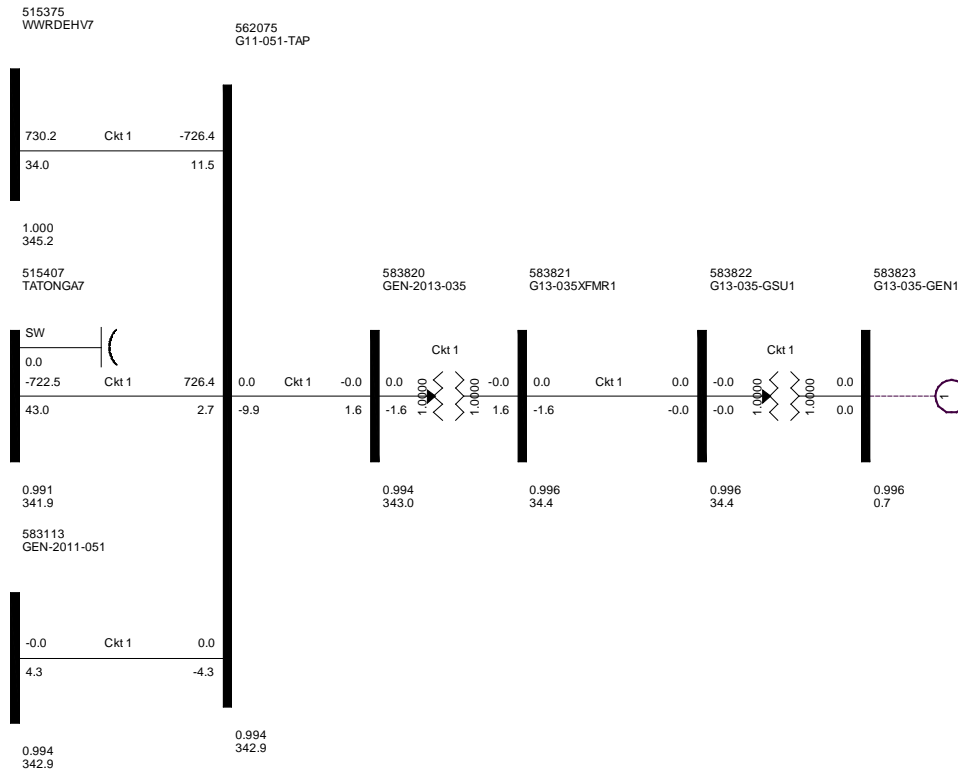


Figure B 1: GEN-2013-035 with generators off and no shunt reactors

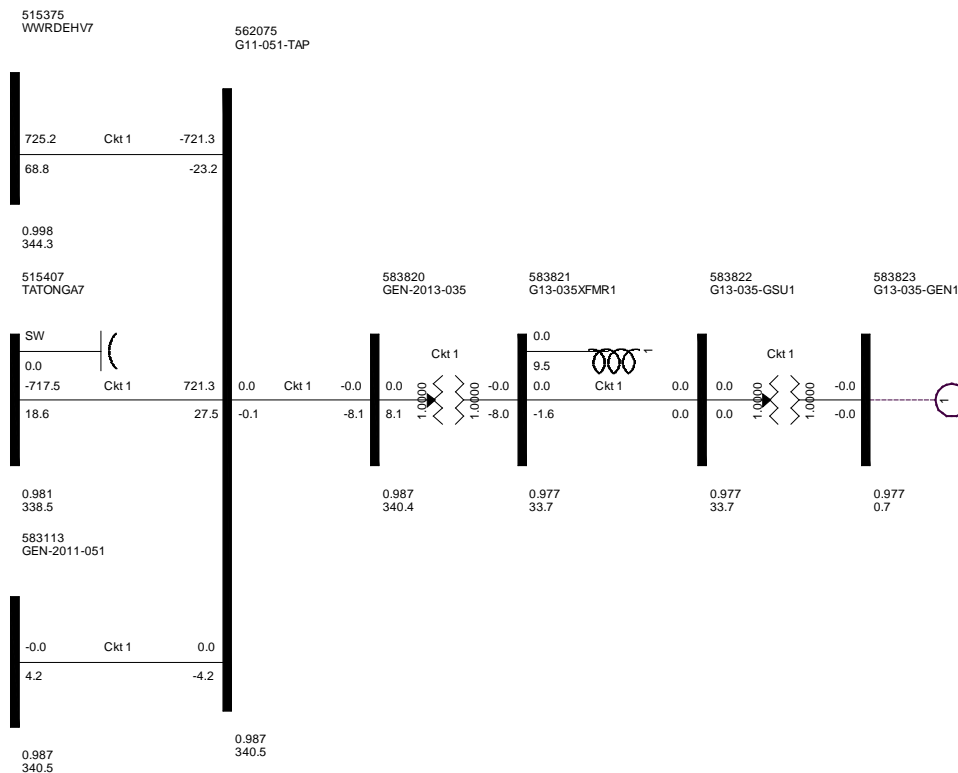


Figure B 2: GEN-2013-035 with generators turned off and shunt reactors added to the low side of the substation 345/34.5kV transformer

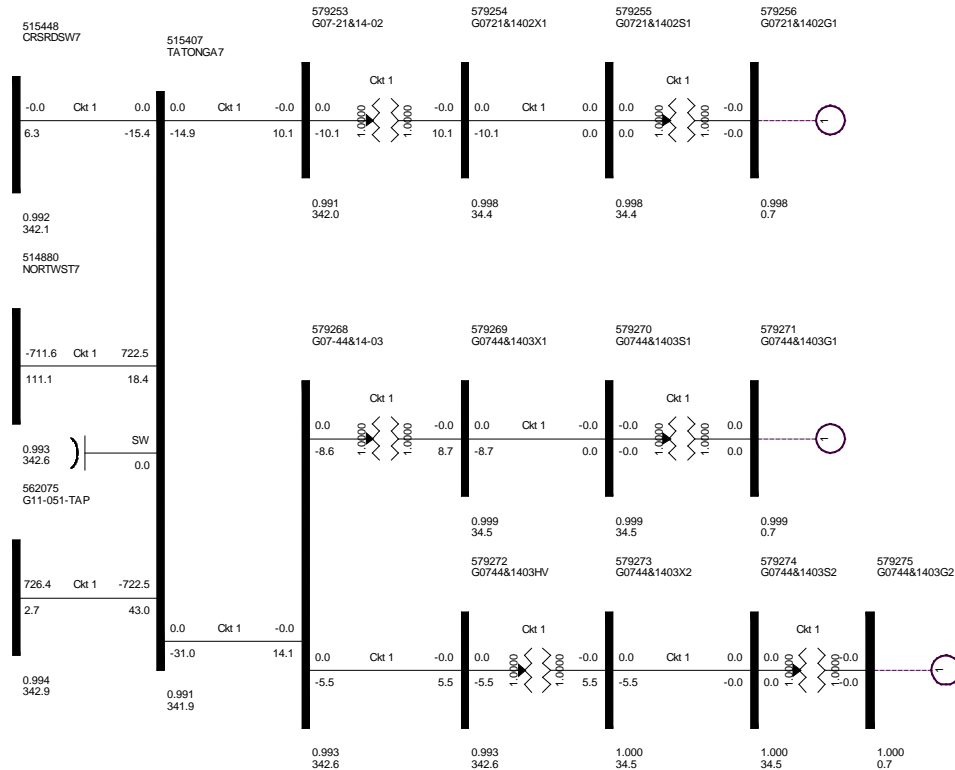


Figure B 3: GEN-2014-002 (top generator) and GEN-2014-003 (bottom two generators) turned off and no shunt reactors

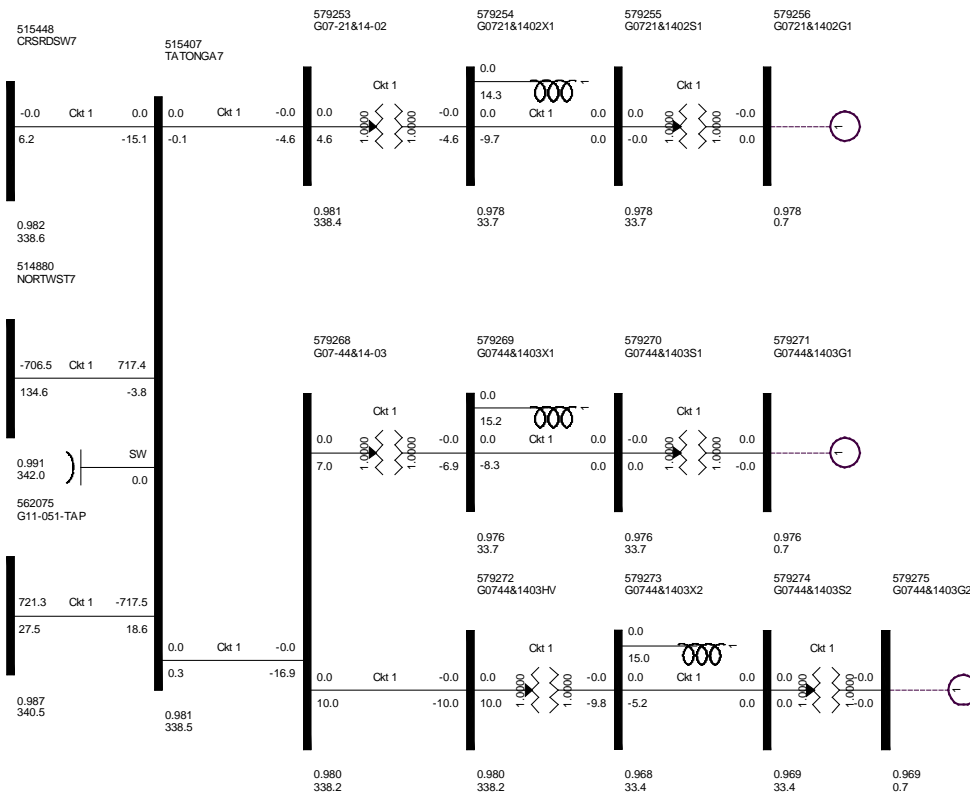


Figure B 4: GEN-2014-002 (top generator) and GEN-2014-003 (bottom two generators) turned off and shunt reactors added to the low side of the substation 345/34.5kV transformers

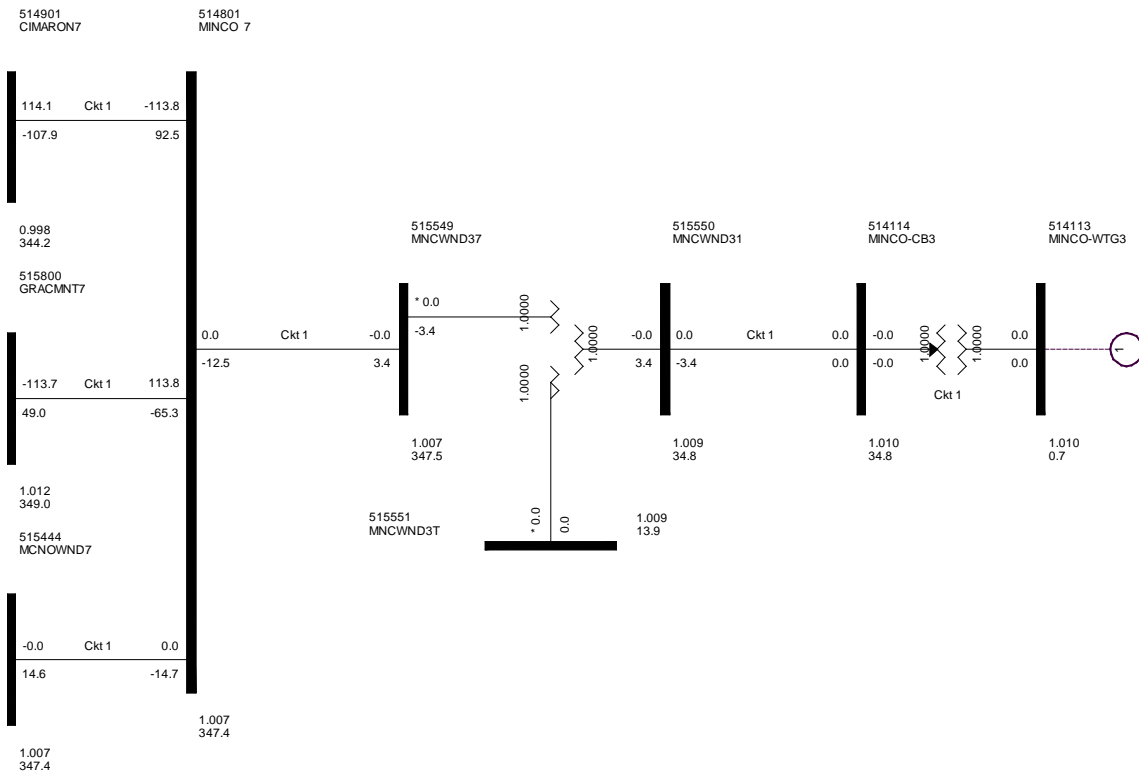


Figure B 5: GEN-2014-005 with generators off and no shunt reactors

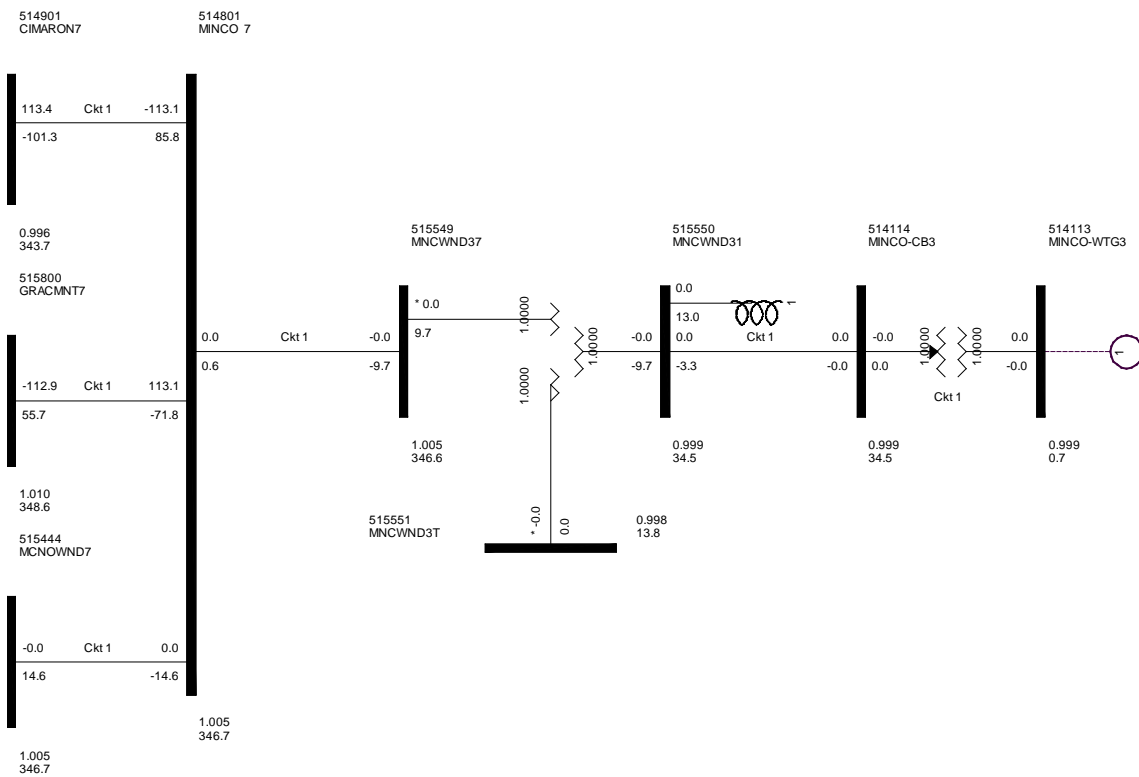


Figure B 6: GEN-2014-005 with generators turned off and shunt reactors added to the low side of the substation 345/34.5kV transformer

Appendix C: Study Plots

K: Group 6 Dynamic Stability Analysis Report

See MEPPi report on next page.

Southwest Power Pool, Inc. (SPP)

DISIS-2014-001 (Group 06) Definitive Impact Study

Final Report

**PXE-0862
Revision #03**

July 2014

**Submitted By:
Mitsubishi Electric Power Products, Inc. (MEPPI)
Power Systems Engineering Services Department
Warrendale, PA**

Title: DISIS-2014-001 (Group 6) Definitive Impact Study: Final Report PXE-0862
Date: July 2014
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Approved: Robert T. Hellested; Deputy Manager, Power Systems Engineering Dept. Robert T. Hellested

EXECUTIVE SUMMARY

SPP requested a Definitive Interconnection System Impact Study (DISIS). The DISIS required a Power Factor Analysis, Stability Analysis, and Low Wind/No Wind Analysis detailing the impacts of the interconnecting projects as shown in Table ES-1.

Table ES-1
Interconnection Projects Evaluated

Request	Size (MW)	Generator Model	Point of Interconnection
GEN-2013-027	327	Alstom ECO1222 3.0MW (583843,583846)	Tap Tolk to Yoakum 230kV (562480)
GEN-2014-007	399.6	GE 87m 1.85MW (583813,583816)	Tap Tuco to Border 345kV (562487)
GEN-2014-012*	779 Summer/850 Winter (16 MW Aux Load)	GENROU (527001,527002,527003)	Tap Hobbs (527896) to Andrews (528604) 345kV (562493)
ASGI-2014-001	2.3	GE 107m 2.3MW (583816)	Erskine 115kV (526109)

*GEN-2014-012 is in 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak cases only.

SUMMARY OF STABILITY ANALYSIS

For the 2014 Winter Peak, 2015 Summer Peak, 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak power flows, the Stability Analysis determined that there was no wind turbine tripping that occurred from interconnecting GEN-2013-027, GEN-2014-007, GEN-2014-012 (for 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak conditions only), or ASGI-2014-001 at 100% output.

The stability analysis identified a few contingencies that were not well damped or unstable. These cases were re-examined with the following upgrades included as discussed with SPP:

- Border to Woodward 345 kV circuit is tapped into a proposed Chisholm 345 kV substation
- Elk City to Sweetwater 230 kV circuit is tapped into a proposed Chisholm 230 kV substation
- Chisholm 345/230 kV Transformer

- Chisholm to Gracemont 345 kV circuit
- Chisholm to Border 345 kV second circuit
- Border to GEN-2014-007-Tap 345 kV second circuit

Note that the following system upgrades were already modeled as in-service for the 2019 and 2024 cases:

- Elk City to Sweetwater 230 kV circuit is tapped into a proposed Chisholm 230 kV substation
- Chisholm 345/230 kV Transformer
- Chisholm to Gracemont 345 kV circuit

With the inclusion of these upgrades, all contingencies were found to be stable and well damped. However, the 2019 Winter Peak had one contingency that resulted in a low voltage (less than 0.90 p.u.) under steady state conditions. SPP determined that switching off reactors located at the Border 345 kV substation and Woodward 345 kV substation would be sufficient to achieve the required voltage for all seasonal models.

SUMMARY OF POWER FACTOR ANALYSIS

2014 Winter Peak Conditions

The Power Factor Analysis shows that GEN-2013-027 has a power factor range of 0.961 leading (absorbing) to 0.998 lagging (supplying), GEN-2014-007 has a power factor range of 1.0 to 0.746 lagging (supplying), and ASGI-2014-001 has a power factor range of 0.105 leading (absorbing) to 0.672 lagging (supplying) for 2014 Winter Peak conditions.

2015 Summer Peak Conditions

The Power Factor Analysis shows that GEN-2013-027 has a power factor range of 0.978 leading (absorbing) to 1.0, GEN-2014-007 has a power factor range of 0.999 leading (absorbing) to 0.807 lagging (supplying), and ASGI-2014-001 has a power factor range of 0.106 leading (absorbing) to 0.233 lagging (supplying) for 2015 Summer Peak conditions.

2019 Summer Peak Conditions

The Power Factor Analysis shows that GEN-2013-027 has a power factor range of 0.971 leading (absorbing) to 0.999 lagging (supplying), GEN-2014-007 has a power factor range of 1.0 to 0.701 lagging (supplying), and ASGI-2014-001 has a power factor range of 0.141 leading (absorbing) to 0.140 lagging (supplying) for 2019 Summer Peak conditions.

2019 Winter Peak Conditions

The Power Factor Analysis shows that GEN-2013-027 has a power factor range of 1.0 to 0.915 leading (absorbing), GEN-2014-007 has a power factor range of 0.999 lagging (supplying) to 0.680 lagging (supplying), and ASGI-2014-001 has a power factor range of 0.157 leading (absorbing) to 0.334 lagging (supplying) for 2019 Winter Peak conditions.

2024 Summer Peak Conditions

The Power Factor Analysis shows that GEN-2013-027 has a power factor range of 0.980 leading (absorbing) to 1.0, GEN-2014-007 has a power factor range of 0.936 lagging (supplying) to 0.999 lagging (supplying), and ASGI-2014-001 has a power factor range of 0.065 leading (absorbing) to 0.142 lagging (supplying) for 2024 Summer Peak conditions.

GEN-2013-027, GEN-2014-007, and ASGI-2014-001 will be required to provide the pro-forma standard 0.95 leading (absorbing) to 0.95 lagging (supplying) at the Point of Interconnection (POI).

SUMMARY OF LOW WIND/NO WIND ANALYSIS

The amount of reactive power injected into the transmission network was recorded at the point of interconnection for GEN-2013-027 and GEN-2014-007 for each season. A reactance range of 12.3 to 12.8 Mvar was found to be sufficient for zero Mvar flow at the POI for GEN-2013-027. A reactance range of 14.2 to 15.2 Mvar was found to be sufficient for zero Mvar flow at the POI for GEN-2014-007.

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SECTION 1: OBJECTIVES

The objective of this report is to provide Southwest Power Pool, Inc. (SPP) with the deliverables for the “GEN-2014-001 (Group 6) Definitive Impact Study.” SPP requested an Interconnection System Impact Study for three generation interconnections (four generation interconnections for 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak), which require a Power Factor Analysis, Stability Analysis, Low Wind/No Wind Analysis and an Impact Study Report.

SECTION 2: BACKGROUND

The Siemens Power Technologies, Inc. PSS/E power system simulation program Version 32.2.0 was used for this study. SPP provided the stability database cases for 2014 Winter Peak, 2015 Summer Peak, 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak conditions and a list of contingencies to be examined. The model includes the study projects and the previously queued projects as listed in Table 2-1 and Table 2-2, respectively. Refer to Appendix A for the steady-state and dynamic model data for the study projects. A power flow one-line diagram for each generation interconnection project is shown in Figures 2-1 through 2-4. Certain transmission upgrades and load additions identified in the High Priority Incremental Loads Study (HPILS) and further identified in the SPP summary report for DISIS-2014-001 were included in the 2019 Summer Peak, 2019 Winter Peak, and the 2024 Summer Peak cases¹.

The Stability Analysis will determine the impacts of the new interconnecting projects on the stability and voltage recovery of the nearby systems and the ability of the interconnecting project to meet FERC Order 661A. If problems with stability or voltage recovery are identified, the need for reactive compensation or system upgrades will be investigated. Three-phase faults and single line-to-ground faults will be examined as listed in Table 2-3 and Table 2-4. Note that contingencies listed in Table 2-3 were ran for all conditions, but contingencies in Table 2-4 were only ran for 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak conditions.

The Power Factor analysis will determine the power factor at the point of interconnection for the wind interconnection projects for pre-contingency and post-contingency conditions. Table 2-3 and Table 2-4 list the contingencies developed from the three-phase fault definitions provided in the group’s interconnection impact study request. Note that contingencies listed in Table 2-3 were ran for all conditions, but contingencies in Table 2-4 were only ran for 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak conditions for the Power Factor Analysis.

¹ The TUCO Interchange – Yoakum – Hobbs Interchange 345kV circuit and the Yoakum 345/230/13kV transformer transmission upgrades were not included in the models.

The Low Wind/No Wind Analysis was completed for wind farm interconnections that interconnect to a 345 kV or 230 kV bus. This analysis will determine if reactor support is needed to have an Mvar flow of approximately zero at the point of interconnection (POI).

**Table 2-1
Interconnection Project Evaluated**

Request	Size (MW)	Generator Model	Point of Interconnection
GEN-2013-027	327	Alstom ECO1222 3.0MW (583843,583846)	Tap Tolk to Yoakum 230kV (562480)
GEN-2014-007	399.6	GE 87m 1.85MW (583813,583816)	Tap Tuco to Border 345kV (562487)
GEN-2014-012*	779 Summer/850 Winter (16 MW Aux Load)	GENROU (527001,527002,527003)	Tap Hobbs (527896) to Andrews (528604) 345kV (562493)
ASGI-2014-001	2.3	GE 107m 2.3MW (583816)	Erskine 115kV (526109)

*GEN-2014-012 is in 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak cases only.

**Table 2-2
Previously Queued Nearby Interconnection Projects Included**

Request	Size (MW)	Generator Model	Point of Interconnection
GEN-2001-033	180	Mitsubishi 1000	San Juan Mesa 230kV (524885)
GEN-2001-036	80	Mitsubishi 1000	Norton 115kV (524502)
GEN-2006-018	170	GENSAL	Tuco 230kV (525830)
GEN-2006-026	502	GENROU (527901, 527902, 527903)	Hobbs 115kV(527891),Hobbs 230kV (527894)
GEN-2008-022	300	GE 2.5MW	Tap on Eddy County – Tolk 345kV line (G08-022-POI, 560007)
GEN-2010-006	180 Summer/205 Winter	GENROU	Jones_bus2 230kV(526337)
ASGI-2010-010	42	GENSAL	Lovington 115kV (528334)
ASGI-2010-020	30	Nordex 2.5MW	Tap LE-Tatum to LE-Crsroads 69kV (AS10-020-POI, 560360)
ASGI-2010-021	15	Mitsubishi MPS-1000A 1.0MW	Tap LE-Saundrtp to LE-Anderson 69kV (ASGI-021-POI, 560364)
GEN-2010-046	56	GENSAL	Tuco 230kV (525830)
ASGI-2011-001	27.3	Suzlon 2.1MW	Lovington 115kV (528334)
ASGI-2011-003	10	Sany 2.0MW	Hendricks 69kV (525943)
ASGI-2011-004	19.8	Sany 1.8MW	Crosby 69kV (525915)
GEN-2011-025	80	GE 1.6MW	Tap on Floyd County - Crosby County 115kV line (G11-025-POI, 562004)
GEN-2011-045	180 Summer/205 Winter	GENROU	Jones_bus2 230kV (526337)
GEN-2011-046	23 Summer/27 Winter	GENROU	Quay County 115kV (524472)
GEN-2011-048	165 Summer/175 Winter	GENROU	Mustang 230kV (527151)
GEN-2012-001	61.2	CCWE 3.6MW (WT4)	Tap Grassland to Borden 230kV (526679)
ASGI-2012-002	18	Vestas 1.65MW V82	Clovis 115kV (524808)
GEN-2012-009	15 MW increase (Pgen=165MW)	GENROU	Mustang 230kV (527151)
GEN-2012-010	15 MW increase (Pgen=165MW)	GENROU	Mustang 230kV (527151)
GEN-2012-020	478	GE 1.68MW	Tuco 230kV (525830)
GEN-2012-034	7 MW increase (Pgen=172MW)	GENROU	Mustang 230kV (527151)
GEN-2012-035	7 MW increase (Pgen=172MW)	GENROU	Mustang 230kV (527151)
GEN-2012-036	7 MW increase (Pgen=172MW Summer/185MW Winter)	GENROU	Mustang 230kV (527151)
GEN-2012-037	196 Summer/203 Winter	GENROU	Tuco 345kV (525832)
ASGI-2012-002	18	Vestas 1.65MW V82	Clovis 115kV (524808)
GEN-2013-013	248.4	Siemens 2.3MW (583633, 583636)	Tap Eddy County (527802) – Tolk (525549) 345kV (560726)
GEN-2013-016	191 Summer/203 Winter	GENROU (583456)	Tuco 345kV (525832)
ASGI-2013-002	18.4	Siemens 2.3MW VS (583613)	Tucumcari 115kV (524509)
ASGI-2013-003	18.4	Siemens 2.3MW VS (583623)	Clovis 115kV (524808)
ASGI-2013-005	19.8	Vestas V82 1.65MW (583283)	FE-Clovis 115kV (524808)
ASGI-2013-006	2	Gamesa G114 2MW (583813)	Erskine 115kV (526109)
GEN-2013-022	25	Solaron 500kW (583313)	Caprock 115kV (524486)

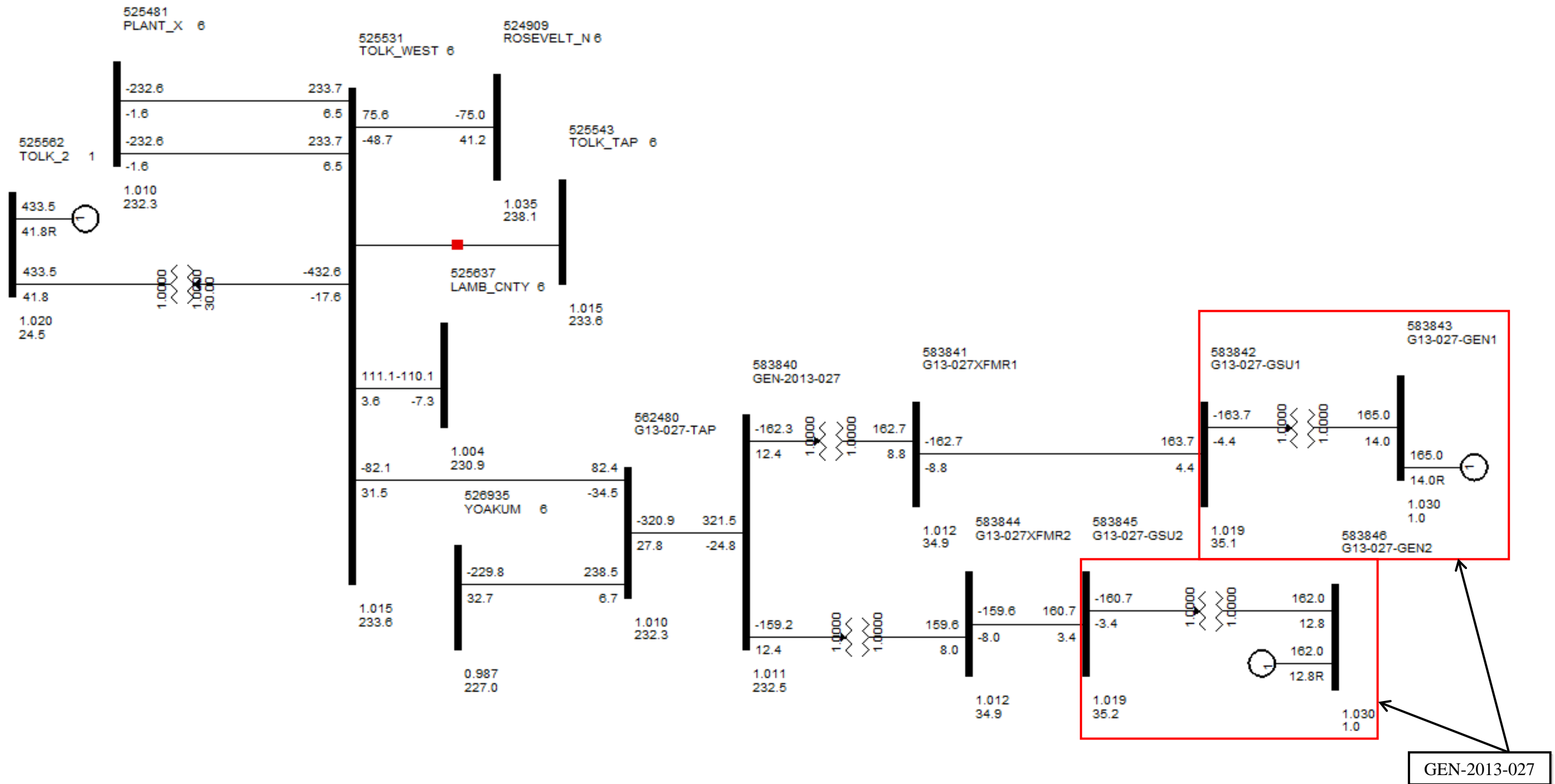


Figure 2-1. Power flow one-line diagram for interconnection project GEN-2013-027 (327MW).

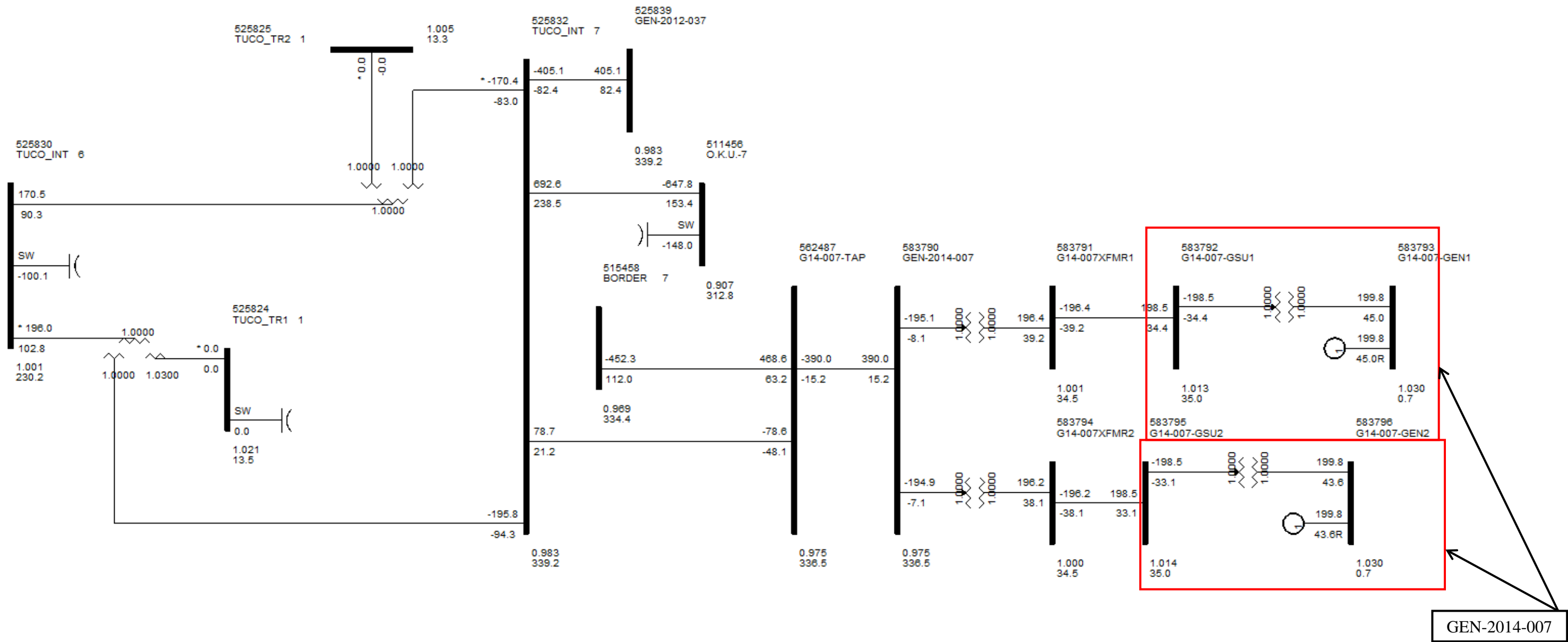


Figure 2-2. Power flow one-line diagram for interconnection project GEN-2014-007 (399.6 MW).

Table 2-3
Case List with Contingency Description (Ran on All Seasons)

1A	FLT-A01-3PH	3 phase fault on the SP-Erskine (526109) to Indiana (526146) 115kV line, near SP-Erskine.
		a. Apply fault at the near SP-Erskine 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
2A	FLT-A02-3PH	d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
		3 phase fault on the SP-Erskine (526109) to Carlisle (526160) 115kV line, near SP-Erskine.
		a. Apply fault at the near SP-Erskine 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
3A	FLT-A03-3PH	c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
		3 phase fault on the Tuco (525828) to Hale County (525454) 115kV line circuit 1, near Tuco.
		a. Apply fault at the Tuco 115kV bus.
4A	FLT-A04-3PH	b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
		3 phase fault on the Tuco (525828) to Floyd County (525780) 115kV line circuit 1, near Tuco.
5A	FLT-A05-3PH	a. Apply fault at the Tuco 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
6A	FLT-A06-3PH	3 phase fault on the Tuco (525828) to Lubbock West (526298) 115kV line circuit 1, near Tuco.
		a. Apply fault at the Tuco 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
7A	FLT-A07-3PH	d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
		3 phase fault on the Carlisle (526160) to LP-Doud Tap (526126) 115kV line circuit 1, near Carlisle.
		a. Apply fault at the Carlisle 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
8A	FLT-A08-3PH	c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
		3 phase fault on the Carlisle (526160) to Murphy (526192) 115kV line circuit 1, near Carlisle.
		a. Apply fault at the Carlisle 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Table 2-3 (Continued)
Case List with Contingency Description (Ran on All Seasons)

Contingency Number	Contingency Name	Description
9A	FLT-A09-3PH	3 phase fault on the Carlisle (526161) to LP-Milwaukee (526823) 230kV line circuit 1, near Carlisle.
		a. Apply fault at the Carlisle 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
10A	FLT-A10-3PH	d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
		3 phase fault on the Carlisle (526161) to Tuco (52830) 230kV line circuit 1, near Carlisle.
		a. Apply fault at the Carlisle 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
11A	FLT-A11-3PH	c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
		3 phase fault on the Carlisle (526160) 115kV to Carlisle (526161) 230kV/(526167) 13.2kV ckt 1 transformer at the 115kV bus.
		a. Apply fault at the Carlisle 115kV bus.
12A	FLT-A12-3PH	b. Clear fault after 5 cycles by tripping the transformer
		3 phase fault on the Tuco (525828) 115kV to Tuco (525830) 230kV/(525821) 13.2kV ckt 1 transformer at the 115kV bus.
		a. Apply fault at the Tuco 115kV bus.
		b. Clear fault after 5 cycles by tripping the transformer
13A	FLT-A13-3PH	3 phase fault on the LP-Milwaukee (522823) 230kV to LP-Milwaukee (522828) 69kV/(522827) 13.5kV ckt 1 transformer at the 230kV bus.
		a. Apply fault at the LP-Milwaukee 230kV bus.
		b. Clear fault after 5 cycles by tripping the transformer
		3 phase fault on the G14-007 Tap (562487) to Tuco (525832) 345kV line circuit 1, near G14-007 Tap.
14A	FLT-A14-3PH	a. Apply fault at the G14-007 Tap 345kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
15A	FLT-A15-3PH	3 phase fault on the G14-007 Tap (562487) to Border (515458) 345kV line circuit 1, near G14-007 Tap.
		a. Apply fault at the G14-007 Tap 345kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
16A	FLT-A16-3PH	d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
		3 phase fault on the Chisholm (511553) to Woodward (515375) 345kV line circuit 1, near Chisholm.
		a. Apply fault at the Chisholm 345kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line(s).
17A	FLT-A17-3PH	c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
		3 phase fault on the Tuco (525832) to OKU (511456) 345kV line circuit 1, near Tuco.
		a. Apply fault at the Tuco 345kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Table 2-3 (Continued)
Case List with Contingency Description (Ran on All Seasons)

Contingency Number	Contingency Name	Description
18A	FLT-A18-3PH	3 phase fault on the Tuco (525832) 345kV to Tuco (525830) 230kV/(525824) 13.2kV ckt 1 transformer at the 345kV bus. a. Apply fault at the Tuco 345kV bus. b. Clear fault after 5 cycles by tripping the transformer
19A	FLT-A19-3PH	3 phase fault on the OKU (511456) to LES (511468) 345kV line circuit 1, near OKU. a. Apply fault at the OKU 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line and block the Okaunion DC tie. c. Wait 20 cycles, and then re-close the line in (b) back into the fault and unblock the Okaunion DC tie. d. Leave fault on for 5 cycles, then trip the line in (b), remove fault and block the Okaunion DC tie.
20A	FLT-A20-3PH	3 phase fault on the LES (511468) to Sunnyside (515136) 345kV line circuit 1, near LES. a. Apply fault at the LES 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
21A	FLT-A21-3PH	3 phase fault on the LES (511468) to Gracemont (515800) 345kV line circuit 1, near LES. a. Apply fault at the LES 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
22A	FLT-A22-3PH	3 phase fault on the LES (511468) 345kV to LES (511467) 138kV/(511411) 13.8kV ckt 2 transformer at the 345kV bus. a. Apply fault at the LES 345kV bus. b. Clear fault after 5 cycles by tripping the transformer
23A	FLT-A23-3PH	3 phase fault on the Tuco (525830) to Swisher (525213) 230kV line circuit 1, near Tuco. a. Apply fault at the Tuco 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
24A	FLT-A24-3PH	3 phase fault on the Tuco (525830) to Tolk East (525524) 230kV line circuit 1, near Tuco. a. Apply fault at the Tuco 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
25A	FLT-A25-3PH	3 phase fault on the Tuco (525830) to Jones (526337) 230kV line circuit 1, near Tuco. a. Apply fault at the Tuco 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
26A	FLT-A26-3PH	3 phase fault on the Tuco (525830) 230kV to Tuco (525828) 115kV/(525821) 13.2kV ckt 1 transformer at the 230kV bus. a. Apply fault at the Tuco 230kV bus. b. Clear fault after 5 cycles by tripping the transformer

Table 2-3 (Continued)
Case List with Contingency Description (Ran on All Seasons)

Contingency Number	Contingency Name	Description
27A	FLT-A27-3PH	3 phase fault on the Jones (526337) to LP-Holly (522870) 230kV line circuit 1, near Jones.
		a. Apply fault at the Jones 230kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
28A	FLT-A28-3PH	3 phase fault on the Jones (526337) to Lubbock South (526269) 230kV line circuit 2, near Jones.
		a. Apply fault at the Jones 230kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
29A	FLT-A29-3PH	3 phase fault on the Jones (526337) to Lubbock East (526299) 230kV line circuit 1, near Jones.
		a. Apply fault at the Jones 230kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
30A	FLT-A30-3PH	3 phase fault on the Jones (526337) to Grassland (526677) 230kV line circuit 1, near Jones.
		a. Apply fault at the Jones 230kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
31A	FLT-A31-3PH	3 phase fault on the Swisher (525213) to Amarillo South (524415) 230kV line circuit 1, near Swisher.
		a. Apply fault at the Swisher 230kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
32A	FLT-A32-3PH	Prior Outage of TUCO (525830) 230kV to TUCO (525828) 115kV/(525819) 13.2kV transformer CKT 2. Then 3 phase fault on the TUCO (525830) 230kV to TUCO (525828) 115kV/(525821) 13.2kV transformer CKT 1, near TUCO 115kV.
		a. Prior outage TUCO (525830) 230kV to TUCO (525828) 115kV/(525819) 13.2kV transformer CKT 2 (solve network for steady state solution).
		b. 3 phase fault on the TUCO (525830) 230kV to TUCO (525828) 115kV/(525821) 13.2kV transformer CKT 1, near TUCO 115kV.
		c. Leave fault on for 5 cycles, then trip the faulted transformer.
33A	FLT-A33-3PH	3 phase fault on the GEN-2013-027 (562480) to Tolk West (525531) 230 kV line, near GEN-2013-027.
		a. Apply fault at the GEN-2013-027 230 kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
34A	FLT-A34-1PH	Single phase fault with stuck breaker on the Tolk West (525531) to GEN-2013-027 (562480) 230 kV line, near Tolk West.
		a. Apply fault at the Tolk West 230 kV bus.
		b. After 5 cycles, open GEN-2013-027 end of the faulted line. c. Wait 16 cycles, and then clear the fault and open Tolk West end of the line in (b) and trip Tolk West (525531) to Plant X (525481) 230 kV line.
35A	FLT-A35-3PH	3 phase fault on the GEN-2013-027 (562480) to Yoakum (526935) 230 kV line, near GEN-2013-027.
		a. Apply fault at the GEN-2013-027 230 kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Table 2-3 (Continued)
Case List with Contingency Description (Ran on All Seasons)

Contingency Number	Contingency Name	Description
36A	FLT-A36-1PH	Single phase fault on the Yoakum (526935) to GEN-2013-027 (562480) 230 kV line, near Yoakum.
		a. Apply fault at the Yoakum 230kV bus.
		b. After 5 cycles, open GEN-2013-027 end of the faulted line.
		c. Wait 16 cycles, and then clear the fault and open Yoakum end of the line in (b) and trip Yoakum (526935) to Yoakum 115 (526934)/13.2 kV (526931) transformer circuit #1.
37A	FLT-A37-3PH	3 phase fault on the Yoakum (526935) to Amoco-SS (526460) 230 kV line, near Yoakum.
		a. Apply fault at the Yoakum 230 kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
38A	FLT-A38-3PH	3 phase fault on the Yoakum (526935) to OxyBru Tap (527010) 230 kV line, near Yoakum.
		a. Apply fault at the Yoakum 230 kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
39A	FLT-A39-3PH	3 phase fault on the Yoakum (526935) to Mustang (527149) 230 kV line, near Yoakum.
		a. Apply fault at the Yoakum 230 kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
40A	FLT-A40-3PH	3 phase fault on the Yoakum (526935) to Hobbs (527894) 230 kV line, near Yoakum.
		a. Apply fault at the Yoakum 230 kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
41A	FLT-A41-3PH	3 phase fault on the Yoakum 230 kV (526935) to Yoakum 115 kV (526934)/13.2 kV (526934) transformer circuit #1, near Yoakum.
		a. Apply fault at the Yoakum 230 kV bus.
		b. Clear fault after 5 cycles by tripping the faulted transformer and remove fault.
42A	FLT-A42-3PH	(Prior Outage) Yoakum (526935) – Amoco-SS (526460) 230 kV out of service then 3 phase fault on the Yoakum 230 kV (526935) to Yoakum 115 kV (526934)/13.2 kV (526934) transformer circuit #1, near Yoakum.
		Switch Yoakum (526935) – Amoco-SS (526460) out of service then solve.
		a. Apply fault at the Yoakum 230 kV bus.
43A	FLT-A43-1PH	Single phase fault with stuck breaker on the Yoakum (526935) to Amoco-SS (526460) 230 kV line, near Yoakum.
		a. Apply fault at the Yoakum 230kV bus.
		b. After 5 cycles, open Amoco-SS end of the faulted line.
		c. Wait 16 cycles, and then clear the fault and open Amoco-SS end of the line in (b) and trip Yoakum 230 kV (526935) to Yoakum 115 kV (526934)/13.2 kV (526934) transformer circuit #1.

Table 2-3 (Continued)
Case List with Contingency Description (Ran on All Seasons)

Contingency Number	Contingency Name	Description
44A	FLT-A44-3PH	3 phase fault on the Tolk West (525531) to Roosevelt N (524909) 230 kV line, near Tolk West.
		a. Apply fault at the Tolk West 230 kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
45A	FLT-A45-1PH	d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
		Single phase fault with stuck breaker on the Tolk West (525531) to Roosevelt N (524909) 230 kV line, near Tolk West.
		a. Apply fault at the Tolk West 230 kV bus.
		b. After 5 cycles, open Roosevelt N end of the faulted line.
46A	FLT-A46-3PH	c. Wait 16 cycles, and then clear the fault and open Tolk West end of the line in (b) and trip Tolk West (525531) to Plant X (525481) 230 kV circuit #1 line.
		3 phase fault on the Tolk West (525531) to Plant X (525481) 230 kV circuit #1 line, near Tolk West.
		a. Apply fault at the Tolk West 230 kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
47A	FLT-A47-1PH	c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
		Single phase fault with stuck breaker on the Tolk West (525531) to Plant X (525481) 230 kV circuit #1 line, near Tolk West.
		a. Apply fault at the Tolk West 230 kV bus.
48A	FLT-A48-3PH	b. After 5 cycles, open Plant X end of the faulted line.
		c. Wait 16 cycles, and then clear the fault and open Tolk West end of the line in (b) and trip Tolk West (525531) to Tolk Tap (525543) 230 kV bus tie line.
		3 phase fault on the Tolk 345 kV (525549) to Tolk Tap 230 kV (525543)/ 13.2 kV (525537) transformer, near Tolk 345 kV.
		a. Apply fault at the Tolk 345 kV bus.
49A	FLT-A49-3PH	b. Clear fault after 5 cycles by tripping the faulted transformer.
		3 phase fault on the Tolk West (525531) to Lamb Co (525637) 230 kV line, near Tolk West.
		a. Apply fault at the Tolk West 230 kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
50A	FLT-A50-1PH	c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
		Single phase fault with stuck breaker on the Tolk West (525531) to Lamb Co (525637) 230 kV line, near Tolk West.
		a. Apply fault at the Tolk West 230 kV bus.
51A	FLT-A51-3PH	b. After 5 cycles, open Lamb Co end of the faulted line.
		c. Wait 16 cycles, and then clear the fault and open Tolk West end of the line in (b) and trip Tolk West (525531) to Plant X (525481) 230 kV circuit #1 line.
		(Prior Outage) Tolk West (525531) – Plant X (525481) 230 kV circuit #1 out of service then
		3 phase fault on the Tolk West 230 kV (525531) to Plant X (525481) 230 kV circuit #2, near Tolk West.
52A	FLT-A52-1PH	Switch Tolk West (525531) – Plant X (525481) 230 kV circuit #1 out of service then solve.
		a. Apply fault at the Tolk West 345kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		Single phase fault with stuck breaker on the Tolk East (525524) to Plant X (525481) 230 kV line circuit #2, near Tolk East.
		a. Apply fault at the Tolk East 230 kV bus.
		b. After 5 cycles, open Plant X end of the faulted line.
		c. Wait 16 cycles, and then clear the fault and open Tolk West end of the line in (b) and trip Tolk East (525524) to TUCO (525830) 230 kV line.

Table 2-4
Case List with Contingency Description (Ran on 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak Only)

Contingency Number	Contingency Name	Description
1B	FLT-B01-3PH	3 phase fault on the Gaines Plant (562493) to Hobbs (527896) 345kV line circuit 1, near Gaines Plant.
		a. Apply fault at the Gaines Plant 345kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
2B	FLT-B02-3PH	3 phase fault on the Gaines Plant (562493) to Andrews (528604) 345kV line circuit 1, near Gaines Plant.
		a. Apply fault at the Gaines Plant 345kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
3B	FLT-B03-3PH	3 phase fault on the National Enrichment (528603) to Andrews (528602) 115kV line circuit 1, near National Enrichment.
		a. Apply fault at the National Enrichment 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
4B	FLT-B04-3PH	3 phase fault on the National Enrichment (528603) to Drinkard (528589) 115kV line circuit 1, near National Enrichment.
		a. Apply fault at the National Enrichment 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
5B	FLT-B05-3PH	3 phase fault on the National Enrichment (528603) to Targa (528605) 115kV line circuit 1, near National Enrichment.
		a. Apply fault at the National Enrichment 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
6B	FLT-B06-3PH	3 phase fault on the Drinkard Tap (528533) to Hobbs West (528498) 115kV line circuit 1, near Drinkard Tap.
		a. Apply fault at the Drinkard Tap 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
7B	FLT-B07-3PH	3 phase fault on the Drinkard Tap (528533) to Eunice (528512) 115kV line circuit 1, near Drinkard Tap.
		a. Apply fault at the Drinkard Tap 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
8B	FLT-B08-3PH	3 phase fault on the National Enrichment Tap (528596) to Lagarto (527957) 115kV line circuit 1, near National Enrichment Tap.
		a. Apply fault at the National Enrichment Tap 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Table 2-4 (Continued)
Case List with Contingency Description (Ran on 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak Only)

Contingency Number	Contingency Name	Description
9B	FLT-B09-3PH	3 phase fault on the National Enrichment Tap (528596) to Teague (528526) 115kV line circuit 1, near National Enrichment Tap.
		a. Apply fault at the National Enrichment Tap 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
10B	FLT-B10-3PH	3 phase fault on the National Enrichment Tap (528596) to Targa (528605) 115kV line circuit 1, near National Enrichment Tap.
		a. Apply fault at the National Enrichment Tap 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
11B	FLT-B11-3PH	3 phase fault on the Hobbs (527896) to Kiowa (527965) 345kV line circuit 1, near Hobbs.
		a. Apply fault at the Hobbs 345kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
12B	FLT-B12-3PH	3 phase fault on the Hobbs (527894) to Yoakum (526935) 230kV line circuit 1, near Hobbs.
		a. Apply fault at the Hobbs 230kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
13B	FLT-B13-3PH	3 phase fault on the Hobbs (527894) to Cunningham (527865) 230kV line circuit 1, near Hobbs.
		a. Apply fault at the Hobbs 230kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
14B	FLT-B14-3PH	3 phase fault on the Hobbs (527891) to Higg (527363) 115kV line circuit 1, near Hobbs.
		a. Apply fault at the Hobbs 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
15B	FLT-B15-3PH	3 phase fault on the Hobbs (527891) to Cunningham (527864) 115kV line circuit 1, near Hobbs.
		a. Apply fault at the Hobbs 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
16B	FLT-B16-3PH	3 phase fault on the Hobbs (527891) to LE-Lovington (528334) 115kV line circuit 1, near Hobbs.
		a. Apply fault at the Hobbs 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
17B	FLT-B17-3PH	3 phase fault on the Hobbs (527891) to Maddox (528355) 115kV line circuit 1, near Hobbs.
		a. Apply fault at the Hobbs 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Table 2-4 (Continued)
Case List with Contingency Description (Ran on 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak Only)

Contingency Number	Contingency Name	Description
18B	FLT-B18-3PH	3 phase fault on the Hobbs (527891) to Millen (528435) 115kV line circuit 1, near Hobbs.
		a. Apply fault at the Hobbs 115kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
19B	FLT-B19-3PH	d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
		3 phase fault on the Cunningham (527865) to Eddy South (527800) 230kV line circuit 1, near Cunningham.
		a. Apply fault at the Cunningham 230kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
20B	FLT-B20-3PH	c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
		3 phase fault on the Cunningham (527865) to Potash Junction (527963) 230kV line circuit 1, near Cunningham.
		a. Apply fault at the Cunningham 230kV bus.
21B	FLT-B21-3PH	b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
		3 phase fault on the Kiowa (527965) to Roadrunner (528027) 345kV line circuit 1, near Kiowa.
22B	FLT-B22-3PH	a. Apply fault at the Kiowa 345kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
23B	FLT-B23-3PH	3 phase fault on the Andrews (528604) 345kV to Andrews (528602) 115kV/(528601) 34.5kV ckt 1 transformer at the 345kV bus.
		a. Apply fault at the Andrews 345kV bus.
		b. Clear fault after 5 cycles by tripping the transformer
24B	FLT-B24-3PH	3 phase fault on the Hobbs (527896) 345kV to Hobbs (527894) 230kV/(527895) 13.2kV ckt 1 transformer at the 345kV bus.
		a. Apply fault at the Hobbs 345kV bus.
		b. Clear fault after 5 cycles by tripping the transformer
25B	FLT-B25-3PH	3 phase fault on the Hobbs (527894) 230kV to Hobbs (527891) 115kV/(527890) 13.2kV ckt 1 transformer at the 230kV bus.
		a. Apply fault at the Hobbs 230kV bus.
26B	FLT-B26-3PH	b. Clear fault after 5 cycles by tripping the transformer
		3 phase fault on the Cunningham (527865) 230kV to Cunningham (527864) 115kV/(527863) 13.2kV ckt 1 transformer at the 230kV bus.
27B	FLT-B27-3PH	a. Apply fault at the Cunningham 230kV bus.
		b. Clear fault after 5 cycles by tripping the transformer
		3 phase fault on the Kiowa (527965) 345kV to Potash Junction (527962) 115kV/(527964) 13.2kV ckt 1 transformer at the 345kV bus.
		a. Apply fault at the Kiowa 345kV bus.
		b. Clear fault after 5 cycles by tripping the transformer

Table 2-4 (Continued)
Case List with Contingency Description (Ran on 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak Only)

Contingency Number	Contingency Name	Description
28B	FLT-B28-3PH	3 phase fault on the Andrews (528604) to Roadrunner (528027) 345kV line circuit 1, near Andrews.
		a. Apply fault at the Andrews 345kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
29B	FLT-B29-3PH	3 phase fault on the Border (515458) to Chisholm (511553) 345kV line circuit 1, near Border.
		a. Apply fault at the Border 345kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
30B	FLT-B30-3PH	3 phase fault on the Chisholm (511553) to Gracemont (515800) 345kV line circuit 1, near Chisholm.
		a. Apply fault at the Chisholm 345kV bus.
		b. Clear fault after 5 cycles by tripping the faulted line.
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault.
		d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
31B	FLT-B31-3PH	3 phase fault on the Chisholm (511553) 345kV to Chisholm (511557) 230kV/(511558) 13.2kV ckt 1 transformer at the 345kV bus.
		a. Apply fault at the Chisholm 345kV bus.
		b. Clear fault after 5 cycles by tripping the transformer
32B	FLT-B32-3PH	3 phase fault on the Roadrunner (528027) 345kV to Roadrunner (528025) 115kV/(528023) 13.2kV ckt 1 transformer at the 345kV bus.
		a. Apply fault at the Roadrunner 345kV bus.
		b. Clear fault after 5 cycles by tripping the transformer

SECTION 3: STABILITY ANALYSIS

The objective of the Stability Analysis was to determine the impacts of the new wind farms on the stability and voltage recovery on the SPP transmission system. If problems with stability or voltage recovery were identified the need for reactive compensation or system upgrades were investigated.

Approach

SPP provided MEPPPI with the following five saved cases:

- 2014 Winter Peak
- 2015 Summer Peak
- 2019 Summer Peak
- 2019 Winter Peak
- 2024 Summer Peak

Each case was examined prior to the Stability Analysis to ensure the case contained the proposed study projects and any previously queued projects listed in Tables 2-1 and 2-2 respectively. There was no suspect power flow data in the study area. The dynamic datasets were also verified and stable initial system conditions (i.e., “flat lines”) were achieved. Three-phase and single line-to-ground faults listed in Tables 2-3 and 2-4 were examined. Single-phase fault impedances were calculated for each season to result in a voltage of approximately 60% of the pre-fault voltage. Refer to Table 3-1 for a list of the calculated single-phase fault impedances used for this analysis.

**Table 3-1
Calculated Single-Phase Fault Impedances**

Contingency Number	Contingency Name	Single-Phase Fault Impedance (MVA)				
		2014 Winter	2015 Summer	2019 Summer	2019 Winter	2024 Summer
34A	FLT-A34-1PH	-6875.0	-6875.0	-7281.3	-6468.8	-7281.3
36A	FLT-A36-1PH	-2609.4	-3625.0	-3828.1	-3218.8	-3828.1
43A	FLT-A43-1PH	-2609.4	-3625.0	-3828.1	-3218.8	-3828.1
45A	FLT-A45-1PH	-6875.0	-6875.0	-7281.3	-6468.8	-7281.3
47A	FLT-A47-1PH	-6875.0	-6875.0	-7281.3	-6468.8	-7281.3
50A	FLT-A50-1PH	-6875.0	-6875.0	-7281.3	-6468.8	-7281.3
52A	FLT-A52-1PH	-6875.0	-6875.0	-7281.3	-6468.8	-7281.3

Bus voltages, machine rotor angles, and previously queued generation in the study area were monitored in addition to the bus voltages and machine rotor angles in the following areas:

- 520 AEPW
- 524 OKGE
- 525 WFEC
- 526 SPS
- 531 MIDW
- 534 SUNC
- 536 WERE

The results of the analysis determined if reactive compensation or system upgrades were required to obtain acceptable system performance. If additional reactive compensation was required, the size, type, and location were determined. The proposed reactive reinforcements would ensure the wind farm meets FERC Order 661A low voltage requirements and return the wind farm to its pre-disturbance operating voltage. If the results indicated the need for fast responding reactive support, dynamic support such as an SVC or STATCOM was investigated. If tripping of the prior queued projects was observed during the stability analysis (for under/over

voltage or under/over frequency) the simulations were re-ran with the prior queued project's voltage and frequency tripping disabled.

Results

The Stability Analysis determined that there was no wind turbine tripping that occurred from interconnecting GEN-2013-027, GEN-2014-007, GEN-2014-012 (for 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak conditions only), or AGGI-2014-001 at 100% output.

Refer to Appendix B, Appendix C, Appendix D, Appendix E, and Appendix F for a complete set of plots for all contingencies for 2014 Winter Peak, 2015 Summer Peak, 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak conditions, respectively.

3.1 2014 Winter Peak and 2015 Summer Peak Conditions

For the 2014 Winter Peak and 2015 Summer Peak conditions, the Stability Analysis determined that there was no wind turbine tripping that occurred from interconnecting GEN-2013-027, GEN-2014-007, or ASGI-2014-001 at 100% output.

Refer to Table 3-2 for a summary of the Stability Analysis results for the cases listed in Table 2-3. Table 3-2 is a summary of the stability results for the 2014 Winter Peak and 2015 Summer Peak conditions and describes whether or not final bus voltages recovered between 0.95 and 1.05 p.u., and whether or not bus voltages remained between 0.70 and 1.20 p.u. any time after the disturbance was cleared. The number of buses that do not meet the above criteria are shown in Table 3-2. The summary table shows that a few contingencies were not well damped or were unstable. All contingencies were re-examined for 2014 Winter Peak and 2015 Summer Peak conditions with the following upgrades included as discussed with SPP (Upgrade_1):

- Border to Woodward 345 kV circuit is tapped into a proposed Chisholm 345 kV substation
- Elk City to Sweetwater 230 kV circuit is tapped into a proposed Chisholm 230 kV substation
- Chisholm 345/230 kV Transformer
- Chisholm to Gracemont 345 kV circuit
- Chisholm to Border 345 kV second circuit
- Border to GEN-2014-007-Tap 345 kV second circuit

Three additional contingencies (Contingency #29B, #30B, and #31B) were examined for the 2014 Winter Peak and 2015 Summer Peak cases with the above upgrades. Descriptions of these contingencies can be found in Table 2-4.

These upgrades improved damping and resolved stability problems for Contingencies FLT-A16-3PH, and FLT-A17-3PH. Refer to Table 3-3 for contingencies that were re-examined with the above upgrades (Upgrade_1). Refer to Figure 3-1 for a comparison plot for Contingency #16A with and without Upgrade_1 implemented.

Nine contingencies had voltages below 0.70 p.u. immediately following the clearing of the disturbance. These voltage violations affect a radially connected system and were determined to not need mitigation at this time. The following buses had voltages below 0.70 p.u. for the nine contingencies listed in Table 3-2:

- LOPEZ 115 kV
- CAMPBELL 115 kV
- CAPROCK 115 kV
- NORTON 115 kV
- FE-TUCMACARI3 115 kV

Refer to Figure 3-2 for a plot of select buses that do not immediately recover to 0.7 p.u. after the disturbance was cleared for Contingency FLT-44A-3PH.

Table 3-2
Stability Analysis Summary of Results for 2014 Winter and 2015 Summer Peak Conditions

Contingency Number	Contingency Name	2014 Winter					2015 Summer				
		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?	
			Less than 0.95 p.u.	Greater than 1.05 p.u.	Less than 0.70 p.u.	Greater than 1.20 p.u.		Less than 0.95 p.u.	Greater than 1.05 p.u.	Less than 0.70 p.u.	Greater than 1.20 p.u.
1A	FLT-A01-3PH	Yes	1	2	0	0	Yes	3	2	0	0
2A	FLT-A02-3PH	Yes	1	2	0	0	Yes	3	2	0	0
3A	FLT-A03-3PH	Yes	1	2	0	0	Yes	3	2	0	0
4A	FLT-A04-3PH	Yes	1	2	0	0	Yes	3	2	0	0
5A	FLT-A05-3PH	Yes	1	2	0	0	Yes	3	2	0	0
6A	FLT-A06-3PH	Yes	1	2	0	0	Yes	3	2	0	0
7A	FLT-A07-3PH	Yes	1	2	0	0	Yes	3	2	0	0
8A	FLT-A08-3PH	Yes	1	2	0	0	Yes	3	2	0	0
9A	FLT-A09-3PH	Yes	1	2	0	0	Yes	4	2	0	0
10A	FLT-A10-3PH	Yes	1	2	0	0	Yes	3	2	0	0
11A	FLT-A11-3PH	Yes	1	2	0	0	Yes	3	2	0	0
12A	FLT-A12-3PH	Yes	1	2	0	0	Yes	3	2	0	0
13A	FLT-A13-3PH	Yes	1	2	0	0	Yes	3	2	0	0
14A	FLT-A14-3PH	Yes	2	2	0	0	Yes	9	2	0	0
15A	FLT-A15-3PH	Yes	1	2	0	0	Yes	3	2	0	0
16A	FLT-A16-3PH	Yes	not well damped				Yes	not well damped			
17A	FLT-A17-3PH	No	unstable				Yes	not well damped			
18A	FLT-A18-3PH	Yes	1	2	0	0	Yes	5	2	0	0
19A	FLT-A19-3PH	Yes	12	2	0	0	Yes	17	2	0	0
20A	FLT-A20-3PH	Yes	2	2	0	0	Yes	7	2	0	0
21A	FLT-A21-3PH	Yes	21	2	0	0	Yes	20	2	0	0
22A	FLT-A22-3PH	Yes	2	2	0	0	Yes	3	2	0	0
23A	FLT-A23-3PH	Yes	2	3	0	0	Yes	11	2	0	0
24A	FLT-A24-3PH	Yes	1	1	0	0	Yes	11	2	0	0
25A	FLT-A25-3PH	Yes	1	2	0	0	Yes	4	2	0	0

Table 3-2 (Continued)
Stability Analysis Summary of Results for 2014 Winter and 2015 Summer Peak Conditions

Contingency Number	Contingency Name	2014 Winter					2015 Summer				
		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?	
			Less than 0.95 p.u.	Greater than 1.05 p.u.	Less than 0.70 p.u.	Greater than 1.20 p.u.		Less than 0.95 p.u.	Greater than 1.05 p.u.	Less than 0.70 p.u.	Greater than 1.20 p.u.
26A	FLT-A26-3PH	Yes	1	2	0	0	Yes	4	2	0	0
27A	FLT-A27-3PH	Yes	1	2	0	0	Yes	3	2	0	0
28A	FLT-A28-3PH	Yes	1	2	0	0	Yes	3	2	0	0
29A	FLT-A29-3PH	Yes	1	2	0	0	Yes	9	2	0	0
30A	FLT-A30-3PH	Yes	4	2	0	0	Yes	26	2	0	0
31A	FLT-A31-3PH	Yes	2	2	0	0	Yes	10	2	0	0
32A	FLT-A32-3PH	Yes	1	2	0	0	Yes	11	2	0	0
33A	FLT-A33-3PH	Yes	3	1	0	0	Yes	5	2	0	0
34A	FLT-A34-1PH	Yes	5	3	5	0	Yes	5	2	5	0
35A	FLT-A35-3PH	Yes	1	1	0	0	Yes	4	2	0	0
36A	FLT-A36-1PH	Yes	1	1	0	0	Yes	3	2	0	0
37A	FLT-A37-3PH	Yes	1	2	0	0	Yes	4	2	0	0
38A	FLT-A38-3PH	Yes	1	1	0	0	Yes	3	2	0	0
39A	FLT-A39-3PH	Yes	1	1	0	0	Yes	3	2	0	0
40A	FLT-A40-3PH	Yes	1	1	0	0	Yes	3	2	0	0
41A	FLT-A41-3PH	Yes	1	2	0	0	Yes	3	2	0	0
42A	FLT-A42-3PH	Yes	1	2	0	0	Yes	4	2	0	0
43A	FLT-A43-1PH	Yes	1	2	0	0	Yes	3	2	0	0
44A	FLT-A44-3PH	Yes	1	2	5	0	Yes	3	2	5	0
45A	FLT-A45-1PH	Yes	1	2	5	0	Yes	3	2	5	0
46A	FLT-A46-3PH	Yes	1	2	5	0	Yes	3	2	5	0
47A	FLT-A47-1PH	Yes	1	2	5	0	Yes	3	2	5	0
48A	FLT-A48-3PH	Yes	13	1	0	0	Yes	32	2	0	0
49A	FLT-A49-3PH	Yes	1	2	5	0	Yes	26	2	5	0
50A	FLT-A50-1PH	Yes	1	2	5	0	Yes	26	2	5	0
51A	FLT-A51-3PH	Yes	1	2	5	0	Yes	8	2	5	0
52A	FLT-A52-1PH	Yes	1	1	5	0	Yes	5	2	5	0

Table 3-3
Upgrade_1 for 2014 Winter and 2015 Summer Peak Conditions

Contingency Number	Contingency Name	2014 Winter				2015 Summer					
		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?	
			Less than 0.95 p.u.	Greater than 1.05 p.u.	Less than 0.70 p.u.	Greater than 1.20 p.u.		Less than 0.95 p.u.	Greater than 1.05 p.u.	Less than 0.70 p.u.	Greater than 1.20 p.u.
1A	FLT-A01-3PH	Yes	1	2	0	0	Yes	1	2	0	0
2A	FLT-A02-3PH	Yes	1	2	0	0	Yes	2	2	0	0
3A	FLT-A03-3PH	Yes	1	2	0	0	Yes	1	2	0	0
4A	FLT-A04-3PH	Yes	1	2	0	0	Yes	1	2	0	0
5A	FLT-A05-3PH	Yes	1	2	0	0	Yes	1	2	0	0
6A	FLT-A06-3PH	Yes	1	2	0	0	Yes	1	2	0	0
7A	FLT-A07-3PH	Yes	1	2	0	0	Yes	1	2	0	0
8A	FLT-A08-3PH	Yes	1	2	0	0	Yes	1	2	0	0
9A	FLT-A09-3PH	Yes	1	2	0	0	Yes	2	2	0	0
10A	FLT-A10-3PH	Yes	1	2	0	0	Yes	2	2	0	0
11A	FLT-A11-3PH	Yes	1	2	0	0	Yes	2	2	0	0
12A	FLT-A12-3PH	Yes	1	2	0	0	Yes	2	2	0	0
13A	FLT-A13-3PH	Yes	1	2	0	0	Yes	1	2	0	0
14A	FLT-A14-3PH	Yes	1	2	0	0	Yes	2	2	0	0
15A	FLT-A15-3PH	Yes	1	2	0	0	Yes	3	2	0	0
16A	FLT-A16-3PH	Yes	2	4	0	0	Yes	3	2	0	0
17A	FLT-A17-3PH	Yes	5	2	0	0	Yes	14	2	0	0
18A	FLT-A18-3PH	Yes	1	2	0	0	Yes	1	2	0	0
19A	FLT-A19-3PH	Yes	3	3	0	0	Yes	7	3	0	0
20A	FLT-A20-3PH	Yes	0	2	0	0	Yes	2	2	0	0
21A	FLT-A21-3PH	Yes	1	2	0	0	Yes	2	2	0	0
22A	FLT-A22-3PH	Yes	1	2	0	0	Yes	2	2	0	0
23A	FLT-A23-3PH	Yes	1	3	0	0	Yes	2	2	0	0
24A	FLT-A24-3PH	Yes	0	1	0	0	Yes	2	2	0	0
25A	FLT-A25-3PH	Yes	1	3	0	0	Yes	1	2	0	0
26A	FLT-A26-3PH	Yes	1	2	0	0	Yes	2	2	0	0
27A	FLT-A27-3PH	Yes	1	2	0	0	Yes	1	2	0	0
28A	FLT-A28-3PH	Yes	1	2	0	0	Yes	1	2	0	0

Table 3-3 (Continued)
Upgrade_1 for 2014 Winter and 2015 Summer Peak Conditions

Contingency Number	Contingency Name	2014 Winter				2015 Summer					
		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?	
			Less than 0.95 p.u.	Greater than 1.05 p.u.	Less than 0.70 p.u.	Greater than 1.20 p.u.		Less than 0.95 p.u.	Greater than 1.05 p.u.	Less than 0.70 p.u.	Greater than 1.20 p.u.
29A	FLT-A29-3PH	Yes	1	2	0	0	Yes	6	2	0	0
30A	FLT-A30-3PH	Yes	1	2	0	0	Yes	24	2	0	0
31A	FLT-A31-3PH	Yes	1	4	0	0	Yes	2	2	0	0
32A	FLT-A32-3PH	Yes	1	2	0	0	Yes	7	2	0	0
33A	FLT-A33-3PH	Yes	3	1	0	0	Yes	4	2	0	0
34A	FLT-A34-1PH	Yes	5	3	5	0	Yes	4	2	5	0
35A	FLT-A35-3PH	Yes	1	1	0	0	Yes	1	2	0	0
36A	FLT-A36-1PH	Yes	1	1	0	0	Yes	2	2	0	0
37A	FLT-A37-3PH	Yes	1	2	0	0	Yes	1	2	0	0
38A	FLT-A38-3PH	Yes	1	2	0	0	Yes	1	2	0	0
39A	FLT-A39-3PH	Yes	1	1	0	0	Yes	1	2	0	0
40A	FLT-A40-3PH	Yes	1	1	0	0	Yes	1	2	0	0
41A	FLT-A41-3PH	Yes	1	2	0	0	Yes	1	2	0	0
42A	FLT-A42-3PH	Yes	1	2	0	0	Yes	1	2	0	0
43A	FLT-A43-1PH	Yes	1	2	0	0	Yes	2	2	0	0
44A	FLT-A44-3PH	Yes	1	3	5	0	Yes	1	2	5	0
45A	FLT-A45-1PH	Yes	1	2	5	0	Yes	2	2	5	0
46A	FLT-A46-3PH	Yes	1	3	5	0	Yes	1	2	5	0
47A	FLT-A47-1PH	Yes	1	2	5	0	Yes	2	2	5	0
48A	FLT-A48-3PH	Yes	13	1	0	0	Yes	25	2	0	0
49A	FLT-A49-3PH	Yes	1	2	5	0	Yes	25	2	5	0
50A	FLT-A50-1PH	Yes	1	2	5	0	Yes	25	2	5	0
51A	FLT-A51-3PH	Yes	1	2	5	0	Yes	2	2	5	0
52A	FLT-A52-1PH	Yes	1	1	5	0	Yes	1	2	5	0
29B	FLT-B29-3PH	Yes	1	2	0	0	Yes	2	2	0	0
30B	FLT-B30-3PH	Yes	1	2	0	0	Yes	2	2	0	0
31B	FLT-B31-3PH	Yes	1	3	0	0	Yes	3	2	0	0

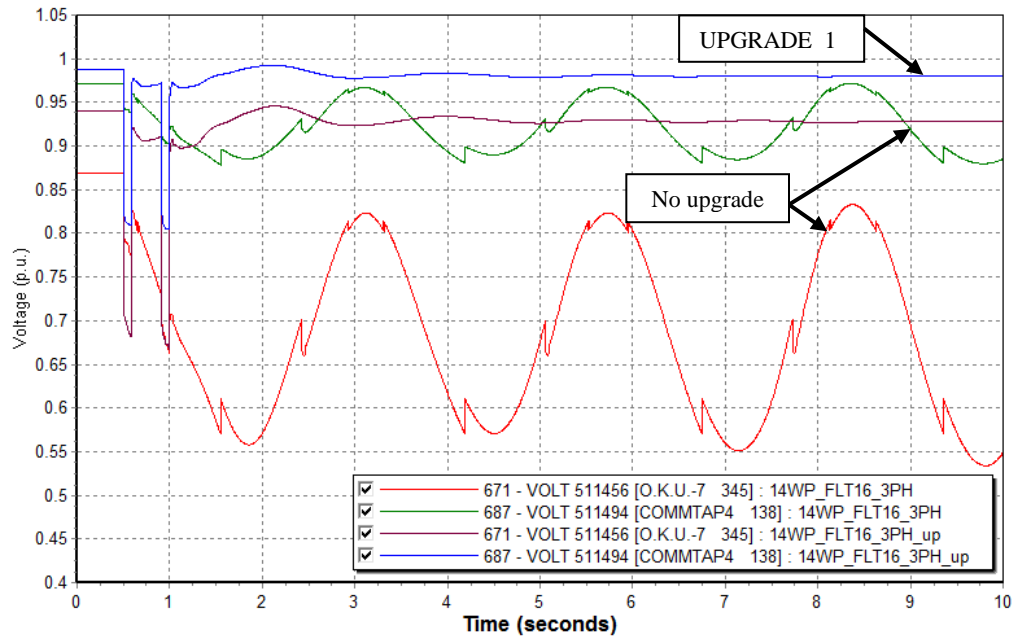


Figure 3-1. Response of select bus voltages during Contingency #16A (FLT-A16-3PH) for 2014 Winter Peak conditions with and without Upgrade_1

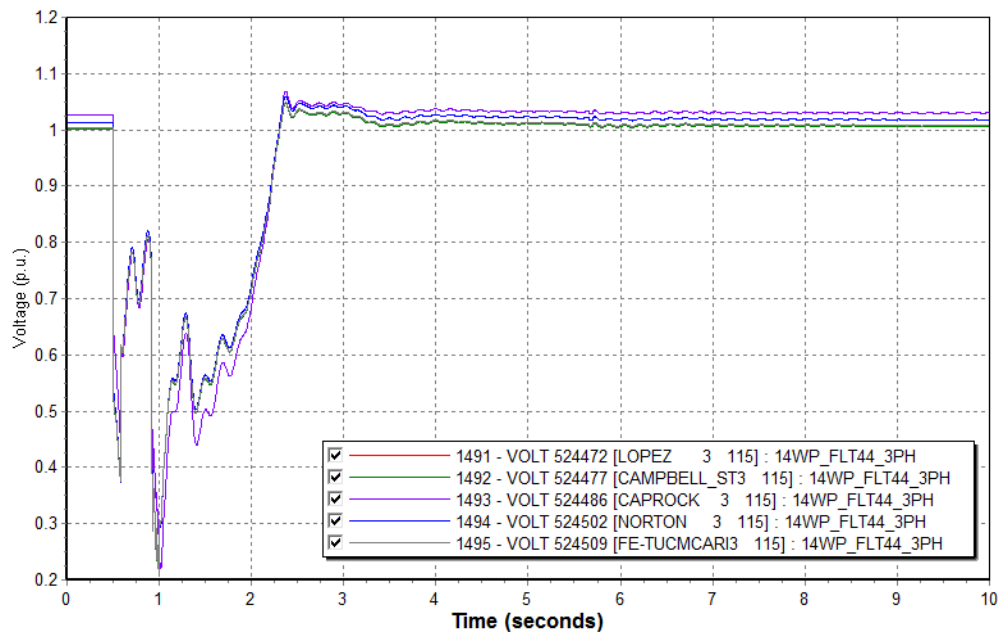


Figure 3-2. Response of select bus voltages during Contingency #44A (FLT-A44-3PH) for 2014 Winter Peak conditions.

3.2 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak Conditions

For the 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak conditions, the Stability Analysis determined that there was no wind turbine tripping that occurred from interconnecting GEN-2013-027, GEN-2014-007, GEN-2014-001 or ASGI-2014-001 at 100% output.

Refer to Table 3-4 for a summary of the Stability Analysis results for the cases listed in Table 2-3 and Table 2-4. Table 3-4 is a summary of the stability results for the 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak conditions and describes whether or not final bus voltages recovered between 0.95 and 1.05 p.u., and whether or not bus voltages remained between 0.70 and 1.20 p.u. any time after the disturbance was cleared. The number of buses that do not meet the above criteria are shown in Table 3-4. The summary table shows that a few contingencies were not well damped or were unstable. All contingencies were re-examined for 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak conditions with the following upgrades included as discussed with SPP (Upgrade_2):

- Border to Woodward 345 kV circuit is tapped into a proposed Chisholm 345 kV substation
- Chisholm to Border 345 kV second circuit
- Border to GEN-2014-007-Tap 345 kV second circuit

Note that the following system upgrades were already modeled as in-service for the 2019 and 2024 cases:

- Elk City to Sweetwater 230 kV circuit is tapped into a proposed Chisholm 230 kV substation
- Chisholm 345/230 kV Transformer
- Chisholm to Gracemont 345 kV circuit

These upgrades improved damping and resolved stability problems for Contingencies FLT-A17-3PH and FLT-B29-3PH. Refer to Table 3-5 for contingencies that were re-examined with the above upgrades (Upgrade_2). Refer to Figure 3-3 and 3-4 for a comparison plot for Contingency #17A and #29B with and without Upgrade_2 respectively. The plots show that the upgrade helps with system stability and system damping.

Contingency FLT-A19-3PH was examined and it was determined that a low voltage under steady state conditions was present in the 2019 Winter Peak case. Low voltages were observed at the Chisholm and Border 345 kV buses with the above upgrades included. SPP determined that switching off one of the switchable line or transformer reactors at either Woodward or Border substations would be sufficient to achieve the required voltage for the 2019 Winter Peak model. These reactors include the following:

- 50MVAR at Woodward Tertiary Bus 515799 (2 X 25MVAR)
- 50MVAR at Woodward Tertiary Bus 515795 (2 X 25MVAR)
- 60MVAR in-line reactor at Woodward to GEN-2013-034-Tap/Hitchland 345kV Ckt 1
- 60MVAR in-line reactor at Woodward to GEN-2013-034-Tap/Hitchland 345kV Ckt 2
- 55MVAR in-line reactor at Woodward to Thistle 345kV Ckt 1
- 55MVAR in-line reactor at Woodward to Thistle 345kV Ckt 2
- 75MVAR in-line reactor at Woodward to Chisholm/Border 345kV Ckt 1
- 50MVAR in-line reactor at Border to GEN-2014-007-Tap/Tuco 345kV Ckt 1
- 50MVAR in-line reactor at Border to GEN-2014-007-Tap/Tuco 345kV Ckt 2

Nine contingencies had voltages below 0.70 p.u. immediately following the clearing of the disturbance. These voltage violations affect a radially connected system and were determined to not need mitigation at this time. The following buses had voltages below 0.70 p.u. for the nine contingencies listed in Table 3-4:

- LOPEZ 115 kV
- CAMPBELL 115 kV
- CAPROCK 115 kV
- NORTON 115 kV
- FE-TUCMACARI3 115 kV

**Table 3-4
Stability Analysis Summary of Results for 2019 Summer, 2019 Winter, and 2024 Summer Peak Conditions**

Contingency Number	Contingency Name	2019 Summer						2019 Winter				2024 Summer				
		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?		Stable?	Recovers between .95 and 1.05?		Recovers between 0.7 and 1.2 p.u.?	
			Less than .95 p.u.	Greater than 1.05 p.u.	Less than .70 p.u.	Greater than 1.20 p.u.		Less than .95 p.u.	Greater than 1.05 p.u.	Less than 0.70 p.u.	Greater than 1.20 p.u.		Less than .95 p.u.	Greater than 1.05 p.u.	Less than .70 p.u.	Greater than 1.20 p.u.
1A	FLT-A01-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
2A	FLT-A02-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
3A	FLT-A03-3PH	Yes	19	3	0	0	Yes	7	2	0	0	Yes	27	3	0	0
4A	FLT-A04-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
5A	FLT-A05-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
6A	FLT-A06-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
7A	FLT-A07-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
8A	FLT-A08-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	5	0	0
9A	FLT-A09-3PH	Yes	18	3	0	0	Yes	8	2	0	0	Yes	27	3	0	0
10A	FLT-A10-3PH	Yes	18	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
11A	FLT-A11-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
12A	FLT-A12-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
13A	FLT-A13-3PH	Yes	17	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
14A	FLT-A14-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	27	3	0	0
15A	FLT-A15-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
16A	FLT-A16-3PH	Yes	28	3	0	0	Yes	8	2	0	0	Yes	26	3	0	0
17A	FLT-A17-3PH	Yes	not well damped				Yes	not well damped				Yes	33	3	0	0
18A	FLT-A18-3PH	Yes	17	3	0	0	Yes	8	2	0	0	Yes	27	3	0	0
19A	FLT-A19-3PH	Yes	47	3	0	0	Yes	24	2	0	0	Yes	32	4	0	0
20A	FLT-A20-3PH	Yes	38	3	0	0	Yes	36	3	0	0	Yes	29	3	0	0
21A	FLT-A21-3PH	Yes	43	3	0	0	Yes	21	2	0	0	Yes	26	3	0	0
22A	FLT-A22-3PH	Yes	18	3	0	0	Yes	7	2	0	0	Yes	27	3	0	0
23A	FLT-A23-3PH	Yes	29	3	0	0	Yes	8	2	0	0	Yes	28	3	0	0
24A	FLT-A24-3PH	Yes	17	3	0	0	Yes	6	2	0	0	Yes	27	3	0	0
25A	FLT-A25-3PH	Yes	18	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
26A	FLT-A26-3PH	Yes	18	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
27A	FLT-A27-3PH	Yes	17	3	0	0	Yes	8	2	0	0	Yes	26	3	0	0
28A	FLT-A28-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
29A	FLT-A29-3PH	Yes	23	3	0	0	Yes	7	2	0	0	Yes	33	3	0	0
30A	FLT-A30-3PH	Yes	16	3	0	0	Yes	7	5	0	0	Yes	27	3	0	0
31A	FLT-A31-3PH	Yes	27	3	0	0	Yes	8	2	0	0	Yes	26	3	0	0
32A	FLT-A32-3PH	Yes	33	3	0	0	Yes	7	2	0	0	Yes	48	3	0	0
33A	FLT-A33-3PH	Yes	18	3	0	0	Yes	9	2	0	0	Yes	28	3	0	0
34A	FLT-A34-1PH	Yes	18	3	5	0	Yes	7	2	5	0	Yes	28	3	5	0
35A	FLT-A35-3PH	Yes	16	3	0	0	Yes	8	2	0	0	Yes	27	3	0	0
36A	FLT-A36-1PH	Yes	17	3	0	0	Yes	7	2	0	0	Yes	27	3	0	0

Table 3-4 (Continued)
Stability Analysis Summary of Results for 2019 Summer, 2019 Winter, and 2024 Summer Peak Conditions

Contingency Number	Contingency Name	2019 Summer						2019 Winter				2024 Summer				
		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?		Stable?	Recovers between .95 and 1.05?		Recovers between 0.7 and 1.2 p.u.?	
			Less than .95 p.u.	Greater than 1.05 p.u.	Less than .70 p.u.	Greater than 1.20 p.u.		Less than .95 p.u.	Greater than 1.05 p.u.	Less than 0.70 p.u.	Greater than 1.20 p.u.		Less than .95 p.u.	Greater than 1.05 p.u.	Less than .70 p.u.	Greater than 1.20 p.u.
37A	FLT-A37-3PH	Yes	18	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
38A	FLT-A38-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
39A	FLT-A39-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
40A	FLT-A40-3PH	Yes	17	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
41A	FLT-A41-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
42A	FLT-A42-3PH	Yes	17	3	0	0	Yes	7	2	0	0	Yes	27	3	0	0
43A	FLT-A43-1PH	Yes	18	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
44A	FLT-A44-3PH	Yes	16	3	5	0	Yes	6	2	5	0	Yes	26	3	5	0
45A	FLT-A45-1PH	Yes	16	3	5	0	Yes	7	2	5	0	Yes	27	3	5	0
46A	FLT-A46-3PH	Yes	19	3	5	0	Yes	7	2	5	0	Yes	26	3	5	0
47A	FLT-A47-1PH	Yes	16	3	5	0	Yes	7	2	5	0	Yes	26	3	5	0
48A	FLT-A48-3PH	Yes	38	3	0	0	Yes	22	1	0	0	Yes	59	3	0	0
49A	FLT-A49-3PH	Yes	48	3	5	0	Yes	7	2	5	0	Yes	55	3	5	0
50A	FLT-A50-1PH	Yes	46	3	5	0	Yes	7	2	5	0	Yes	59	3	5	0
51A	FLT-A51-3PH	Yes	19	3	5	0	Yes	7	2	5	0	Yes	26	3	5	0
52A	FLT-A52-1PH	Yes	17	3	5	0	Yes	6	2	5	0	Yes	27	3	5	0
1B	FLT-B01-3PH	Yes	21	3	0	0	Yes	12	2	0	0	Yes	26	2	0	0
2B	FLT-B02-3PH	Yes	54	3	0	0	Yes	40	1	0	0	Yes	68	3	0	0
3B	FLT-B03-3PH	Yes	27	3	0	0	Yes	11	2	0	0	Yes	39	3	0	0
4B	FLT-B04-3PH	Yes	17	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
5B	FLT-B05-3PH	Yes	37	3	0	0	Yes	22	2	0	0	Yes	39	3	0	0
6B	FLT-B06-3PH	Yes	16	3	0	0	Yes	8	2	0	0	Yes	26	3	0	0
7B	FLT-B07-3PH	Yes	20	3	0	0	Yes	8	2	0	0	Yes	27	3	0	0
8B	FLT-B08-3PH	Yes	17	3	0	0	Yes	9	2	0	0	Yes	29	3	0	0
9B	FLT-B09-3PH	Yes	24	3	0	0	Yes	12	2	0	0	Yes	28	3	0	0
10B	FLT-B10-3PH	Yes	32	3	0	0	Yes	17	2	0	0	Yes	38	3	0	0
11B	FLT-B11-3PH	Yes	41	3	0	0	Yes	25	2	0	0	Yes	73	3	0	0
12B	FLT-B12-3PH	Yes	17	3	0	0	Yes	7	2	0	0	Yes	25	3	0	0
13B	FLT-B13-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
14B	FLT-B14-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	27	3	0	0
15B	FLT-B15-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
16B	FLT-B16-3PH	Yes	17	3	0	0	Yes	9	1	0	0	Yes	26	3	0	0
17B	FLT-B17-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
18B	FLT-B18-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	27	3	0	0
19B	FLT-B19-3PH	Yes	17	3	0	0	Yes	7	2	0	0	Yes	27	3	0	0
20B	FLT-B20-3PH	Yes	19	3	0	0	Yes	7	2	0	0	Yes	41	3	0	0

Table 3-4 (Continued)
Stability Analysis Summary of Results for 2019 Summer, 2019 Winter, and 2024 Summer Peak Conditions

Contingency Number	Contingency Name	2019 Summer				2019 Winter				2024 Summer						
		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?		Stable?	Recovers between .95 and 1.05?		Recovers between 0.7 and 1.2 p.u.?	
			Less than .95 p.u.	Greater than 1.05 p.u.	Less than .70 p.u.	Greater than 1.20 p.u.		Less than .95 p.u.	Greater than 1.05 p.u.	Less than 0.70 p.u.	Greater than 1.20 p.u.		Less than .95 p.u.	Greater than 1.05 p.u.	Less than .70 p.u.	Greater than 1.20 p.u.
21B	FLT-B21-3PH	Yes	18	3	0	0	Yes	8	2	0	0	Yes	28	3	0	0
22B	FLT-B22-3PH	Yes	26	3	0	0	Yes	15	2	0	0	Yes	47	3	0	0
23B	FLT-B23-3PH	Yes	22	3	0	0	Yes	11	2	0	0	Yes	39	3	0	0
24B	FLT-B24-3PH	Yes	19	3	0	0	Yes	8	2	0	0	Yes	31	3	0	0
25B	FLT-B25-3PH	Yes	16	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0
26B	FLT-B26-3PH	Yes	16	3	0	0	Yes	8	2	0	0	Yes	26	3	0	0
27B	FLT-B27-3PH	Yes	22	4	0	0	Yes	16	3	0	0	Yes	45	3	0	0
28B	FLT-B28-3PH	Yes	39	3	0	0	Yes	23	2	0	0	Yes	47	3	0	0
29B	FLT-B29-3PH	No	unstable				No	unstable				Yes	41	2	0	0
30B	FLT-B30-3PH	Yes	23	3	0	0	Yes	23	3	0	0	Yes	27	3	0	0
31B	FLT-B31-3PH	Yes	18	3	0	0	Yes	6	5	0	0	Yes	28	3	0	0
32B	FLT-B32-3PH	Yes	58	3	0	0	Yes	37	1	0	0	Yes	48	3	0	0

Table 3-5
Upgrade_2 for 2019 Summer, 2019 Winter, and 2024 Summer Peak Conditions

Contingency Number	Contingency Name	2019 Summer				2019 Winter				2024 Summer						
		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?		Stable?	Recovers between .95 and 1.05?		Recovers between 0.7 and 1.2 p.u.?	
			Less than .95 p.u.	Greater than 1.05 p.u.	Less than .70 p.u.	Greater than 1.20 p.u.		Less than .95 p.u.	Greater than 1.05 p.u.	Less than 0.70 p.u.	Greater than 1.20 p.u.		Less than .95 p.u.	Greater than 1.05 p.u.	Less than .70 p.u.	Greater than 1.20 p.u.
1A	FLT-A01-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0
2A	FLT-A02-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0
3A	FLT-A03-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	25	3	0	0
4A	FLT-A04-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0
5A	FLT-A05-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0
6A	FLT-A06-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0
7A	FLT-A07-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	25	3	0	0
8A	FLT-A08-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	5	0	0
9A	FLT-A09-3PH	Yes	14	3	0	0	Yes	6	2	0	0	Yes	27	3	0	0
10A	FLT-A10-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	2	0	0
11A	FLT-A11-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0
12A	FLT-A12-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0
13A	FLT-A13-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0
14A	FLT-A14-3PH	Yes	16	3	0	0	Yes	5	2	0	0	Yes	29	3	0	0

Table 3-5 (Continued)
Upgrade_2 for 2019 Summer, 2019 Winter, and 2024 Summer Peak Conditions

Contingency Number	Contingency Name	2019 Summer						2019 Winter					2024 Summer				
		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?		Stable?	Recovers between .95 and 1.05?		Recovers between 0.7 and 1.2 p.u.?		
			Less than .95 p.u.	Greater than 1.05 p.u.	Less than .70 p.u.	Greater than 1.20 p.u.		Less than .95 p.u.	Greater than 1.05 p.u.	Less than 0.70 p.u.	Greater than 1.20 p.u.		Less than .95 p.u.	Greater than 1.05 p.u.	Less than .70 p.u.	Greater than 1.20 p.u.	
15A	FLT-A15-3PH	Yes	16	3	0	0	Yes	5	2	0	0	Yes	27	3	0	0	
16A	FLT-A16-3PH	Yes	19	3	0	0	Yes	7	2	0	0	Yes	26	3	0	0	
17A	FLT-A17-3PH	Yes	69	3	0	0	Yes	16	2	0	0	Yes	29	3	0	0	
18A	FLT-A18-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0	
19A	FLT-A19-3PH	Yes	26	5	0	0	Yes	10	2	0	0	Yes	27	4	0	0	
20A	FLT-A20-3PH	Yes	32	3	0	0	Yes	10	2	0	0	Yes	28	3	0	0	
21A	FLT-A21-3PH	Yes	18	3	0	0	Yes	6	2	0	0	Yes	26	3	0	0	
22A	FLT-A22-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0	
23A	FLT-A23-3PH	Yes	16	3	0	0	Yes	5	2	0	0	Yes	27	3	0	0	
24A	FLT-A24-3PH	Yes	17	3	0	0	Yes	6	2	0	0	Yes	26	3	0	0	
25A	FLT-A25-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0	
26A	FLT-A26-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0	
27A	FLT-A27-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0	
28A	FLT-A28-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0	
29A	FLT-A29-3PH	Yes	17	3	0	0	Yes	5	2	0	0	Yes	32	3	0	0	
30A	FLT-A30-3PH	Yes	13	3	0	0	Yes	5	5	0	0	Yes	27	3	0	0	
31A	FLT-A31-3PH	Yes	16	3	0	0	Yes	4	2	0	0	Yes	26	3	0	0	
32A	FLT-A32-3PH	Yes	24	3	0	0	Yes	4	2	0	0	Yes	45	3	0	0	
33A	FLT-A33-3PH	Yes	14	3	0	0	Yes	6	2	0	0	Yes	27	3	0	0	
34A	FLT-A34-1PH	Yes	11	3	5	0	Yes	6	2	5	0	Yes	28	3	5	0	
35A	FLT-A35-3PH	Yes	13	3	0	0	Yes	6	2	0	0	Yes	26	3	0	0	
36A	FLT-A36-1PH	Yes	13	3	0	0	Yes	4	2	0	0	Yes	27	3	0	0	
37A	FLT-A37-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0	
38A	FLT-A38-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0	
39A	FLT-A39-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	25	3	0	0	
40A	FLT-A40-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0	
41A	FLT-A41-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0	
42A	FLT-A42-3PH	Yes	13	3	0	0	Yes	4	2	0	0	Yes	27	3	0	0	
43A	FLT-A43-1PH	Yes	15	3	0	0	Yes	4	2	0	0	Yes	26	3	0	0	
44A	FLT-A44-3PH	Yes	8	3	5	0	Yes	5	2	5	0	Yes	26	3	5	0	
45A	FLT-A45-1PH	Yes	8	3	5	0	Yes	4	2	5	0	Yes	26	3	5	0	
46A	FLT-A46-3PH	Yes	13	3	5	0	Yes	5	2	5	0	Yes	26	3	5	0	
47A	FLT-A47-1PH	Yes	13	3	5	0	Yes	4	2	5	0	Yes	26	3	5	0	
48A	FLT-A48-3PH	Yes	31	3	0	0	Yes	18	2	0	0	Yes	59	3	0	0	
49A	FLT-A49-3PH	Yes	42	3	5	0	Yes	5	2	5	0	Yes	55	3	5	0	
50A	FLT-A50-1PH	Yes	41	3	5	0	Yes	4	2	5	0	Yes	58	3	5	0	

Table 3-5 (Continued)
Upgrade_2 for 2019 Summer, 2019 Winter, and 2024 Summer Peak Conditions

Contingency Number	Contingency Name	2019 Summer						2019 Winter					2024 Summer				
		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?		Stable?	Recovers between 0.95 and 1.05?		Recovers between 0.70 and 1.20 p.u.?		Stable?	Recovers between .95 and 1.05?		Recovers between 0.7 and 1.2 p.u.?		
			Less than .95 p.u.	Greater than 1.05 p.u.	Less than .70 p.u.	Greater than 1.20 p.u.		Less than .95 p.u.	Greater than 1.05 p.u.	Less than 0.70 p.u.	Greater than 1.20 p.u.		Less than .95 p.u.	Greater than 1.05 p.u.	Less than .70 p.u.	Greater than 1.20 p.u.	
51A	FLT-A51-3PH	Yes	14	3	5	0	Yes	4	2	5	0	Yes	26	3	5	0	
52A	FLT-A52-1PH	Yes	17	3	5	0	Yes	5	2	5	0	Yes	26	3	5	0	
1B	FLT-B01-3PH	Yes	17	3	0	0	Yes	10	2	0	0	Yes	26	2	0	0	
2B	FLT-B02-3PH	Yes	45	3	0	0	Yes	38	1	0	0	Yes	67	3	0	0	
3B	FLT-B03-3PH	Yes	19	3	0	0	Yes	9	2	0	0	Yes	38	3	0	0	
4B	FLT-B04-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0	
5B	FLT-B05-3PH	Yes	31	3	0	0	Yes	20	2	0	0	Yes	38	3	0	0	
6B	FLT-B06-3PH	Yes	13	3	0	0	Yes	6	2	0	0	Yes	26	3	0	0	
7B	FLT-B07-3PH	Yes	14	3	0	0	Yes	6	2	0	0	Yes	26	3	0	0	
8B	FLT-B08-3PH	Yes	14	3	0	0	Yes	7	2	0	0	Yes	29	3	0	0	
9B	FLT-B09-3PH	Yes	20	3	0	0	Yes	10	2	0	0	Yes	28	3	0	0	
10B	FLT-B10-3PH	Yes	27	3	0	0	Yes	15	2	0	0	Yes	37	3	0	0	
11B	FLT-B11-3PH	Yes	34	3	0	0	Yes	23	2	0	0	Yes	73	2	0	0	
12B	FLT-B12-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	25	3	0	0	
13B	FLT-B13-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0	
14B	FLT-B14-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	27	3	0	0	
15B	FLT-B15-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0	
16B	FLT-B16-3PH	Yes	14	3	0	0	Yes	9	1	0	0	Yes	27	3	0	0	
17B	FLT-B17-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0	
18B	FLT-B18-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	27	3	0	0	
19B	FLT-B19-3PH	Yes	14	3	0	0	Yes	5	2	0	0	Yes	27	3	0	0	
20B	FLT-B20-3PH	Yes	15	3	0	0	Yes	5	2	0	0	Yes	41	3	0	0	
21B	FLT-B21-3PH	Yes	15	3	0	0	Yes	7	2	0	0	Yes	28	3	0	0	
22B	FLT-B22-3PH	Yes	20	3	0	0	Yes	13	2	0	0	Yes	46	3	0	0	
23B	FLT-B23-3PH	Yes	19	3	0	0	Yes	9	2	0	0	Yes	38	3	0	0	
24B	FLT-B24-3PH	Yes	16	3	0	0	Yes	6	2	0	0	Yes	31	3	0	0	
25B	FLT-B25-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0	
26B	FLT-B26-3PH	Yes	13	3	0	0	Yes	6	2	0	0	Yes	26	3	0	0	
27B	FLT-B27-3PH	Yes	18	4	0	0	Yes	14	3	0	0	Yes	44	3	0	0	
28B	FLT-B28-3PH	Yes	32	3	0	0	Yes	21	2	0	0	Yes	47	3	0	0	
29B	FLT-B29-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	26	3	0	0	
30B	FLT-B30-3PH	Yes	13	3	0	0	Yes	5	2	0	0	Yes	27	3	0	0	
31B	FLT-B31-3PH	Yes	13	3	0	0	Yes	4	5	0	0	Yes	27	3	0	0	
32B	FLT-B32-3PH	Yes	47	3	0	0	Yes	34	1	0	0	Yes	45	3	0	0	

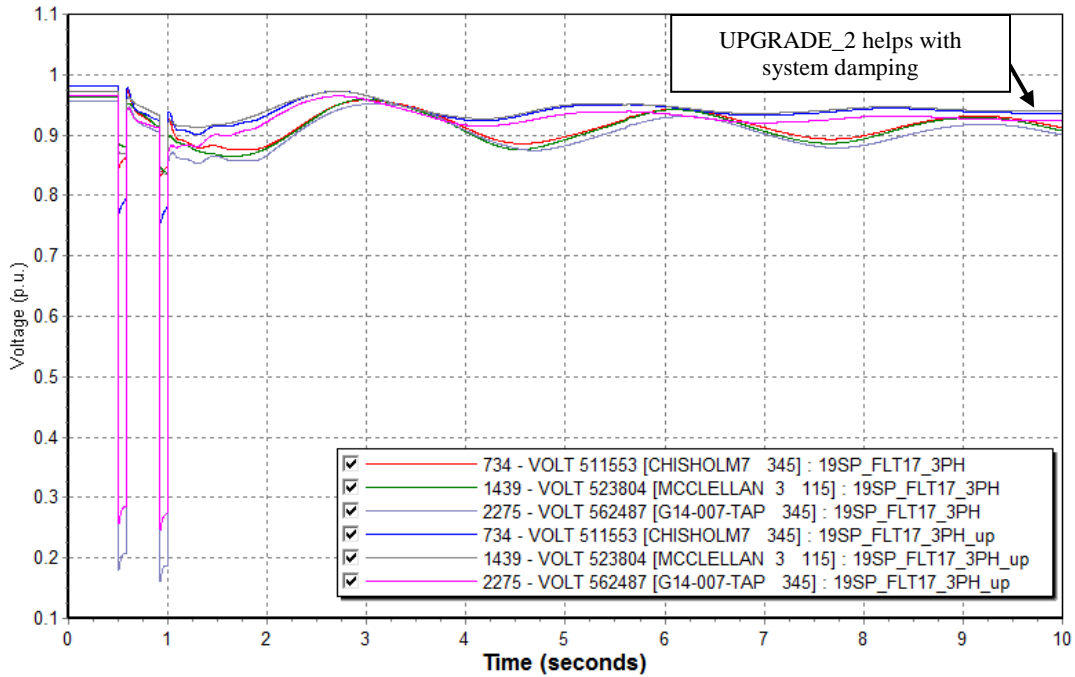


Figure 3-3. Response of select bus voltages during Contingency #17A (FLT-A17-3PH) for 2019 Summer Peak conditions with and without Upgrade_2.

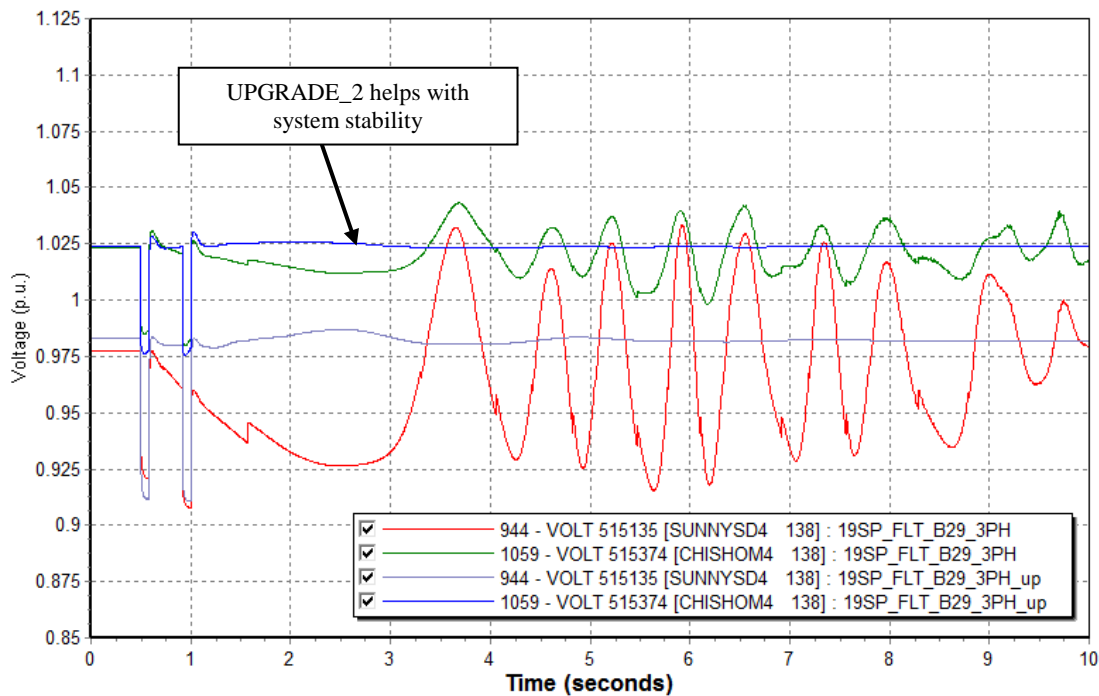


Figure 3-4. Response of select bus voltages during Contingency #29B (FLT-B29-3PH) for 2019 Summer Peak conditions with and without Upgrade_2.

SECTION 4: POWER FACTOR ANALYSIS

The objective of this task is to quantify the power factor at the point of interconnection for the wind farms during base case and system contingencies. SPP transmission planning practice requires interconnecting generation projects to maintain the power factor (pf) at the Point of Interconnection (POI) within +/- 0.95 pf for system intact conditions and for post-contingency conditions. This is analyzed by having the wind farm maintain a prescribed voltage schedule at the point of interconnection of 1.0 p.u. voltage, or if the pre-project voltage is higher than 1.0 p.u., to maintain the pre-project voltage schedule.

The 2014 Winter Peak, 2015 Summer Peak, 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak power flows provided by SPP were examined prior to the Power Factor Analysis to ensure they contained the proposed study project modeled at 100% of the nameplate rating and any previously queued projects listed in Table 2-2. There was no suspect power flow data in the study area. The proposed study project and any previously queued projects at the same point of interconnection were turned off during the power factor analysis. The wind farm(s) were then replaced by a generator modeled at the high side bus with the same real power (MW) capability as the wind farm(s) and open limits for the reactive power set points (Mvar). The generator was set to hold the POI scheduled bus voltage. Contingencies from the three-phase fault definitions provided in Table 2-3 and Table 2-4 (2019 Winter Peak, 2019 Summer Peak, and 2024 Summer Peak only) were then applied and the reactive power required to maintain the bus voltage was recorded.

4.1 2014 Winter Peak Case

Approach

Upgrades found to be necessary in the Stability Analysis were implemented for the Power Factor Analysis.

GEN-2013-027 was disabled and a generator was placed at the study project's point of interconnect bus. The generator was modeled with PGEN = 327 MW, QMin = -9999 Mvar, and QMax = 9999 Mvar. All buses and transformers connected from the study project's POI bus to the GEN-2013-027 generator were disabled. The pre-project voltage at the POI (Tap Tolk to Yoakum 230 kV – Bus 562480) for the 2014 Winter Peak condition is 1.01 p.u. Therefore, the scheduled voltage for the POI was set to 1.01 p.u.

GEN-2014-007 was disabled and a generator was placed at the study project's point of interconnect bus. The generator was modeled with PGEN = 399.6 MW, QMin = -9999 Mvar, and QMax = 9999 Mvar. All buses and transformers connected from the study project's POI bus to the GEN-2014-007 generator were disabled. The pre-project voltage at the POI (Tap Tuco to

Border 345 kV – Bus 562487) for the 2014 Winter Peak conditions is 0.97 p.u. Therefore, the scheduled voltage for the POI was set to 1.00 p.u.

ASGI-2014-001 was disabled and a generator was placed at the study project's point of interconnect bus. The generator was modeled with PGEN = 2.3 MW, QMin = -9999 Mvar, and QMax = 9999 Mvar. All buses and transformers connected from the study project's POI bus to the GEN-2014-007 generator were disabled. Note that a queued generator was also connected to this POI, which was turned off for the power factor analysis. The pre-project voltage at the POI (Erskine 115 kV – Bus 526109) for the 2014 Winter Peak conditions is 1.00 p.u. Therefore, the scheduled voltage for the POI was set to 1.00 p.u.

Results

The power factor was calculated for the 2014 Winter Peak condition. Table 4-1 shows the power factor results for the three wind study generators. Note that a positive Q (Mvar) output illustrates that the generator is absorbing reactive power from the system, implying a leading power factor; a negative Q (Mvar) illustrates that the generator is supplying reactive power to the system, implying a lagging power factor.

**Table 4-1
Power Factor Analysis: 2014 Winter Peak Conditions**

Power Factor Analysis for 2014 Winter Peak Conditions										
Reference Number	Case	GEN-2013-027 (Pgen = 327 MW)			GEN-2014-007 (Pgen = 399.6 MW)			ASGI-2014-001 (Pgen = 2.3 MW)		
		Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)
0A	Base	0.977	Leading	71.519	0.944	Lagging	-139.242	0.168	Leading	13.486
1A	FLT-A01-3PH	0.977	Leading	71.494	0.944	Lagging	-139.351	0.151	Leading	15.015
2A	FLT-A02-3PH	0.977	Leading	71.715	0.944	Lagging	-139.314	0.672	Lagging	-2.537
3A	FLT-A03-3PH	0.977	Leading	71.483	0.945	Lagging	-138.982	0.162	Leading	14.036
4A	FLT-A04-3PH	0.977	Leading	71.514	0.944	Lagging	-139.016	0.166	Leading	13.702
5A	FLT-A05-3PH	0.977	Leading	70.657	0.944	Lagging	-139.735	0.267	Leading	8.301
6A	FLT-A06-3PH	0.977	Leading	71.289	0.944	Lagging	-139.450	0.174	Leading	13.020
7A	FLT-A07-3PH	0.978	Leading	69.727	0.943	Lagging	-140.446	0.129	Leading	17.743
8A	FLT-A08-3PH	0.977	Leading	72.084	0.944	Lagging	-139.258	0.105	Leading	21.747
9A	FLT-A09-3PH	0.977	Leading	71.280	0.944	Lagging	-139.512	0.142	Leading	16.057
10A	FLT-A10-3PH	0.978	Leading	69.048	0.942	Lagging	-141.896	0.902	Lagging	-1.101
11A	FLT-A11-3PH	0.977	Leading	71.519	0.944	Lagging	-139.242	0.168	Leading	13.486
12A	FLT-A12-3PH	0.977	Leading	71.317	0.943	Lagging	-140.556	0.183	Leading	12.339
13A	FLT-A13-3PH	0.977	Leading	71.282	0.944	Lagging	-139.508	0.141	Leading	16.110
14A	FLT-A14-3PH	0.975	Leading	74.790	1.000	Leading	5.646	0.180	Leading	12.584
15A	FLT-A15-3PH	0.976	Leading	72.816	0.928	Lagging	-159.974	0.180	Leading	12.571
16A	FLT-A16-3PH	0.976	Leading	72.321	0.907	Lagging	-185.138	0.183	Leading	12.366
17A	FLT-A17-3PH	0.975	Leading	74.708	0.746	Lagging	-357.169	0.167	Leading	13.593
18A	FLT-A18-3PH	0.977	Leading	71.970	0.943	Lagging	-141.095	0.156	Leading	14.549
19A	FLT-A19-3PH	0.975	Leading	74.689	0.771	Lagging	-330.328	0.147	Leading	15.429
20A	FLT-A20-3PH	0.977	Leading	72.015	0.940	Lagging	-145.598	0.156	Leading	14.565
21A	FLT-A21-3PH	0.977	Leading	71.486	0.946	Lagging	-136.475	0.177	Leading	12.815
22A	FLT-A22-3PH	0.977	Leading	71.567	0.942	Lagging	-142.099	0.169	Leading	13.450
23A	FLT-A23-3PH	0.976	Leading	72.188	0.936	Lagging	-150.359	0.181	Leading	12.484
24A	FLT-A24-3PH	0.983	Leading	60.882	0.964	Lagging	-110.428	0.202	Leading	11.130
25A	FLT-A25-3PH	0.978	Leading	69.509	0.942	Lagging	-142.314	0.167	Leading	13.555
26A	FLT-A26-3PH	0.977	Leading	71.317	0.943	Lagging	-140.556	0.183	Leading	12.339
27A	FLT-A27-3PH	0.977	Leading	71.494	0.944	Lagging	-139.375	0.181	Leading	12.477
28A	FLT-A28-3PH	0.977	Leading	71.455	0.944	Lagging	-139.347	0.167	Leading	13.577
29A	FLT-A29-3PH	0.977	Leading	71.593	0.944	Lagging	-139.972	0.220	Leading	10.219
30A	FLT-A30-3PH	0.977	Leading	71.478	0.944	Lagging	-139.508	0.180	Leading	12.536
31A	FLT-A31-3PH	0.977	Leading	72.023	0.938	Lagging	-148.218	0.164	Leading	13.814
32A	FLT-A32-3PH	0.978	Leading	70.526	0.939	Lagging	-146.866	0.357	Leading	6.018
33A	FLT-A33-3PH	0.998	Lagging	-19.498	0.943	Lagging	-141.422	0.181	Leading	12.531
34A	FLT-A34-1PH	0.978	Leading	70.540	0.944	Lagging	-140.211	0.169	Leading	13.421
35A	FLT-A35-3PH	0.961	Leading	94.522	0.950	Lagging	-131.230	0.209	Leading	10.788
36A	FLT-A36-1PH	0.976	Leading	72.483	0.944	Lagging	-139.395	0.173	Leading	13.064
37A	FLT-A37-3PH	0.976	Leading	72.550	0.944	Lagging	-139.484	0.176	Leading	12.859
38A	FLT-A38-3PH	0.977	Leading	70.630	0.944	Lagging	-139.008	0.170	Leading	13.361
39A	FLT-A39-3PH	0.978	Leading	70.201	0.944	Lagging	-139.132	0.170	Leading	13.312
40A	FLT-A40-3PH	0.986	Leading	55.840	0.944	Lagging	-139.399	0.197	Leading	11.431
41A	FLT-A41-3PH	0.976	Leading	72.482	0.944	Lagging	-139.395	0.173	Leading	13.064
42A	FLT-A42-3PH	0.975	Leading	74.683	0.944	Lagging	-139.537	0.183	Leading	12.349
43A	FLT-A43-1PH	0.976	Leading	72.483	0.944	Lagging	-139.395	0.173	Leading	13.064

*A positive Q (Mvar) output illustrates the generator is absorbing Mvars from the system, which implies a leading power factor; negative Q (Mvar) output shows the generator is supplying Mvars to the system implying a lagging power factor.

Table 4-1 (Continued)
Power Factor Analysis: 2014 Winter Peak Conditions

Power Factor Analysis for 2014 Winter Peak Conditions										
Reference Number	Case	GEN-2013-027 (Pgen = 327 MW)			GEN-2014-007 (Pgen = 399.6 MW)			ASGI-2014-001 (Pgen = 2.3 MW)		
		Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)
43A	FLT-A43-1PH	0.976	Leading	72.483	0.944	Lagging	-139.395	0.173	Leading	13.064
44A	FLT-A44-3PH	0.977	Leading	71.519	0.944	Lagging	-139.242	0.168	Leading	13.486
45A	FLT-A45-1PH	0.978	Leading	70.540	0.944	Lagging	-140.211	0.169	Leading	13.421
46A	FLT-A46-3PH	0.978	Leading	70.539	0.944	Lagging	-140.211	0.169	Leading	13.421
47A	FLT-A47-1PH	0.976	Leading	73.012	0.944	Lagging	-140.030	0.169	Leading	13.455
48A	FLT-A48-3PH	0.970	Leading	82.222	0.944	Lagging	-140.098	0.162	Leading	14.013
49A	FLT-A49-3PH	0.979	Leading	67.825	0.945	Lagging	-138.616	0.172	Leading	13.168
50A	FLT-A50-1PH	0.978	Leading	70.540	0.944	Lagging	-140.211	0.169	Leading	13.421
51A	FLT-A51-3PH	0.979	Leading	67.741	0.941	Lagging	-144.258	0.172	Leading	13.201
52A	FLT-A52-1PH	0.983	Leading	60.882	0.964	Lagging	-110.429	0.202	Leading	11.130

*A positive Q (Mvar) output illustrates the generator is absorbing Mvars from the system, which implies a leading power factor; negative Q (Mvar) output shows the generator is supplying Mvars to the system implying a lagging power factor.

Summary

The Power Factor Analysis shows that GEN-2013-027 has a power factor range of 0.961 leading (absorbing) to 0.998 lagging (supplying) for 2014 Winter Peak conditions. The Power Factor Analysis shows that GEN-2014-007 has a power factor range of 1.0 to 0.746 lagging (supplying) for 2014 Winter Peak conditions. The Power Factor Analysis shows that ASGI-2014-001 has a power factor range of 0.105 leading (absorbing) to 0.672 lagging (supplying) for 2014 Winter Peak conditions.

4.2 2015 Summer Peak Case

Approach

Upgrades found to be necessary in the Stability Analysis were implemented for the Power Factor Analysis.

GEN-2013-027 was disabled and a generator was placed at the study project's point of interconnect bus. The generator was modeled with PGEN = 327 MW, QMin = -9999 Mvar, and QMax = 9999 Mvar. All buses and transformers connected from the study project's POI bus to the GEN-2013-027 generator were disabled. The pre-project voltage at the POI (Tap Talk to Yoakum 230 kV – Bus 562480) for the 2015 Summer Peak condition is 1.01 p.u. Therefore, the scheduled voltage for the POI was set to 1.01 p.u.

GEN-2014-007 was disabled and a generator was placed at the study project's point of interconnect bus. The generator was modeled with PGEN = 399.6 MW, QMin = -9999 Mvar, and QMax = 9999 Mvar. All buses and transformers connected from the study project's POI bus to the GEN-2014-007 generator were disabled. The pre-project voltage at the POI (Tap Tuco to

Border 345 kV – Bus 562487) for the 2015 Summer Peak conditions is 0.97 p.u. Therefore, the scheduled voltage for the POI was set to 1.00 p.u.

ASGI-2014-001 was disabled and a generator was placed at the study project's point of interconnect bus. The generator was modeled with PGEN = 2.3 MW, QMin = -9999 Mvar, and QMax = 9999 Mvar. All buses and transformers connected from the study project's POI bus to the GEN-2014-007 generator were disabled. Note that a queued generator was also connected to this POI, which was turned off for the power factor analysis. The pre-project voltage at the POI (Erskine 115 kV – Bus 526109) for the 2015 Summer Peak conditions is 1.00 p.u. Therefore, the scheduled voltage for the POI was set to 1.00 p.u.

Results

The power factor was calculated for the 2015 Summer Peak condition. Table 4-2 shows the power factor results for the three wind study generators. Note that a positive Q (Mvar) output illustrates that the generator is absorbing reactive power from the system, implying a leading power factor; a negative Q (Mvar) illustrates that the generator is supplying reactive power to the system, implying a lagging power factor.

**Table 4-2
Power Factor Analysis: 2015 Summer Peak Conditions**

Power Factor Analysis for 2015 Summer Peak Conditions										
Reference Number	Case	GEN-2013-027 (Pgen = 327 MW)			GEN-2014-007 (Pgen = 399.6 MW)			ASGI-2014-001 (Pgen = 2.3 MW)		
		Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)
0A	Base	0.979	Leading	68.276	0.952	Lagging	-129.025	0.347	Leading	6.212
1A	FLT-A01-3PH	0.979	Leading	68.348	0.951	Lagging	-129.866	0.240	Leading	9.323
2A	FLT-A02-3PH	0.979	Leading	68.404	0.951	Lagging	-130.411	0.313	Lagging	-6.969
3A	FLT-A03-3PH	0.979	Leading	68.356	0.950	Lagging	-130.879	0.336	Leading	6.438
4A	FLT-A04-3PH	0.979	Leading	68.292	0.951	Lagging	-129.390	0.333	Leading	6.503
5A	FLT-A05-3PH	0.979	Leading	68.152	0.952	Lagging	-128.787	0.998	Lagging	-0.136
6A	FLT-A06-3PH	0.979	Leading	68.317	0.952	Lagging	-128.749	0.350	Leading	6.152
7A	FLT-A07-3PH	0.979	Leading	67.991	0.955	Lagging	-124.496	0.119	Leading	19.235
8A	FLT-A08-3PH	0.979	Leading	68.436	0.955	Lagging	-124.761	0.106	Leading	21.534
9A	FLT-A09-3PH	0.979	Leading	68.263	0.954	Lagging	-125.412	0.198	Leading	11.366
10A	FLT-A10-3PH	0.979	Leading	67.830	0.952	Lagging	-129.014	0.271	Lagging	-8.166
11A	FLT-A11-3PH	0.979	Leading	68.276	0.952	Lagging	-129.025	0.347	Leading	6.212
12A	FLT-A12-3PH	0.979	Leading	68.206	0.951	Lagging	-130.206	0.563	Leading	3.376
13A	FLT-A13-3PH	0.979	Leading	68.264	0.954	Lagging	-125.349	0.197	Leading	11.419
14A	FLT-A14-3PH	0.979	Leading	68.708	0.999	Leading	14.576	0.430	Leading	4.826
15A	FLT-A15-3PH	0.979	Leading	68.458	0.934	Lagging	-152.535	0.411	Leading	5.107
16A	FLT-A16-3PH	0.979	Leading	68.426	0.922	Lagging	-168.298	0.398	Leading	5.297
17A	FLT-A17-3PH	0.979	Leading	68.681	0.789	Lagging	-311.553	0.369	Leading	5.790
18A	FLT-A18-3PH	0.979	Leading	68.346	0.953	Lagging	-126.642	0.300	Leading	7.311
19A	FLT-A19-3PH	0.979	Leading	68.777	0.807	Lagging	-292.915	0.970	Leading	0.578
20A	FLT-A20-3PH	0.979	Leading	68.346	0.949	Lagging	-132.377	0.309	Leading	7.073
21A	FLT-A21-3PH	0.979	Leading	68.271	0.952	Lagging	-128.436	0.373	Leading	5.724

*A positive Q (Mvar) output illustrates the generator is absorbing Mvars from the system, which implies a leading power factor; negative Q (Mvar) output shows the generator is supplying Mvars to the system implying a lagging power factor.

Table 4-2 (Continued)
Power Factor Analysis: 2015 Summer Peak Conditions

Power Factor Analysis for 2015 Summer Peak Conditions										
Reference Number	Case	GEN-2013-027 (Pgen = 327 MW)			GEN-2014-007 (Pgen = 399.6 MW)			ASGI-2014-001 (Pgen = 2.3 MW)		
		Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)
22A	FLT-A22-3PH	0.979	Leading	68.284	0.950	Lagging	-131.766	0.349	Leading	6.185
23A	FLT-A23-3PH	0.979	Leading	68.530	0.944	Lagging	-139.472	0.289	Leading	7.629
24A	FLT-A24-3PH	0.980	Leading	66.599	0.969	Lagging	-101.281	0.462	Leading	4.411
25A	FLT-A25-3PH	0.979	Leading	68.622	0.960	Lagging	-116.930	0.355	Leading	6.060
26A	FLT-A26-3PH	0.979	Leading	68.206	0.951	Lagging	-130.206	0.563	Leading	3.376
27A	FLT-A27-3PH	0.979	Leading	68.256	0.951	Lagging	-130.255	0.436	Leading	4.753
28A	FLT-A28-3PH	0.979	Leading	68.227	0.951	Lagging	-129.306	0.347	Leading	6.214
29A	FLT-A29-3PH	0.979	Leading	68.258	0.946	Lagging	-136.412	0.942	Leading	0.823
30A	FLT-A30-3PH	0.979	Leading	68.260	0.951	Lagging	-130.558	0.410	Leading	5.120
31A	FLT-A31-3PH	0.979	Leading	68.308	0.935	Lagging	-151.486	0.425	Leading	4.904
32A	FLT-A32-3PH	0.979	Leading	67.969	0.951	Lagging	-130.136	0.233	Lagging	-9.581
33A	FLT-A33-3PH	1.000	Lagging	-9.136	0.952	Lagging	-128.218	0.513	Leading	3.844
34A	FLT-A34-1PH	0.979	Leading	68.005	0.950	Lagging	-131.465	0.363	Leading	5.904
35A	FLT-A35-3PH	0.984	Leading	59.512	0.953	Lagging	-127.436	0.328	Leading	6.634
36A	FLT-A36-1PH	0.978	Leading	69.146	0.951	Lagging	-130.267	0.367	Leading	5.821
37A	FLT-A37-3PH	0.978	Leading	69.925	0.953	Lagging	-127.310	0.621	Leading	2.901
38A	FLT-A38-3PH	0.981	Leading	64.165	0.952	Lagging	-129.128	0.372	Leading	5.746
39A	FLT-A39-3PH	0.981	Leading	63.796	0.952	Lagging	-129.165	0.374	Leading	5.706
40A	FLT-A40-3PH	0.980	Leading	66.284	0.952	Lagging	-129.096	0.355	Leading	6.053
41A	FLT-A41-3PH	0.978	Leading	69.149	0.951	Lagging	-129.361	0.361	Leading	5.942
42A	FLT-A42-3PH	0.978	Leading	70.243	0.953	Lagging	-126.805	0.502	Leading	3.965
43A	FLT-A43-1PH	0.978	Leading	69.146	0.951	Lagging	-130.267	0.367	Leading	5.821
44A	FLT-A44-3PH	0.979	Leading	68.276	0.952	Lagging	-129.025	0.347	Leading	6.212
45A	FLT-A45-1PH	0.979	Leading	68.005	0.950	Lagging	-131.465	0.363	Leading	5.904
46A	FLT-A46-3PH	0.979	Leading	68.003	0.951	Lagging	-130.599	0.357	Leading	6.012
47A	FLT-A47-1PH	0.979	Leading	68.432	0.950	Lagging	-131.095	0.354	Leading	6.067
48A	FLT-A48-3PH	0.980	Leading	66.584	0.951	Lagging	-129.385	0.435	Leading	4.767
49A	FLT-A49-3PH	0.980	Leading	66.931	0.950	Lagging	-131.387	0.414	Leading	5.053
50A	FLT-A50-1PH	0.979	Leading	68.005	0.950	Lagging	-131.465	0.363	Leading	5.904
51A	FLT-A51-3PH	0.980	Leading	66.949	0.945	Lagging	-138.913	0.425	Leading	4.906
52A	FLT-A52-1PH	0.980	Leading	66.596	0.969	Lagging	-102.114	0.472	Leading	4.294

*A positive Q (Mvar) output illustrates the generator is absorbing Mvars from the system, which implies a leading power factor; negative Q (Mvar) output shows the generator is supplying Mvars to the system implying a lagging power factor.

Summary

The Power Factor Analysis shows that GEN-2013-027 has a power factor range of 0.978 leading (absorbing) to 1.0 for 2015 Summer Peak conditions. The Power Factor Analysis shows that GEN-2014-007 has a power factor range of 0.999 lagging (supplying) to 0.807 lagging (supplying) for 2015 Summer Peak conditions. The Power Factor Analysis shows that ASGI-2014-001 has a power factor range of 0.106 leading (absorbing) to 0.233 lagging (supplying) for 2015 Summer Peak conditions.

4.3 2019 Summer Peak Case

Approach

Upgrades found to be necessary in the Stability Analysis were implemented for the Power Factor Analysis.

GEN-2013-027 was disabled and a generator was placed at the study project's point of interconnect bus. The generator was modeled with $P_{GEN} = 327$ MW, $Q_{Min} = -9999$ Mvar, and $Q_{Max} = 9999$ Mvar. All buses and transformers connected from the study project's POI bus to the GEN-2013-027 generator were disabled. The pre-project voltage at the POI (Tap Tolk to Yoakum 230 kV – Bus 562480) for the 2019 Summer Peak condition is 1.02 p.u. Therefore, the scheduled voltage for the POI was set to 1.02 p.u.

GEN-2014-007 was disabled and a generator was placed at the study project's point of interconnect bus. The generator was modeled with $P_{GEN} = 399.6$ MW, $Q_{Min} = -9999$ Mvar, and $Q_{Max} = 9999$ Mvar. All buses and transformers connected from the study project's POI bus to the GEN-2014-007 generator were disabled. The pre-project voltage at the POI (Tap Tuco to Border 345 kV – Bus 562487) for the 2019 Summer Peak conditions is 0.95 p.u. Therefore, the scheduled voltage for the POI was set to 1.00 p.u.

ASGI-2014-001 was disabled and a generator was placed at the study project's point of interconnect bus. The generator was modeled with $P_{GEN} = 2.3$ MW, $Q_{Min} = -9999$ Mvar, and $Q_{Max} = 9999$ Mvar. All buses and transformers connected from the study project's POI bus to the GEN-2014-007 generator were disabled. Note that a queued generator was also connected to this POI, which was turned off for the power factor analysis. The pre-project voltage at the POI (Erskine 115 kV – Bus 526109) for the 2019 Summer Peak conditions is 1.00 p.u. Therefore, the scheduled voltage for the POI was set to 1.00 p.u.

Results

The power factor was calculated for the 2019 Summer Peak condition. Table 4-3 shows the power factor results for the three wind study generators. Note that a positive Q (Mvar) output illustrates that the generator is absorbing reactive power from the system, implying a leading power factor; a negative Q (Mvar) illustrates that the generator is supplying reactive power to the system, implying a lagging power factor.

**Table 4-3
Power Factor Analysis: 2019 Summer Peak Conditions**

Power Factor Analysis for 2019 Summer Peak Conditions										
Reference Number	Case	GEN-2013-027 (Pgen = 327 MW)			GEN-2014-007 (Pgen = 399.6 MW)			ASGI-2014-001 (Pgen = 2.3 MW)		
		Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)
0A	Base	0.972	Leading	78.915	0.894	Lagging	-200.427	0.405	Leading	5.192
1A	FLT-A01-3PH	0.972	Leading	79.001	0.893	Lagging	-201.454	0.254	Leading	8.743
2A	FLT-A02-3PH	0.972	Leading	79.058	0.892	Lagging	-202.273	0.260	Lagging	-8.546
3A	FLT-A03-3PH	0.972	Leading	78.990	0.893	Lagging	-201.850	0.353	Leading	6.102
4A	FLT-A04-3PH	0.972	Leading	78.934	0.893	Lagging	-200.927	0.386	Leading	5.502
5A	FLT-A05-3PH	0.972	Leading	78.812	0.894	Lagging	-199.819	0.843	Lagging	-1.466
6A	FLT-A06-3PH	0.972	Leading	78.931	0.894	Lagging	-199.884	0.401	Leading	5.256
7A	FLT-A07-3PH	0.972	Leading	78.776	0.894	Lagging	-199.747	0.206	Leading	10.903
8A	FLT-A08-3PH	0.972	Leading	79.074	0.896	Lagging	-197.995	0.141	Leading	16.159
9A	FLT-A09-3PH	0.972	Leading	79.104	0.893	Lagging	-201.816	0.238	Leading	9.377
10A	FLT-A10-3PH	0.972	Leading	78.706	0.895	Lagging	-198.657	0.774	Leading	1.881
11A	FLT-A11-3PH	0.972	Leading	78.915	0.894	Lagging	-200.427	0.405	Leading	5.192
12A	FLT-A12-3PH	0.972	Leading	78.856	0.893	Lagging	-201.492	0.889	Leading	1.186
13A	FLT-A13-3PH	0.972	Leading	79.105	0.893	Lagging	-201.773	0.237	Leading	9.414
14A	FLT-A14-3PH	0.972	Leading	79.252	1.000	Lagging	-3.141	0.550	Leading	3.494
15A	FLT-A15-3PH	0.972	Leading	79.079	0.873	Lagging	-223.202	0.477	Leading	4.238
16A	FLT-A16-3PH	0.972	Leading	78.981	0.870	Lagging	-226.992	0.439	Leading	4.707
17A	FLT-A17-3PH	0.972	Leading	79.213	0.701	Lagging	-406.810	0.478	Leading	4.229
18A	FLT-A18-3PH	0.972	Leading	79.008	0.897	Lagging	-197.274	0.343	Leading	6.289
19A	FLT-A19-3PH	0.972	Leading	79.143	0.727	Lagging	-377.523	0.902	Lagging	-1.101
20A	FLT-A20-3PH	0.972	Leading	78.993	0.893	Lagging	-201.911	0.351	Leading	6.129
21A	FLT-A21-3PH	0.972	Leading	78.903	0.892	Lagging	-202.741	0.446	Leading	4.613
22A	FLT-A22-3PH	0.972	Leading	78.919	0.891	Lagging	-203.821	0.408	Leading	5.140
23A	FLT-A23-3PH	0.972	Leading	79.152	0.882	Lagging	-213.402	0.333	Leading	6.505
24A	FLT-A24-3PH	0.973	Leading	77.738	0.919	Lagging	-171.662	0.551	Leading	3.487
25A	FLT-A25-3PH	0.972	Leading	79.032	0.894	Lagging	-200.356	0.519	Leading	3.783
26A	FLT-A26-3PH	0.972	Leading	78.856	0.893	Lagging	-201.492	0.889	Leading	1.186
27A	FLT-A27-3PH	0.972	Leading	78.851	0.893	Lagging	-201.820	0.526	Leading	3.715
28A	FLT-A28-3PH	0.972	Leading	78.813	0.893	Lagging	-201.376	0.513	Leading	3.844
29A	FLT-A29-3PH	0.972	Leading	78.811	0.884	Lagging	-211.400	0.843	Lagging	-1.468
30A	FLT-A30-3PH	0.972	Leading	78.898	0.893	Lagging	-201.818	0.475	Leading	4.261
31A	FLT-A31-3PH	0.972	Leading	78.917	0.869	Lagging	-227.102	0.513	Leading	3.852
32A	FLT-A32-3PH	0.972	Leading	78.615	0.894	Lagging	-200.371	0.140	Lagging	-16.276
33A	FLT-A33-3PH	0.999	Lagging	-13.418	0.894	Lagging	-199.953	0.621	Leading	2.901
34A	FLT-A34-1PH	0.972	Leading	78.710	0.889	Lagging	-205.752	0.430	Leading	4.826
35A	FLT-A35-3PH	0.975	Leading	73.818	0.895	Lagging	-198.832	0.387	Leading	5.480
36A	FLT-A36-1PH	0.971	Leading	80.131	0.891	Lagging	-203.344	0.394	Leading	5.371
37A	FLT-A37-3PH	0.973	Leading	78.075	0.898	Lagging	-195.516	0.828	Leading	1.558
38A	FLT-A38-3PH	0.975	Leading	75.249	0.894	Lagging	-200.513	0.400	Leading	5.275
39A	FLT-A39-3PH	0.975	Leading	74.802	0.894	Lagging	-200.566	0.403	Leading	5.216
40A	FLT-A40-3PH	0.974	Leading	76.555	0.894	Lagging	-200.193	0.420	Leading	4.976
41A	FLT-A41-3PH	0.971	Leading	80.136	0.894	Lagging	-199.767	0.386	Leading	5.495
42A	FLT-A42-3PH	0.973	Leading	77.528	0.896	Lagging	-197.677	0.868	Leading	1.317

*A positive Q (Mvar) output illustrates the generator is absorbing Mvars from the system, which implies a leading power factor; negative Q (Mvar) output shows the generator is supplying Mvars to the system implying a lagging power factor.

Table 4-3 (Continued)
Power Factor Analysis: 2019 Summer Peak Conditions

Power Factor Analysis for 2019 Summer Peak Conditions										
Reference Number	Case	GEN-2013-027 (Pgen = 327 MW)			GEN-2014-007 (Pgen = 399.6 MW)			ASGI-2014-001 (Pgen = 2.3 MW)		
		Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)
43A	FLT-A43-1PH	0.971	Leading	80.131	0.891	Lagging	-203.344	0.394	Leading	5.371
44A	FLT-A44-3PH	0.972	Leading	78.915	0.894	Lagging	-200.427	0.405	Leading	5.192
45A	FLT-A45-1PH	0.972	Leading	78.710	0.889	Lagging	-205.752	0.430	Leading	4.826
46A	FLT-A46-3PH	0.972	Leading	78.714	0.892	Lagging	-202.188	0.422	Leading	4.946
47A	FLT-A47-1PH	0.972	Leading	78.963	0.890	Lagging	-205.045	0.414	Leading	5.058
48A	FLT-A48-3PH	0.974	Leading	75.583	0.892	Lagging	-202.237	0.502	Leading	3.963
49A	FLT-A49-3PH	0.973	Leading	78.103	0.892	Lagging	-202.559	0.478	Leading	4.227
50A	FLT-A50-1PH	0.972	Leading	78.710	0.889	Lagging	-205.752	0.430	Leading	4.826
51A	FLT-A51-3PH	0.973	Leading	78.204	0.884	Lagging	-211.730	0.459	Leading	4.454
52A	FLT-A52-1PH	0.973	Leading	77.730	0.916	Lagging	-175.161	0.566	Leading	3.352
1B	FLT-B01-3PH	0.972	Leading	78.682	0.893	Lagging	-201.142	0.412	Leading	5.093
2B	FLT-B02-3PH	0.972	Leading	78.915	0.894	Lagging	-200.427	0.405	Leading	5.192
3B	FLT-B03-3PH	0.972	Leading	78.872	0.892	Lagging	-202.048	0.408	Leading	5.147
4B	FLT-B04-3PH	0.972	Leading	78.908	0.894	Lagging	-200.640	0.406	Leading	5.184
5B	FLT-B05-3PH	0.972	Leading	78.843	0.890	Lagging	-204.421	0.426	Leading	4.891
6B	FLT-B06-3PH	0.972	Leading	78.921	0.894	Lagging	-199.742	0.403	Leading	5.217
7B	FLT-B07-3PH	0.972	Leading	78.824	0.888	Lagging	-206.767	0.438	Leading	4.727
8B	FLT-B08-3PH	0.972	Leading	78.892	0.893	Lagging	-201.380	0.411	Leading	5.108
9B	FLT-B09-3PH	0.972	Leading	78.903	0.893	Lagging	-201.392	0.409	Leading	5.127
10B	FLT-B10-3PH	0.972	Leading	78.867	0.892	Lagging	-202.804	0.417	Leading	5.010
11B	FLT-B11-3PH	0.972	Leading	78.662	0.885	Lagging	-209.752	0.462	Leading	4.419
12B	FLT-B12-3PH	0.974	Leading	76.555	0.894	Lagging	-200.193	0.420	Leading	4.976
13B	FLT-B13-3PH	0.972	Leading	78.889	0.894	Lagging	-200.612	0.408	Leading	5.150
14B	FLT-B14-3PH	0.972	Leading	78.850	0.894	Lagging	-200.498	0.402	Leading	5.239
15B	FLT-B15-3PH	0.972	Leading	78.915	0.894	Lagging	-200.421	0.405	Leading	5.189
16B	FLT-B16-3PH	0.972	Leading	78.841	0.893	Lagging	-201.022	0.406	Leading	5.181
17B	FLT-B17-3PH	0.972	Leading	78.918	0.894	Lagging	-200.178	0.404	Leading	5.209
18B	FLT-B18-3PH	0.972	Leading	78.899	0.894	Lagging	-200.743	0.406	Leading	5.181
19B	FLT-B19-3PH	0.972	Leading	78.673	0.894	Lagging	-200.714	0.423	Leading	4.923
20B	FLT-B20-3PH	0.972	Leading	78.715	0.893	Lagging	-201.352	0.419	Leading	4.983
21B	FLT-B21-3PH	0.972	Leading	78.870	0.892	Lagging	-202.103	0.413	Leading	5.070
22B	FLT-B22-3PH	0.972	Leading	78.753	0.888	Lagging	-207.333	0.447	Leading	4.603
23B	FLT-B23-3PH	0.972	Leading	78.872	0.892	Lagging	-202.032	0.408	Leading	5.148
24B	FLT-B24-3PH	0.972	Leading	78.915	0.894	Lagging	-200.427	0.405	Leading	5.192
25B	FLT-B25-3PH	0.972	Leading	78.911	0.894	Lagging	-200.499	0.404	Leading	5.203
26B	FLT-B26-3PH	0.972	Leading	78.909	0.894	Lagging	-200.446	0.404	Leading	5.210
27B	FLT-B27-3PH	0.972	Leading	78.833	0.892	Lagging	-202.798	0.421	Leading	4.956
28B	FLT-B28-3PH	0.972	Leading	78.660	0.887	Lagging	-207.923	0.448	Leading	4.590
29B	FLT-B29-3PH	0.972	Leading	78.952	0.881	Lagging	-214.372	0.424	Leading	4.909
30B	FLT-B30-3PH	0.972	Leading	78.915	0.899	Lagging	-194.370	0.515	Leading	3.824
31B	FLT-B31-3PH	0.972	Leading	78.973	0.901	Lagging	-191.905	0.386	Leading	5.491
32B	FLT-B32-3PH	0.972	Leading	78.457	0.870	Lagging	-226.754	0.574	Leading	3.282

*A positive Q (Mvar) output illustrates the generator is absorbing Mvars from the system, which implies a leading power factor; negative Q (Mvar) output shows the generator is supplying Mvars to the system implying a lagging power factor.

Summary

The Power Factor Analysis shows that GEN-2013-027 has a power factor range of 0.971 leading (absorbing) to 0.999 lagging (supplying) for 2019 Summer Peak conditions. The Power Factor Analysis shows that GEN-2014-007 has a power factor range of 1.0 to 0.701 lagging (supplying) for 2019 Summer Peak conditions. The Power Factor Analysis shows that ASGI-2014-001 has a power factor range of 0.141 leading (absorbing) to 0.140 lagging (supplying) for 2019 Summer Peak conditions.

4.4 2019 Winter Peak Case

Approach

Upgrades found to be necessary in the Stability Analysis were implemented for the Power Factor Analysis.

GEN-2013-027 was disabled and a generator was placed at the study project's point of interconnect bus. The generator was modeled with $P_{GEN} = 327$ MW, $Q_{Min} = -9999$ Mvar, and $Q_{Max} = 9999$ Mvar. All buses and transformers connected from the study project's POI bus to the GEN-2013-027 generator were disabled. The pre-project voltage at the POI (Tap Tolk to Yoakum 230 kV – Bus 562480) for the 2019 Winter Peak condition is 1.02 p.u. Therefore, the scheduled voltage for the POI was set to 1.02 p.u.

GEN-2014-007 was disabled and a generator was placed at the study project's point of interconnect bus. The generator was modeled with $P_{GEN} = 399.6$ MW, $Q_{Min} = -9999$ Mvar, and $Q_{Max} = 9999$ Mvar. All buses and transformers connected from the study project's POI bus to the GEN-2014-007 generator were disabled. The pre-project voltage at the POI (Tap Tuco to Border 345 kV – Bus 562487) for the 2019 Winter Peak conditions is 0.95 p.u. Therefore, the scheduled voltage for the POI was set to 1.00 p.u.

ASGI-2014-001 was disabled and a generator was placed at the study project's point of interconnect bus. The generator was modeled with $P_{GEN} = 2.3$ MW, $Q_{Min} = -9999$ Mvar, and $Q_{Max} = 9999$ Mvar. All buses and transformers connected from the study project's POI bus to the GEN-2014-007 generator were disabled. Note that a queued generator was also connected to this POI, which was turned off for the power factor analysis. The pre-project voltage at the POI (Erskine 115 kV – Bus 526109) for the 2019 Winter Peak conditions is 1.00 p.u. Therefore, the scheduled voltage for the POI was set to 1.00 p.u.

Results

The power factor was calculated for the 2019 Winter Peak condition. Table 4-4 shows the power factor results for the three wind study generators. Note that a positive Q (Mvar) output illustrates

that the generator is absorbing reactive power from the system, implying a leading power factor; a negative Q (Mvar) illustrates that the generator is supplying reactive power to the system, implying a lagging power factor.

**Table 4-4
Power Factor Analysis: 2019 Winter Peak Conditions**

Power Factor Analysis for 2019 Winter Peak Conditions										
Reference Number	Case	GEN-2013-027 (Pgen = 327 MW)			GEN-2014-007 (Pgen = 399.6 MW)			ASGI-2014-001 (Pgen = 2.3 MW)		
		Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)
0A	Base	0.920	Leading	139.261	0.886	Lagging	-208.733	0.254	Leading	8.771
1A	FLT-A01-3PH	0.920	Leading	139.332	0.885	Lagging	-209.753	0.185	Leading	12.214
2A	FLT-A02-3PH	0.920	Leading	139.415	0.885	Lagging	-210.269	0.334	Lagging	-6.495
3A	FLT-A03-3PH	0.920	Leading	139.253	0.887	Lagging	-208.406	0.252	Leading	8.823
4A	FLT-A04-3PH	0.920	Leading	139.246	0.886	Lagging	-208.725	0.263	Leading	8.445
5A	FLT-A05-3PH	0.920	Leading	139.374	0.886	Lagging	-208.786	0.415	Leading	5.044
6A	FLT-A06-3PH	0.920	Leading	139.575	0.884	Lagging	-211.173	0.293	Leading	7.518
7A	FLT-A07-3PH	0.920	Leading	139.400	0.887	Lagging	-208.060	0.157	Leading	14.502
8A	FLT-A08-3PH	0.920	Leading	139.535	0.885	Lagging	-209.724	0.966	Leading	0.613
9A	FLT-A09-3PH	0.920	Leading	139.433	0.886	Lagging	-209.360	0.189	Leading	11.918
10A	FLT-A10-3PH	0.920	Leading	138.847	0.893	Lagging	-201.057	0.869	Leading	1.307
11A	FLT-A11-3PH	0.920	Leading	139.261	0.886	Lagging	-208.733	0.254	Leading	8.771
12A	FLT-A12-3PH	0.920	Leading	139.223	0.886	Lagging	-209.668	0.254	Leading	8.750
13A	FLT-A13-3PH	0.920	Leading	139.435	0.886	Lagging	-209.320	0.189	Leading	11.954
14A	FLT-A14-3PH	0.919	Leading	140.612	0.999	Lagging	-17.925	0.291	Leading	7.559
15A	FLT-A15-3PH	0.920	Leading	139.789	0.866	Lagging	-230.603	0.283	Leading	7.809
16A	FLT-A16-3PH	0.920	Leading	139.483	0.861	Lagging	-235.576	0.274	Leading	8.083
17A	FLT-A17-3PH	0.919	Leading	140.308	0.680	Lagging	-431.392	0.275	Leading	8.039
18A	FLT-A18-3PH	0.920	Leading	139.494	0.884	Lagging	-211.447	0.214	Leading	10.480
19A	FLT-A19-3PH	0.918	Leading	140.998	0.695	Lagging	-413.537	0.688	Leading	2.428
20A	FLT-A20-3PH	0.920	Leading	139.464	0.886	Lagging	-209.294	0.222	Leading	10.079
21A	FLT-A21-3PH	0.920	Leading	139.254	0.882	Lagging	-213.441	0.274	Leading	8.086
22A	FLT-A22-3PH	0.920	Leading	139.270	0.882	Lagging	-213.256	0.257	Leading	8.648
23A	FLT-A23-3PH	0.920	Leading	139.405	0.878	Lagging	-217.689	0.282	Leading	7.820
24A	FLT-A24-3PH	0.923	Leading	136.091	0.908	Lagging	-184.773	0.338	Leading	6.406
25A	FLT-A25-3PH	0.920	Leading	139.227	0.894	Lagging	-200.313	0.235	Leading	9.509
26A	FLT-A26-3PH	0.920	Leading	139.223	0.886	Lagging	-209.668	0.254	Leading	8.750
27A	FLT-A27-3PH	0.920	Leading	139.527	0.880	Lagging	-215.895	0.332	Leading	6.538
28A	FLT-A28-3PH	0.920	Leading	139.395	0.885	Lagging	-210.746	0.331	Leading	6.549
29A	FLT-A29-3PH	0.920	Leading	139.614	0.882	Lagging	-213.486	0.375	Leading	5.683
30A	FLT-A30-3PH	0.920	Leading	139.275	0.887	Lagging	-207.642	0.230	Leading	9.754
31A	FLT-A31-3PH	0.920	Leading	139.319	0.870	Lagging	-226.212	0.271	Leading	8.164
32A	FLT-A32-3PH	0.920	Leading	139.418	0.885	Lagging	-209.996	0.338	Leading	6.400
33A	FLT-A33-3PH	1.000	Lagging	-4.205	0.887	Lagging	-208.039	0.270	Leading	8.206
34A	FLT-A34-1PH	0.920	Leading	138.953	0.885	Lagging	-209.933	0.246	Leading	9.054
35A	FLT-A35-3PH	0.929	Leading	130.284	0.889	Lagging	-205.297	0.240	Leading	9.293
36A	FLT-A36-1PH	0.919	Leading	140.219	0.887	Lagging	-207.861	0.240	Leading	9.297
37A	FLT-A37-3PH	0.916	Leading	143.700	0.887	Lagging	-207.621	0.337	Leading	6.418
38A	FLT-A38-3PH	0.922	Leading	137.457	0.886	Lagging	-208.894	0.242	Leading	9.211
39A	FLT-A39-3PH	0.922	Leading	137.046	0.886	Lagging	-208.953	0.244	Leading	9.151
40A	FLT-A40-3PH	0.921	Leading	138.113	0.886	Lagging	-208.604	0.240	Leading	9.283
41A	FLT-A41-3PH	0.919	Leading	140.217	0.887	Lagging	-207.931	0.241	Leading	9.267
42A	FLT-A42-3PH	0.915	Leading	144.512	0.888	Lagging	-206.649	0.348	Leading	6.194

*A positive Q (Mvar) output illustrates the generator is absorbing Mvars from the system, which implies a leading power factor; negative Q (Mvar) output shows the generator is supplying Mvars to the system implying a lagging power factor.

Table 4-4 (Continued)
Power Factor Analysis: 2019 Winter Peak Conditions

Power Factor Analysis for 2019 Winter Peak Conditions										
Reference Number	Case	GEN-2013-027 (Pgen = 327 MW)			GEN-2014-007 (Pgen = 399.6 MW)			ASGI-2014-001 (Pgen = 2.3 MW)		
		Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)
43A	FLT-A43-1PH	0.919	Leading	140.219	0.887	Lagging	-207.861	0.240	Leading	9.297
44A	FLT-A44-3PH	0.920	Leading	139.261	0.886	Lagging	-208.733	0.254	Leading	8.771
45A	FLT-A45-1PH	0.920	Leading	138.953	0.885	Lagging	-209.933	0.246	Leading	9.054
46A	FLT-A46-3PH	0.920	Leading	138.951	0.884	Lagging	-210.913	0.247	Leading	9.024
47A	FLT-A47-1PH	0.920	Leading	139.740	0.886	Lagging	-208.792	0.253	Leading	8.800
48A	FLT-A48-3PH	0.917	Leading	142.501	0.887	Lagging	-207.567	0.252	Leading	8.839
49A	FLT-A49-3PH	0.921	Leading	138.283	0.886	Lagging	-208.826	0.254	Leading	8.762
50A	FLT-A50-1PH	0.920	Leading	138.953	0.885	Lagging	-209.933	0.246	Leading	9.054
51A	FLT-A51-3PH	0.922	Leading	137.075	0.880	Lagging	-215.429	0.276	Leading	8.017
52A	FLT-A52-1PH	0.923	Leading	136.094	0.909	Lagging	-183.803	0.336	Leading	6.439
1B	FLT-B01-3PH	0.920	Leading	139.465	0.887	Lagging	-208.492	0.254	Leading	8.751
2B	FLT-B02-3PH	0.920	Leading	139.261	0.886	Lagging	-208.733	0.254	Leading	8.771
3B	FLT-B03-3PH	0.920	Leading	139.145	0.885	Lagging	-210.612	0.256	Leading	8.694
4B	FLT-B04-3PH	0.920	Leading	139.222	0.886	Lagging	-208.848	0.254	Leading	8.775
5B	FLT-B05-3PH	0.920	Leading	139.792	0.883	Lagging	-212.646	0.260	Leading	8.529
6B	FLT-B06-3PH	0.920	Leading	139.261	0.887	Lagging	-208.501	0.253	Leading	8.782
7B	FLT-B07-3PH	0.920	Leading	139.798	0.881	Lagging	-214.075	0.263	Leading	8.440
8B	FLT-B08-3PH	0.920	Leading	139.349	0.885	Lagging	-209.750	0.255	Leading	8.704
9B	FLT-B09-3PH	0.920	Leading	139.282	0.886	Lagging	-209.560	0.255	Leading	8.723
10B	FLT-B10-3PH	0.920	Leading	139.387	0.884	Lagging	-210.932	0.257	Leading	8.635
11B	FLT-B11-3PH	0.919	Leading	140.328	0.877	Lagging	-218.679	0.253	Leading	8.780
12B	FLT-B12-3PH	0.921	Leading	138.113	0.886	Lagging	-208.604	0.240	Leading	9.283
13B	FLT-B13-3PH	0.920	Leading	139.638	0.886	Lagging	-209.042	0.254	Leading	8.747
14B	FLT-B14-3PH	0.920	Leading	139.108	0.886	Lagging	-208.893	0.254	Leading	8.758
15B	FLT-B15-3PH	0.920	Leading	139.274	0.886	Lagging	-208.712	0.254	Leading	8.769
16B	FLT-B16-3PH	0.920	Leading	139.458	0.885	Lagging	-209.816	0.256	Leading	8.669
17B	FLT-B17-3PH	0.920	Leading	139.266	0.886	Lagging	-208.848	0.254	Leading	8.760
18B	FLT-B18-3PH	0.920	Leading	139.214	0.886	Lagging	-209.174	0.254	Leading	8.741
19B	FLT-B19-3PH	0.920	Leading	139.601	0.886	Lagging	-208.923	0.254	Leading	8.742
20B	FLT-B20-3PH	0.920	Leading	139.698	0.886	Lagging	-209.308	0.255	Leading	8.718
21B	FLT-B21-3PH	0.920	Leading	139.315	0.885	Lagging	-210.435	0.256	Leading	8.667
22B	FLT-B22-3PH	0.919	Leading	140.143	0.880	Lagging	-215.377	0.248	Leading	8.980
23B	FLT-B23-3PH	0.920	Leading	139.144	0.885	Lagging	-210.596	0.256	Leading	8.695
24B	FLT-B24-3PH	0.920	Leading	139.261	0.886	Lagging	-208.733	0.254	Leading	8.771
25B	FLT-B25-3PH	0.920	Leading	139.218	0.886	Lagging	-208.734	0.253	Leading	8.793
26B	FLT-B26-3PH	0.920	Leading	139.180	0.886	Lagging	-208.745	0.253	Leading	8.792
27B	FLT-B27-3PH	0.919	Leading	139.999	0.884	Lagging	-211.861	0.259	Leading	8.568
28B	FLT-B28-3PH	0.919	Leading	140.050	0.879	Lagging	-216.366	0.249	Leading	8.930
29B	FLT-B29-3PH	0.920	Leading	139.376	0.874	Lagging	-221.945	0.262	Leading	8.474
30B	FLT-B30-3PH	0.920	Leading	139.660	0.889	Lagging	-206.320	0.322	Leading	6.772
31B	FLT-B31-3PH	0.920	Leading	139.324	0.883	Lagging	-212.447	0.255	Leading	8.730
32B	FLT-B32-3PH	0.919	Leading	140.364	0.862	Lagging	-235.078	0.285	Leading	7.730

*A positive Q (Mvar) output illustrates the generator is absorbing Mvars from the system, which implies a leading power factor; negative Q (Mvar) output shows the generator is supplying Mvars to the system implying a lagging power factor.

Summary

The Power Factor Analysis shows that GEN-2013-027 has a power factor range of 0.915 leading (absorbing) to 1.0 for 2019 Winter Peak conditions. The Power Factor Analysis shows that GEN-2014-007 has a power factor range of 0.999 lagging (supplying) to 0.680 lagging (supplying) for 2019 Winter Peak conditions. The Power Factor Analysis shows that ASGI-2014-001 has a power factor range of 0.157 leading (absorbing) to 0.334 lagging (supplying) for 2019 Winter Peak conditions.

4.5 2024 Summer Peak Case

Approach

GEN-2013-027 was disabled and a generator was placed at the study project's point of interconnect bus. The generator was modeled with $P_{GEN} = 327$ MW, $Q_{Min} = -9999$ Mvar, and $Q_{Max} = 9999$ Mvar. All buses and transformers connected from the study project's POI bus to the GEN-2013-027 generator were disabled. The pre-project voltage at the POI (Tap Tolk to Yoakum 230 kV – Bus 562480) for the 2024 Summer Peak condition is 1.01 p.u. Therefore, the scheduled voltage for the POI was set to 1.01 p.u.

GEN-2014-007 was disabled and a generator was placed at the study project's point of interconnect bus. The generator was modeled with $P_{GEN} = 399.6$ MW, $Q_{Min} = -9999$ Mvar, and $Q_{Max} = 9999$ Mvar. All buses and transformers connected from the study project's POI bus to the GEN-2014-007 generator were disabled. The pre-project voltage at the POI (Tap Tuco to Border 345 kV – Bus 562487) for the 2024 Summer Peak conditions is 0.99 p.u. Therefore, the scheduled voltage for the POI was set to 1.00 p.u.

ASGI-2014-001 was disabled and a generator was placed at the study project's point of interconnect bus. The generator was modeled with $P_{GEN} = 2.3$ MW, $Q_{Min} = -9999$ Mvar, and $Q_{Max} = 9999$ Mvar. All buses and transformers connected from the study project's POI bus to the GEN-2014-007 generator were disabled. Note that a queued generator was also connected to this POI, which was turned off for the power factor analysis. The pre-project voltage at the POI (Erskine 115 kV – Bus 526109) for the 2024 Summer Peak conditions is 1.01 p.u. Therefore, the scheduled voltage for the POI was set to 1.01 p.u.

Results

The power factor was calculated for the 2024 Summer Peak condition. Table 4-5 shows the power factor results for the three wind study generators. Note that a positive Q (Mvar) output illustrates that the generator is absorbing reactive power from the system, implying a leading power factor; a negative Q (Mvar) illustrates that the generator is supplying reactive power to the system, implying a lagging power factor.

**Table 4-5
Power Factor Analysis: 2024 Summer Peak Conditions**

Power Factor Analysis for 2024 Summer Peak Conditions										
Reference Number	Case	GEN-2013-027 (Pgen = 327 MW)			GEN-2014-007 (Pgen = 399.6 MW)			ASGI-2014-001 (Pgen = 2.3 MW)		
		Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)
0A	Base	0.984	Leading	58.485	0.996	Lagging	-34.509	0.130	Leading	17.598
1A	FLT-A01-3PH	0.984	Leading	58.474	0.996	Lagging	-34.885	0.146	Leading	15.535
2A	FLT-A02-3PH	0.984	Leading	58.620	0.996	Lagging	-35.838	0.749	Lagging	-2.035
3A	FLT-A03-3PH	0.984	Leading	58.762	0.996	Lagging	-34.948	0.121	Leading	18.899
4A	FLT-A04-3PH	0.984	Leading	58.554	0.996	Lagging	-33.806	0.124	Leading	18.479
5A	FLT-A05-3PH	0.985	Leading	58.045	0.997	Lagging	-33.153	0.524	Leading	3.737
6A	FLT-A06-3PH	0.984	Leading	58.469	0.997	Lagging	-32.886	0.126	Leading	18.047
7A	FLT-A07-3PH	0.985	Leading	57.899	0.997	Lagging	-33.421	0.086	Leading	26.500
8A	FLT-A08-3PH	0.984	Leading	58.800	0.997	Lagging	-30.653	0.065	Leading	35.084
9A	FLT-A09-3PH	0.984	Leading	58.773	0.996	Lagging	-34.485	0.103	Leading	22.207
10A	FLT-A10-3PH	0.985	Leading	56.868	0.997	Lagging	-30.842	0.446	Leading	4.621
11A	FLT-A11-3PH	0.984	Leading	58.485	0.996	Lagging	-34.509	0.130	Leading	17.598
12A	FLT-A12-3PH	0.984	Leading	58.284	0.996	Lagging	-35.188	0.198	Leading	11.404
13A	FLT-A13-3PH	0.984	Leading	58.774	0.996	Lagging	-34.449	0.103	Leading	22.243
14A	FLT-A14-3PH	0.984	Leading	58.746	0.999	Lagging	-20.146	0.128	Leading	17.788
15A	FLT-A15-3PH	0.984	Leading	59.630	0.998	Lagging	-27.255	0.170	Leading	13.325
16A	FLT-A16-3PH	0.984	Leading	58.556	0.995	Lagging	-41.649	0.132	Leading	17.333
17A	FLT-A17-3PH	0.984	Leading	59.410	0.936	Lagging	-150.266	0.139	Leading	16.362
18A	FLT-A18-3PH	0.984	Leading	58.527	0.997	Lagging	-32.445	0.128	Leading	17.845
19A	FLT-A19-3PH	0.984	Leading	59.847	0.952	Lagging	-128.266	0.165	Leading	13.728
20A	FLT-A20-3PH	0.984	Leading	58.618	0.996	Lagging	-36.289	0.127	Leading	17.948
21A	FLT-A21-3PH	0.984	Leading	58.477	0.995	Lagging	-38.483	0.132	Leading	17.240
22A	FLT-A22-3PH	0.984	Leading	58.497	0.996	Lagging	-35.571	0.130	Leading	17.594
23A	FLT-A23-3PH	0.984	Leading	59.317	0.994	Lagging	-45.617	0.123	Leading	18.543
24A	FLT-A24-3PH	0.985	Leading	56.719	0.998	Lagging	-25.342	0.131	Leading	17.460
25A	FLT-A25-3PH	0.984	Leading	58.332	0.997	Lagging	-30.379	0.126	Leading	18.086
26A	FLT-A26-3PH	0.984	Leading	58.284	0.996	Lagging	-35.188	0.198	Leading	11.404
27A	FLT-A27-3PH	0.984	Leading	58.387	0.996	Lagging	-36.647	0.148	Leading	15.395
28A	FLT-A28-3PH	0.984	Leading	58.280	0.996	Lagging	-35.608	0.145	Leading	15.710
29A	FLT-A29-3PH	0.984	Leading	58.449	0.992	Lagging	-49.228	0.329	Leading	6.604
30A	FLT-A30-3PH	0.984	Leading	58.472	0.996	Lagging	-35.154	0.134	Leading	17.024
31A	FLT-A31-3PH	0.984	Leading	58.537	0.993	Lagging	-48.844	0.136	Leading	16.786
32A	FLT-A32-3PH	0.985	Leading	57.503	0.995	Lagging	-39.008	0.142	Lagging	-16.023
33A	FLT-A33-3PH	1.000	Lagging	-9.730	0.996	Lagging	-34.171	0.132	Leading	17.263
34A	FLT-A34-1PH	0.985	Leading	57.968	0.996	Lagging	-35.735	0.130	Leading	17.496
35A	FLT-A35-3PH	0.986	Leading	54.995	0.997	Lagging	-33.425	0.135	Leading	16.853
36A	FLT-A36-1PH	0.984	Leading	59.532	0.996	Lagging	-35.040	0.134	Leading	16.977
37A	FLT-A37-3PH	0.981	Leading	64.202	0.996	Lagging	-35.676	0.163	Leading	13.891
38A	FLT-A38-3PH	0.987	Leading	53.474	0.996	Lagging	-34.882	0.134	Leading	17.027
39A	FLT-A39-3PH	0.987	Leading	53.069	0.996	Lagging	-34.940	0.134	Leading	16.976
40A	FLT-A40-3PH	0.985	Leading	56.699	0.996	Lagging	-35.105	0.131	Leading	17.397
41A	FLT-A41-3PH	0.984	Leading	60.016	0.996	Lagging	-35.041	0.134	Leading	16.976
42A	FLT-A42-3PH	0.980	Leading	66.071	0.996	Lagging	-35.903	0.174	Leading	13.033

*A positive Q (Mvar) output illustrates the generator is absorbing Mvars from the system, which implies a leading power factor; negative Q (Mvar) output shows the generator is supplying Mvars to the system implying a lagging power factor.

Table 4-5 (Continued)
Power Factor Analysis: 2024 Summer Peak Conditions

Power Factor Analysis for 2024 Summer Peak Conditions										
Reference Number	Case	GEN-2013-027 (Pgen = 327 MW)			GEN-2014-007 (Pgen = 399.6 MW)			ASGI-2014-001 (Pgen = 2.3 MW)		
		Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)	Power Factor		Q*(MVAR)
43A	FLT-A43-1PH	0.984	Leading	59.532	0.996	Lagging	-35.040	0.134	Leading	16.977
44A	FLT-A44-3PH	0.984	Leading	58.485	0.996	Lagging	-34.509	0.130	Leading	17.598
45A	FLT-A45-1PH	0.984	Leading	59.532	0.996	Lagging	-35.735	0.130	Leading	17.496
46A	FLT-A46-3PH	0.985	Leading	57.967	0.996	Lagging	-35.736	0.130	Leading	17.495
47A	FLT-A47-1PH	0.984	Leading	59.507	0.996	Lagging	-35.568	0.130	Leading	17.526
48A	FLT-A48-3PH	0.983	Leading	61.409	0.995	Lagging	-38.696	0.130	Leading	17.474
49A	FLT-A49-3PH	0.986	Leading	55.927	0.995	Lagging	-38.153	0.148	Leading	15.333
50A	FLT-A50-1PH	0.984	Leading	59.507	0.996	Lagging	-35.735	0.130	Leading	17.496
51A	FLT-A51-3PH	0.985	Leading	56.461	0.995	Lagging	-38.801	0.132	Leading	17.209
52A	FLT-A52-1PH	0.985	Leading	58.188	0.998	Lagging	-25.341	0.131	Leading	17.461
1B	FLT-B01-3PH	0.985	Leading	58.233	0.996	Lagging	-35.309	0.130	Leading	17.519
2B	FLT-B02-3PH	0.984	Leading	58.485	0.996	Lagging	-34.509	0.130	Leading	17.598
3B	FLT-B03-3PH	0.984	Leading	58.492	0.996	Lagging	-36.370	0.130	Leading	17.506
4B	FLT-B04-3PH	0.984	Leading	58.499	0.996	Lagging	-34.812	0.130	Leading	17.585
5B	FLT-B05-3PH	0.984	Leading	58.860	0.995	Lagging	-39.096	0.131	Leading	17.381
6B	FLT-B06-3PH	0.984	Leading	58.535	0.996	Lagging	-34.387	0.130	Leading	17.601
7B	FLT-B07-3PH	0.984	Leading	58.780	0.995	Lagging	-38.362	0.131	Leading	17.411
8B	FLT-B08-3PH	0.984	Leading	58.641	0.996	Lagging	-36.062	0.130	Leading	17.526
9B	FLT-B09-3PH	0.984	Leading	58.560	0.996	Lagging	-35.546	0.130	Leading	17.551
10B	FLT-B10-3PH	0.984	Leading	58.760	0.996	Lagging	-37.753	0.131	Leading	17.446
11B	FLT-B11-3PH	0.984	Leading	59.872	0.993	Lagging	-46.071	0.134	Leading	17.071
12B	FLT-B12-3PH	0.985	Leading	56.699	0.996	Lagging	-35.105	0.131	Leading	17.397
13B	FLT-B13-3PH	0.984	Leading	58.306	0.996	Lagging	-34.897	0.130	Leading	17.556
14B	FLT-B14-3PH	0.984	Leading	58.365	0.996	Lagging	-34.667	0.130	Leading	17.545
15B	FLT-B15-3PH	0.984	Leading	58.496	0.996	Lagging	-34.511	0.130	Leading	17.598
16B	FLT-B16-3PH	0.984	Leading	58.408	0.996	Lagging	-35.005	0.130	Leading	17.528
17B	FLT-B17-3PH	0.984	Leading	58.490	0.996	Lagging	-34.444	0.130	Leading	17.600
18B	FLT-B18-3PH	0.984	Leading	58.462	0.996	Lagging	-34.908	0.130	Leading	17.562
19B	FLT-B19-3PH	0.984	Leading	59.336	0.996	Lagging	-37.078	0.130	Leading	17.517
20B	FLT-B20-3PH	0.984	Leading	59.246	0.995	Lagging	-39.500	0.131	Leading	17.378
21B	FLT-B21-3PH	0.984	Leading	58.547	0.996	Lagging	-35.705	0.130	Leading	17.538
22B	FLT-B22-3PH	0.984	Leading	59.491	0.994	Lagging	-45.451	0.134	Leading	17.068
23B	FLT-B23-3PH	0.984	Leading	58.491	0.996	Lagging	-36.360	0.130	Leading	17.507
24B	FLT-B24-3PH	0.984	Leading	58.485	0.996	Lagging	-34.509	0.130	Leading	17.598
25B	FLT-B25-3PH	0.984	Leading	58.512	0.996	Lagging	-34.510	0.130	Leading	17.607
26B	FLT-B26-3PH	0.984	Leading	58.429	0.996	Lagging	-34.507	0.130	Leading	17.599
27B	FLT-B27-3PH	0.984	Leading	59.172	0.995	Lagging	-38.378	0.131	Leading	17.449
28B	FLT-B28-3PH	0.984	Leading	59.071	0.994	Lagging	-42.583	0.133	Leading	17.197
29B	FLT-B29-3PH	0.984	Leading	59.738	0.997	Lagging	-33.400	0.180	Leading	12.564
30B	FLT-B30-3PH	0.984	Leading	58.483	0.997	Lagging	-31.838	0.133	Leading	17.136
31B	FLT-B31-3PH	0.984	Leading	58.584	0.998	Lagging	-23.629	0.128	Leading	17.811
32B	FLT-B32-3PH	0.984	Leading	59.982	0.989	Lagging	-58.807	0.139	Leading	16.330

*A positive Q (Mvar) output illustrates the generator is absorbing Mvars from the system, which implies a leading power factor; negative Q (Mvar) output shows the generator is supplying Mvars to the system implying a lagging power factor.

Summary

The Power Factor Analysis shows that GEN-2013-027 has a power factor range of 0.980 leading (absorbing) to 1.0 for 2024 Summer Peak conditions. The Power Factor Analysis shows that GEN-2014-007 has a power factor range of 0.936 lagging (supplying) to 0.999 lagging (supplying) for 2024 Summer Peak conditions. The Power Factor Analysis shows that ASGI-2014-001 has a power factor range of 0.065 leading (absorbing) to 0.142 lagging (supplying) for 2024 Summer Peak conditions.

SECTION 5: LOW WIND/NO WIND ANALYSIS

The objective of this task is to determine the impact of low wind or no wind conditions on wind farms that interconnect to a 345 kV or 230 kV bus. The 2014 Winter Peak, 2015 Summer Peak, 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak power flows provided by SPP were examined for this analysis.

Approach

GEN-2013-027 was disabled, but the collector system remained in-service. The amount of reactive power injected into the transmission network was recorded at the point of interconnection. This reactive power comes from the capacitance of the project's transmission lines and collector cables. A shunt reactor was added at the high side bus to bring the Mvar flow into the POI down to approximately zero.

GEN-2014-007 was disabled, but the collector system remained in-service. The amount of reactive power injected into the transmission network was recorded at the point of interconnection. This reactive power comes from the capacitance of the project's transmission lines and collector cables. A shunt reactor was added at the high side bus to bring the Mvar flow into the POI down to approximately zero.

Results

The reactance needed to bring the Mvar flow into the point of interconnect to zero Mvar was recorded for each season for GEN-2013-027 and GEN-2014-007. Refer to Table 5-1 for the Low Wind/No Wind Analysis results.

**Table 5-1
Low Wind/No Wind Analysis**

Request	Size (MW)	Point of Interconnection	Shunt Reactors to Result in Zero Mvar Flow (Mvar)				
			2014 Winter Peak	2015 Summer Peak	2019 Summer Peak	2019 Winter Peak	2024 Summer Peak
GEN-2013-027	327	Tap Talk to Yoakum 230kV (562480)	12.4	12.4	12.4	12.8	12.3
GEN-2014-007	399.6	Tap Tucu to Border 345kV (562487)	14.8	14.7	14.2	14.2	15.2

SECTION 6: CONCLUSIONS

SUMMARY OF STABILITY ANALYSIS

For the 2014 Winter Peak, 2015 Summer Peak, 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak power flows, the Stability Analysis determined that there was no wind turbine tripping that occurred from interconnecting GEN-2013-027, GEN-2014-007, GEN-2014-012 (for 2019 Summer Peak, 2019 Winter Peak, and 2024 Summer Peak conditions only), or ASGI-2014-001 at 100% output.

The stability analysis identified a few contingencies that were not well damped or unstable. These cases were re-examined with the following upgrades included as discussed with SPP:

- Border to Woodward 345kV circuit is tapped into a proposed Chisholm 345kV substation
- Elk City to Sweetwater 230kV circuit is tapped into a proposed Chisholm 230kV substation
- Chisholm 345/230kV Transformer
- Chisholm to Gracemont 345 kV circuit
- Chisholm to Border 345 kV second circuit
- Border to GEN-2014-007-Tap 345 kV second circuit

Note that the following system upgrades were already modeled as in-service for the 2019 and 2024 cases:

- Elk City to Sweetwater 230kV circuit is tapped into a proposed Chisholm 230kV substation
- Chisholm 345/230kV Transformer
- Chisholm to Gracemont 345 kV circuit

With the inclusion of these upgrades, all contingencies were found to be stable and well damped. However, the 2019 Winter Peak had one contingency that resulted in a low voltage (less than 0.90 p.u.) under steady state conditions. SPP determined that switching off reactors located at Border 345 kV substation and Woodward 345 kV substation would be sufficient to achieve the required voltage for all seasonal models.

SUMMARY OF POWER FACTOR ANALYSIS

2014 Winter Peak Conditions

The Power Factor Analysis shows that GEN-2013-027 has a power factor range of 0.961 leading (absorbing) to 0.998 lagging (supplying), GEN-2014-007 has a power factor range of 1.0 to

0.746 lagging (supplying), and ASGI-2014-001 has a power factor range of 0.105 leading (absorbing) to 0.672 lagging (supplying) for 2014 Winter Peak conditions.

2015 Summer Peak Conditions

The Power Factor Analysis shows that GEN-2013-027 has a power factor range of 0.978 leading (absorbing) to 1.0, GEN-2014-007 has a power factor range of 0.999 leading (absorbing) to 0.807 lagging (supplying), and ASGI-2014-001 has a power factor range of 0.106 leading (absorbing) to 0.233 lagging (supplying) for 2015 Summer Peak conditions.

2019 Summer Peak Conditions

The Power Factor Analysis shows that GEN-2013-027 has a power factor range of 0.971 leading (absorbing) to 0.999 lagging (supplying), GEN-2014-007 has a power factor range of 1.0 to 0.701 lagging (supplying), and ASGI-2014-001 has a power factor range of 0.141 leading (absorbing) to 0.140 lagging (supplying) for 2019 Summer Peak conditions.

2019 Winter Peak Conditions

The Power Factor Analysis shows that GEN-2013-027 has a power factor range of 1.0 to 0.915 leading (absorbing), GEN-2014-007 has a power factor range of 0.999 lagging (supplying) to 0.680 lagging (supplying), and ASGI-2014-001 has a power factor range of 0.157 leading (absorbing) to 0.334 lagging (supplying) for 2019 Winter Peak conditions.

2024 Summer Peak Conditions

The Power Factor Analysis shows that GEN-2013-027 has a power factor range of 0.980 leading (absorbing) to 1.0, GEN-2014-007 has a power factor range of 0.936 lagging (supplying) to 0.999 lagging (supplying), and ASGI-2014-001 has a power factor range of 0.065 leading (absorbing) to 0.142 lagging (supplying) for 2024 Summer Peak conditions.

GEN-2013-027, GEN-2014-007, and ASGI-2014-001 will be required to provide the pro-forma standard 0.95 leading (absorbing) to 0.95 lagging (supplying) at the Point of Interconnection (POI).

SUMMARY OF LOW WIND/NO WIND ANALYSIS

The amount of reactive power injected into the transmission network was recorded at the point of interconnection for GEN-2013-027 and GEN-2014-007 for each season. A reactance range of 12.3 to 12.8 Mvar was found to be sufficient for zero Mvar flow at the POI for GEN-2013-027. A reactance range of 14.2 to 15.2 Mvar was found to be sufficient for zero Mvar flow at the POI for GEN-2014-007.

L: Group 8 Dynamic Stability Analysis Report

See S and C report on next page.



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DISIS-2014-001 (GROUP 08)

LITTLE ROCK, AR

SOUTHWEST POWER POOL

DEFINITIVE INTERCONNECTION SYSTEM IMPACT STUDY

S&C PROJECT NUMBER: 8358

DOCUMENT NUMBER: E-857

REVISION: 0

FINAL REPORT

CONFIDENTIAL

JULY 18, 2014



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Appendix A

Southwest Power Pool Disturbance Performance Requirements

Appendix B

Transient Stability Plots For 2014 Winter Peak Case

(See Appendix B Submitted in a Separate File)

Appendix C

Transient Stability Plots For 2015 Summer Peak Case

(See Appendix C Submitted in a Separate File)

Appendix D

Transient Stability Plots For 2024 Summer Peak Case

(See Appendix D Submitted in a Separate File)



1. EXECUTIVE SUMMARY

S&C Electric Company has performed a Definitive Interconnection System Impact Study, DISIS-2014-001 (Group 8), in response to a request through Southwest Power Pool (SPP) tariff studies. Group 8 consists of one (1) generation interconnection study project. The interconnection study project, i.e. GEN-2014-001, is a 200.6 MW wind farm project comprised of GE 1.7 MW wind turbine generators (WTG). Group 8 and prior-queued projects specified in the scope of work were studied at 100% output power using the 2014 Winter Peak Case and the 2015 and 2024 Summer Peak Cases provided by SPP.

Transient stability analysis indicated that Group 8 is expected to successfully ride through each N-1 and N-2 fault contingency specified by SPP and the nearby areas will retain angular, frequency and voltage stability. Group 8 is expected to successfully interconnect into the transmission system at the desired location without a required reduction in output power. Furthermore, the study project and nearby generators in the study area meet rotor angular damping and transient voltage recovery requirements as specified in Appendix A.

SPP requires that interconnection request projects meet a voltage schedule at the point of interconnection (POI) consistent with the voltage in the SPP base case or nominal voltage, whichever is higher. The power factor requirements for renewable energy interconnection projects are specified by SPP for N-1 contingencies (or N-2 contingencies if applicable). Power factor analysis revealed that the wind farm represented by GEN-2014-001 is required to maintain a power factor of 0.95 lagging to 0.95 leading at the POI to meet SPP's requirements.

An analysis on the project for no wind power production due to no wind conditions indicated that an 11 Mvar 345-kV shunt reactor can reduce the Mvar flow into the POI to approximately zero in all three Peak Cases.



2. INTRODUCTION

S&C Electric Company has performed a Definitive Interconnection System Impact Study DISIS-2014-001 (Group 8) in response to a request through the SPP Tariff studies. Group 8 consist of the project listed in Table 1.

Table 1: Study Project in Group 8

Project	Size	Generator Model	Generator Bus(es)	Point of Interconnection (POI)	POI Bus
GEN-2014-001	200.6 MW	GE 1.7 MW	583853 583856	Tap Wichita to Emporia Energy Center 345 kV	562476

GEN-2014-001 is a new wind farm project. Group 8 and prior-queued projects were studied at 100% output power using 2014 Winter and 2015 and 2024 Summer Peak Cases provided by SPP.



3. TRANSMISSION SYSTEM AND STUDY AREA

The study project in Group 8 will interconnect into Westar Energy, Inc. (WERE, Area #536). In addition to this area, the following areas were also monitored:

- American Electric Power West (AEPW, Area #520)
- Grand River Dam Authority (GRDA, Area #523)
- Oklahoma Gas & Electric (OKGE, Area #524)
- Western Farmers Electric Cooperative (WFEC, Area #525)
- Greater Missouri Operations (GMO, Area #540)
- Kansas City Power & Light (KCPL, Area #541)
- Empire District Electric Company (EMDE, Area #544)



4. POWER FLOW BASE CASES

DISIS-2014-001 (Group 8) and prior-queued projects were modeled as aggregates of generating units. The aggregate models were part of the base case supplied by SPP. The following power flow base cases were provided by SPP:

- **MDWG13-14WP_DIS1401_G08** – 2014 Winter Peak Case, which includes aggregate representation of interconnect requests for DISIS-2014-001 (Group 8) and prior queued projects at 100% output power.
- **MDWG13-15SP_DIS1401_G08** – 2015 Summer Peak Case, which includes aggregate representation of interconnect requests for DISIS-2014-001 (Group 8) and prior queued projects at 100% output power.
- **MDWG13-24SP_DIS1401_G08** – 2024 Summer Peak Case, which includes aggregate representation of interconnect requests for DISIS-2014-001 (Group 8) and prior queued projects at 100% output power.



5. POWER FLOW MODEL

Power flow model for the study project has been created in PSS/E 32.2.2 and provided by SPP.

Figure 1 depicts a simplified one-line diagram for the study project.

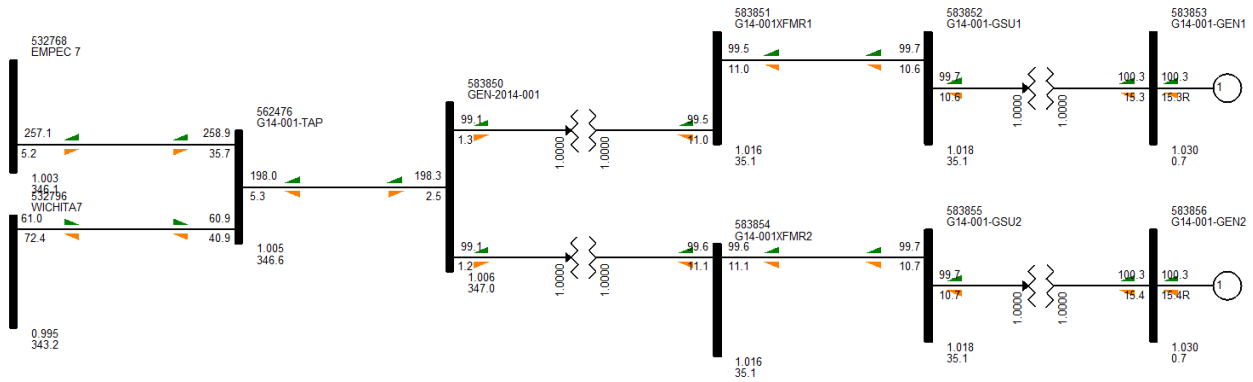


Figure 1. Simplified one-line diagram of the study project GEN-2014-001.



6. TRANSIENT STABILITY ANALYSIS

Transient stability analysis was performed for the fault contingencies listed in Table 2, which were specified by SPP. The prior-queued projects monitored are listed in Table 3.

Single line-to-ground faults were simulated in a manner consistent with currently accepted practices, i.e. to assume that a single line-to-ground fault will cause a positive-sequence voltage drop at the fault location to 60% of nominal.

Table 2: Fault Contingencies Specified by SPP

Cont. No.	Cont. Name	Description
1	FLT01-3PH	3-phase fault on the G14-001-TAP (562476) to Wichita (532796) 345 kV line ckt 1, near G14-001-TAP . a. Apply fault at the G14-001-TAP 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
2	FLT02-3PH	3-phase fault on the G14-001-TAP (562476) to EMPEC (532768) 345 kV line ckt 1, near G14-001-TAP . a. Apply fault at the G14-001-TAP 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
3	FLT03-3PH	3-phase fault on the Wichita (532796) to Reno (532771) 345 kV line ckt 1, near Wichita. a. Apply fault at the Wichita 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
4	FLT04-3PH	3-phase fault on the Wichita (532796) to Benton (532791) 345 kV line ckt 1, near Wichita. a. Apply fault at the Wichita 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
5	FLT05-3PH	3-phase fault on the Wichita (532796) to Viola (532798) 345 kV line ckt 1, near Wichita. a. Apply fault at the Wichita 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.



Cont. No.	Cont. Name	Description
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
6	FLT06-3PH	3-phase fault on the Wichita (532796) to Thistle (539801) 345 kV line ckt 1, near Wichita. a. Apply fault at the Wichita 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
7	FLT07-3PH	3-phase fault on the Lang (532769) to EMPEC (532768) 345 kV line ckt 1, near Lang. a. Apply fault at the Lang 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
8	FLT08-3PH	3-phase fault on the Morris (532770) to EMPEC (532768) 345 kV line ckt 1, near Morris. a. Apply fault at the Morris 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
9	FLT09-3PH	3-phase fault on the Swissvale (532774) to EMPEC (532768) 345 kV line ckt 1, near Swissvale. a. Apply fault at the Swissvale 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
10	FLT10-3PH	3-phase fault on the Wichita (532796) to G14-001-TAP (562476) 345 kV line ckt 1, near Wichita. a. Apply fault at the Wichita 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
11	FLT11-3PH	3-phase fault on the Lang (533304) to East St (533301) 115 kV line ckt 1, near Lang. a. Apply fault at the Lang 115 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
12	FLT12-3PH	3-phase fault on the Lang (533304) to Reading (533306) 115 kV line ckt 1, near Lang.



Cont. No.	Cont. Name	Description
		<ol style="list-style-type: none">Apply fault at the Lang 115 kV bus.Clear fault after 5 cycles by tripping the faulted line.Wait 20 cycles, and then re-close the line in (b) back into the fault.Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
13	FLT13-3PH	<p>3-phase fault on the Lang (533304) to Prairie (533307) 115 kV line ckt 1, near Lang.</p> <ol style="list-style-type: none">Apply fault at the Lang 115 kV bus.Clear fault after 5 cycles by tripping the faulted line.Wait 20 cycles, and then re-close the line in (b) back into the fault.Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
14	FLT14-3PH	<p>3-phase fault on the Morris (532770) to JEC (532766) 345 kV line ckt 1, near Morris.</p> <ol style="list-style-type: none">Apply fault at the Morris 345 kV bus.Clear fault after 5 cycles by tripping the faulted line.Wait 20 cycles, and then re-close the line in (b) back into the fault.Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
15	FLT15-3PH	<p>3-phase fault on the Morris (532863) to Swissvale (532856) 230 kV line ckt 1, near Morris.</p> <ol style="list-style-type: none">Apply fault at the Morris 230 kV bus.Clear fault after 5 cycles by tripping the faulted line.Wait 20 cycles, and then re-close the line in (b) back into the fault.Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
16	FLT16-3PH	<p>3-phase fault on the Morris (532863) to McDowell (532862) 230 kV line ckt 1, near Morris.</p> <ol style="list-style-type: none">Apply fault at the Morris 230 kV bus.Clear fault after 5 cycles by tripping the faulted line.Wait 20 cycles, and then re-close the line in (b) back into the fault.Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
17	FLT17-3PH	<p>3-phase fault on the Morris (532863) to Union Ridge (532874) 230 kV line ckt 1, near Morris.</p> <ol style="list-style-type: none">Apply fault at the Morris 230 kV bus.Clear fault after 5 cycles by tripping the faulted line.Wait 20 cycles, and then re-close the line in (b) back into the fault.Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
18	FLT18-3PH	<p>3-phase fault on the Swissvale (532774) to W. Gardner (542965) 345 kV line ckt 1, near Swissvale.</p> <ol style="list-style-type: none">Apply fault at the Swissvale 345 kV bus.Clear fault after 5 cycles by tripping the faulted line.Wait 20 cycles, and then re-close the line in (b) back into the fault.Leave fault on for 5 cycles, then trip the line in (b) and remove fault.



Cont. No.	Cont. Name	Description
19	FLT19-3PH	<p>3-phase fault on the Swissvale (532856) to Auburn (532851) 230 kV line ckt 1, near Swissvale.</p> <p>a. Apply fault at the Swissvale 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
20	FLT20-3PH	<p>3-phase fault on the Swissvale (532856) to Lawhill (532853) 230 kV line ckt 1, near Swissvale.</p> <p>a. Apply fault at the Swissvale 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
21	FLT21-3PH	<p>3-phase fault on the Swissvale (532856) to Techill (532857) 230 kV line ckt 1, near Swissvale.</p> <p>a. Apply fault at the Swissvale 230 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
22	FLT22-3PH	<p>3-phase fault on the Benton (532791) to Rosehill (532794) 345 kV line ckt 1, near Benton.</p> <p>a. Apply fault at the Benton 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
23	FLT23-3PH	<p>3-phase fault on the Benton (532791) to Wolfcreek (532797) 345 kV line ckt 1, near Benton.</p> <p>a. Apply fault at the Benton 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
24	FLT24-3PH	<p>3-phase fault on the Benton (532986) to Midian (532990) 138 kV line ckt 1, near Benton.</p> <p>a. Apply fault at the Benton 138 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.</p>
25	FLT25-3PH	<p>3-phase fault on the Benton (532986) to 29th (533024) 138 kV line ckt 1, near Benton.</p> <p>a. Apply fault at the Benton 138 kV bus. b. Clear fault after 5 cycles by tripping the faulted line.</p>



Cont. No.	Cont. Name	Description
		c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
26	FLT26-3PH	3-phase fault on the Benton (532986) to Chisholm (533035) 138 kV line ckt 1, near Benton. a. Apply fault at the Benton 138 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
27	FLT27-3PH	3-phase fault on the Benton (532986) to Comotar (533037) 138 kV line ckt 1, near Benton. a. Apply fault at the Benton 138 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
28	FLT28-3PH	3-phase fault on the Renfrow (515543) to Hunters (515476) 138 kV line ckt 1, near Renfrow. a. Apply fault at the Renfrow 138 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
29	FLT29-3PH	3-phase fault on the Thistle (539801) to Clark County (539800) 345 kV line ckt 1, near Thistle. a. Apply fault at the Thistle 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
30	FLT30-3PH	3-phase fault on the Thistle (539801) to Woodward (515375) 345 kV line ckt 1, near Thistle. a. Apply fault at the Thistle 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line, Thistle (539801) to G12-016-TAP (562286) to Woodward (515375). c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
31	FLT31-3PH	3-phase fault on the Reno (532771) to Summit (532773) 345 kV line ckt 1, near Reno. a. Apply fault at the Reno 345 kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
32	FLT32-3PH	3-phase fault on the Renfro (515543) 345 kV to Renfro (515544) 138



Cont. No.	Cont. Name	Description
		kV/(515545) 13.8 kV transformer at the 345 kV bus. a. Apply fault at the Renfro 345 kV bus. b. Clear fault after 5 cycles by tripping the transformer
33	FLT33-3PH	3-phase fault on the Lang (533304) 115 kV to Lang (532769) 345 kV/(532808) 14.4kV transformer at the 115 kV bus. a. Apply fault at the Lang 115 kV bus. b. Clear fault after 5 cycles by tripping the transformer
34	FLT34-3PH	3-phase fault on the Wichita (532796) 345 kV to Evans (533040) 138 kV/(532830) 13.8 kV transformer at the 345 kV bus. a. Apply fault at the Wichita 345 kV bus. b. Clear fault after 5 cycles by tripping the transformer
35	FLT35-3PH	3-phase fault on the Morris (532770) 345 kV to Morris (532863) 230 kV/(532809) 14.4kV transformer at the 345 kV bus. a. Apply fault at the Morris 345 kV bus. b. Clear fault after 5 cycles by tripping the transformer
36	FLT36-3PH	3-phase fault on the Morris (532863) 230 kV to Morris (533305) 115 kV/(532890) 13.8 kV transformer at the 230 kV bus. a. Apply fault at the Morris 230 kV bus. b. Clear fault after 5 cycles by tripping the transformer
37	FLT37-3PH	3-phase fault on the Swissvale (532856) 230 kV to Swissvale (532774) 345 kV/(532815) 14.4kV transformer at the 230 kV bus. a. Apply fault at the Swissvale 230 kV bus. b. Clear fault after 5 cycles by tripping the transformer
38	FLT38-3PH	3-phase fault on the Benton (532791) 345 kV to Benton (532986) 138 kV/(532821) 13.8 kV transformer at the Benton 345 kV bus. a. Apply fault at the Benton 345 kV bus. b. Clear fault after 5 cycles by tripping the transformer
39	FLT39-3PH	3-phase fault on the Thistle (539801) 345 kV to Thistle (539804) 138 kV/(539802) 13.8 kV transformer at the Thistle 345 kV bus. a. Apply fault at the Thistle 345 kV bus. b. Clear fault after 5 cycles by tripping the transformer
40	FLT40-3PH	3-phase fault on the Reno (532771) 345 kV to Reno (533416) 115 kV/(532810) 13.8 kV transformer at the Reno 345 kV bus. a. Apply fault at the Reno 345 kV bus. b. Clear fault after 5 cycles by tripping the transformer
41	FLT41-3PH	Prior Outage Wolf Creek to Benton 345 kV line Trip Wolf Creek (532797) to Benton (532791) 345 kV line, reduce Wolf Creek (532751) output to 800MW, and solve for steady state. Then -- a. Apply 3-phase fault at Wolf Creek 345 kV. b. After 3.6 cycles remove fault.



Cont. No.	Cont. Name	Description
		c. Trip Wolf Creek - G08-098-Tap (560004) 345 kV line.
42	FLT42-3PH	<p>Prior Outage Wolf Creek to G08-098-Tap 345 kV line Trip Wolf Creek (532797) to G08-098-Tap (560004) 345 kV line, reduce Wolf Creek (532751) output to 800MW, and solve for steady state. Then --</p> <p>a. Apply 3-phase fault at Wolf Creek 345 kV. b. After 3.6 cycles remove fault. c. Trip Wolf Creek - Benton (532791) 345 kV line.</p>
43	FLT43-3PH	<p>Prior Outage Wolf Creek to Rose Hill 345 kV line Trip Wolf Creek (532797) to Rose Hill (532794) 345 kV line, reduce Wolf Creek (532751) output to 800MW, and solve for steady state. Then --</p> <p>a. Apply 3-phase fault at Wolf Creek 345 kV. b. After 3.6 cycles remove fault. c. Trip Wolf Creek - G08-098-Tap (560004) 345 kV line.</p>
44	FLT44-1PH	<p>Wichita (532796) 345 kV Stuck Breaker Scenario 1</p> <p>a. Apply single phase fault at the Wichita (532796) 345 kV bus. b. Wait 16 cycles and remove fault. c. Drop Wichita (532796)-Reno (532771) 345 kV, ckt 1 line. d. Drop Wichita –Evans Transformer (532796,533040,532830,"1").</p>
45	FLT45-1PH	<p>Wichita (532796) 345 kV Stuck Breaker Scenario 2</p> <p>a. Apply single phase fault at the Wichita (532796) 345 kV bus. b. Wait 16 cycles and remove fault. c. Drop Wichita (532796)-Benton (532791) 345 kV, ckt 1 line. d. Drop Wichita –Evans Transformer (532796,533040,532830,"1").</p>
46	FLT46-1PH	<p>Wichita (532796) 345 kV Stuck Breaker Scenario 3</p> <p>a. Apply single phase fault at the Wichita (532796) 345 kV bus. b. Wait 16 cycles and remove fault. c. Drop Wichita (532796)-Viola (532798) 345 kV, ckt 1 line. d. Drop Wichita –Evans Transformer (532796,533040,532830,"1").</p>
47	FLT47-1PH	<p>Wichita (532796) 345 kV Stuck Breaker Scenario 4</p> <p>a. Apply single phase fault at the Wichita (532796) 345 kV bus. b. Wait 16 cycles and remove fault. c. Drop Wichita (532796)-Thistle (539801) 345 kV, ckt 1 line. d. Drop Wichita –Evans Transformer (532796,533040,532830,"1").</p>
48	FLT48-1PH (2014WP Only)	<p>EMPEC (532768) 345 kV Stuck Breaker Scenario 1</p> <p>a. Apply single phase fault at the EMPEC (532768) 345 kV bus. b. Wait 16 cycles and remove fault. c. Drop EMPEC (532768)-Lang (532769) 345 kV, ckt 1 line. d. Drop EMPEC121 generation (532740).</p>
49	FLT49-1PH (2014WP Only)	<p>EMPEC (532768) 345 kV Stuck Breaker Scenario 2</p> <p>a. Apply single phase fault at the EMPEC (532768) 345 kV bus.RU b. Wait 16 cycles and remove fault.</p>



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Cont. No.	Cont. Name	Description
		c. Drop EMPEC (532768)-Morris (532770) 345 kV, ckt 1 line. d. Drop EMPEC121 generation (532740).
50	FLT50-1PH (2014WP Only)	EMPEC (532768) 345 kV Stuck Breaker Scenario 3 a. Apply single phase fault at the EMPEC (532768) 345 kV bus. b. Wait 16 cycles and remove fault. c. Drop EMPEC (532768)-Swissvale (532774) 345 kV, ckt 1 line. d. Drop EMPEC121 generation (532740).
51	FLT51-1PH (2015SP & 2024SP Only)	EMPEC (532768) 345 kV Stuck Breaker Scenario 1 a. Apply single phase fault at the EMPEC (532768) 345 kV bus. b. Wait 16 cycles and remove fault. c. Drop EMPEC (532768)-Lang (532769) 345 kV, ckt 1 line. d. Drop EMPEC51 generation (532742).
52	FLT52-1PH (2015SP & 2024SP Only)	EMPEC (532768) 345 kV Stuck Breaker Scenario 2 a. Apply single phase fault at the EMPEC (532768) 345 kV bus. b. Wait 16 cycles and remove fault. c. Drop EMPEC (532768)-Morris (532770) 345 kV, ckt 1 line. d. Drop EMPEC51 generation (532742).
53	FLT53-1PH (2015SP & 2024SP) Only	EMPEC (532768) 345 kV Stuck Breaker Scenario 3 a. Apply single phase fault at the EMPEC (532768) 345 kV bus. b. Wait 16 cycles and remove fault. c. Drop EMPEC (532768)-Swissvale (532774) 345 kV, ckt 1 line. d. Drop EMPEC51 generation (532742).



Table 3: Prior Queued Projects

Request	Size (MW)	Generator Model	Point of Interconnection
GEN-2008-021	1283	GENROU	Wolf Creek 345 kV (532797)
GEN-2008-098	100.8	Vestas V100 1.8 MW	Tap on the Wolf Creek – LaCygne 345 kV line (560004)
GEN-2009-025	59.8	Siemens 2.3 MW	Tap on the Deerck – Sinck 69KV line (515528)
GEN-2010-003	100.8	Vestas V100 1.8 MW	Tap on the Wolf Creek – LaCygne 345 kV line (560004)
GEN-2010-005	299.2	GE 1.6 MW	Viola 345 kV (532798)
ASGI-2010-006	150	GE1.5 MW	Remington 138 kV (301369)
GEN-2010-055	4.8	GENROU	Wekiwa 138 kV (509757)
GEN-2011-057	150.4	GE 1.6 MW	Creswell 138 kV (532981)
GEN-2012-023	115	Siemens 2.3 MW	Viola 345 kV (532798)
GEN-2012-027	150.7	GE 1.62 MW	Shidler 138 kV (510403)
GEN-2012-032	300	Vestas V112 3.0 MW	Tap Rose Hill-Sooner 345 kV (562318)
GEN-2012-033	98.8	GE 1.62 MW	Tap Bunch Creek-South 4th 138 kV(562303)
GEN-2012-040	76.5	GE 1.7 MW	Chilocco 138 kV (521198)
GEN-2012-041	85 Summer 121.5 Winter	GENROU	Tap Rose Hill-Sooner 345 kV (562318)
GEN-2013-009	100.3	GE 1.7 MW (583593)	Tap Alluwe Tap-Vinita Junction 138 kV (560742)
GEN-2013-012	4 x 168.0MW Summer 4 x 215MW Winter	GENROU (514910, 514911, 514912, 514942)	Redbud 345 kV (514909)
GEN-2013-028	516.4 Summer 559.5 Winter	GENROU (583743, 583746)	Tap on Tulsa N to GRDA1 345 kV (562423)
GEN-2013-029	300	Vestas V100 VCSS 2 MW (583753, 583756)	Renfrow 345 kV(515543)



6.1. STABILITY CRITERIA

Disturbances, including three-phase and single-phase to ground faults, should not cause synchronous and asynchronous plants to become unstable or disconnect from the transmission grid. The criterion for synchronous generator stability as defined by NERC is: “power system stability is defined as that condition in which the difference of the angular positions of synchronous machine rotor becomes constant following an aperiodic system disturbance.”

Voltage magnitudes and frequencies at terminals of asynchronous generators should not exceed magnitudes and durations that will cause protection elements to operate. Furthermore, the response after the disturbance needs to be studied at the terminals of the machine to insure that there are no sustained oscillations in power output, speed, frequency, etc.

Voltage magnitudes and angles after the disturbance should settle to a constant and acceptable operating level. Frequencies should settle to the acceptable range within nominal 60 Hz power frequency.

SPP has two specific transient stability requirements as summarized below. These requirements will be elaborated in more detail in the SPP Disturbance Performance Requirements provided in Appendix A. This document provides a basis for evaluating the system response during the initial transient period following a disturbance on the bulk electric system by establishing minimum requirements for machine rotor angle damping and transient voltage recovery.

- **Angular Oscillations:** for study projects that include synchronous machines, rotor angle oscillations should meet the damping requirements described in Appendix A. For other projects that do not include synchronous machines, but based on engineering judgment have questionable rotor angle oscillation, damping should also meet the requirements described in Appendix A.
- **Transient Voltage Recovery:** for the transient voltage recovery requirement in Appendix A, the bus voltages to be included are those at the point of interconnection for each study generator. Other voltages in the area should be checked for this requirement if the terminal voltage of other machines in the monitored area appears to have voltage recovery issues.



Note that the study project in Group 8 consists of wind turbine generators and is excluded from the above rotor angular oscillation requirement. Group 8 is expected to meet SPP’s transient voltage recovery requirement.

6.2. TRANSIENT STABILITY RESULTS

Undisturbed runs of 20 seconds were performed with the Summer and Winter Peak Cases to verify proper initialization of dynamic models.

Results of transient stability analysis indicated that Group 8 is expected to successfully ride through each fault contingency specified by SPP and the nearby areas will retain angular, frequency and voltage stability. Group 8 is expected to successfully interconnect into the transmission system at the desired location without a required reduction in output power. See Appendix B through Appendix D for further details. Group 8 is also expected to meet angular oscillation stability requirements.

Summary results of transient stability analysis are listed in Table 4.

Table 4: Summary of Transient Stability Results

Cont. No.	Cont. Name	2014 Winter Peak	2015 Summer Peak	2024 Summer Peak
1	FLT01-3PH	STABLE	STABLE	STABLE
2	FLT02-3PH	STABLE	STABLE	STABLE
3	FLT03-3PH	STABLE	STABLE	STABLE
4	FLT04-3PH	STABLE	STABLE	STABLE
5	FLT05-3PH	STABLE	STABLE	STABLE
6	FLT06-3PH	STABLE	STABLE	STABLE
7	FLT07-3PH	STABLE	STABLE	STABLE
8	FLT08-3PH	STABLE	STABLE	STABLE
9	FLT09-3PH	STABLE	STABLE	STABLE
10	FLT10-3PH	STABLE	STABLE	STABLE
11	FLT11-3PH	STABLE	STABLE	STABLE
12	FLT12-3PH	STABLE	STABLE	STABLE
13	FLT13-3PH	STABLE	STABLE	STABLE
14	FLT14-3PH	STABLE	STABLE	STABLE
15	FLT15-3PH	STABLE	STABLE	STABLE
16	FLT16-3PH	STABLE	STABLE	STABLE
17	FLT17-3PH	STABLE	STABLE	STABLE
18	FLT18-3PH	STABLE	STABLE	STABLE
19	FLT19-3PH	STABLE	STABLE	STABLE



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Cont. No.	Cont. Name	2014 Winter Peak	2015 Summer Peak	2024 Summer Peak
20	FLT20-3PH	STABLE	STABLE	STABLE
21	FLT21-3PH	STABLE	STABLE	STABLE
22	FLT22-3PH	STABLE	STABLE	STABLE
23	FLT23-3PH	STABLE	STABLE	STABLE
24	FLT24-3PH	STABLE	STABLE	STABLE
25	FLT25-3PH	STABLE	STABLE	STABLE
26	FLT26-3PH	STABLE	STABLE	STABLE
27	FLT27-3PH	STABLE	STABLE	STABLE
28	FLT28-3PH	STABLE	STABLE	STABLE
29	FLT29-3PH	STABLE	STABLE	STABLE
30	FLT30-3PH	STABLE	STABLE	STABLE
31	FLT31-3PH	STABLE	STABLE	STABLE
32	FLT32-3PH	STABLE	STABLE	STABLE
33	FLT33-3PH	STABLE	STABLE	STABLE
34	FLT34-3PH	STABLE	STABLE	STABLE
35	FLT35-3PH	STABLE	STABLE	STABLE
36	FLT36-3PH	STABLE	STABLE	STABLE
37	FLT37-3PH	STABLE	STABLE	STABLE
38	FLT38-3PH	STABLE	STABLE	STABLE
39	FLT39-3PH	STABLE	STABLE	STABLE
40	FLT40-3PH	STABLE	STABLE	STABLE
41	FLT41-3PH	STABLE	STABLE	STABLE
42	FLT42-3PH	STABLE	STABLE	STABLE
43	FLT43-3PH	STABLE	STABLE	STABLE
44	FLT44-1PH	STABLE	STABLE	STABLE
45	FLT45-1PH	STABLE	STABLE	STABLE
46	FLT46-1PH	STABLE	STABLE	STABLE
47	FLT47-1PH	STABLE	STABLE	STABLE
48	FLT48-1PH	STABLE	N/A	N/A
49	FLT49-1PH	STABLE	N/A	N/A
50	FLT50-1PH	STABLE	N/A	N/A
51	FLT51-1PH	N/A	STABLE	STABLE
52	FLT52-1PH	N/A	STABLE	STABLE
53	FLT53-2PH	N/A	STABLE	STABLE



7. POWER FACTOR ANALYSIS

7.1. POWER FACTOR REQUIREMENTS AT THE POINT OF INTERCONNECTION

SPP has specific voltage requirements for interconnecting renewable energy projects (including wind and solar plants). These projects must maintain a power factor required to hold a voltage schedule at the POI consistent with the voltage schedule in the provided base case or 1.0 pu voltage, whichever is higher. The voltage requirements must also be met during single (or N-2, if applicable) transmission facility outage contingencies specified by SPP. The base case voltages at the POI for the three Peak cases (Winter 2014, Summer 2015, and Summer 2024) are listed in Table 5. The power factor requirements are applied to Group 8 and thus GEN-2014-001 must keep the power factor required to hold the voltage at the POI according to the voltage schedule shown in Table 5.

Table 5: Base Case Voltages at the POI of the Generation Interconnection Request

Request	POI	2014 Winter Peak (pu)	2015 Summer Peak (pu)	2024 Summer Peak (pu)
GEN-2014-001	Tap Wichita to Emporia Energy Center 345 kV (562476)	1.0046	1.0187	1.0158

7.2. POWER FACTOR ANALYSIS RESULTS

The transmission facility outage contingencies specified by SPP and listed in Table 6 and Table 7 show the power factor required to maintain the aforementioned voltage schedules at the POI during the occurrence of the contingencies listed in Table 6. Note that no cases where the power factor requirement exceeds 0.95 leading or lagging occurred.

According to FERC Order No. 661-A, interconnection projects are not typically required to operate beyond a power factor range of 0.95 leading/lagging at the POI for voltages from 0.95 to 1.05 of nominal. Based on the results of the power factor analysis, the wind farm represented by GEN-2014-001 is not expected to require a power factor exceeding 0.95 leading/lagging since the lowest identified leading power factor is about 0.97 and was registered for outage no. 34 of the 2015 Summer Peak Case. Similarly, the lowest identified lagging power factor is 0.98 and occurred in outage no. 43 of the 2014 Winter Peak Case. Thus, the wind farm represented by



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GEN-2014-001 is required to maintain a power factor of 0.95 lagging to 0.95 leading at the POI to meet SPP's reactive power requirements.



Table 6: List of Transmission Facility Outages for the Power Factor Analysis

Outage No.	Description
0	System Intact (Base Case)
1	Outage of the G14-001-TAP (562476) to Wichita (532796) 345 kV line
2	Outage of the on the G14-001-TAP (562476) to EMPEC (532768) 345 kV line
3	Outage of the Wichita (532796) to Reno (532771) 345 kV line
4	Outage of the Wichita (532796) to Benton (532791) 345 kV line
5	Outage of the Wichita (532796) to Viola (532798) 345 kV line
6	Outage of the Wichita (532796) to Thistle (539801) 345 kV line
7	Outage of the Lang (532769) to EMPEC (532768) 345 kV line
8	Outage of the Morris (532770) to EMPEC (532768) 345 kV line
9	Outage of the Swissvale (532774) to EMPEC (532768) 345 kV line
10	Outage of the Wichita (532796) to G14-001-TAP (562476) 345 kV line
11	Outage of the Lang (533304) to East St (533301) 115 kV line
12	Outage of the Lang (533304) to Reading (533306) 115 kV line
13	Outage of the Lang (533304) to Prairie (533307) 115 kV line
14	Outage of the Morris (532770) to JEC (532766) 345 kV line ckt 1
15	Outage of the Morris (532863) to Swissvale (532856) 230 kV line
16	Outage of the Morris (532863) to McDowell (532862) 230 kV line
17	Outage of the Morris (532863) to Union Ridge (532874) 230 kV line
18	Outage of the Swissvale (532774) to W. Gardner (542965) 345 kV line
19	Outage of the Swissvale (532856) to Auburn (532851) 230 kV line
20	Outage of the Swissvale (532856) to Lawhill (532853) 230 kV line
21	Outage of the Swissvale (532856) to Techill (532857) 230 kV line
22	Outage of the Benton (532791) to Rosehill (532794) 345 kV line
23	Outage of the Benton (532791) to Wolfcreek (532797) 345 kV line
24	Outage of the Benton (532986) to Midian (532990) 138 kV line
25	Outage of the Benton (532986) to 29th (533024) 138 kV line



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Outage No.	Description
26	Outage of the Benton (532986) to Chisholm (533035) 138 kV line
27	Outage of the Benton (532986) to Comotar (533037) 138 kV line
28	Outage of the Renfrow (515543) to Hunters (515476) 138 kV line
29	Outage of the Thistle (539801) to Clark County (539800) 345 kV line
30	Outage of the Thistle (539801) to Woodward (515375) 345 kV line
31	Outage of the Reno (532771) to Summit (532773) 345 kV line
32	Outage of the Renfro (515543) 345 kV to Renfro (515544) 138 kV/(515545) 13.8 kV transformer
33	Outage of the Lang (533304) 115 kV to Lang (532769) 345 kV/(532808) 14.4kV transformer
34	Outage of the Wichita (532796) 345 kV to Evans (533040) 138 kV/(532830) 13.8 kV transformer
35	Outage of the Morris (532770) 345 kV to Morris (532863) 230 kV/(532809) 14.4kV transformer
36	Outage of the Morris (532863) 230 kV to Morris (533305) 115 kV/(532890) 13.8 kV transformer
37	Outage of the Swissvale (532856) 230 kV to Swissvale (532774) 345 kV/(532815) 14.4kV transformer
38	Outage of the Benton (532791) 345 kV to Benton (532986) 138 kV/(532821) 13.8 kV transformer
39	Outage of the Thistle (539801) 345 kV to Thistle (539804) 138 kV/(539802) 13.8 kV transformer
40	Outage of the Reno (532771) 345 kV to Reno (533416) 115 kV/(532810) 13.8 kV transformer
41	Outage of Wolf Creek (532797) to G08-098-Tap (560004) 345 kV line (Prior outage of the Wolf Creek (532797) to Benton (532791) 345 kV line and reduction of Wolf Creek (532751) output to 800MW)
42	Outage of Wolf Creek (532797) to Benton (532791) 345 kV line (Prior outage of the Wolf Creek (532797) to G08-098-Tap (560004) 345 kV line and reduction of Wolf Creek (532751) output to 800 MW)
43	Outage of Wolf Creek (532797) to G08-098-Tap (560004) 345 kV line (Prior outage of the Wolf Creek (532797) to Rose Hill (532794) 345 kV line and reduction of Wolf Creek (532751) output to 800 MW)



Table 7: Power Factor Requirements for the Generation Interconnection Request for the Outages in Table 6

Outage No.	2014 Winter Peak (Min. PF = 98.20%)				2015 Summer Peak (Min. PF = 97.23%)				2024 Summer Peak (Min. PF = 98.23%)			
	MW	MVAR	Power Factor		MW	MVAR	Power Factor		MW	MVAR	Power Factor	
0	200.6	5.1	99.97%	lag	200.6	-9.4	99.89%	lead	200.6	-6.4	99.95%	lead
1	200.6	-35.5	98.47%	lead	200.6	-24.8	99.24%	lead	200.6	-33.5	98.63%	lead
2	200.6	22.5	99.38%	lag	200.6	1.3	100%	lag	200.6	17.2	99.63%	lag
3	200.6	22.9	99.35%	lag	200.6	-0.7	100%	lead	200.6	6.0	99.96%	lag
4	200.6	-0.6	100%	lead	200.6	21.4	99.44%	lag	200.6	-0.8	100%	lead
5	200.6	19.9	99.51%	lag	200.6	-1.9	100%	lead	200.6	-2.9	99.99%	lead
6	200.6	21.0	99.46%	lag	200.6	0.7	100%	lag	200.6	5.0	99.97%	lag
7	200.6	-9.7	99.88%	lea	200.6	-17.3	99.63%	lead	200.6	-13.9	99.76%	lead
8	200.6	17.2	99.63%	lag	200.6	-8.0	99.92%	lead	200.6	-3.9	99.98%	lead
9	200.6	-14.2	99.75%	lead	200.6	-25.2	99.22%	lead	200.6	-15.1	99.72%	lead
10	200.6	-35.5	98.47%	lead	200.6	-24.8	99.24%	lead	200.6	-33.5	98.63%	lead
11	200.6	4.7	99.97%	lag	200.6	-9.7	99.88%	lead	200.6	-6.6	99.95%	lead
12	200.6	5.6	99.96%	lag	200.6	-10.1	99.87%	lead	200.6	-7.2	99.94%	lead
13	200.6	4.6	99.97%	lag	200.6	-9.9	99.88%	lead	200.6	-6.9	99.94%	lead
14	200.6	17.3	99.63%	lag	200.6	-7.0	99.94%	lead	200.6	-5.8	99.96%	lead
15	200.6	6.7	99.94%	lag	200.6	-8.7	99.91%	lead	200.6	-5.7	99.96%	lead
16	200.6	3.0	99.99%	lag	200.6	-12.8	99.80%	lead	200.6	-8.6	99.91%	lead
17	200.6	7.0	99.94%	lag	200.6	-8.2	99.92%	lead	200.6	-5.0	99.97%	lead
18	200.6	-23.4	99.33%	lead	200.6	-27.7	99.06%	lead	200.6	-15.3	99.71%	lead
19	200.6	8.5	99.91%	lag	200.6	-9.1	99.90%	lead	200.6	-6.6	99.95%	lead
20	200.6	10.5	99.86%	lag	200.6	-7.0	99.94%	lead	200.6	-5.4	99.96%	lead
21	200.6	3.8	99.98%	lag	200.6	-11.7	99.83%	lead	200.6	-8.7	99.91%	lead
22	200.6	12.1	99.82%	lag	200.6	-5.1	99.97%	lead	200.6	-4.8	99.97%	lead
23	200.6	16.4	99.67%	lag	200.6	-5.7	99.96%	lead	200.6	1.7	100%	lag
24	200.6	4.8	99.97%	lag	200.6	-8.9	99.90%	lead	200.6	-6	99.96%	lead
25	200.6	5.0	99.97%	lag	200.6	-9.3	99.89%	lead	200.6	-6.2	99.95%	lead
26	200.6	1.0	100%	lag	200.6	-10.6	99.86%	lead	200.6	-5.8	99.96%	lead
27	200.6	5.1	99.97%	lag	200.6	-9.2	99.89%	lead	200.6	-6.1	99.95%	lead
28	200.6	31.3	98.80%	lag	200.6	-0.7	100%	lead	200.6	5.1	99.97%	lag
29	200.6	9.0	99.90%	lag	200.6	-8.5	99.91%	lead	200.6	-4.8	99.97%	lead
30	200.6	6.1	99.95%	lag	200.6	-8.9	99.90%	lead	200.6	-4.5	99.97%	lead
31	200.6	16.6	99.66%	lag	200.6	-0.1	100%	lead	200.6	3.9	99.98%	lag
32	200.6	5.8	99.96%	lag	200.6	-8.6	99.91%	lead	200.6	-5.7	99.96%	lead



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Outage No.	2014 Winter Peak (Min. PF = 98.20%)				2015 Summer Peak (Min. PF = 97.23%)				2024 Summer Peak (Min. PF = 98.23%)			
	MW	MVAR	Power Factor		MW	MVAR	Power Factor		MW	MVAR	Power Factor	
33	200.6	-8.7	99.91%	lead	200.6	-17.4	99.63%	lead	200.6	-14	99.76%	lead
34	200.6	-33.9	98.60%	lead	200.6	-48.2	97.23%	lead	200.6	-38.2	98.23%	lead
35	200.6	-0.2	100%	lead	200.6	-10.3	99.87%	lead	200.6	-6.6	99.95%	lead
36	200.6	5.6	99.96%	lag	200.6	-8.5	99.91%	lead	200.6	-5.3	99.97%	lead
37	200.6	3.0	99.99%	lag	200.6	-9.3	99.89%	lead	200.6	-6.8	99.94%	lead
38	200.6	0.6	100%	lag	200.6	-6.3	99.95%	lead	200.6	-5.3	99.97%	lead
39	200.6	7.4	99.93%	lag	200.6	-8.7	99.91%	lead	200.6	-8.8	99.90%	lead
40	200.6	4.8	99.97%	lag	200.6	-11.1	99.85%	lead	200.6	-8.2	99.92%	lead
41	200.6	31.3	98.80%	lag	200.6	6.9	99.94%	lag	200.6	6.3	99.95%	lag
42	200.6	23.6	99.32%	lag	200.6	-0.3	100%	lead	200.6	5.9	99.96%	lag
43	200.6	38.6	98.20%	lag	200.6	12.7	99.80%	lag	200.6	9.6	99.89%	lag



7.3. NO WIND CONDITIONS ANALYSIS

Since the interconnection request is a wind farm that interconnects to a 345-kV bus, an analysis of the project for no power production due to no wind conditions was performed. The analysis consists of determining the amount of reactive power required to offset the reactive power injected by the project into the transmission network. The size of a shunt reactor placed at the study project substation high side bus (583850) to reduce the Mvar flow into the POI to approximately zero was determined. As shown in Table 8, an 11 Mvar, 345-kV shunt reactor can reduce the Mvar flow into the POI to practically zero in all three Peak cases.

Table 8: Inductive Reactive Power Required to Offset the Capacitive Reactive Power Injected by the Project

Request	POI	2014 Winter Peak	2015 Summer Peak	2024 Summer Peak
GEN-2014-001	Tap Wichita to Emporia Energy Center 345 kV (562476)	11 Mvar	11 Mvar	11 Mvar



8. CONCLUSIONS AND RECOMMENDATIONS

Group 8 and prior-queued projects were studied at 100% output power using “MDWG13-14WP_DIS1401_G08” (Winter 2014), “MDWG13-15SP_DIS1401_G08” (Summer 2015) and “MDWG13-24SP_DIS1401_G08” (Summer 2024) peak loading cases provided by SPP.

Transient analysis results indicate that DISIS-2014-001 (Group 8) study project is expected to successfully interconnect into the transmission system at 100% output power and at the desired location. Transient stability analysis also indicates that Group 8 is expected to ride through each N-1 and N-2 fault contingency specified by SPP and the nearby areas will retain angular, frequency and voltage stability. Thus, Group 8 is expected to meet SPP’s transient voltage recovery requirement.

The results of power factor analysis indicate that the wind farm represented by GEN-2014-001 is required to maintain a power factor of 0.95 lagging to 0.95 leading at the POI to meet SPP’s requirements.

When the wind farm represented by GEN-2014-001 is producing no power due to no wind conditions, an 11 Mvar, 345 kV shunt reactor can reduce the Mvar flow into the POI to approximately zero in all three Peak cases.



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APPENDIX A

SOUTHWEST POWER POOL DISTURBANCE PERFORMANCE REQUIREMENTS



OVERVIEW

These Disturbance Performance Requirements (“Requirements”) shall be applicable to the Bulk Electric System within the Southwest Power Pool Planning Area. Utilization of these Requirements applies to all registered entities within the Southwest Power Pool Planning Area. These Requirements shall not be applicable to facilities that are not part of Bulk Electric System. More stringent Requirements are at the sole discretion of each Transmission Owner.

Transient and dynamic stability assessments are generally performed to assure adequate avoidance of loss of generator synchronism and prevention of system voltage collapse within the first 20 seconds after a system disturbance. These Requirements provide a basis for evaluating the system response during the initial transient period following a disturbance on the Bulk Electric System by establishing minimum requirements for machine rotor angle damping and transient voltage recovery.

ROTOR ANGLE DAMPING REQUIREMENT

Machine Rotor Angles shall exhibit well damped angular oscillations [as defined below] and acceptable power swings following a disturbance on the Bulk Electric System for all NERC Category A, B and C events.

Well damped angular oscillations shall meet one of the following two requirements when calculated directly from the rotor angle:

1. Successive Positive Peak Ratio (SPPR) must be less than or equal to 0.95 where SPPR is calculated as follows:

$$\text{SPPR} = \frac{\text{Peak Rotor Angle of 2}^{\text{nd}} \text{ Positive Swing Peak}}{\text{Peak Rotor Angle of 1}^{\text{st}} \text{ Positive Swing Peak}} \leq 0.95$$

-or- $\text{Damping Factor \%} = (1 - \text{SPPR}) \times 100\% \geq 5\%$

The machine rotor angle damping ratio may be determined by appropriate modal analysis (i.e. Prony Analysis) where the following equivalent requirement must be met:

$$\text{Damping Ratio} \geq 0.0081633$$

2. Successive Positive Peak Ratio Five (SPPR5) must be less than or equal to 0.774 where SPPR5 is calculated as follows:

$$\text{SPPR5} = \frac{\text{Peak Rotor Angle of 5}^{\text{th}} \text{ Positive Swing Peak}}{\text{Peak Rotor Angle of 1}^{\text{st}} \text{ Positive Swing Peak}} \leq 0.774$$

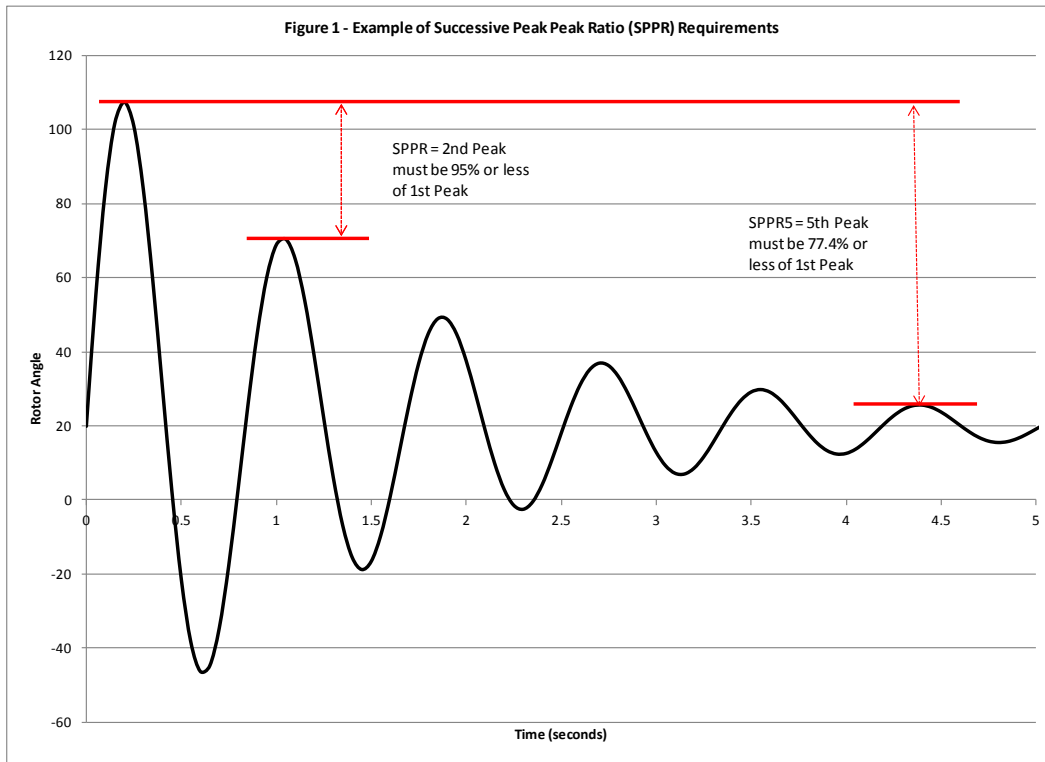
-or- $\text{Damping Factor \%} = (1 - \text{SPPR}) \times 100\% \geq 22.6\%$



The machine rotor angle damping ratio may be determined by appropriate modal analysis (i.e. Prony Analysis) where the following equivalent requirement must be met:

$$\text{Damping Ratio} \geq 0.0081633$$

Qualitatively, these Requirements are shown below:

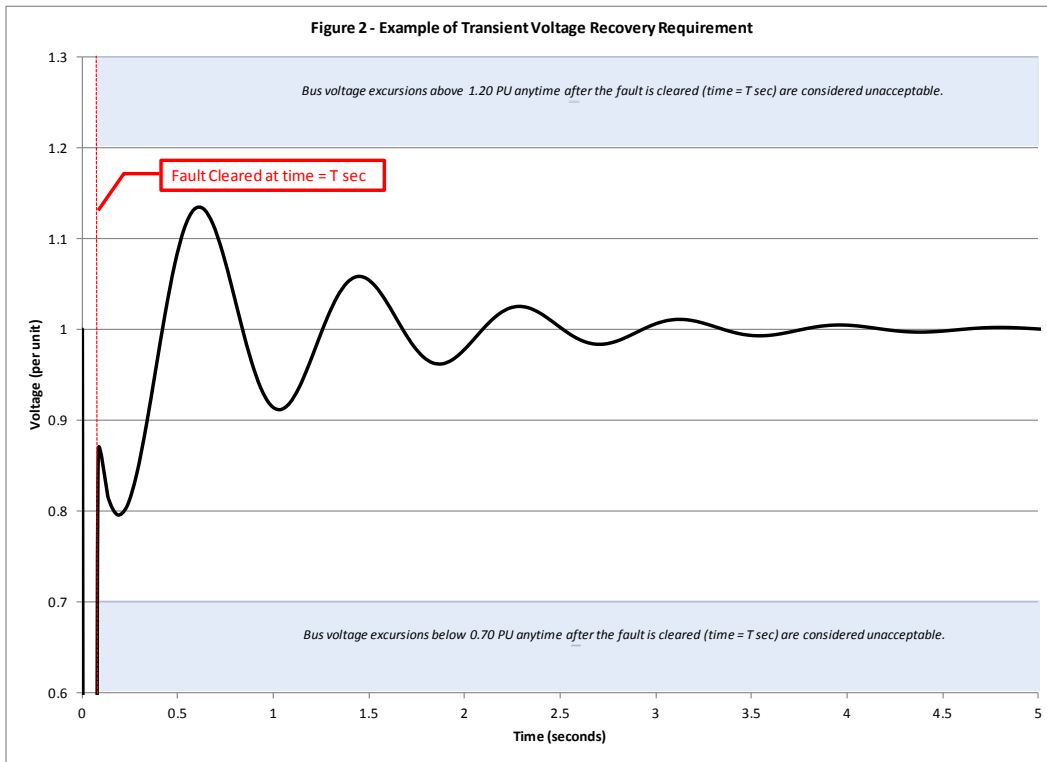




TRANSIENT VOLTAGE RECOVERY REQUIREMENT

Any time after a disturbance is cleared; bus voltages on the Bulk Electric System shall not swing outside of the bandwidth of 0.70 per unit to 1.20 per unit.

Qualitatively, this Requirement is shown below:





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APPENDIX B

TRANSIENT STABILITY PLOTS FOR 2014 WINTER PEAK CASE

(SEE APPENDIX B SUBMITTED IN A SEPARATE FILE)



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APPENDIX C

TRANSIENT STABILITY PLOTS FOR 2015 SUMMER PEAK CASE

(SEE APPENDIX C SUBMITTED IN A SEPARATE FILE)



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APPENDIX D

TRANSIENT STABILITY PLOTS FOR 2024 SUMMER PEAK CASE

(SEE APPENDIX D SUBMITTED IN A SEPARATE FILE)

M: Group 9 Dynamic Stability Analysis Report

See POWER-tek report on next page

Southwestern Power Pool Inc. (SPP)



Definitive Impact Study DISIS-2014-001 (Group 09)



Draft Report Submitted to
Southwest Power Pool Inc.
July-2014

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1. Executive Summary

This report presents the results of impact study comprising of power factor and stability analyses of the proposed interconnection projects under DISIS-2014-001 (Group 09) “the Project” as described in the following table.

Table 1.1: Interconnection Request

Request	Size (MW)	Generator Model	Point of Interconnection
GEN-2014-004	4MW increase to GEN-2013-008 (Pgen=78.76)	GE 97.4m 1.79MW (582318)	Steele City 115kV (640426)
GEN-2014-006	73.6	Siemens 2.3MW (583863)	Harbine 115kV (640208)
GEN-2014-013	73.5	GE XLE 97.4m 1.75MW (583833)	Tap on Fort Randall – Columbus 230 kV (Meadow Grove 230kV, 640540)

Power factor analysis and transient stability simulations were performed for the Projects in service at its full output. SPP provided three base cases for Winter-2014, Summer-2015, and Summer-2024, each comprising of a power flow and corresponding dynamics database. The previous queued request projects are already modeled in the base cases.

The power factor analysis consists of running all N-1, three phase contingencies shown in the Fault Definitions table (Table 3 in the RFP) in power flow to advise the necessary power factor at the point of interconnection (POI) for each contingency.

The power factor analysis indicates that interconnection requests i.e., GEN-2014-004, GEN-2014-006, GEN-2014-013- are required to provide reactive power as indicated in Tables 3.2.2 through 3.2.4.

Per the SPP OATT, the Interconnection Customer will be required to provide 95% lagging (supplying vars) and 95% leading (absorbing vars) at the POI.

To offset the capacitive effects of the collector system and transmission line of the wind farm under low wind or no wind conditions, the inductive reactive support analysis was performed for winter-2014 scenario. The analysis indicates that for GEN-2014-004 at POI (Steele City 115kV 640426) 2.6 MVAR reactor is required at 34.5kV Bus 582118 to maintain zero MVAR flow at POI.

For GEN-2014-006 at POI (Harbine 115kV 640208) 3.0 MVAR reactor is required at 34.5kV Bus 583861 to maintain zero MVAR flow at POI.

Similarly, for GEN-2014-013 at POI (Tap on Fort Randall – Columbus 230 kV Meadow Grove 230kV, 640540) total 34.5 MVAR reactor is required (9.3 MVAR at 34.5kV Bus 579471, 9.9 MVAR at 34.5kV Bus 579571, 7.9MVAR at 34.5kV Bus 583551, and 34.5kV 7.9MVAR at Bus 583831) to maintain zero MVAR flow at POI. Maintaining zero MVar flow at the POI at all times is not possible with static reactor banks. It will be determined on a case by case basis for each generator as to whether additional reactor banks are required for low wind conditions.

There are no impacts on the stability performance of the SPP system for the contingencies simulated on the supplied base cases. The study Projects stayed on-line and stable for all simulated faults. The Project stability simulations with sixty four (64) specified test disturbances did not show instability problems in the SPP system and oscillations were damped out.

Request	Size (MW)	Wind Turbine Model	Point of Interconnection
GEN-2006-038N005	79.5	GE 1.5MW	Broken Bow 115kV (640089)
GEN-2006-038N019	79.5	GE 1.5MW	Petersburg 115kV (640444)
GEN-2006-044N	40.5	GE 1.5MW	Petersburg 115kV (640444)
GEN-2007-011N08	81	Vestas 3.0MW	Bloomfield 115kV (640084)
GEN-2008-086N02	199.5	GE 1.5MW	Tap on the Columbus – Ft Randall 230kV line (560006)
GEN-2008-119O	60	GE 1.5MW	S1399 161kV (646399)
GEN-2008-123N	89.7	SMK203	Tap on the Pauline – Guide Rock 115kV (560137)
GEN-2009-040	73.8	Vestas V90 1.8MW	Marshall 115kV (533349)
GEN-2010-041	10.5	GE 1.5MW	S1399 161kV (646399)
GEN-2010-051	200	GE 1.6MW	Tap on the Twin Church – Hoskins 230kV line (560347)
GEN-2011-018	73.6	Siemens 2.3MW	Steele County 115kV (640426)
GEN-2011-027	120	GE 1.85MW	Tap Twin Church-Hoskins 230kV (560347)
GEN-2011-055	52.8	GE 1.6MW	South Sterling 69kV (S969, 647969)
GEN-2011-056	3.6 MW increase (Pgen=21.6MW)	GENSAL	Jeffrey 115kV (640238)
GEN-2011-056A	3.6 MW increase (Pgen=21.6MW)	GENSAL	Johnson 1 115kV (640240)
GEN-2011-056B	4.5 MW increase (Pgen=23.5MW)	GENSAL	Johnson 2 115kV (640242)
GEN-2012-021	4.8 MW	GENROU	84 th & Bluff 115kV (650275)
GEN-2012-005	81.0	GE 1.62MW (583503)	Tap Fort Randall (652509) – Columbus (640133) 230kV (560718)
GEN-2013-002	50.6	Siemens 2.3MW (583523)	Tap Sheldon (640278) – Folsom (650242) 115kV (560746)
GEN-2013-004	6 MW increase to GEN-2008-086N02 (Pgen=206.5MW)	GE 1.75MW (579469, 579569)	Tap Fort Randall (652509) – Columbus (640133) 230kV (560006)
GEN-2013-005	73.5	GE 1.75MW (583553)	Tap Fort Randall (652509) – Columbus (640133) 230kV (640540)
GEN-2013-006	50.6	Siemens 2.3MW (583563)	Tap Fort Randall (652509) – Columbus (640133) 230kV (640540)

Request	Size (MW)	Wind Turbine Model	Point of Interconnection
GEN-2013-008	1.2MW increase to GEN-2011-018 (Pgen=74.8MW)	GE 1.7MW (582318)	Steele City (640426) 115kV
GEN-2013-014	25.5	GE 1.7MW (583643)	Tap Pauline (640313) – Guide Rock (640206) 115kV (560137)
GEN-2013-015	125.8	GE 1.7MW (583653)	Tap Pauline (640313) – Hildreth (640222) 115kV (560733)
GEN-2013-019	73.6	Siemens 2.3MW (583703)	Tap Sheldon-Folsom – Pleasant Hill 115kV (560746)
GEN-2013-021	229.5	GE 100m 1.70MW (583723)	Ogallala 230kV (640302)
GEN-2013-032	204.0	GE 1.7MW (583783)	Neligh 115kV (640293)

ATC (Available Transfer Capability) studies were not performed as part of this study. These studies will be required at the time transmission service is actually requested. Additional transmission upgrades may be required based on that analysis.

Study assumptions in general have been based on the specific information and data provided by SPP. The accuracy of the conclusions contained within this study is dependent on the assumptions made with respect to other generation additions and transmission improvements planned by other entities. Changes in the assumptions of the timing of other generation additions or transmission improvements may affect this study’s conclusions.

2.2. Objectives

The objectives of the study are to conduct power factor analysis and to determine the impact on system stability of interconnecting the proposed wind farms to SPP’s transmission system.

2.3. Models and Simulations Tools Used

Version 32 of the Siemens, PSS/E™ power system simulation program was used in this study.

SPP provided its latest stability database cases for winter-2014, summer-2015, and summer-2024 peak seasons. The Project’s PSS/E model had been developed prior to this study and was included in the power flow case and the dynamics database. Machine, interconnection and dynamic model data for the Project plant is provided in Appendix D.

Power flow single line diagram of the projects in winter 2014 peak condition are shown in Figure 2.1.1, Figure 2.1.2, and Figure 2.1.3 respectively. These Figures shows that wind farms model includes representation of the radial transmission line, the substation transformer from transmission voltage (115kV and 230kV) to 34.5V. The remainder of each wind farm is represented by lumped equivalents including a generator, a step-up transformer, and collector system impedance.

No special modeling is required of line relays in these cases, except for the special modeling related to the wind-turbine tripping.

All generators in Areas 531, 534, 536, 540, 541, 640, 645, 650, 652 were monitored.

3. Power Factor Analysis

3.1. Methodology

Power factor analysis was conducted for the Project using the following methodology:

1. Replace the wind farm by a generator at the high side bus 345 kV, 138 kV, 115kV, or 69 kV bus, as applicable, with the MW of the wind farms at that point of interconnection.
2. Turn off the wind farm as modeled (as well as previous queued projects at the same point of interconnection).
3. Model a var generator at the Project’s high voltage side, 345 kV, 138 kV, 115kV, or 69kV bus, as applicable. The var generator is set to hold a voltage schedule at the POI consistent with the voltage schedule in the provided power flow cases for summer and winter or 1.0 pu voltage, whichever is higher.
4. Perform the steady state contingency analysis to determine the power factor necessary at the POI for each contingency.
5. If the required power factor at the POI is beyond the capability of the studied wind turbines to meet (at the POI) capacitor banks may be considered for the stability analysis. The preference is to locate the capacitance banks on the 34.5 kV customer side. Factors to sizing capacitor banks include:
 - 5.1. The ability of the wind farm to meet FERC Order 661A (low voltage ride through) with and without capacitor banks.
 - 5.2. The ability of the wind farm to meet FERC Order 661A (wind farm recovery to pre-fault voltage).
 - 5.3. If wind farms trips on high voltage, power factor lower than unity may be required.

3.2. Analysis

Analysis was performed for the proposed Projects with all prior queued projects in service. A var generator was modeled at the point of interconnection and was set to hold a voltage schedule at the POI consistent with the voltage schedule in the provided power flow cases OR 1 p.u. whichever is higher. The voltages for these Projects are summarized in Table 3.2.1. All upgrades and instructions were made in the base cases. No other changes were made in the base cases provided, other than the addition of the var generators. Contingency analysis was run for provided list of contingencies.

Table 3.2.1: POI voltages for the summer and winter peak cases

Request	Point of Interconnection	Size (MW)	Base Case Voltage (p.u.)		
			Winter 2014 Peak	Summer 2015 Peak	Summer 2024 Peak
GEN-2014-004	Steele City 115kV (640426)	4MW increase to GEN-2013-008 (Pgen=78.76)	1.032	1.0294	1.030
GEN-2014-006	Harbine 115kV (640208)	73.6	1.0343	1.03	1.033

Request	Point of Interconnection	Size (MW)	Base Case Voltage (p.u.)		
			Winter 2014 Peak	Summer 2015 Peak	Summer 2024 Peak
GEN-2014-013	Tap on Fort Randall – Columbus 230 kV (Meadow Grove 230kV, 640540)	73.5	1.016	1.0164	1.016

The details of the var requirement during contingencies are highlighted in Table 3.2.2, 3.2.3 and 3.2.4. The highest and the lowest values obtained are highlighted in these tables.

1. For 2014 winter case (GEN-2014-004 analysis): The maximum var generator supply is 22.3 MVARs at 0.96 (lagging power factor) for the outage of 560137 [G08-123N-TAP115.0] TO BUS 640313 [PAULINE7 115.0] CKT outage. The minimum var requirement is 0.3 MVAR at 1.0 (lagging power factor) for outage of 640426 [STEELEC7 115.0] TO BUS 533332 [KNOB HL3 115.0] CKT outage.
2. For 2014 winter case (GEN-2014-006 analysis): The maximum var generator supply is 19.3 MVARs at 0.97 (lagging power factor) for the outage of 560137 [G08-123N-TAP115.0] TO BUS 640313 [PAULINE7 115.0] CKT outage. The minimum var requirement is -13.0 MVAR at 0.98 (leading power factor) for outage of 640426 [STEELEC7 115.0] TO BUS 533332 [KNOB HL3 115.0] CKT outage.
3. For 2014 winter case (GEN-2014-013 analysis): The maximum var generator supply is -24.8 MVARs at 1.0 (leading power factor) for the outage of 640540 [MEADOW GROVE230.0] TO BUS 560718 [G12-005-TAP 230.0] CKT outage. The minimum var requirement is -58.5 MVAR at 0.99 (leading power factor) for outage of 640126 [E.COL. 4 230.0] TO BUS 640127 [COLMB.E7 115.0] Transformer outage.

Table 3.2.2: Var Generator Output in 2014 Winter Peak Case for DISIS-2014-001 (Group 09)
2014 Winter Peak Case Power Factor Study:

Generation Interconnection Request Analysis Rated MW of Wind Farms OR at POI (MW) Rated MVAR of Wind Farms OR at POI (MVAR)						For GEN-2014-004		For GEN-2014-004		For GEN-2014-013		
						MW at POI 78.6 MVAR at POI 35.2		MW at POI 73.6 MVAR at POI 35.64		MW at POI 404.1 MVAR at POI 184.5		
Cont. Name	From Bus (# & Name)		To Bus (# & Name)		ID	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	
	Base Case MVAR Flow					N/A	13.4	0.99	1.0	1.00	-54.3	0.99
FLT01-3PH	640208	HARBINE7 115.00	640169	FAIRBRY7 115.00	CKT 1	10.8	0.99	-6.5	1.00	-54.4	0.99	
FLT02-3PH	640426	STEELEC7 115.00	640208	HARBINE7 115.00	CKT 1	11.8	0.99	4.4	1.00	-54.4	0.99	
FLT03-3PH	640426	STEELEC7 115.00	533332	KNOB HL3 115.00	CKT 1	0.3	1.00	-13.0	0.98	-53.9	0.99	
FLT04-3PH	533332	KNOB HL3 115.00	539665	GRNLEAF3 115.00	CKT 1	8.2	0.99	-4.4	1.00	-54.3	0.99	

Generation Interconnection Request Analysis Rated MW of Wind Farms OR at POI (MW) Rated MVAR of Wind Farms OR at POI (MVAR)							For GEN-2014-004		For GEN-2014-004		For GEN-2014-013	
							MW at POI 78.6 MVAR at POI 35.2		MW at POI 73.6 MVAR at POI 35.64		MW at POI 404.1 MVAR at POI 184.5	
Cont. Name	From Bus (# & Name)		To Bus (# & Name)		ID	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	
FLT05-3PH	533332	KNOB HL3 115.00	533349	MARSHALL 115.00	CKT 1	16.9	0.98	3.6	1.00	-54.3	0.99	
FLT06-3PH	640540	MEADOW GROVE230.00	560718	G12-005-TAP 230.00	CKT 1	13.5	0.99	1.2	1.00	-24.8	1.00	
FLT07-3PH	640540	MEADOW GROVE230.00	640133	COLMBUS4 230.00	CKT 1	13.3	0.99	1.0	1.00	-49.3	0.99	
FLT08-3PH	640540	MEADOW GROVE230.00	560101	S_NORFOLK 230.00	CKT 1	13.6	0.99	1.4	1.00	-43.4	0.99	
FLT09-3PH	560718	G12-005-TAP 230.00	652509	FTRANDL4 230.00	CKT 1	13.5	0.99	1.2	1.00	-37.2	1.00	
FLT10-3PH	560746	G13-002-TAP 115.00	640278	SHELDON7 115.00	CKT 2	13.4	0.99	0.9	1.00	-54.1	0.99	
FLT11-3PH	640278	SHELDON7 115.00	640088	BPS SUB7 115.00	CKT 1	15.5	0.98	3.2	1.00	-53.3	0.99	
FLT12-3PH	640278	SHELDON7 115.00	640111	CLATONA7 115.00	CKT 1	14.6	0.98	2.3	1.00	-54.0	0.99	
FLT13-3PH	640278	SHELDON7 115.00	640153	CRETE_7 115.00	CKT 1	14.6	0.98	3.7	1.00	-54.0	0.99	
FLT14-3PH	640278	SHELDON7 115.00	640171	FIRTH 7 115.00	CKT 1	13.9	0.98	1.4	1.00	-54.7	0.99	
FLT15-3PH	640076	BEATRCE7 115.00	640088	BPS SUB7 115.00	CKT 1	14.2	0.98	2.6	1.00	-54.3	0.99	
FLT16-3PH	640076	BEATRCE7 115.00	640208	HARBINE7 115.00	CKT 1	19.6	0.97	6.3	1.00	-53.8	0.99	
FLT17-3PH	640076	BEATRCE7 115.00	640361	STEINER7 115.00	CKT 1	14.6	0.98	2.8	1.00	-54.0	0.99	
FLT18-3PH	640235	HUMBOLT7 115.00	640361	STEINER7 115.00	CKT 1	14.5	0.98	2.6	1.00	-54.0	0.99	
FLT19-3PH	533217	KELLY 3 115.00	533331	KING HL3 115.00	CKT 1	13.6	0.99	0.9	1.00	-54.3	0.99	

Generation Interconnection Request Analysis Rated MW of Wind Farms OR at POI (MW) Rated MVAR of Wind Farms OR at POI (MVAR)							For GEN-2014-004		For GEN-2014-004		For GEN-2014-013	
							MW at POI 78.6 MVAR at POI 35.2		MW at POI 73.6 MVAR at POI 35.64		MW at POI 404.1 MVAR at POI 184.5	
Cont. Name	From Bus (# & Name)		To Bus (# & Name)		ID	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	
FLT20-3PH	539656	CLIFTON3 115.00	539657	CONCORD3 115.00	CKT 1	10.4	0.99	-2.4	1.00	-54.3	0.99	
FLT21-3PH	539657	CONCORD3 115.00	539650	BELOIT 3 115.00	CKT 1	13.5	0.99	1.0	1.00	-54.3	0.99	
FLT22-3PH	539657	CONCORD3 115.00	539669	JEWELL 3 115.00	CKT 1	13.5	0.99	1.1	1.00	-54.3	0.99	
FLT23-3PH	640277	MOORE 3 345.00	640139	COOPER 3 345.00	CKT 1	14.2	0.98	2.1	1.00	-51.5	0.99	
FLT24-3PH	640277	MOORE 3 345.00	640271	MCCOOL 3 345.00	CKT 1	14.0	0.98	1.8	1.00	-46.8	0.99	
FLT25-3PH	640277	MOORE 3 345.00	640312	PAULINE3 345.00	CKT 1	14.7	0.98	3.9	1.00	-44.9	0.99	
FLT26-3PH	640277	MOORE 3 345.00	650114	NW68HOLDRG3 345.00	CKT 1	13.6	0.99	1.3	1.00	-51.8	0.99	
FLT27-3PH	640277	MOORE 3 345.00	650189	103&ROKEBY3 345.00	CKT 1	13.9	0.98	1.8	1.00	-51.9	0.99	
FLT28-3PH	650114	NW68HOLDRG3 345.00	650185	WAGENER 3 345.00	CKT 1	13.6	0.99	1.3	1.00	-52.7	0.99	
FLT29-3PH	650114	NW68HOLDRG3 345.00	640125	COLMB.E3 345.00	CKT 1	13.4	0.99	1.0	1.00	-54.3	0.99	
FLT30-3PH	650189	103&ROKEBY3 345.00	645458	S3458 3 345.00	CKT 1	13.6	0.99	1.6	1.00	-49.7	0.99	
FLT31-3PH	650189	103&ROKEBY3 345.00	650185	WAGENER 3 345.00	CKT 1	13.4	0.99	1.0	1.00	-51.9	0.99	
FLT32-3PH	650185	WAGENER 3 345.00	645454	S3454 3 345.00	CKT 1	13.9	0.98	1.4	1.00	-54.5	0.99	
FLT33-3PH	640313	PAULINE7 115.00	640215	HASTING7 115.00	CKT 2	13.5	0.99	1.1	1.00	-54.3	0.99	
FLT34-3PH	640374	SWEET W3 345.00	652571	GR ISLD3 345.00	CKT 1	13.4	0.99	1.7	1.00	-50.7	0.99	

Generation Interconnection Request Analysis Rated MW of Wind Farms OR at POI (MW) Rated MVAR of Wind Farms OR at POI (MVAR)							For GEN-2014-004		For GEN-2014-004		For GEN-2014-013	
							MW at POI 78.6 MVAR at POI 35.2		MW at POI 73.6 MVAR at POI 35.64		MW at POI 404.1 MVAR at POI 184.5	
Cont. Name	From Bus (# & Name)		To Bus (# & Name)		ID	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	
FLT35-3PH	652571	GR ISLD3 345.00	640271	MCCOOL 3 345.00	CKT 1	13.6	0.99	2.2	1.00	-44.3	0.99	
FLT36-3PH	652571	GR ISLD3 345.00	652506	FTTHOMP3 345.00	CKT 1	13.5	0.99	1.3	1.00	-47.4	0.99	
FLT37-3PH	560137	G08-123N-TAP115.00	640206	GUIDE R7 115.00	CKT 1	12.0	0.99	-1.1	1.00	-52.8	0.99	
FLT38-3PH	560137	G08-123N-TAP115.00	640313	PAULINE7 115.00	CKT 1	22.3	0.96	19.3	0.97	-54.5	0.99	
FLT39-3PH	640218	HEBRN N7 115.00	640169	FAIRBRY7 115.00	CKT 1	13.7	0.99	0.7	1.00	-54.5	0.99	
FLT40-3PH	640218	HEBRN N7 115.00	640105	CARLJCT7 115.00	CKT 1	14.4	0.98	2.1	1.00	-54.4	0.99	
FLT41-3PH	640313	PAULINE7 115.00	640215	HASTING7 115.00	CKT 1	13.5	0.99	1.1	1.00	-54.3	0.99	
FLT42-3PH	652509	FTRANDL4 230.00	652507	FTTHOMP4 230.00	CKT 1	13.4	0.99	1.1	1.00	-56.1	0.99	
FLT43-3PH	652509	FTRANDL4 230.00	652516	LAKPLAT4 230.00	CKT 1	13.4	0.99	1.0	1.00	-55.8	0.99	
FLT44-3PH	652509	FTRANDL4 230.00	652526	UTICAJC4 230.00	CKT 1	13.6	0.99	1.3	1.00	-46.3	0.99	
FLT45-3PH	652509	FTRANDL4 230.00	652565	SIUUXCY4 230.00	CKT 1	13.5	0.99	1.3	1.00	-47.4	0.99	
FLT46-3PH	640133	COLMBUS4 230.00	640126	E.COL. 4 230.00	CKT 1	13.4	0.99	1.0	1.00	-57.9	0.99	
FLT47-3PH	640133	COLMBUS4 230.00	640131	COLMB.W4 230.00	CKT 1	13.5	0.99	1.1	1.00	-56.1	0.99	
FLT48-3PH	640133	COLMBUS4 230.00	640343	SHELCRK4 230.00	CKT 1	13.5	0.99	1.2	1.00	-45.0	0.99	
FLT49-3PH	640131	COLMB.W4 230.00	640200	GR ISLD4 230.00	CKT 1	13.6	0.99	1.4	1.00	-49.2	0.99	

Generation Interconnection Request Analysis Rated MW of Wind Farms OR at POI (MW) Rated MVAR of Wind Farms OR at POI (MVAR)						For GEN-2014-004		For GEN-2014-004		For GEN-2014-013	
						MW at POI 78.6 MVAR at POI 35.2		MW at POI 73.6 MVAR at POI 35.64		MW at POI 404.1 MVAR at POI 184.5	
Cont. Name	From Bus (# & Name)		To Bus (# & Name)		ID	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI
FLT50-3PH	640277	MOORE 3 345.00	640278	SHELDON7 115.00	T/F	13.3	0.99	0.8	1.00	-58.1	0.99
FLT51-3PH	640234	HUMBOLT5 161.00	640235	HUMBOLT7 115.00	T/F	14.2	0.98	2.5	1.00	-54.1	0.99
FLT52-3PH	532913	KELLY 5 161.00	533217	KELLY 3 115.00	T/F	12.1	0.99	0.5	1.00	-54.4	0.99
FLT53-3PH	539658	CONCRD6 230.00	539657	CONCORD3 115.00	T/F	16.6	0.98	3.1	1.00	-54.3	0.99
FLT54-3PH	650114	NW68HOLDRG3 345.00	650214	NW68HOLDRG7 115.00	T/F	13.3	0.99	1.0	1.00	-54.8	0.99
FLT55-3PH	640312	PAULINE3 345.00	640313	PAULINE7 115.00	T/F	13.4	0.99	1.0	1.00	-54.3	0.99
FLT56-3PH	652571	GR ISLD3 345.00	640200	GR ISLD4 230.00	T/F	13.4	0.99	1.0	1.00	-53.6	0.99
FLT57-3PH	640200	GR ISLD4 230.00	640201	GR ISLD7 115.00	T/F	13.4	0.99	1.0	1.00	-54.0	0.99
FLT58-3PH	640214	HASTING4 230.00	641088	HASTCTY7 115.00	T/F	13.6	0.99	1.5	1.00	-55.4	0.99
FLT59-3PH	652509	FTRANDL4 230.00	652510	FTRANDL7 115.00	T/F	13.4	0.99	1.0	1.00	-54.1	0.99
FLT60-3PH	640133	COLMBUS4 230.00	640134	KELLY 7 115.00	T/F	13.4	0.99	1.0	1.00	-55.7	0.99
FLT61-3PH	640126	E.COL. 4 230.00	640127	COLMB.E7 115.00	T/F	13.4	0.99	1.0	1.00	-58.5	0.99
FLT62-3PH	640343	SHELCKR4 230.00	640342	SHELCKR3 345.00	T/F	13.5	0.99	1.2	1.00	-45.6	0.99
FLT63-3PH	640540	MEADOW GROVE230.00	560008	MEADOWGROVE 115.00	T/F	13.4	0.99	1.1	1.00	-44.9	0.99
FLT64-3PH	560100	S_NORFOLK 345.00	560101	S_NORFOLK 230.00	T/F	13.6	0.99	1.4	1.00	-50.9	0.99

4. For 2015 summer case (GEN-2014-004 analysis): The maximum var generator supply is 22.3 MVARs at 0.96 (lagging power factor) for the outage of 560137 [G08-123N-TAP115.0] TO BUS 640313 [PAULINE7 115.0] CKT outage. The minimum var requirement is 4.4 MVAR at 1.0 (lagging power factor) for outage of 640426 [STEELEC7 115.0] TO BUS 533332 [KNOB HL3 115.0] CKT outage.
5. For 2015 summer case (GEN-2014-006 analysis): The maximum var generator supply is 17.0 MVARs at 0.97 (lagging power factor) for the outage of 560137 [G08-123N-TAP115.0] TO BUS 640313 [PAULINE7 115.0] CKT outage. The minimum var requirement is -11.9 MVAR at 0.99 (leading power factor) for outage of 640208 [HARBINE7 115.0] TO BUS 640169 [FAIRBRY7 115.0] CKT outage.
6. For 2015 summer case (GEN-2014-013 analysis): The maximum var generator supply is -35.0 MVARs at 1.0 (leading power factor) for the outage of 640540 [MEADOW GROVE230.0] TO BUS 560718 [G12-005-TAP 230.0] CKT outage. The minimum var requirement is -62.9 MVAR at 0.99 (leading power factor) for outage of 640126 [E.COL. 4 230.0] TO BUS 640127 [COLMB.E7 115.0] Transformer outage

Table 3.2.3: Var Generator Output in 2015 Summer Peak Case for DISIS-2014-001 (Group 09)

2015 Summer Peak Case Power Factor Study:

Generation Interconnection Request Analysis Rated MW of Wind Farms OR at POI (MW) Rated MVAR of Wind Farms OR at POI (MVAR)						For GEN-2014-004		For GEN-2014-004		For GEN-2014-013		
						MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	
	Base Case MVAR Flow					N/A	14.5	0.98	1.9	1.00	-57.1	0.99
FLT01-3PH	640208	HARBINE7 115.00	640169	FAIRBRY7 115.00	CKT 1	9.3	0.99	-11.9	0.99	-56.7	0.99	
FLT02-3PH	640426	STEELEC7 115.00	640208	HARBINE7 115.00	CKT 1	10.2	0.99	-7.0	1.00	-56.9	0.99	
FLT03-3PH	640426	STEELEC7 115.00	533332	KNOB HL3 115.00	CKT 1	4.4	1.00	-10.0	0.99	-56.9	0.99	
FLT04-3PH	533332	KNOB HL3 115.00	539665	GRNLEAF3 115.00	CKT 1	14.8	0.98	0.9	1.00	-57.1	0.99	
FLT05-3PH	533332	KNOB HL3 115.00	533349	MARSHALL 115.00	CKT 1	18.2	0.97	4.5	1.00	-57.2	0.99	
FLT06-3PH	640540	MEADOW GROVE230.00	560718	G12-005-TAP 230.00	CKT 1	14.5	0.98	2.0	1.00	-35.0	1.00	

Generation Interconnection Request Analysis Rated MW of Wind Farms OR at POI (MW) Rated MVAR of Wind Farms OR at POI (MVAR)						For GEN-2014-004		For GEN-2014-004		For GEN-2014-013	
						MW at POI 78.6 MVAR at POI 35.2		MW at POI 73.6 MVAR at POI 35.64		MW at POI 404.1 MVAR at POI 184.5	
Cont. Name	From Bus (# & Name)		To Bus (# & Name)		ID	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI
FLT07-3PH	640540	MEADOW GROVE230.00	640133	COLMBUS4 230.00	CKT 1	14.4	0.98	1.9	1.00	-54.5	0.99
FLT08-3PH	640540	MEADOW GROVE230.00	560101	S_NORFOLK 230.00	CKT 1	14.6	0.98	2.2	1.00	-46.4	0.99
FLT09-3PH	560718	G12-005-TAP 230.00	652509	FTRANDL4 230.00	CKT 1	14.6	0.98	2.0	1.00	-48.0	0.99
FLT10-3PH	560746	G13-002-TAP 115.00	640278	SHELDON7 115.00	CKT 2	14.5	0.98	1.9	1.00	-56.9	0.99
FLT11-3PH	640278	SHELDON7 115.00	640088	BPS SUB7 115.00	CKT 1	16.8	0.98	4.7	1.00	-56.1	0.99
FLT12-3PH	640278	SHELDON7 115.00	640111	CLATONA7 115.00	CKT 1	15.8	0.98	3.4	1.00	-56.7	0.99
FLT13-3PH	640278	SHELDON7 115.00	640153	CRETE_7 115.00	CKT 1	15.3	0.98	3.7	1.00	-57.1	0.99
FLT14-3PH	640278	SHELDON7 115.00	640171	FIRTH 7 115.00	CKT 1	15.0	0.98	2.4	1.00	-57.7	0.99
FLT15-3PH	640076	BEATRCE7 115.00	640088	BPS SUB7 115.00	CKT 1	15.1	0.98	3.2	1.00	-57.1	0.99
FLT16-3PH	640076	BEATRCE7 115.00	640208	HARBINE7 115.00	CKT 1	21.2	0.97	9.7	0.99	-56.8	0.99
FLT17-3PH	640076	BEATRCE7 115.00	640361	STEINER7 115.00	CKT 1	16.0	0.98	4.3	1.00	-57.0	0.99
FLT18-3PH	640235	HUMBOLT7 115.00	640361	STEINER7 115.00	CKT 1	15.9	0.98	4.1	1.00	-57.0	0.99
FLT19-3PH	533217	KELLY 3 115.00	533331	KING HL3 115.00	CKT 1	14.5	0.98	1.7	1.00	-57.2	0.99
FLT20-3PH	539656	CLIFTON3 115.00	539657	CONCORD3 115.00	CKT 1	8.9	0.99	-4.3	1.00	-57.2	0.99
FLT21-3PH	539657	CONCORD3 115.00	539650	BELOIT 3 115.00	CKT 1	14.1	0.98	1.5	1.00	-57.2	0.99

Generation Interconnection Request Analysis Rated MW of Wind Farms OR at POI (MW) Rated MVAR of Wind Farms OR at POI (MVAR)						For GEN-2014-004		For GEN-2014-004		For GEN-2014-013	
						MW at POI 78.6 MVAR at POI 35.2		MW at POI 73.6 MVAR at POI 35.64		MW at POI 404.1 MVAR at POI 184.5	
Cont. Name	From Bus (# & Name)		To Bus (# & Name)		ID	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI
FLT22-3PH	539657	CONCORD3 115.00	539669	JEWELL 3 115.00	CKT 1	14.4	0.98	1.8	1.00	-57.2	0.99
FLT23-3PH	640277	MOORE 3 345.00	640139	COOPER 3 345.00	CKT 1	15.2	0.98	2.8	1.00	-55.0	0.99
FLT24-3PH	640277	MOORE 3 345.00	640271	MCCOOL 3 345.00	CKT 1	14.6	0.98	2.0	1.00	-50.8	0.99
FLT25-3PH	640277	MOORE 3 345.00	640312	PAULINE3 345.00	CKT 1	14.9	0.98	3.0	1.00	-50.1	0.99
FLT26-3PH	640277	MOORE 3 345.00	650114	NW68HOLDRG3 345.00	CKT 1	14.6	0.98	2.0	1.00	-53.6	0.99
FLT27-3PH	640277	MOORE 3 345.00	650189	103&ROKEBY3 345.00	CKT 1	14.8	0.98	2.3	1.00	-55.9	0.99
FLT28-3PH	650114	NW68HOLDRG3 345.00	650185	WAGENER 3 345.00	CKT 1	14.6	0.98	2.1	1.00	-55.9	0.99
FLT29-3PH	650114	NW68HOLDRG3 345.00	640125	COLMB.E3 345.00	CKT 1	14.5	0.98	1.9	1.00	-57.1	0.99
FLT30-3PH	650189	103&ROKEBY3 345.00	645458	S3458 3 345.00	CKT 1	14.5	0.98	2.2	1.00	-52.4	0.99
FLT31-3PH	650189	103&ROKEBY3 345.00	650185	WAGENER 3 345.00	CKT 1	14.4	0.98	1.8	1.00	-54.9	0.99
FLT32-3PH	650185	WAGENER 3 345.00	645454	S3454 3 345.00	CKT 1	14.8	0.98	2.1	1.00	-58.4	0.99
FLT33-3PH	640313	PAULINE7 115.00	640215	HASTING7 115.00	CKT 2	14.6	0.98	2.1	1.00	-57.1	0.99
FLT34-3PH	640374	SWEET W3 345.00	652571	GR ISLD3 345.00	CKT 1	14.3	0.98	2.3	1.00	-48.7	0.99
FLT35-3PH	652571	GR ISLD3 345.00	640271	MCCOOL 3 345.00	CKT 1	14.5	0.98	2.5	1.00	-48.9	0.99
FLT36-3PH	652571	GR ISLD3 345.00	652506	FTTHOMP3 345.00	CKT 1	14.4	0.98	2.2	1.00	-43.7	0.99

Generation Interconnection Request Analysis Rated MW of Wind Farms OR at POI (MW) Rated MVAR of Wind Farms OR at POI (MVAR)						For GEN-2014-004		For GEN-2014-004		For GEN-2014-013	
						MW at POI 78.6 MVAR at POI 35.2		MW at POI 73.6 MVAR at POI 35.64		MW at POI 404.1 MVAR at POI 184.5	
Cont. Name	From Bus (# & Name)		To Bus (# & Name)		ID	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI
FLT37-3PH	560137	G08-123N-TAP115.00	640206	GUIDE R7 115.00	CKT 1	14.9	0.98	3.9	1.00	-55.8	0.99
FLT38-3PH	560137	G08-123N-TAP115.00	640313	PAULINE7 115.00	CKT 1	22.3	0.96	17.0	0.97	-57.3	0.99
FLT39-3PH	640218	HEBRN N7 115.00	640169	FAIRBRY7 115.00	CKT 1	14.5	0.98	0.9	1.00	-57.3	0.99
FLT40-3PH	640218	HEBRN N7 115.00	640105	CARLJCT7 115.00	CKT 1	13.0	0.99	-2.6	1.00	-56.8	0.99
FLT41-3PH	640313	PAULINE7 115.00	640215	HASTING7 115.00	CKT 1	14.6	0.98	2.1	1.00	-57.1	0.99
FLT42-3PH	652509	FTRANDL4 230.00	652507	FTTHOMP4 230.00	CKT 1	14.5	0.98	2.0	1.00	-58.1	0.99
FLT43-3PH	652509	FTRANDL4 230.00	652516	LAKPLAT4 230.00	CKT 1	14.5	0.98	1.9	1.00	-59.5	0.99
FLT44-3PH	652509	FTRANDL4 230.00	652526	UTICAJC4 230.00	CKT 1	14.6	0.98	2.1	1.00	-49.7	0.99
FLT45-3PH	652509	FTRANDL4 230.00	652565	SIOUXCY4 230.00	CKT 1	14.6	0.98	2.1	1.00	-50.5	0.99
FLT46-3PH	640133	COLMBUS4 230.00	640126	E.COL. 4 230.00	CKT 1	14.5	0.98	1.9	1.00	-62.3	0.99
FLT47-3PH	640133	COLMBUS4 230.00	640131	COLMB.W4 230.00	CKT 1	14.6	0.98	2.1	1.00	-62.8	0.99
FLT48-3PH	640133	COLMBUS4 230.00	640343	SHELCRK4 230.00	CKT 1	14.6	0.98	2.0	1.00	-47.7	0.99
FLT49-3PH	640131	COLMB.W4 230.00	640200	GR ISLD4 230.00	CKT 1	14.6	0.98	2.1	1.00	-53.3	0.99
FLT50-3PH	640277	MOORE 3 345.00	640278	SHELDON7 115.00	T/F	14.8	0.98	2.1	1.00	-59.4	0.99
FLT51-3PH	640234	HUMBOLT5 161.00	640235	HUMBOLT7 115.00	T/F	15.6	0.98	3.8	1.00	-57.0	0.99

Generation Interconnection Request Analysis Rated MW of Wind Farms OR at POI (MW) Rated MVAR of Wind Farms OR at POI (MVAR)						For GEN-2014-004		For GEN-2014-004		For GEN-2014-013	
						MW at POI 78.6 MVAR at POI 35.2		MW at POI 73.6 MVAR at POI 35.64		MW at POI 404.1 MVAR at POI 184.5	
Cont. Name	From Bus (# & Name)		To Bus (# & Name)		ID	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI
FLT52-3PH	532913	KELLY 5 161.00	533217	KELLY 3 115.00	T/F	20.5	0.97	6.7	1.00	-57.3	0.99
FLT53-3PH	539658	CONCRD6 230.00	539657	CONCORD3 115.00	T/F	16.4	0.98	3.7	1.00	-57.0	0.99
FLT54-3PH	650114	NW68HOLDRG3 345.00	650214	NW68HOLDRG7 115.00	T/F	14.3	0.98	1.7	1.00	-58.1	0.99
FLT55-3PH	640312	PAULINE3 345.00	640313	PAULINE7 115.00	T/F	14.5	0.98	1.9	1.00	-57.1	0.99
FLT56-3PH	652571	GR ISLD3 345.00	640200	GR ISLD4 230.00	T/F	14.5	0.98	1.8	1.00	-56.1	0.99
FLT57-3PH	640200	GR ISLD4 230.00	640201	GR ISLD7 115.00	T/F	14.5	0.98	2.0	1.00	-56.2	0.99
FLT58-3PH	640214	HASTING4 230.00	641088	HASTCTY7 115.00	T/F	14.6	0.98	2.1	1.00	-60.2	0.99
FLT59-3PH	652509	FTRANDL4 230.00	652510	FTRANDL7 115.00	T/F	14.5	0.98	1.9	1.00	-57.8	0.99
FLT60-3PH	640133	COLMBUS4 230.00	640134	KELLY 7 115.00	T/F	14.5	0.98	1.9	1.00	-56.1	0.99
FLT61-3PH	640126	E.COL. 4 230.00	640127	COLMB.E7 115.00	T/F	14.5	0.98	1.9	1.00	-62.9	0.99
FLT62-3PH	640343	SHELCRK4 230.00	640342	SHELCRK3 345.00	T/F	14.6	0.98	2.0	1.00	-48.3	0.99
FLT63-3PH	640540	MEADOW GROVE230.00	560008	MEADOWGROVE 115.00	T/F	14.5	0.98	1.9	1.00	-36.2	1.00
FLT64-3PH	560100	S_NORFOLK 345.00	560101	S_NORFOLK 230.00	T/F	14.6	0.98	2.0	1.00	-54.0	0.99

7. For 2024 summer case (GEN-2014-004 analysis): The maximum var generator supply is 21.2 MVARs at 0.97 (lagging power factor) for the outage of 560137 [G08-123N-TAP115.0] TO BUS 640313 [PAULINE7 115.0] CKT outage. The minimum var requirement is 9.8 MVAR at 0.99 (lagging power factor) for outage of 539656 [CLIFTON3 115.0] TO BUS 539657 [CONCORD3 115.0] CKT outage.
8. For 2024 summer case (GEN-2014-006 analysis): The maximum var generator supply is 13.8 MVARs at 0.98 (lagging power factor) for the outage of 560137 [G08-123N-TAP115.0] TO BUS 640313 [PAULINE7 115.0] CKT outage. The minimum var requirement is -5.4 MVAR at 1.0 (leading power factor) for outage of 640426 [STEELEC7 115.0] TO BUS 533332 [KNOB HL3 115.0] CKT outage.
9. For 2024 summer case (GEN-2014-013 analysis): The maximum var generator supply is -27.9 MVARs at 1.0 (leading power factor) for the outage of 640540 [MEADOW GROVE230.0] TO BUS 560718 [G12-005-TAP 230.0] CKT outage. The minimum var requirement is -63.0 MVAR at 0.99 (leading power factor) for outage of 640133 [COLMBUS4 230.0] TO BUS 640131 [C COLMB.W4 230.0] CKT outage.

Table 3.2.3: Var Generator Output in 2024 Summer Peak Case for DISIS-2014-001 (Group 09)
2024 Summer Peak Case Power Factor Study:

Generation Interconnection Request Analysis Rated MW of Wind Farms OR at POI (MW) Rated MVAR of Wind Farms OR at POI (MVAR)						For GEN-2014-004		For GEN-2014-004		For GEN-2014-013		
						MW at POI 78.6 MVAR at POI 35.2		MW at POI 73.6 MVAR at POI 35.64		MW at POI 404.1 MVAR at POI 184.5		
Cont. Name	From Bus (# & Name)		To Bus (# & Name)		ID	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	
	Base Case MVAR Flow					N/A	14.8	0.98	2.0	1.00	-51.8	0.99
FLT01-3PH	640208	HARBINE7 115.00	640169	FAIRBRY7 115.00	CKT 1	13.8	0.98	-3.8	1.00	-51.9	0.99	
FLT02-3PH	640426	STEELEC7 115.00	640208	HARBINE7 115.00	CKT 1	15.2	0.98	1.2	1.00	-51.8	0.99	
FLT03-3PH	640426	STEELEC7 115.00	533332	KNOB HL3 115.00	CKT 1	11.6	0.99	-5.4	1.00	-51.6	0.99	
FLT04-3PH	533332	KNOB HL3 115.00	539665	GRNLEAF3 115.00	CKT 1	14.0	0.98	-0.1	1.00	-51.8	0.99	
FLT05-3PH	533332	KNOB HL3 115.00	533349	MARSHALL 115.00	CKT 1	16.4	0.98	3.6	1.00	-51.8	0.99	
FLT06-3PH	640540	MEADOW	560718	G12-005-TAP 230.00	CKT 1	14.8	0.98	2.0	1.00	-27.9	1.00	

Generation Interconnection Request Analysis Rated MW of Wind Farms OR at POI (MW) Rated MVAR of Wind Farms OR at POI (MVAR)						For GEN-2014-004		For GEN-2014-004		For GEN-2014-013	
						MW at POI 78.6 MVAR at POI 35.2		MW at POI 73.6 MVAR at POI 35.64		MW at POI 404.1 MVAR at POI 184.5	
Cont. Name	From Bus (# & Name)		To Bus (# & Name)		ID	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI
		GROVE230.00									
FLT07-3PH	640540	MEADOW GROVE230.00	640133	COLMBUS4 230.00	CKT 1	14.8	0.98	1.9	1.00	-58.2	0.99
FLT08-3PH	640540	MEADOW GROVE230.00	560101	S_NORFOLK 230.00	CKT 1	14.9	0.98	2.1	1.00	-37.8	1.00
FLT09-3PH	560718	G12-005-TAP 230.00	652509	FTRANDL4 230.00	CKT 1	14.9	0.98	2.1	1.00	-41.2	0.99
FLT10-3PH	560746	G13-002-TAP 115.00	640278	SHELDON7 115.00	CKT 2	14.9	0.98	2.1	1.00	-51.5	0.99
FLT11-3PH	640278	SHELDON7 115.00	640088	BPS SUB7 115.00	CKT 1	16.7	0.98	4.2	1.00	-51.2	0.99
FLT12-3PH	640278	SHELDON7 115.00	640111	CLATONA7 115.00	CKT 1	15.9	0.98	3.2	1.00	-51.7	0.99
FLT13-3PH	640278	SHELDON7 115.00	640153	CRETE_7 115.00	CKT 1	15.4	0.98	3.5	1.00	-51.6	0.99
FLT14-3PH	640278	SHELDON7 115.00	640171	FIRTH 7 115.00	CKT 1	15.4	0.98	2.6	1.00	-52.4	0.99
FLT15-3PH	640076	BEATRCE7 115.00	640088	BPS SUB7 115.00	CKT 1	15.4	0.98	3.4	1.00	-51.8	0.99
FLT16-3PH	640076	BEATRCE7 115.00	640208	HARBINE7 115.00	CKT 1	19.0	0.97	6.6	1.00	-51.7	0.99
FLT17-3PH	640076	BEATRCE7 115.00	640361	STEINER7 115.00	CKT 1	16.1	0.98	4.0	1.00	-51.7	0.99
FLT18-3PH	640235	HUMBOLT7 115.00	640361	STEINER7 115.00	CKT 1	15.9	0.98	3.8	1.00	-51.7	0.99
FLT19-3PH	533217	KELLY 3 115.00	533331	KING HL3 115.00	CKT 1	14.7	0.98	1.6	1.00	-51.8	0.99
FLT20-3PH	539656	CLIFTON3 115.00	539657	CONCORD3 115.00	CKT 1	9.8	0.99	-4.6	1.00	-51.8	0.99

Generation Interconnection Request Analysis Rated MW of Wind Farms OR at POI (MW) Rated MVAR of Wind Farms OR at POI (MVAR)						For GEN-2014-004		For GEN-2014-004		For GEN-2014-013	
						MW at POI 78.6 MVAR at POI 35.2		MW at POI 73.6 MVAR at POI 35.64		MW at POI 404.1 MVAR at POI 184.5	
Cont. Name	From Bus (# & Name)		To Bus (# & Name)		ID	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI
FLT21-3PH	539657	CONCORD3 115.00	539650	BELOIT 3 115.00	CKT 1	14.6	0.98	1.8	1.00	-51.8	0.99
FLT22-3PH	539657	CONCORD3 115.00	539669	JEWELL 3 115.00	CKT 1	14.8	0.98	1.9	1.00	-51.8	0.99
FLT23-3PH	640277	MOORE 3 345.00	640139	COOPER 3 345.00	CKT 1	14.9	0.98	2.1	1.00	-49.8	0.99
FLT24-3PH	640277	MOORE 3 345.00	640271	MCCOOL 3 345.00	CKT 1	14.9	0.98	2.3	1.00	-45.3	0.99
FLT25-3PH	640277	MOORE 3 345.00	640312	PAULINE3 345.00	CKT 1	15.1	0.98	2.6	1.00	-47.0	0.99
FLT26-3PH	640277	MOORE 3 345.00	650114	NW68HOLDRG3 345.00	CKT 1	14.9	0.98	2.1	1.00	-48.1	0.99
FLT27-3PH	640277	MOORE 3 345.00	650189	103&ROKEBY3 345.00	CKT 1	15.1	0.98	2.4	1.00	-50.7	0.99
FLT28-3PH	650114	NW68HOLDRG3 345.00	650185	WAGENER 3 345.00	CKT 1	14.9	0.98	2.2	1.00	-50.4	0.99
FLT29-3PH	650114	NW68HOLDRG3 345.00	640125	COLMB.E3 345.00	CKT 1	14.8	0.98	2.0	1.00	-50.8	0.99
FLT30-3PH	650189	103&ROKEBY3 345.00	645458	S3458 3 345.00	CKT 1	14.8	0.98	2.3	1.00	-45.8	0.99
FLT31-3PH	650189	103&ROKEBY3 345.00	650185	WAGENER 3 345.00	CKT 1	14.8	0.98	1.9	1.00	-49.5	0.99
FLT32-3PH	650185	WAGENER 3 345.00	645454	S3454 3 345.00	CKT 1	14.9	0.98	2.2	1.00	-52.4	0.99
FLT33-3PH	640313	PAULINE7 115.00	640215	HASTING7 115.00	CKT 2	14.7	0.98	2.2	1.00	-51.8	0.99
FLT34-3PH	640374	SWEET W3 345.00	652571	GR ISLD3 345.00	CKT 1	14.5	0.98	2.4	1.00	-42.6	0.99
FLT35-3PH	652571	GR ISLD3 345.00	640271	MCCOOL 3 345.00	CKT 1	14.7	0.98	2.6	1.00	-45.1	0.99

Generation Interconnection Request Analysis Rated MW of Wind Farms OR at POI (MW) Rated MVAR of Wind Farms OR at POI (MVAR)						For GEN-2014-004		For GEN-2014-004		For GEN-2014-013	
						MW at POI 78.6 MVAR at POI 35.2		MW at POI 73.6 MVAR at POI 35.64		MW at POI 404.1 MVAR at POI 184.5	
Cont. Name	From Bus (# & Name)		To Bus (# & Name)		ID	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI
FLT36-3PH	652571	GR ISLD3 345.00	652506	FTTHOMP3 345.00	CKT 1	14.6	0.98	1.8	1.00	-46.7	0.99
FLT37-3PH	560137	G08-123N-TAP115.00	640206	GUIDE R7 115.00	CKT 1	15.1	0.98	1.5	1.00	-51.0	0.99
FLT38-3PH	560137	G08-123N-TAP115.00	640313	PAULINE7 115.00	CKT 1	21.2	0.97	13.8	0.98	-51.9	0.99
FLT39-3PH	640218	HEBRN N7 115.00	640169	FAIRBRY7 115.00	CKT 1	14.7	0.98	5.4	1.00	-52.0	0.99
FLT40-3PH	640218	HEBRN N7 115.00	640105	CARLJCT7 115.00	CKT 1	13.8	0.98	-3.3	1.00	-50.4	0.99
FLT41-3PH	640313	PAULINE7 115.00	640215	HASTING7 115.00	CKT 1	14.7	0.98	2.1	1.00	-51.8	0.99
FLT42-3PH	652509	FTRANDL4 230.00	652507	FTTHOMP4 230.00	CKT 1	14.6	0.98	2.0	1.00	-53.4	0.99
FLT43-3PH	652509	FTRANDL4 230.00	652516	LAKPLAT4 230.00	CKT 1	14.6	0.98	2.0	1.00	-53.1	0.99
FLT44-3PH	652509	FTRANDL4 230.00	652526	UTICAJC4 230.00	CKT 1	14.7	0.98	2.1	1.00	-43.4	0.99
FLT45-3PH	652509	FTRANDL4 230.00	652565	SIUUXCY4 230.00	CKT 1	14.7	0.98	2.1	1.00	-46.0	0.99
FLT46-3PH	640133	COLMBUS4 230.00	640126	E.COL. 4 230.00	CKT 1	14.6	0.98	1.9	1.00	-57.1	0.99
FLT47-3PH	640133	COLMBUS4 230.00	640131	COLMB.W4 230.00	CKT 1	14.7	0.98	2.1	1.00	-63.0	0.99
FLT48-3PH	640133	COLMBUS4 230.00	640343	SHELCKR4 230.00	CKT 1	14.7	0.98	2.0	1.00	-39.7	1.00
FLT49-3PH	640131	COLMB.W4 230.00	640200	GR ISLD4 230.00	CKT 1	14.7	0.98	2.1	1.00	-51.0	0.99
FLT50-3PH	640277	MOORE 3 345.00	640278	SHELDON7 115.00	T/F	14.9	0.98	2.1	1.00	-53.6	0.99

Generation Interconnection Request Analysis Rated MW of Wind Farms OR at POI (MW) Rated MVAR of Wind Farms OR at POI (MVAR)						For GEN-2014-004		For GEN-2014-004		For GEN-2014-013	
						MW at POI 78.6 MVAR at POI 35.2		MW at POI 73.6 MVAR at POI 35.64		MW at POI 404.1 MVAR at POI 184.5	
Cont. Name	From Bus (# & Name)		To Bus (# & Name)		ID	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI	MVAR at POI	P.F at POI
FLT51-3PH	640234	HUMBOLT5 161.00	640235	HUMBOLT7 115.00	T/F	15.6	0.98	3.8	1.00	-51.7	0.99
FLT52-3PH	532913	KELLY 5 161.00	533217	KELLY 3 115.00	T/F	19.9	0.97	6.4	1.00	-51.9	0.99
FLT53-3PH	539658	CONCRD6 230.00	539657	CONCORD3 115.00	T/F	17.1	0.98	3.3	1.00	-51.8	0.99
FLT54-3PH	650114	NW68HOLDRG3 345.00	650214	NW68HOLDRG7 115.00	T/F	14.6	0.98	1.8	1.00	-52.8	0.99
FLT55-3PH	640312	PAULINE3 345.00	640313	PAULINE7 115.00	T/F	14.8	0.98	2.0	1.00	-51.8	0.99
FLT56-3PH	652571	GR ISLD3 345.00	640200	GR ISLD4 230.00	T/F	14.8	0.98	1.9	1.00	-50.6	0.99
FLT57-3PH	640200	GR ISLD4 230.00	640201	GR ISLD7 115.00	T/F	14.8	0.98	2.0	1.00	-50.8	0.99
FLT58-3PH	640214	HASTING4 230.00	641088	HASTCTY7 115.00	T/F	14.9	0.98	2.2	1.00	-54.8	0.99
FLT59-3PH	652509	FTRANDL4 230.00	652510	FTRANDL7 115.00	T/F	14.8	0.98	2.0	1.00	-51.3	0.99
FLT60-3PH	640133	COLMBUS4 230.00	640134	KELLY 7 115.00	T/F	14.8	0.98	2.0	1.00	-52.2	0.99
FLT61-3PH	640126	E.COL. 4 230.00	640127	COLMB.E7 115.00	T/F	14.8	0.98	2.0	1.00	-57.6	0.99
FLT62-3PH	640343	SHELCRK4 230.00	640342	SHELCRK3 345.00	T/F	14.9	0.98	2.1	1.00	-40.3	1.00
FLT63-3PH	640540	MEADOW GROVE230.00	560008	MEADOWGROVE 115.00	T/F	14.8	0.98	2.0	1.00	-32.2	1.00
FLT64-3PH	560100	S_NORFOLK 345.00	560101	S_NORFOLK 230.00	T/F	14.8	0.98	2.1	1.00	-45.3	0.99

3.3. Conclusions

The power factor analysis indicates the DISIS-2014-001 (Group 09) interconnection requests i.e., GEN-2014-004, GEN-2014-006, and GEN-2014-013 are required to maintain the SPP standard power factor at the point of interconnection i.e., (Steele City 115kV 640426), (Harbine 115kV 640208), and (Tap on Fort Randall – Columbus 230 kV Meadow Grove 230kV, 640540) based on the contingencies studied.

Per the SPP OATT, the Interconnection Customer will be required to provide 95% lagging (supplying vars) and 95% leading (absorbing vars) at the POI.

4. Inductive Reactive Support Analysis

To offset the capacitive effects of the collector system and transmission line of the wind farm under low wind or no wind conditions, analysis was performed for winter-2014 scenario to calculate the Inductive Reactive Support at point of interconnection for each interconnection request under project DISIS-2014-001 (Group 09).

Following methodology was adopted as communicated by SPP:

1. Switch the generator and capacitor bank (if installed) out of service with the collector system as modeled remaining in service.
2. Calculate the amount of inductive reactive support required at the 34.5kV collector buses which would result in zero VAR flow at the POI.”

The inductive reactive support analysis for GEN-2014-004 performed for winter-2014 scenario which indicates that at POI (Steele City 115kV 640426) 2.6 MVAR reactor is required at Bus 582118 to maintain zero MVAR flow at POI.

The inductive reactive support analysis for GEN-2014-006 performed for winter-2014 scenario which indicates that at POI (Harbine 115kV 640208) 3.0 MVAR reactor is required at Bus 583161 to maintain zero MVAR flow at POI.

Similarly, the inductive reactive support analysis for GEN-2014-013 performed for winter-2014 scenario which indicates that at POI (Tap on Fort Randall – Columbus 230 kV Meadow Grove 230kV, 640540) total 34.5 MVAR reactor is required (9.3 MVAR at Bus 579471, 9.9 MVAR at Bus 579571, 7.9MVAR at Bus 583551, and 7.9MVAR at Bus 583831) to maintain zero MVAR flow at POI.

Maintaining zero MVar flow at the POI at all times is not possible with static reactor banks. It will be determined on a case by case basis for each generator as to whether additional reactor banks are required for low wind conditions.

The single line diagram showing the inductive reactive requirement for Gen-2013-025 and Gen-2013-034 are respectively shown in Figure 4.1.1, 4.1.2, and 4.1.3:

5. Stability Analysis

5.1. Faults Simulated

Sixty Four (64) faults were considered for the transient stability simulations which included three phase faults, at the locations defined by SPP.

Concurrently and previously queued projects as respectively shown in Table-1 and Table-2 of the study request i.e., GEN-2003-021N, GEN-2004-005N, GEN-2004-023N, GEN-2006-020N, GEN-2006-037N1, GEN-2006-038N005, GEN-2006-038N019, GEN-2006-044N, GEN-2007-011N08, GEN-2008-086N02 (replaced by GEN-2013-004), GEN-2008-119O, GEN-2008-123N, GEN-2009-040, GEN-2010-041, GEN-2010-051, GEN-2011-018 (replaced by GEN-2013-008), GEN-2011-027, GEN-2011-055, GEN-2011-056, GEN-2011-056A, GEN-2011-056B, GEN-2012-021, GEN-2012-005, GEN-2013-002, GEN-2013-004, GEN-2013-005, GEN-2013-006, GEN-2013-008, GEN-2013-014, GEN-2013-015, GEN-2013-019, GEN-2013-021, GEN-2013-032, other neighboring machines, as well as areas number 531, 534, 536, 540, 541, 541, 640, 645, 650, and 652, were monitored during all the simulations. Table 5.1.1 shows the list of simulated contingencies. This table also shows the fault clearing time and the time delay before re-closing for all the study contingencies.

Simulations were performed with a 0.1-second steady-state run followed by the appropriate disturbance as described in Table 5.1.1. Simulations were run for minimum 15-second duration to confirm proper machine damping.

Table 5.1.1 summarizes the overall results for all faults simulations. Complete sets of plots for winter-2014, summer-2015, and summer-2024 peak seasons for each fault are included in Appendices A, B and C respectively.

Table 5.1.1: List of simulated faults for stability analysis

Cont. #	Contingency Name	Description	2014 Winter Results	2015 Summer Results	2024 Summer Results
1	FLT01-3PH	3 phase fault on the Harbine (640208) to Fairbury (640169) 115kV near Harbine. a. Apply fault at Harbine 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
2	FLT02-3PH	3 phase fault on the Steele City (640426) to Harbine (640208) 115kV near Harbine. a. Apply fault at Harbine 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
3	FLT03-3PH	3 phase fault on the Steele City (640426) to Knob Hill (533332) 115kV near Harbine. a. Apply fault at Harbine 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
4	FLT04-3PH	3 phase fault on the Knob Hill (533332) to Green Leaf (539665) 115kV near Knob Hill. a. Apply fault at Knob Hill 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
5	FLT05-3PH	3 phase fault on the Knob Hill (533332) to Marshall (533349) 115kV near Knob Hill. a. Apply fault at Knob Hill 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
6	FLT06-3PH	3 phase fault on the Meadow Grove (640540) to G12-005-Tap (560718) 230kV near Meadow Grove. a. Apply fault at Meadow Grove 230kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
7	FLT07-3PH	3 phase fault on the Meadow Grove (640540) to Columbus (640133) 230kV near Madison County. a. Apply fault at Meadow Grove 230kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
8	FLT08-3PH	3 phase fault on the Meadow Grove (640540) to South Norfolk (560101) 230kV line, near Meadow Grove. a. Apply fault at the Meadow Grove 230kV bus. b. Clear fault after 5.5 cycles by tripping the faulted line.	Stable	Stable	Stable
9	FLT09-3PH	3 phase fault on the G12-005-Tap (560718) to Ft. Randall (652509) 230kV near G12-005-Tap. a. Apply fault at G12-005-Tap 230kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable

Cont. #	Contingency Name	Description	2014 Winter Results	2015 Summer Results	2024 Summer Results
10	FLT10-3PH	3 phase fault on the G13-002-Tap (560746) to Sheldon (640278) 115kV near G13-002-Tap. a. Apply fault at G13-002-Tap 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
11	FLT11-3PH	3 phase fault on the Sheldon (640278) to BPS Sub (640088) 115kV near Sheldon. a. Apply fault at Sheldon 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
12	FLT12-3PH	3 phase fault on the Sheldon (640278) to Clatonia (640111) 115kV near Sheldon. a. Apply fault at Sheldon 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
13	FLT13-3PH	3 phase fault on the Sheldon (640278) to Crete (640153) 115kV near Sheldon. a. Apply fault at Sheldon 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
14	FLT14-3PH	3 phase fault on the Sheldon (640278) to Firth (640171) 115kV near Sheldon. a. Apply fault at Sheldon 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
15	FLT15-3PH	3 phase fault on the Beatrice (640076) to BPS Sub (640088) 115kV near Beatrice. a. Apply fault at Beatrice 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
16	FLT16-3PH	3 phase fault on the Beatrice (640076) to Harbine (640208) 115kV near Beatrice. a. Apply fault at Beatrice 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
17	FLT17-3PH	3 phase fault on the Beatrice (640076) to Steiner (640361) 115kV near Beatrice. a. Apply fault at Beatrice 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
18	FLT18-3PH	3 phase fault on the Humboldt (640235) to Steiner (640361) 115kV near Humboldt. a. Apply fault at Humboldt 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable

Cont. #	Contingency Name	Description	2014 Winter Results	2015 Summer Results	2024 Summer Results
19	FLT19-3PH	3 phase fault on the Kelly (533217) to King Hill (533331) 115kV near Kelly. a. Apply fault at Kelly 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
20	FLT20-3PH	3 phase fault on the Clifton (539656) to Concordia (539657) 115kV near Clifton. a. Apply fault at Clifton 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
21	FLT21-3PH	3 phase fault on the Concordia (539657) to Beloit (539650) 115kV near Concordia. a. Apply fault at Concordia 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
22	FLT22-3PH	3 phase fault on the Concordia (539657) to Jewell (539669) 115kV near Concordia. a. Apply fault at Concordia 115kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
23	FLT23-3PH	3 phase fault on the Moore (640277) to Cooper (640139) 345kV line, near Moore. a. Apply fault at the Moore 345kV bus. b. Clear fault after 6.5 cycles by tripping the faulted line.	Stable	Stable	Stable
24	FLT24-3PH	3 phase fault on the Moore (640277) to McCool (640271) 345kV line, near Moore. a. Apply fault at the Moore 345kV bus. b. Clear fault after 6.5 cycles by tripping the faulted line.	Stable	Stable	Stable
25	FLT25-3PH	3 phase fault on the Moore (640277) to Pauline (640312) 345kV line, near Moore. a. Apply fault at the Moore 345kV bus. b. Clear fault after 6.5 cycles by tripping the faulted line.	Stable	Stable	Stable
26	FLT26-3PH	3 phase fault on the Moore (640277) to NW68Holdrg (650114) 345kV line, near Moore. a. Apply fault at the Moore 345kV bus. b. Clear fault after 6.5 cycles by tripping the faulted line.	Stable	Stable	Stable
27	FLT27-3PH	3 phase fault on the Moore (640277) to 103&Rokeby (650189) 345kV line, near Moore. a. Apply fault at the Moore 345kV bus. b. Clear fault after 6.5 cycles by tripping the faulted line.	Stable	Stable	Stable

Cont. #	Contingency Name	Description	2014 Winter Results	2015 Summer Results	2024 Summer Results
28	FLT28-3PH	3 phase fault on the NW68Holdrg (650114) to Wagener (650185) 345kV line, near NW68Holdrg. a. Apply fault at the NW68Holdrg 345kV bus. b. Clear fault after 6.5 cycles by tripping the faulted line.	Stable	Stable	Stable
29	FLT29-3PH	3 phase fault on the NW68Holdrg (650114) to Columbus East (640125) 345kV line, near NW68Holdrg. a. Apply fault at the NW68Holdrg 345kV bus. b. Clear fault after 6.5 cycles by tripping the faulted line.	Stable	Stable	Stable
30	FLT30-3PH	3 phase fault on the 103&Rokeby (650189) to S3458 (645458) 345kV line, near 103&Rokeby. a. Apply fault at the 103&Rokeby 345kV bus. b. Clear fault after 6.5 cycles by tripping the faulted line.	Stable	Stable	Stable
31	FLT31-3PH	3 phase fault on the 103&Rokeby (650189) to Wagener (650185) 345kV line, near 103&Rokeby. a. Apply fault at the 103&Rokeby 345kV bus. b. Clear fault after 6.5 cycles by tripping the faulted line.	Stable	Stable	Stable
32	FLT32-3PH	3 phase fault on the Wagener (650185) to S3454 (645454) 345kV line, near Wagener. a. Apply fault at the Wagener 345kV bus. b. Clear fault after 6.5 cycles by tripping the faulted line.	Stable	Stable	Stable
33	FLT33-3PH	3 phase fault on the Pauline (640313) to Axtell (640215) 345kV line, near Pauline. a. Apply fault at the Pauline 345kV bus. b. Clear fault after 6.5 cycles by tripping the faulted line.	Stable	Stable	Stable
34	FLT34-3PH	3 phase fault on the Sweetwater (640374) to Grand Island (652571) 345kV line, near Sweetwater. a. Apply fault at the Sweetwater 345kV bus. b. Clear fault after 6.5 cycles by tripping the faulted line.	Stable	Stable	Stable
35	FLT35-3PH	3 phase fault on the Grand Island (652571) to McCool (640271) 345kV line, near Grand Island. a. Apply fault at the Grand Island 345kV bus. b. Clear fault after 6.5 cycles by tripping the faulted line.	Stable	Stable	Stable

Cont. #	Contingency Name	Description	2014 Winter Results	2015 Summer Results	2024 Summer Results
36	FLT36-3PH	<p>3 phase fault on the Grand Island (652571) to Ft. Thompson (652506) 345kV line, near Grand Island.</p> <p>a. Apply fault at the Grand Island 345kV bus.</p> <p>b. Clear fault after 6.5 cycles by tripping the faulted line.</p> <p>For 2024 Case:</p> <p>3 phase fault on the Grand Island (652571) to HOLT.CO3 (640510) 345kV line, near Grand Island.</p> <p>a. Apply fault at the Grand Island 345kV bus.</p> <p>b. Clear fault after 6.5 cycles by tripping the faulted line.</p>	Stable	Stable	Stable
37	FLT37-3PH	<p>3 phase fault on the G08-123N-Tap (560137) to Guide Rock (640206) 115kV near G08-123N-Tap.</p> <p>a. Apply fault at G08-123N-Tap 115kV bus.</p> <p>b. Clear fault after 6.5 cycles by tripping faulted line.</p>	Stable	Stable	Stable
38	FLT38-3PH	<p>3 phase fault on the G08-123N-Tap (560137) to Pauline (640313) 115kV near G08-123N-Tap.</p> <p>a. Apply fault at G08-123N-Tap 115kV bus.</p> <p>b. Clear fault after 6.5 cycles by tripping faulted line.</p>	Stable	Stable	Stable
39	FLT39-3PH	<p>3 phase fault on the Hebron North (640218) to Fairbury (640169) 115kV near Hebron North.</p> <p>a. Apply fault at Hebron North 115kV bus.</p> <p>b. Clear fault after 6.5 cycles by tripping faulted line.</p>	Stable	Stable	Stable
40	FLT40-3PH	<p>3 phase fault on the Hebron North (640218) to Carlton Jct (640105) 115kV near Hebron North.</p> <p>a. Apply fault at Hebron North 115kV bus.</p> <p>b. Clear fault after 6.5 cycles by tripping faulted line.</p>	Stable	Stable	Stable
41	FLT41-3PH	<p>3 phase fault on the Pauline (640313) to Hastings (640215) 115kV CKT 1 near Pauline.</p> <p>a. Apply fault at Pauline 115kV bus.</p> <p>b. Clear fault after 6.5 cycles by tripping faulted line.</p>	Stable	Stable	Stable
42	FLT42-3PH	<p>3 phase fault on the Ft. Randall (652509) to Ft. Thompson (652507) 230kV near Ft. Randall.</p> <p>a. Apply fault at Ft. Randall 230kV bus.</p> <p>b. Clear fault after 6.5 cycles by tripping faulted line.</p>	Stable	Stable	Stable
43	FLT43-3PH	<p>3 phase fault on the Ft. Randall (652509) to Lake Platte (652516) 230kV near Ft. Randall.</p> <p>a. Apply fault at Ft. Randall 230kV bus.</p> <p>b. Clear fault after 6.5 cycles by tripping faulted line.</p>	Stable	Stable	Stable

Cont. #	Contingency Name	Description	2014 Winter Results	2015 Summer Results	2024 Summer Results
44	FLT44-3PH	3 phase fault on the Ft. Randall (652509) to Utica Jct (652526) 230kV near Ft. Randall. a. Apply fault at Ft. Randall 230kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
45	FLT45-3PH	3 phase fault on the Ft. Randall (652509) to Sioux City (652565) 230kV near Ft. Randall. a. Apply fault at Ft. Randall 230kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
46	FLT46-3PH	3 phase fault on the Columbus (640133) to E. Columbus (640126) 230kV near Columbus. a. Apply fault at Columbus 230kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
47	FLT47-3PH	3 phase fault on the Columbus (640133) to Columbus West (640131) 230kV near Columbus. a. Apply fault at Columbus 230kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
48	FLT48-3PH	3 phase fault on the Columbus (640133) to Shell Creek (640343) 230kV near Columbus. a. Apply fault at Columbus 230kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
49	FLT49-3PH	3 phase fault on the Columbus West (640131) to Grand Island (640200) 230kV near Columbus West. a. Apply fault at Columbus West 230kV bus. b. Clear fault after 6.5 cycles by tripping faulted line.	Stable	Stable	Stable
50	FLT50-3PH	3 phase fault on the Moore (640277) 345kV to Sheldon (640278) 115kV/(640280) 13.8kV transformer at the 345kV bus. a. Apply fault at the Moore 345kV bus. b. Clear fault after 5.5 cycles by tripping the transformer	Stable	Stable	Stable
51	FLT51-3PH	3 phase fault on the Humboldt (640235) 115kV to Humboldt (640234) 161kV/(643087) 13.8kV transformer at the 115kV bus. a. Apply fault at the Humboldt 115kV bus. b. Clear fault after 5.5 cycles by tripping the transformer	Stable	Stable	Stable
52	FLT52-3PH	3 phase fault on the Kelly (533217) 115kV to Kelly (532913) 161kV/(532942) 13.8kV transformer at the 115kV bus. a. Apply fault at the Kelly 115kV bus. b. Clear fault after 5.5 cycles by tripping the transformer	Stable	Stable	Stable

Cont. #	Contingency Name	Description	2014 Winter Results	2015 Summer Results	2024 Summer Results
53	FLT53-3PH	3 phase fault on the Concordia (539657) 115kV to Concordia (539658) 230kV/(539904) 13.8kV transformer at the 115kV bus. a. Apply fault at the Concordia 115kV bus. b. Clear fault after 5.5 cycles by tripping the transformer	Stable	Stable	Stable
54	FLT54-3PH	3 phase fault on the NW68Holdrg (650114) 345kV to NW68Holdrg (650214) 115kV/(650314) 13.8kV transformer at the 345kV bus. a. Apply fault at the NW68Holdrg 345kV bus. b. Clear fault after 5.5 cycles by tripping the transformer	Stable	Stable	Stable
55	FLT55-3PH	3 phase fault on the Pauline (640312) 345kV to Pauline (640313) 115kV/(640315) 13.8kV transformer at the 345kV bus. a. Apply fault at the Pauline 345kV bus. b. Clear fault after 5.5 cycles by tripping the transformer	Stable	Stable	Stable
56	FLT56-3PH	3 phase fault on the Grand Island (652571) 345kV to Grand Island (640200) 230kV/(643071) 13.8kV transformer at the 230kV bus. a. Apply fault at the Grand Island 345kV bus. b. Clear fault after 5.5 cycles by tripping the transformer	Stable	Stable	Stable
57	FLT57-3PH	3 phase fault on the Grand Island (640201) 115kV to Grand Island (640200) 230kV/(640203) 13.8kV transformer at the 230kV bus. a. Apply fault at the Grand Island 115kV bus. b. Clear fault after 5.5 cycles by tripping the transformer	Stable	Stable	Stable
58	FLT58-3PH	3 phase fault on the Hasting City (641088) 115kV to Hasting City (640214) 230kV/(643075) 13.8kV transformer at the 115kV bus. a. Apply fault at the Hastings City 115kV bus. b. Clear fault after 5.5 cycles by tripping the transformer	Stable	Stable	Stable
59	FLT59-3PH	3 phase fault on the Ft. Randall (652509) 230kV to Ft. Randall (652510) 115V transformer at the 230kV bus. a. Apply fault at the Ft. Randall 230kV bus. b. Clear fault after 5.5 cycles by tripping the transformer	Stable	Stable	Stable
60	FLT60-3PH	3 phase fault on the Columbus (640133) 230kV to Kelly (640134) 115kV/(640135) 13.8kV transformer at the 230kV bus. a. Apply fault at the Columbus 230kV bus. b. Clear fault after 5.5 cycles by tripping the transformer	Stable	Stable	Stable

Cont. #	Contingency Name	Description	2014 Winter Results	2015 Summer Results	2024 Summer Results
61	FLT61-3PH	3 phase fault on the E. Columbus (640126) 230kV to E. Columbus (640127) 115kV/(643036) 13.8kV transformer at the 230kV bus. a. Apply fault at the E. Columbus 230kV bus. b. Clear fault after 5.5 cycles by tripping the transformer	Stable	Stable	Stable
62	FLT62-3PH	3 phase fault on the Shell Creek (640343) 230kV to Shell Creek (640342) 115kV/(643136) 13.8kV transformer at the 230kV bus. a. Apply fault at the Shell Creek 230kV bus. b. Clear fault after 5.5 cycles by tripping the transformer	Stable	Stable	Stable
63	FLT63-3PH	3 phase fault on the Meadow Grove 230kV (640540) to MEADOWGROVE 115.0 (560008)/(560005) 13.8kV CKT 1 transformer at the 230kV bus. a. Apply fault at the Meadow Grove 230kV bus. b. Clear fault after 5.5 cycles by tripping the transformer	Stable	Stable	Stable
64	FLT64-3PH	3 phase fault on the South Norfolk (560100) 345kV to South Norfolk (560101) 230kV/(560102) 13.8kV CKT 1 transformer at the 345kV bus. a. Apply fault at the South Norfolk 345kV bus. b. Clear fault after 5.5 cycles by tripping the transformer	Stable	Stable	Stable

5.2. Simulation Results

There are no impacts on the stability performance of the SPP system for the contingencies tested on the SPP provided base cases.

6. Conclusions

The findings of the impact study for the proposed interconnection projects under DSIS-2014-001 (Group 09) considered 100% of their proposed installed capacity is as follows:

1. The power factor analysis indicates that all the projects GEN-2014-004, GEN-2014-006, and GEN-2014-013 interconnection requests are required to maintain the SPP standard power factor at the point of interconnection i.e., (Steele City 115kV 640426), (Harbine 115kV 640208), and (Tap on Fort Randall – Columbus 230 kV Meadow Grove 230kV, 640540) based on the contingencies studied. Per the SPP OATT, the Interconnection Customer will be required to provide 95% lagging (supplying vars) and 95% leading (absorbing vars) at the POI.
2. To offset the capacitive effects of the collector system and transmission line of the wind farm under low wind or no wind conditions, the inductive reactive support analysis was performed for winter-2014 scenario. The analysis indicates that for GEN-2014-004 at POI (Steele City 115kV 640426) 2.6 MVAR reactor is required at Bus 582118 to maintain zero MVAR flow at POI. For GEN-2014-006 at POI (Harbine 115kV 640208) 3.0 MVAR reactor is required at Bus 583161 to maintain zero MVAR flow at POI. Similarly, for GEN-2014-013 at POI (Tap on Fort Randall – Columbus 230 kV Meadow Grove 230kV, 640540) total 34.5 MVAR reactor is required (9.3 MVAR at Bus 579471, 9.9 MVAR at Bus 579571, 7.9MVAR at Bus 583551, and 7.9MVAR at Bus 583831) to maintain zero MVAR flow at POI. Maintaining zero MVar flow at the POI at all times is not possible with static reactor banks. It will be determined on a case by case basis for each generator as to whether additional reactor banks are required for low wind conditions.
3. There are no impacts on the stability performance of the SPP system for the contingencies tested on the provided base cases. The study machines stayed on-line and stable for all simulated faults. The Project stability simulations with sixty four (64) specified test disturbances did not show instability problems in the SPP system. Any oscillations were damped out.

-
- 7. Appendix A: 2014 Winter Peak Case Stability Run Plots**

 - 8. Appendix B: 2015 Summer Peak Case Stability Run Plots**

 - 9. Appendix C: 2024 Summer Peak Case Stability Run Plots**

 - 10. Appendix D: Project Model Data**

N: Group 13 Dynamic Stability Analysis Report

See Quanta Technology report on next page.



DISIS 2014-001

GROUP 13

DEFINITIVE INTERCONNECTION SYSTEM IMPACT
STUDY

July 31, 2014

Submitted To:
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EXECUTIVE SUMMARY

The Southwest Power Pool (SPP), on behalf of generation interconnection customers, desires a definitive interconnection system impact study for a wind farm in northwestern Missouri (Holt County), known as Group 13. Group 13 consists of the following:

- GEN-2013-026 – 150 MW wind farm connected to a tap on the St. Joseph-Cooper 345 kV transmission line

There are 4 previously queued generators in Group 13.

SPP requested a stability analysis and a power factor analysis for the queued generator project in Group 13. SPP did not request an Available Transfer Capability (ATC) study as part of this study.

- Reactive support, which may include external capacitor banks, is necessary to maintain the POI voltage schedule at the pre-contingency level for the studied cases.
- Capacitors or other reactive equipment located at the 34.5 kV side of the GEN-2013-026 34.5/161 kV transformer requires transformer tap ratio changing to avoid overvoltage on the generator and collector system in certain situations.
- Low wind/no wind analysis has shown that GEN-2010-056 & GEN-2013-026 provide a combined 19.1 MVAR of (capacitive) reactive power at the POI that requires mitigation by external reactor banks or other means. The contribution is approximately 12 MVAR from GEN-2010-056 and 7.1 MVAR from GEN-2013-026.
- GEN-2013-026 will be required to maintain the standard pro-forma power factor requirement of 0.95 leading (absorbing) to 0.95 lagging (supplying) at the point of interconnection. Additionally the project may be required to install additional reactive/capacitive equipment as described above.
- The GEN-2013-026 wind farm was stable for all studied faults.
- GEN-2013-026 did not trip offline under any of the studied fault conditions.
- Using real power output as a proxy for rotor angle, GEN-2013-026 met the rotor angle damping requirements. (The Vestas model does not give rotor angle as an output as it is an asynchronous machine.)

- The GEN-2013-026 POI voltage recovered to near the pre-contingency voltage following all studied fault disturbances.
- Low Voltage Ride Through (LVRT) analysis shows no generators tripping offline due to low voltage.
- All generators in the monitored areas remain stable for all of the modeled disturbances.
- All generators are found to be compliant with rotor angle damping requirement and post fault voltage recovery was found to be within the criterion of 0.7 PU to 1.2 PU.

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1. INTRODUCTION

The Southwest Power Pool (hereafter referred to as SPP) commissioned Quanta Technology to study the impact of a wind farm in the SPP interconnection queue referred to as Group 13. The site studied is in northwest Missouri in Holt County (GEN-2013-026).

The site studied was:

- GEN-2013-026 – A 150 MW wind farm connected to a tap on the Cooper-St. Joseph 345 kV transmission line (NPPD-GMO).

SPP did not request an Available Transfer Capability (ATC) study.

SPP requested a stability analysis for the generation in Group 13. Quanta Technology performed a dynamics study utilizing SPP's list of faults as follows:

1. Determined the ability of the generators to remain in synchronism following three phase and single line to ground faults.
2. Performed a power factor and LVRT study because the Group 13 study generation was a wind farm.

The results of the study are given in the following sections.

2. STUDY METHODOLOGY

SPP provided 2015 summer peak and 2014 winter peak and 2024 summer peak load flow cases in PSS/E format. Table 2-1 below shows the total demand and generation in the monitored areas.

Table 2-1: Description of Study Areas

Area #	Area Name	2014 Winter Peak		2015 Summer Peak		2024 Summer Peak	
		Load (MW)	Generation (MW)	Load (MW)	Generation (MW)	Load (MW)	Generation (MW)
531	MIDW	282.3	422.7	392.1	412.7	441.9	412.8
534	SUNC	847.0	1522.3	1242.2	1948.4	1353.2	2056.0
536	WERE	4208.8	4572.1	6194.7	5939.5	6724.3	6487.1
540	GMO	1606.1	946.1	2039.1	1366.3	2257.6	1474.3
541	KCPL	2720.8	2540.7	3681.8	3876.6	3992.2	4468.3
640	NPPD	2827.1	2960.7	3823.6	3494.3	4412.9	4147.7
645	OPPD	1984.0	1939.4	2874.7	2816.4	3288.9	3294.8

2.1 POWER FACTOR ANALYSIS

A power factor analysis was performed at the POI (bus 560663 – G10-056-TAP 345, a tap on the 640139 COOPER 3 – 541199 ST JOE 3 345 kV line). As the name implies, bus 560663 is also the POI for GEN-2010-056, a 151.2 MW wind farm. In the case as received, GEN-2013-026 was generating at 150 MW & 10 MVAR at its generation bus, and GEN-2010-056 was generating at 151.2 MW & 0 MVAR, again at its generation bus.

The wind turbine generators, GEN-2010-056 & GEN-2013-026, were modeled off-line and replaced by a 301.2 MW proxy generator at the 345kV POI. A high capacity continuously variable VAR generator with a voltage schedule of the greater of the voltage schedule in the provided base case and 1.00 PU was modeled at the POI.

The reactive capability attributed to GEN-2013-026 at the POI was determined to maintain the scheduled voltage for base case and contingency conditions for the 2014 and 2024 summer and 2014 winter peak cases provided.

An analysis for low wind/no wind conditions was performed on the wind projects at the GEN-2013-026 POI. The generators of both projects connected to the POI were switched off leaving the remainder of the equivalent models connected to the system. The resulting reactive power

injection into the transmission network measured at the POI comes from the capacitance of the project's transmission lines and collector cables. Shunt reactors were added at the study project substation high side bus to bring the Mvar flow into the POI down to approximately zero.

2.2 DYNAMIC ANALYSIS

The study areas shown in Table 2-1 were monitored in the dynamic analysis.

The transmission line and transformer faults were simulated and synchronous machine rotor angles and wind turbine generator electrical power outputs were monitored to check whether synchronism is maintained and oscillations are damped following fault removal. Bus voltages were also monitored to ensure voltage recovery following fault removal. The Vestas models do not give meaningful information for rotor angle or speed as it is an asynchronous machine. GEN-2013-026 real power output was used as a proxy for rotor angle,

Line faults were simulated with or without reclosing, depending on the fault, and clearing times varied between 3.75 to 5.5 cycles depending on the fault. Transformer faults, stuck breaker faults, faults with prior outages, and selected normally cleared faults were not reclosed.

If a fault clearing time was indicated as "X cycles with reclosing", the sequence of the fault was as follows:

- a. Apply fault
- b. Open faulted line and clear fault after X cycles
- c. Wait 20 cycles, reclose line opened in step b, and reapply fault
- d. Open faulted line and clear fault after X cycles.

If a normally cleared fault clearing time was indicated as "X cycles without reclosing", the sequence of the fault was as follows:

- a. Apply fault
- b. Open faulted transmission element and clear fault after X cycles

All stuck breaker faults except FLT36 were modelled as described below. Reclosing did not occur on stuck breaker faults.

- a. Apply fault
- b. Open the end of the faulted line distant from the fault after X cycles but do not clear the fault
- c. After 13 additional cycles, open the end of the line near the fault and additional elements tripped as a result of the stuck breaker, and clear the fault

Stuck breaker fault 36 simulated a fault on S3458-Cooper 345 kV with a stuck breaker and opening of the west bus at S3458. This fault sequence was:

- a. Apply fault on S3458-Cooper 345 kV line near S3458
- b. Open Cooper end of line and drop Nebraska City Unit 1 & 2 after 4.5 cycles
- c. After 9 additional cycles, clear the fault

Table 2-2 gives detailed descriptions of all the studied faults.

Table 2-2: Fault Descriptions

Cont. No.	Description
1	3 phase fault on GEN-2010-056 (560663) to St. Joseph (541199) 345 kV line, near GEN-2010-056. 3.75 cycle clearing time with reclosing.
2	Single phase fault with stuck breaker on the St. Joseph (541199) to GEN-2010-056 (560663) 345 kV line, near St. Joseph. 3.75 cycle line opening at GEN-2010-056 end without reclosing, then after 13 additional cycles clear fault and open St. Joseph (541199) to Nashua (542980) 345 kV line.
3	3 phase fault on the GEN-2010-056 (560663) to Cooper (640139) 345 kV line, near GEN-2010-056. 4.5 cycle clearing time without reclosing.
4	Single phase fault on the GEN-2010-056 (560663) to Cooper (640139) 345 kV line, near GEN-2010-056. 4.5 cycle clearing time with reclosing.
5	3 phase fault on the St. Joseph (541199) to AECI-Fairport (300039) 345 kV line, near St. Joseph. 3.75 cycle clearing time with reclosing.
6	Single phase fault and sequence like previous
7	3 phase fault on the St. Joseph (541199) to Easttown (541400) 345 kV line, near St. Joseph. 3.75 cycle clearing time with reclosing.
8	Single phase fault with stuck breaker on the St. Joseph (541199) to Easttown (541400) 345 kV line, near St. Joseph. 3.75 cycle line opening at Easttown end, then after 13 additional cycles clear fault and open St. Joseph end of line and the St. Joseph (541199) to AECI-Fairport

Cont. No.	Description
	(300039) 345 kV line.
9	3 phase fault on the St. Joseph (541199) to Nashua (542980) 345 kV line, near St. Joseph. 3.75 cycle clearing time with reclosing.
10	Single phase fault and sequence like previous
11	3 phase fault on the St. Joseph 345 /161/13.8 kV transformer (541199-541253-541370). 3.75 cycle clearing time without reclosing.
12	3 phase fault on the St. Joseph (541253) to Cook (541257) 161 kV line, near St. Joseph. 5 cycle clearing time with reclosing.
13	Single phase fault and sequence like previous
14	3 phase fault on the St. Joseph (541253) to Midway (541369) 161 kV line. 5 cycle clearing time with reclosing.
15	Single phase fault and sequence like previous
16	3 phase fault on the St. Joseph (541253) to Woodbin (541258) 161 kV line. 5 cycle clearing time with reclosing.
17	Single phase fault and sequence like previous
18	3 phase fault on the Cooper (640139) to AECI-Fairport (300039) 345 kV line, near Cooper. Clear fault at 4.5 cycles without reclosing by tripping the Cooper to AECI-Fairport 345 kV line, the AECI-Fairport (300039) to St. Joseph (541253) 345 kV line, and the AECI-Fairport 345/161 kV transformer (300039-300076 ckt 3).
19	Single phase fault with stuck breaker on the Cooper (640139) to AECI-Fairport (300039) to St. Joseph (541253) 345 kV line, near Cooper. Open St. Joseph end of line at 4.5 cycles without reclosing, then after 13 additional cycles clear fault and open the Cooper end of the line and the Cooper 345/161/13.8 kV T5 (640139-640140-643172).
20	3 phase fault on the AECI-Fairport 345/161 kV transformer (300039-300076 ckt 3). 5 cycle clearing time without reclosing.
21	3 phase fault on the Cooper (640139) to Atchison Co Tap (635017) 345 kV line near Cooper. 4.5 cycle clearing time without reclosing.
22	Single phase fault with stuck breaker on the Cooper (640139) to Atchison Co Tap (635017) 345 kV line near Cooper. Open the Atchison Co Tap end of the line at 4.5 cycles without reclosing, then after 13.5 additional cycles clear fault and open the Cooper (640139) to GEN-2010-056 (560663) 345 kV line.
23	3 phase fault on Cooper (640139) to Moore (640277) 345 kV line near Cooper. 4.5 cycle clearing time without reclosing.
24	Single phase fault on the Cooper (640139) to Moore (640277) 345 kV line near Cooper. 4.5 cycle clearing time with reclosing.

Cont. No.	Description
25	3 phase fault on the Cooper (640139) to S3458 (645458) 345 kV line, near Cooper. 4.5 cycle clearing time without reclosing.
26	Single phase fault with stuck breaker on the Cooper (640139) to S3458 (645458) 345 kV line, near Cooper. Open S3458 end at 4.5 cycles without reclosing, then after 13 additional cycles clear fault and open the Cooper end and also trip Cooper 345/161/13.8 kV T2 (640139-640140-640142).
27	3 phase fault on the Atchison Co Tap (635017) to Boonville (635630) 345 kV line, near Atchison Co Tap. 4.5 second clearing time without reclosing.
28	Single phase fault and sequence like previous
29	3 phase fault on the Moore (640277) to NW68 & Holdredge (650114) 345 kV line, near Moore. 4.5 cycle clearing time without reclosing.
30	Single phase fault and sequence like previous
31	3 phase fault on the S3458 (645458) to S3470 (645740) 345 kV line, near S3458. 5 cycle clearing time with reclosing.
32	Single phase fault and sequence like previous
33	3 phase fault on the S3458 (645458) to S3456 (645456) 345 kV line near S3456. 5 cycle clearing time with reclosing.
34	Single phase fault and sequence like previous
35	3 phase fault on the Cooper 345/161/13.8 kV T2 (640139-640140-640142), near Cooper 345 kV. 5.5 cycle clearing time without reclosing.
36	3 phase fault with stuck breaker on S3458 (645458) to Cooper (640139) 345 kV line, near S3458. After 4.5 cycles open line without reclosing and trip Nebraska City Unit 1 & 2 (645012). After 9 additional cycles clear fault.
37	3 phase fault on the S3458 (645458) to 103 rd & Rokeby (650189) 345 kV line, near S3458. 5 cycle clearing time with reclosing.
38	Prior Outage of 103 rd & Rokeby (650189) to S3458 (645458) 345 kV line, then 3 phase fault on S3458 (645458) to S3456 (645456) 345 kV line near S3458. 5 cycle clearing time with reclosing.
39	(For 2019 and beyond): 3 phase fault on S3458 (645458) to Mullen Creek (541197) 345 kV line, near S3458. 5 cycle clearing time with reclosing.
40	Single phase fault and sequence like previous
41	3 phase fault on the S3458 345 kV substation bus (645458) near S3458. Clear S3458 345 kV bus, i.e. trip Nebraska City Units 1 (645011) and 2 (645012) and the 345 kV lines to Cooper (640139), S3456 (645456), S3470 (645740), 103 rd &Rokeby (650189). 5 cycle clearing time without reclosing.
42	3 phase fault on the Nashua (542980) to Hawthorn (542972) 345 kV line, near Nashua. 5 cycle clearing time with reclosing.

Cont. No.	Description
43	Single phase fault and sequence like previous
44	3 phase fault on Cooper 345/161/13.8 kV T5 (640139-640140-643172) near Cooper 345 kV. 5.5 cycle clearing time without reclosing.
45	Skipped (duplicate of FLT02-1PH)
46	Prior outage of St. Joseph (541199) to Nashua (542980) 345 kV, then 3 phase fault on the Cooper (640139) to GEN-2010-056 (560663) 345 kV line, near GEN-2010-056. 3.75 cycle clearing time without reclosing.
47	Prior outage of Cooper (640139) to Atchison Co Tap (635017) 345 kV, then 3 phase fault on the Cooper (640139) to Moore (640277) 345 kV line, near Cooper. 4.5 cycle clearing time without reclosing.
48	Prior outage of Nashua (542980) to Hawthorn (542972) 345 kV line, then 3 phase fault on the Nashua 345/161/13.8 kV (542980-543028-543640 ckt 11) transformer, near Nashua. 3.75 cycle clearing time without reclosing.

Single phase to ground faults were simulated by applying an admittance¹ at the faulted bus representing the negative and zero sequence equivalent impedance. Table 2-3 presents equivalent reactors used in the transient stability study.

Table 2-3: Equivalent Reactors (MVAR) for Single Line to Ground Faults

Faulted Bus No.	Faulted Bus Name	Faulted Bus kV	Win14	Sum15	Sum24	Fault Numbers
541199	ST JOE 3	345	-7583	-7836	-7960	02, 06, 08, 10
560663	G10-056-TAP	345	-5439	-5543	-5607	04
541253	ST JOE 5	161	-3803	-3867	-3902	13, 15, 17
640139	COOPER 3	345	-9413	-9805	-10157	19, 22, 24, 26
635017	ATCHSNT3	345	-5957	-6128	-6274	28
640277	MOORE 3	345	-7411	-8041	-8240	30
645458	S3458 3	345	-9718	-10448	-11422	32, 34, 40
542980	NASHUA 7	345	-7742	-8269	-8618	43

Another important aspect of the dynamic analysis was to check FERC Order 661A (Low Voltage Ride Through) compliance for wind generating plants. GEN-2013-026 did not trip offline for

¹ The admittance was calculated to attain a voltage at the faulted bus of 0.60 pu in the study case.

undervoltage or for any other reason for any of the tested faults, nor did any of the other wind farms trip offline.

As documented in the fault list, stuck breaker faults were checked at the nearest substations for which a stuck breaker will not eliminate all outlets for GEN-2013-026 (Cooper 345 kV & St Joseph 345 kV). Even for those faults, GEN-2013-026 was not in danger of tripping offline.

3. PROJECT DESCRIPTION

Following is a table of the proposed generator in Group 13.

Table 3-1: Points of Interconnection for Group 13

Request	Size (MW)	Wind Turbine Model	Point Of Interconnection		
			Common Name	Bus #	Name in Model
GEN-2013-026	150	Vestas 2.0 MW V110 VCSS 60 Hz	Tap on St Joseph-Cooper 345 kV line	560663	G10-056-TAP 345

As illustrated below, the site of the interconnection is in northwestern Missouri (Holt County.)

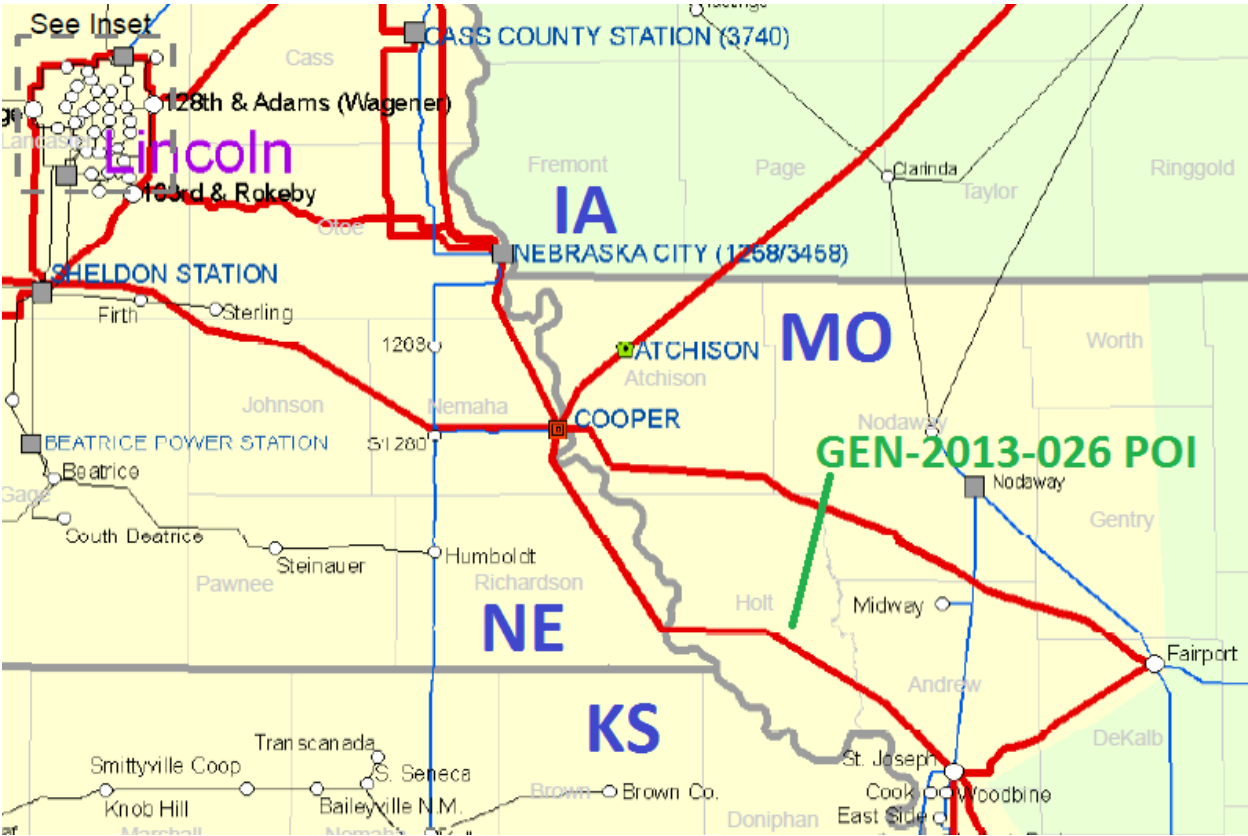


Figure 3-1: Geographical Location of Group 13 Project

A one-line diagram of the interconnection of GEN-2013-026 (along with GEN-2010-056 which shares the same POI) is shown in Figure 3-2. All voltages and line flows are from the 2015 summer peak base case. The one-line diagram uses this following color code for nominal voltages:

Red **345 kV**

Black **lower voltage levels**

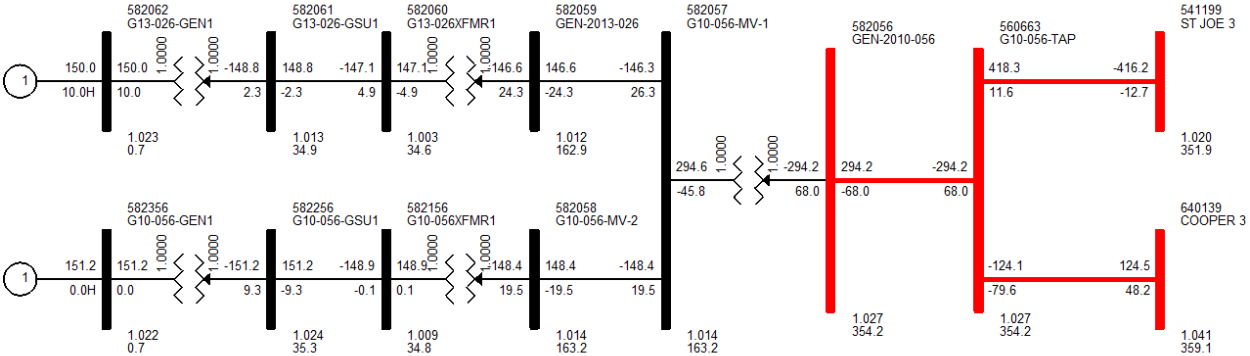


Figure 3-2: GEN-2013-026 One-Line Diagram

The following is the detailed description of the wind project in Group 13.

GEN-2013-026

- Wind Turbine
 - Vestas V110 VCSS 2.0 MW turbines (75 x 2.0 MW)
 - Power Output: 150 MW at generation bus
 - Power factor: 98% lagging, 96% leading at the generator bus

- Interconnection
 - Voltage: 345 kV
 - Location: Tap on Cooper-St Joseph 345 kV line (POI shared with GEN-2010-056)
 - Generator-to-Collector step up transformer (Aggregated):
 - MVA: Rate A – 150 MW. Rate B – 150 MW. Rate C – 150 MW
 - X: 8.955% on 157.5 MVA base
 - X/R = 9.99
 - 34.5 kV Collector Line Parameters:
 - R = 0.007703, X = 0.040274, Bc = 0.059829 (per unit on 100 MVA base)
 - 34.5 kV to 161 kV collector step up transformer:
 - MVA: Rate A – 167 MW. Rate B – 167 MW. Rate C – 167 MW
 - X: 8.996% on 100 MVA base
 - X/R = 35
 - 161 kV line from collector step up transformer:
 - R = 0.001400, X = 0.015200, Bc = 0.012540 (per unit on 100 MVA base)
 - 5.7 miles
 - 161/345 kV transformer at POI (shared with GEN-2010-056):
 - MVA: Rate A – 325 MW. Rate B – 325 MW. Rate C – 325 MW
 - X = 4.999% on 195 MVA base
 - X/R = 54.84
 - Line from 345 kV winding to POI is a zero impedance line

4. POWER FACTOR RESULTS

Following are the VAR injections and power factors as measured at the 345 kV POI associated with the above 301.2 MW real power injection at the POI. **Blue highlighting** indicates the most leading power factor (positive numbers for VARs and power factor), and **yellow highlighting**

indicates the most lagging power factor (negative numbers for VARs and power factor.) That is, negative numbers imply a VAR injection to the 345 kV POI.

Key findings of the power factor analysis are:

- To maintain POI voltage at the pre-fault level for all studied faults requires a power factor range of **0.9302 leading to 0.9968 lagging as measured at the POI**, the former for FLT48 in the Summer 2015 case and the latter for FLT03 in the Winter 2014 case.
- Shunts or other reactive equipment are needed to provide the required power factor at the POI. Assuming the shunts are placed on the 34.5 kV side, transformer tap changing is needed to avoid overvoltage on the generator and collector system in certain situations.
- During low-wind conditions when the collector is connected to the POI but the turbines are not generating, 20.4 MVAR of capacitive charging from the project’s transmission lines and collector cables was observed at the POI. **A nominal 19.1 MVAR shunt reactor installed at the project 345kV bus (582056) will counteract the reactive injection from the collector system reducing the Mvar flow into the POI down to approximately zero.** This shunt reactor would compensate for an approximate contribution of 12 MVAR from GEN-2010-056 and 7.1 MVAR from GEN-2013-026.
- The interconnection customer, GEN-2013-026, will be required to maintain the standard pro-forma power factor requirement of 0.95 leading (absorbing) to 0.95 lagging (supplying) at the point of interconnection.

Table 4-1: Power factor analysis results at POI (Negative numbers imply lagging/VAR injection into POI)

Contingency	MVAR			PF		
	Win14	Sum15	Sum24	Win14	Sum15	Sum24
BASE CASE	66.66	66.80	65.75	0.9764	0.9763	0.9770
FLT01	103.48	95.69	90.20	0.9457	0.9531	0.9580
FLT03	-24.06	-13.62	-7.65	-0.9968	-0.9990	-0.9997
FLT05	45.67	50.81	53.30	0.9887	0.9861	0.9847
FLT07	80.94	66.21	66.87	0.9657	0.9767	0.9762
FLT09	97.71	99.15	85.53	0.9512	0.9499	0.9620
FLT11	65.80	66.52	65.10	0.9770	0.9765	0.9774
FLT12	68.81	69.88	68.34	0.9749	0.9741	0.9752

Contingency	MVAR			PF		
	Win14	Sum15	Sum24	Win14	Sum15	Sum24
FLT14	68.14	68.78	68.67	0.9754	0.9749	0.9750
FLT16	67.83	67.96	66.91	0.9756	0.9755	0.9762
FLT18	30.65	30.50	34.41	0.9949	0.9949	0.9935
FLT20	76.62	78.82	81.26	0.9691	0.9674	0.9655
FLT21	60.15	57.50	54.75	0.9806	0.9823	0.9839
FLT23	72.32	70.93	73.24	0.9724	0.9734	0.9717
FLT25	48.61	56.96	52.59	0.9872	0.9826	0.9851
FLT27	61.95	59.56	56.46	0.9795	0.9810	0.9829
FLT29	63.64	65.13	64.32	0.9784	0.9774	0.9780
FLT31	62.88	62.91	63.76	0.9789	0.9789	0.9783
FLT33	62.28	62.52	63.98	0.9793	0.9791	0.9782
FLT35	66.52	66.98	65.77	0.9765	0.9762	0.9770
FLT36	47.92	62.82	59.19	0.9876	0.9789	0.9812
FLT37	59.32	58.51	59.18	0.9812	0.9816	0.9812
FLT38	47.72	46.30	51.79	0.9877	0.9884	0.9855
FLT39	N/A	N/A	50.23	N/A	N/A	0.9864
FLT41	25.97	49.41	46.09	0.9963	0.9868	0.9885
FLT42	66.14	73.12	76.59	0.9767	0.9718	0.9692
FLT44	66.50	66.94	65.74	0.9765	0.9762	0.9770
FLT46	4.79	15.89	9.35	0.9999	0.9986	0.9995
FLT47	64.15	59.41	59.54	0.9781	0.9811	0.9810
FLT48	102.39	118.88	102.13	0.9468	0.9302	0.9470

The most lagging scenario (FLT03-3PH, Winter 2014), requires the combination of GEN-2010-056 and GEN-2013-026 to supply MVAR to the POI beyond the reactive capability of the Vestas turbines.

Therefore, GEN-2013-026 requires reactive support at the 34.5 kV collector bus to meet the reactive requirements. Since there were no instabilities at either GEN-2010-056 or GEN-2013-026 even without reactive compensation, capacitors and reactors banks may be considered to meet the requirements. To avoid overvoltage, transformer tap ratios need to be adjusted on the 161 kV side of the GEN-2013-026 34.5/161 kV transformer and on the 161 kV side of the GEN-2010-056 34.5/161 kV transformer.

5. TRANSIENT STABILITY RESULTS

Dynamic simulations were performed using each fault noted in Table 2-2. Fault clearing times ranged from 3.75 to 5.5 cycles. If reclosing occurred, faulted transmission lines were reclosed into the fault 20 cycles after the initial clearing, then cleared and locked out after one more interval of standard clearing time (i.e. 3.75 to 5.5 cycles.) Faulted transformers, stuck breakers, faults with a prior outage and selected transmission line faults were not reclosed.

The proposed GEN-2013-026 wind project and all other generator units in the monitored areas remained stable and did not trip off line under any of the faults simulated in all three seasonal cases. All faults were stable and adequately damped

6. ROTOR ANGLE DAMPING AND VOLTAGE RECOVERY REQUIREMENT

The Vestas model does not output rotor angles as it is an asynchronous machine. Therefore, electrical power output (PELEC) was used as a substitute measurement. Rotor angular damping and voltage recovery as determined via dynamic simulation were checked against all contingencies. Electrical power output plots (as a stand-in for rotor angle) for GEN-2013-026 are provided in Appendix 2 and POI voltage recovery plots for GEN-2013-026 are provided in Appendix 3. Plots in these Appendices are labelled with suffixes to indicate the conditions studied: W14 for 2014 Winter conditions, S15 for 2015 Spring conditions, and S24 for 2024 Summer conditions

SPP's Rotor Angle Damping Requirements are shown in Appendix 1. The Vestas model does not give rotor angle as an output as it is an asynchronous machine, so electric power output was used as a proxy for rotor angle. Using electrical power output as a proxy for rotor angle, GEN-2013-026 meets the Rotor Angle Damping Requirements.

The electric power output was treated as the sum of the steady-state value (1.5 pu/150 MW), and the oscillatory component. By visual inspection, the worst-case fault from an oscillatory standpoint was FLT46 (Prior outage of St Joseph-Nashua 345 kV, then 3 phase fault on the line between the 345 kV POI and Cooper near the POI.) By a narrow margin, the least-damped case was the Winter 2014 case. In the Winter 2014 case, the first peak in PELEC was 0.0716 pu, and the second peak was 0.0639 pu (89.2% of first peak), and the fifth peak was 0.0462 pu (64.5% of

the first peak.) The Rotor Angle Damping Requirements require that the second peak must be no more than 95% of the first peak or the fifth peak must be no more than 77.4% of the first peak. Therefore, if PELEC is used as a proxy for rotor angle, GEN-2013-026 meets the Rotor Angle Damping Requirement whether the second or the fifth peak is used as the basis.

Following is a plot of the electrical power output of GEN-2013-026 with the oscillatory portion zoomed in (i.e. PELEC on a scale of 1.4 to 1.6 pu) and the rotor angle test applied to the oscillatory portion of the electrical power output.

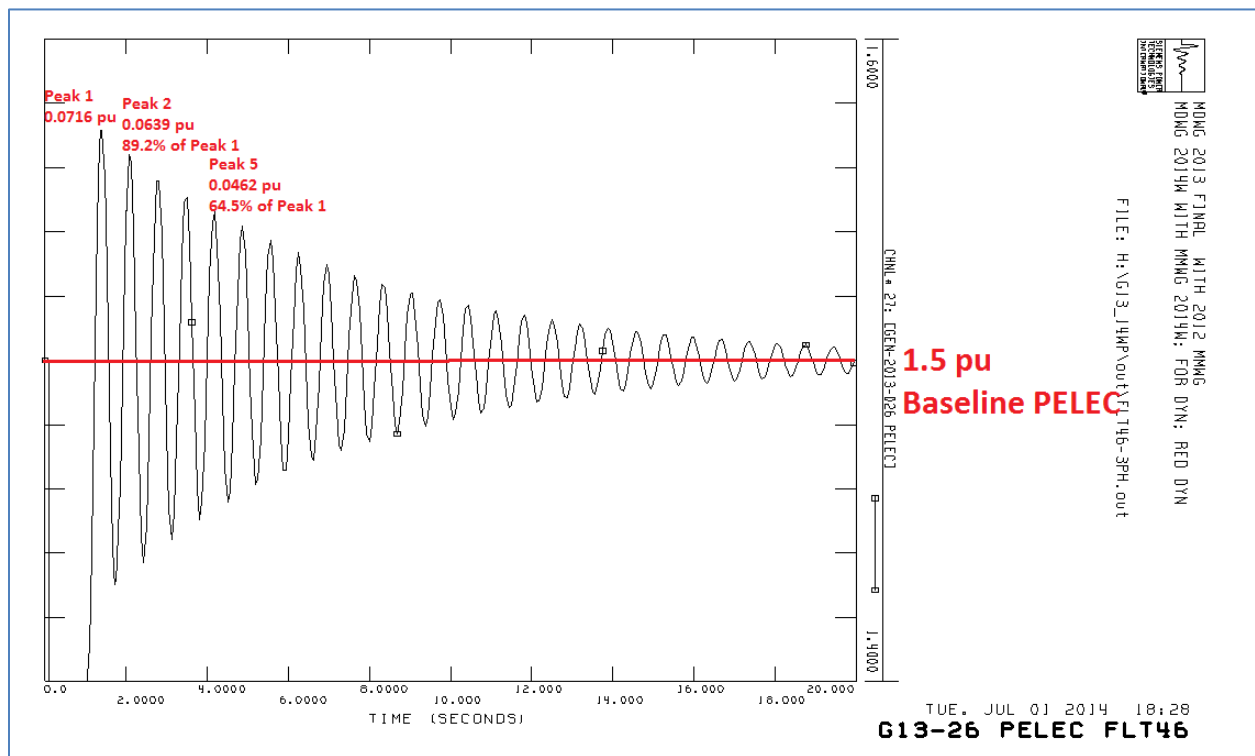


Figure 6-1: GEN-2013-026 oscillatory portion of real power output, FLT46, Winter 2014

If the voltage recovers post-fault to a steady-state level consistent with the steady-state simulation, the generator interconnection is considered stable from a voltage standpoint. The POI voltages were determined via dynamic simulations and AC contingency analysis. Due to generation being converted in the dynamics cases and due to dynamic effects not captured in AC contingency analysis, minor differences in voltages are to be expected between dynamic and steady-state simulations. However, all POI voltages calculated via dynamic simulation were reasonably close to the POI voltages calculated via AC contingency analysis. The largest

difference between dynamic and AC contingency analysis POI voltages was 0.0029 pu for FLT08-1PH.

The following table shows all POI voltages for all tested contingencies, as determined by dynamic simulation and AC contingency analysis. **Yellow highlighting** indicates the highest voltage for a given scenario, and **blue highlighting** indicates the lowest voltage for a given scenario. The highest post-fault steady-state voltage was 1.0368 for FLT02 in the Winter 2014 case as determined via dynamic simulation (0.0113 pu rise above base case), and the lowest post-fault steady-state voltage was 1.0026 for FLT22 in the Winter 2014 case as determined by AC contingency analysis (0.0229 pu fall below base case).

Following are the post-fault voltages for all simulated faults using both methods (dynamic simulation and AC contingency analysis) for all 3 study cases. All post-fault voltages were between 1.0026-1.0368 pu.

Table 6-1: GEN-2013-026 345 kV POI voltage recovery

Fault	By Dynamic Simulation			By AC Contingency Analysis		
	WIN14	SUM15	SUM24	WIN14	SUM15	SUM24
BASE CASE	1.0255	1.0266	1.0282	1.0255	1.0266	1.0282
FLT01-3PH	1.036	1.0349	1.0350	1.0357	1.0347	1.0348
FLT02-1PH	1.0368	1.0357	1.0354	1.0362	1.0353	1.0351
FLT03-3PH	1.005	1.0083	1.0115	1.0034	1.0073	1.0105
FLT04-1PH	1.0034	1.0072	1.0105	1.0034	1.0073	1.0105
FLT05-3PH	1.0235	1.0251	1.027	1.0227	1.0245	1.0266
FLT06-1PH	1.0232	1.0249	1.0268	1.0227	1.0245	1.0266
FLT07-3PH	1.0289	1.0274	1.0292	1.0275	1.0266	1.0283
FLT08-1PH	1.0246	1.0239	1.0265	1.0275	1.0266	1.0283
FLT09-3PH	1.0312	1.0321	1.0317	1.0298	1.0311	1.0309
FLT10-1PH	1.0307	1.0318	1.0315	1.0298	1.0311	1.0309
FLT11-3PH	1.0264	1.0273	1.0288	1.0254	1.0266	1.0281
FLT12-3PH	1.0268	1.0277	1.0292	1.0257	1.027	1.0285
FLT13-1PH	1.0258	1.027	1.0286	1.0257	1.027	1.0285
FLT14-3PH	1.0265	1.0275	1.0291	1.0257	1.0269	1.0285
FLT15-1PH	1.0257	1.0269	1.0285	1.0257	1.0269	1.0285
FLT16-3PH	1.0267	1.0275	1.029	1.0256	1.0268	1.0283
FLT17-1PH	1.0257	1.0268	1.0284	1.0256	1.0268	1.0283
FLT18-3PH	1.0211	1.0219	1.0241	1.0207	1.0219	1.0241
FLT19-1PH	1.0209	1.0218	1.024	1.0207	1.0218	1.0241

Fault	By Dynamic Simulation			By AC Contingency Analysis		
	WIN14	SUM15	SUM24	WIN14	SUM15	SUM24
FLT20-3PH	1.027	1.0283	1.0302	1.0268	1.0282	1.0302
FLT21-3PH	1.0257	1.026	1.0274	1.0246	1.0254	1.0268
FLT22-1PH	1.0035	1.006	1.01	1.0026	1.0062	1.0095
FLT23-3PH	1.0274	1.0279	1.0298	1.0262	1.0272	1.0291
FLT24-1PH	1.0269	1.0272	1.0291	1.0262	1.0272	1.0291
FLT25-3PH	1.0243	1.0261	1.0272	1.023	1.0253	1.0264
FLT26-1PH	1.0238	1.0258	1.0269	1.023	1.0253	1.0264
FLT27-3PH	1.0255	1.0261	1.0272	1.0249	1.0257	1.027
FLT28-1PH	1.0245	1.0254	1.0268	1.0249	1.0257	1.027
FLT29-3PH	1.0252	1.0265	1.028	1.0251	1.0264	1.028
FLT30-1PH	1.0251	1.0264	1.028	1.0251	1.0264	1.028
FLT31-3PH	1.026	1.0268	1.0286	1.025	1.0261	1.0279
FLT32-1PH	1.0249	1.0261	1.0279	1.025	1.0261	1.0279
FLT33-3PH	1.0259	1.0267	1.0285	1.0249	1.0261	1.0279
FLT34-1PH	1.0248	1.026	1.0279	1.0249	1.0261	1.0279
FLT35-3PH	1.0266	1.0274	1.0289	1.0255	1.0267	1.0282
FLT36-3PH	1.0225	1.0259	1.0272	1.0229	1.0261	1.0273
FLT37-3PH	1.0256	1.0262	1.028	1.0245	1.0256	1.0273
FLT38-3PH	1.024	1.0246	1.027	1.023	1.024	1.0264
FLT39-3PH	n/a	n/a	1.0269	n/a	n/a	1.0262
FLT40-1PH	n/a	n/a	1.0262	n/a	n/a	1.0262
FLT41-3PH	1.022	1.0255	1.0264	1.0199	1.0243	1.0256
FLT42-3PH	1.0265	1.0283	1.0303	1.0254	1.0275	1.0296
FLT43-1PH	1.0255	1.0276	1.0297	1.0254	1.0275	1.0296
FLT44-3PH	1.0266	1.0274	1.0289	1.0254	1.0267	1.0282
FLT46-3PH	1.0102	1.014	1.0138	1.0082	1.0125	1.0125
FLT47-3PH	1.0263	1.0264	1.0281	1.0251	1.0257	1.0274
FLT48-3PH	1.0313	1.0345	1.0338	1.0302	1.0335	1.0329

The worst-case fault from a standpoint of POI oscillation is FLT26 (1 phase fault on Cooper-S3458 345 kV near Cooper, stuck breaker and loss of Cooper 345/161/13.8 kV T2). Even that fault is very well damped from a POI voltage standpoint, though. Following is the plot of GEN-2013-026 POI voltage for FLT26 for the worst of the 3 study cases (Summer 2024.)

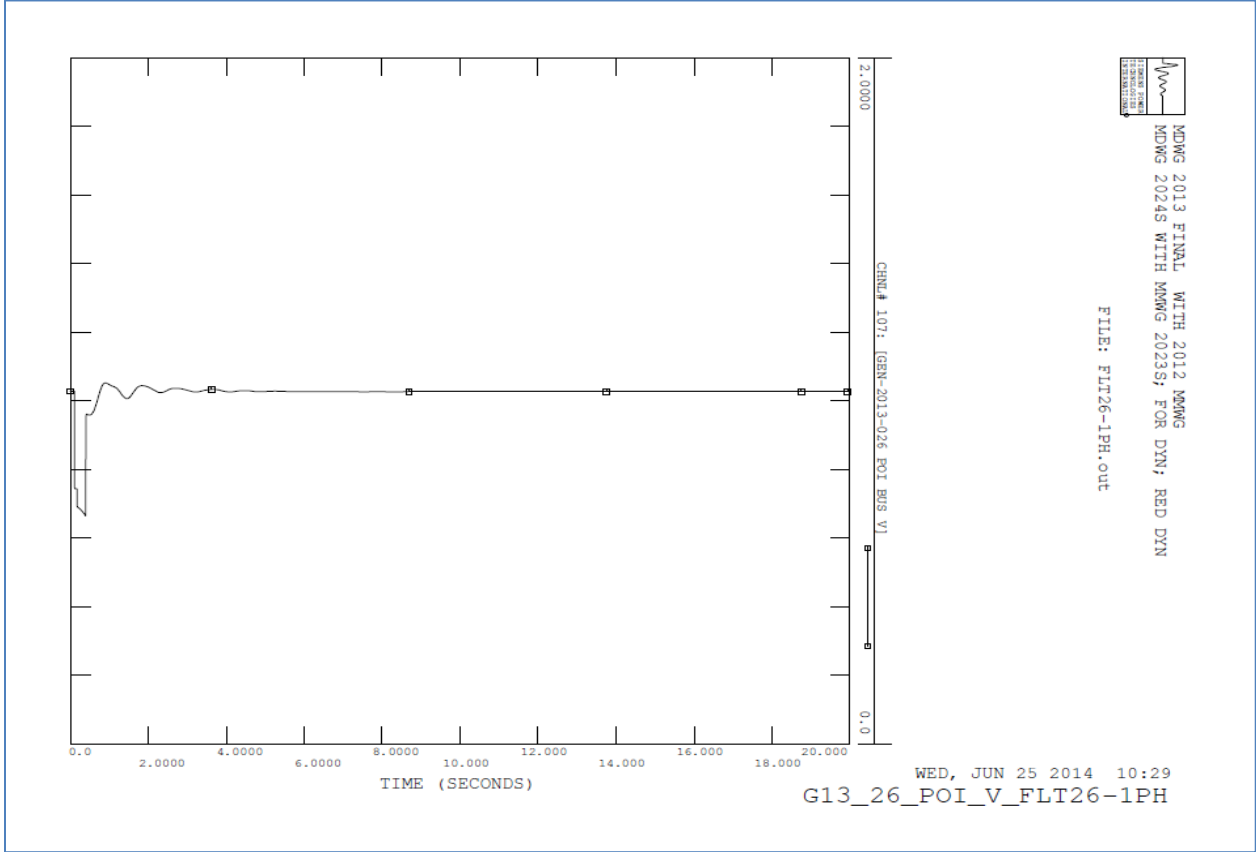


Figure 6-2: GEN-2013-026 POI voltage response to FLT26, Summer 2024

From a standpoint of post-fault POI voltage magnitude, the lowest voltage by dynamic simulation was observed in the Winter 2014 case for FLT04 (1 phase fault on the line from the 345 kV POI to Cooper 345 kV near the POI, with reclosing.) The post-fault voltage settled to 1.0034 pu in the steady state.

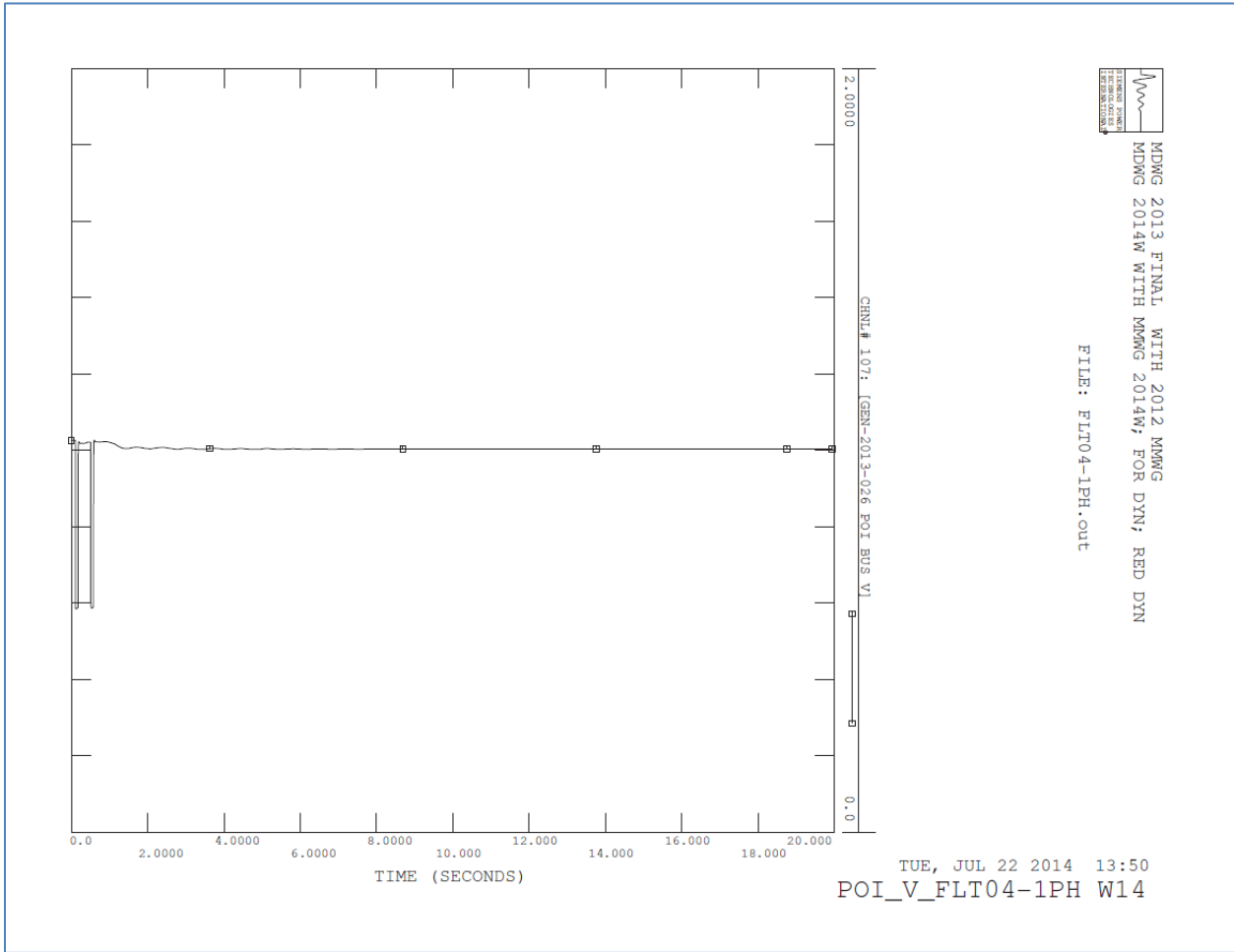


Figure 6-3: GEN-2013-026 POI voltage response to FLT04, Winter 2014 case

The highest POI voltage as determined by dynamic simulation was in the Winter 2014 case for FLT02 (Single phase fault on line between St. Joseph and 345 kV POI near St. Joseph, stuck breaker and loss of St. Joseph-Nashua 345 kV.) For FLT02 in the Winter 2014 case, the post-fault voltage was 1.0368 pu as determined by dynamic simulation.

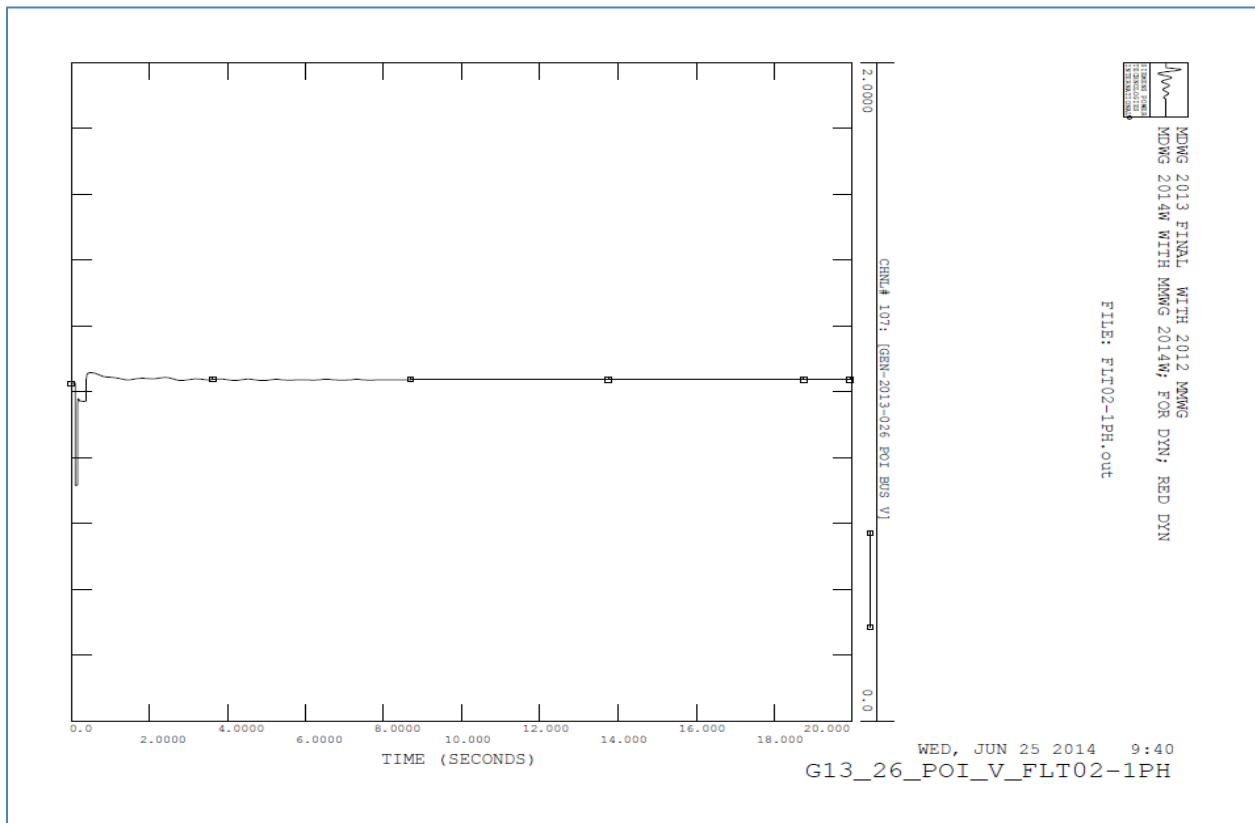


Figure 6-4: GEN-2013-026 POI voltage response to FLT02, Winter 2014 case

Also, GEN-2013-026 did not trip offline for voltage-related reasons, or any other reason. For that matter, no other wind farms tripped offline for any reason including voltage. Therefore, for the tested faults, low-voltage ride through (LVRT) is met.

The lowest generator bus voltage observed was for FLT04 in the Winter 2014 case (single phase fault on the 345 kV line from the POI to Cooper near the POI, with reclosing.) For FLT04, the post-fault generator bus voltage was 0.99536 pu (compared to 1.0216 pu pre-fault). Therefore, the generation voltage does not dip low enough to trip the GEN-2013-026 offline for undervoltage for the tested faults.

Following is a plot of the generator bus voltage for this worst-case fault FLT04 in the Winter 2014 case.

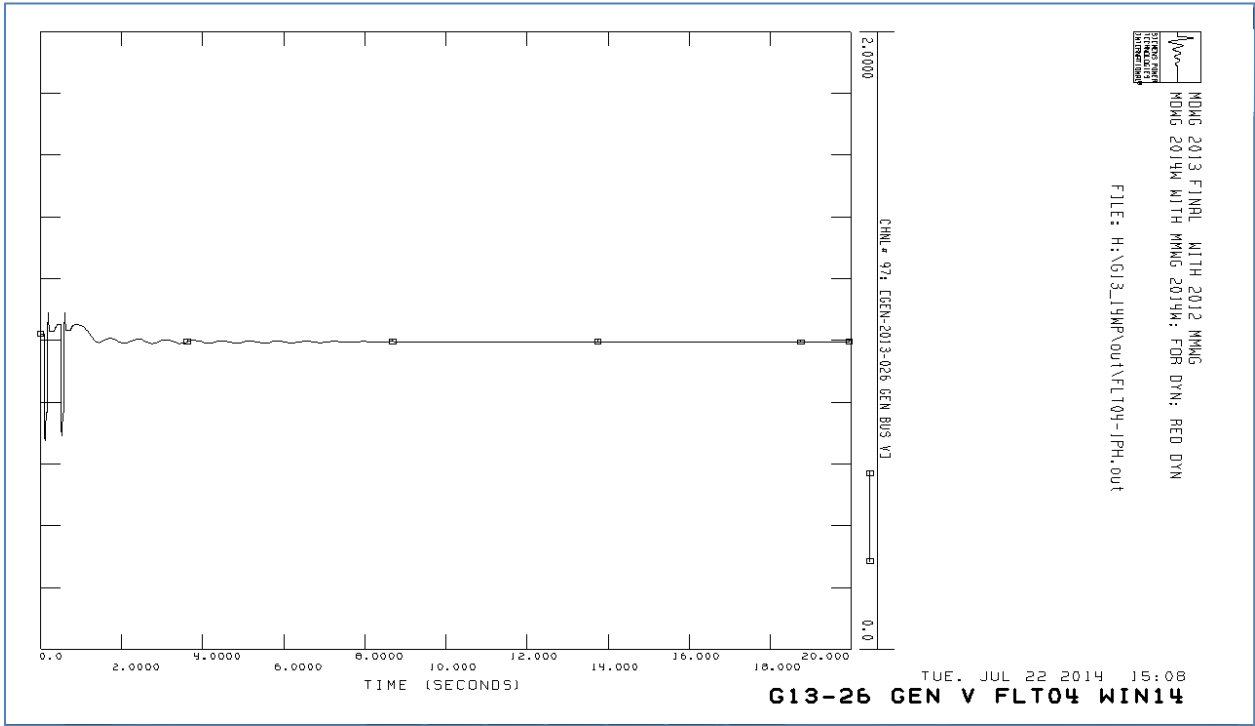


Figure 6-5: GEN-2013-026 Generator bus voltage for fault FLT04, Winter 2014 case

7. CONCLUSIONS

Based on the results of dynamic simulation studies, the following findings apply to Group 13, consisting of GEN-2013-026:

- Reactive support, which may include external capacitor banks, is necessary to maintain the POI voltage schedule at the pre-contingency level for the studied cases.
- Capacitors or other reactive equipment located at the 34.5 kV side of the GEN-2013-026 34.5/161 kV transformer requires transformer tap ratio changing to avoid overvoltage on the generator and collector system in certain situations.
- Low wind/no wind analysis has shown that GEN-2010-056 & GEN-2013-026 provide a combined 19.1 MVAR of (capacitive) reactive power that requires mitigation by external reactor banks or other means. The contribution is approximately (12) MVAR from GEN-2010-056 and (7.1) MVAR from GEN-2013-026.
- GEN-2013-026 will be required to maintain the standard pro-forma power factor requirement of 0.95 leading (absorbing) to 0.95 lagging (supplying) at the point of interconnection. Additionally the project may be required to install additional reactive/capacitive equipment as described above.
- The GEN-2013-026 wind farm was stable for all studied faults.
- GEN-2013-026 is capable of meeting LVRT requirements. GEN-2013-026 did not trip offline under any fault conditions.
- GEN-2013-026 meets the rotor angle damping requirement if electrical power output is used as a stand-in for rotor angle, because the Vestas wind turbine model does not give rotor angle output as it is an asynchronous machine.
- The GEN-2013-026 POI recovered to between 0.011 pu above and 0.023 pu below the pre-fault voltage following all studied fault disturbances.
- All generators in the monitored areas remain stable for all of the modeled disturbances.

- All generators are found to be compliant with rotor angle damping requirement and post fault voltage recovery was found to be within the criterion of 0.7 PU to 1.2 PU.

APPENDIX 1

ROTOR ANGLE DAMPING REQUIREMENT

Machine Rotor Angles shall exhibit well damped angular oscillations [as defined below] and acceptable power swings following a disturbance on the Bulk Electric System for all NERC Category A, B and C events.

Well damped angular oscillations shall meet one of the following two requirements when calculated directly from the rotor angle:

1. Successive Positive Peak Ratio (SPPR) must be less than or equal to 0.95 where SPPR is calculated as follows:

$$\text{SPPR} = \frac{\text{Peak Rotor Angle of 2}^{\text{nd}} \text{ Positive Swing Peak}}{\text{Peak Rotor Angle of 1}^{\text{st}} \text{ Positive Swing Peak}} \leq 0.95$$

-or- $\text{Damping Factor \%} = (1 - \text{SPPR}) \times 100\% \geq 5\%$

The machine rotor angle damping ratio may be determined by appropriate modal analysis (i.e. Prony Analysis) where the following equivalent requirement must be met:

$$\text{Damping Ratio} \geq 0.0081633$$

2. Successive Positive Peak Ratio Five (SPPR5) must be less than or equal to 0.774 where SPPR5 is calculated as follows:

$$\text{SPPR5} = \frac{\text{Peak Rotor Angle of 5}^{\text{th}} \text{ Positive Swing Peak}}{\text{Peak Rotor Angle of 1}^{\text{st}} \text{ Positive Swing Peak}} \leq 0.774$$

-or- $\text{Damping Factor \%} = (1 - \text{SPPR}) \times 100\% \geq 22.6\%$

The machine rotor angle damping ratio may be determined by appropriate modal analysis (i.e. Prony Analysis) where the following equivalent requirement must be met:

$$\text{Damping Ratio} \geq 0.0081633$$

Qualitatively, these Requirements are shown in Figure 1 below.

