

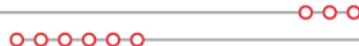


# **Definitive Interconnection System Impact Study for Generator Interconnection Requests**

**(DISIS-2012-002-4)  
[Group 1 / Group 3 Only]**

**June 2014**

**Generator Interconnection**



## Revision History

Date	Author	Change Description
01/31/2013	SPP	Report Issued (DISIS-2012-002)
02/08/2013	SPP	Report Re-Issued for corrections
05/16/2013	SPP	Account for Withdrawn Projects, Report Re-Posted (DISIS-2012-002-1)
08/05/2013	SPP	Account for Withdrawn Projects, Report Re-Posted (DISIS-2012-002-2)
01/23/2014	SPP	Account for Withdrawn Projects, Report Re-Posted (DISIS-2012-002-3)
06/12/2014	SPP	Study for Group 1 and Group 3 only to account for Withdrawn Projects, Report Re-Posted (DISIS-2012-002-4)

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## Executive Summary

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Pursuant to the Generator Interconnection Procedures (GIP) of the Southwest Power Pool (SPP) Open Access Transmission Tariff (OATT), SPP has conducted this Definitive Interconnection System Impact Study (DISIS). The Interconnection Customers' requests have been clustered together for the following System Impact Cluster Study window which closed September 30, 2012. This DISIS Re-Study is being performed on the Group 1 and Group 3 Interconnection Customers exclusively to account for higher and equally queued withdrawn Interconnection Requests. The customers will be referred to in this study as the DISIS-2012-002 Interconnection Customers. This System Impact Study analyzes the interconnecting of multiple generation interconnection requests associated with new generation totaling approximately 380 MW of new generation which would be located within the transmission systems of Oklahoma Gas and Electric (OKGE) and Sunflower Electric Power Corporation/Mid-Kansas Electric Power LLC (SUNC)/(MKEC).. The various generation interconnection requests have differing proposed in-service dates<sup>1</sup>. The generation interconnection requests included in this System Impact Cluster Study are listed in Appendix A by their queue number, amount, requested interconnection service, area, requested interconnection point, proposed interconnection point, and the requested in-service date. This restudy was performed to account for withdrawals within the DISIS-2012-002 study and/or higher queued projects withdrawing.

Power flow analysis has indicated that for the power flow cases studied, 380 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 Order No. 661-A 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.

It should be noted that although this study analyzed many of the most probable contingencies, it is not an all-inclusive list that can account for every operational situation. Additionally, the generator[s] may not be able to inject any power onto the Transmission System due to constraints that fall below the threshold of mitigation for a Generator Interconnection request. Because of this, it is likely that the Customer[s] may be required to reduce their generation output to 0 MW under certain system conditions to allow system operators to maintain the reliability of the transmission network.

The total estimated minimum cost for interconnecting the DISIS-2012-002 interconnection customers is \$40,040,000. These costs are shown in Appendix E and F. Interconnection Service to

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<sup>1</sup> 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 Customer's 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.

DISIS-2012-002 interconnection customers is also contingent upon higher queued customers paying for certain required network upgrades. **The in service date for the DISIS customers will be deferred until the construction of these network upgrades can be completed.**

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

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 the Energy Resource (ERIS) Interconnection Request. 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

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Pursuant to the Generator Interconnection Procedures (GIP) of the Southwest Power Pool (SPP) Open Access Transmission Tariff (OATT), SPP has conducted this Definitive Interconnection System Impact Study (DISIS). The Interconnection Customers' requests have been clustered together for the following System Impact Cluster Study window which closed September 30, 2012. This DISIS Re-Study is being performed on the Group 1 and Group 3 Interconnection Customers exclusively to account for higher and equally queued withdrawn Interconnection Requests. The customers will be referred to in this study as the DISIS-2012-002 Interconnection Customers. This System Impact Study analyzes the interconnecting of multiple generation interconnection requests associated with new generation totaling approximately 380 MW of new generation which would be located within the transmission systems of Oklahoma Gas and Electric (OKGE) and Sunflower Electric Power Corporation/Mid-Kansas Electric Power LLC (SUNC)/(MKEC). The various generation interconnection requests have differing proposed in-service dates<sup>2</sup>. The generation interconnection requests included in this System Impact Cluster Study are listed in Appendix A by their queue number, amount, requested interconnection service, area, requested interconnection point, proposed interconnection point, and the requested in-service date. This restudy was performed to account for withdrawals within the DISIS-2012-002 study and/or higher queued projects withdrawing.

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

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<sup>2</sup> 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 Customer's 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.

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## Model Development

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### Interconnection Requests Included in the Cluster

SPP has included all interconnection requests that submitted a Definitive Interconnection System Impact Study Agreement no later than September 30, 2012 and were subsequently accepted by Southwest Power Pool under the terms of the Generator Interconnection Procedures (GIP) that became effective March 30, 2010. The interconnection requests that are included in this study are listed in Appendix A.

### Affected System Interconnection Requests

Also included in this Definitive Interconnection System Impact Study is a single Affected System Study, located on the Farmers Electric Cooperative, Inc. (FEC) system, which shares connections to the SPS system. The Affected System Study Requests has been given the designations: ASGI-2012-002 (18MW, Point of Interconnection is FEC-Clovis Interchange 115kV). This Affected System Request is located in Group 6 and was not re-evaluated for this study.

### 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 2014 spring, 2014 summer and winter peak, 2019 summer and winter peak, and the 2024 summer peak 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.

### Dynamic Stability

The 2013 series SPP Model Development Working Group (MDWG) Models 2014 winter, 2015 summer, and 2024 summer were used as starting points for this study.

### Base Case Upgrades

The following facilities are part of the SPP Transmission Expansion Plan or the Balanced Portfolio or recently approved Priority Projects. These facilities, have an approved Notice 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-2012-002 Customers have not been assigned acceleration costs for the below listed projects. The DISIS-2012-002 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.

- Hitchland 230/115kV area projects<sup>3</sup>:
  - Hitchland – Ochiltree 230kV Project, (placed in-service 2013)
- Balanced Portfolio Projects<sup>4</sup>:
  - Woodward – Border – TUCO 345kV project, scheduled for 5/19/2014 in-service
    - Woodward 345/138kV circuit #2 autotransformer
    - TUCO 345/138kV circuit #2 autotransformer
    - Reactors at Woodward and Border
  - Iatan – Nashua 345kV, scheduled for 6/1/2015 in-service
    - Nashua 345/161kV autotransformer
  - Muskogee– Seminole 345kV, scheduled for 12/31/2013 in-service
  - Tap Stillwell – Swissvale 345kV line at West Gardner, (placed in-service 2013)
- Priority Projects<sup>5</sup>:
  - Hitchland – Woodward double circuit 345kV, (placed in-service 2014)
    - Hitchland 345/230kV circuit #2 autotransformer
  - Woodward – Thistle double circuit 345kV, scheduled for 12/31/2014 in-service
  - Spearville – Clark double circuit 345kV, scheduled for 12/31/2014 in-service
  - Clark – Thistle double circuit 345kV, scheduled for 12/31/2014 in-service
  - Thistle – Wichita double circuit 345kV, scheduled for 12/31/2014 in-service
  - Thistle 345/138kV autotransformer, scheduled for 12/31/2014 in-service
  - Thistle – Flat Ridge 138kV, scheduled for 12/31/2014 in-service
- Various MKEC Transmission System Upgrades<sup>6</sup>
  - Harper – Flat Ridge 138kV rebuild, (placed in-service in 2013)
  - Flat Ridge – Medicine Lodge 138kV rebuild, scheduled for 12/31/2013 in-service
  - Pratt – Medicine Lodge 115kV rebuild, scheduled for 6/15/2014 in-service
  - Medicine Lodge 138/115kV autotransformer replacement, (placed in-service in 2013)
- Northwest 345/138/13.8kV circuit #3 autotransformer, scheduled for 6/1/2017 in-service<sup>7</sup>
- Woodward (OKGE) – Woodward (WFEC) 69kV rebuild, scheduled for 6/1/2015 in-service<sup>8</sup>
- Sheldon – SW7<sup>th</sup> and Pleasant Hill 115kV circuit #2 rebuild, (placed in-service in 2013)<sup>9</sup>
- Moundridge 138/115/13.8kV autotransformer circuit #2, scheduled for 12/1/2014 in-service<sup>10</sup>
- Fremont – S6801 161/69kV circuit #1 Project<sup>11</sup>
  - Fremont 161/69/13.8kV transformer circuit #1, scheduled for 6/1/2019 in-service.
  - Fremont – S6801 69kV circuit #1, scheduled for 6/1/2019 in-service.

<sup>3</sup> SPP Regional Reliability Projects identified in 2007 STEP. As of the writing of this report, SPP Project Tracking TAGIT shows some of these project's in-service dates have been delayed from the original 2010/2011 in-service dates.

<sup>4</sup> Notice to Construct (NTC) issued June 2009.

<sup>5</sup> Notice to Construct (NTC) issued June 2010.

<sup>6</sup> SPP Transmission Service Projects identified in SPP-2007-AG3-AFS-9.

<sup>7</sup> SPP Transmission Service Project identified in SPP-2009-AG2-AFS6. Per SPP-NTC-20137.

<sup>8</sup> SPP Regional Reliability Project. Per SPP-NTC-20003.

<sup>9</sup> SPP Regional Reliability 2012 ITPNT Project. Per SPP-NTC-200171.

<sup>10</sup> SPP Regional Reliability 2012 ITP10 Project. Per SPP-NTC-200181.

<sup>11</sup> SPP Regional Reliability 2014 ITPNT Project. Per SPP-NTC-200259.

- S1226 – S1301 161kV circuit #1, scheduled for 6/1/2019 in-service.
- Mustang – Yoakum 230kV circuit #1 replace line traps (placed In-Service in 2014)
- Yoakum 230/115kV transformer #1 and #2 replacements, scheduled for 6/1/2019 in-service
- Dobson – Gano 115kV circuit #1 replace terminal equipment (placed In-Service in 2014)
- Garden City – Kansas Avenue 115kV circuit #1 replace terminal equipment (placed In-Service in 2014)
- Amoco – Wasson 230kV line traps (placed in service 2014)

## 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-2012-002 study and are assumed to be in service. This list may not be all inclusive. The DISIS-2012-002 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 GIA or withdraw from the interconnection queue. The DISIS-2012-002 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 345kV, addition
    - Lancer 345/115kV transformer circuit #1, addition
    - Lancer – North Ft. Dodge 115kV, addition
    - Ft. Dodge – North Ft. Dodge circuit #2, addition
    - Move Ft. Dodge terminal of Shooting Star 115kV
  - Fort Randall – Meadow Grove – Kelly 230kV circuit #1, rerate (320MVA)
- Upgrades assigned to DISIS-2010-001 Interconnection Customers:
  - Switch 2749 – Wildorado 69kV circuit #1, rebuild
- Upgrades assigned to DISIS-2010-002 Interconnection Customers:
  - Buckner – Spearville 345kV circuit #1, replace terminal equipment
  - Twin Church – Dixon County 230kV circuit #1, rerate (320MVA)
- Upgrades assigned to DISIS-2011-001 Interconnection Customers:
  - Beaver County – Buckner 345kV circuit #1, build
  - Rice County – Circle 230kV conversion, (placed In-Service in 2012)
  - Rice County – Lyons 115kV, rebuild (placed In-Service in 2013)
  - Rice County 230/115kV autotransformer, (placed In-Service in 2012)
  - Wheatland – Lyons 115kV, rerate (199 MVA) (placed In-Service in 2012)
  - Hoskins – Dixon County – Twin Church 230kV circuit #1, rerate
  - (NRIS only) Mooreland – FPL Switch – Woodward 138kV circuit #1 rebuild
  - (NRIS only) Glass Mountain – Mooreland 138kV circuit #1, rebuild
  - (NRIS only) TUCO – New Deal – Stanton 345/115kV Project, build
  - (NRIS only) Wolfforth 230/115kV transformer 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)
  - SUB 967 - SUB 968 69kV circuit #1, replace terminal equipment

- (NRIS only) Allen – Lubbock South 115kV circuit #1, rebuild
- (NRIS only) Hydro Carbon Tap - Sub974 69kV 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:
  - None

## 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 in fifteen different 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 each group, the various wind generating plants were modeled at 100% nameplate of maximum generation. The other wind generating plants in each area were modeled at 80% nameplate while the wind generating plants in the other areas were modeled at 20% nameplate of maximum generation. These projects were dispatched as Energy Resources with equal distribution across the SPP footprint. Certain projects that requested Network Resource Interconnection Service were dispatched in an additional analysis into the balancing authority of the interconnecting transmission owner. 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 each interconnection request modeled at 100% nameplate.

Peaking units were not dispatched in the 2014 spring model. To study peaking units' impacts, the 2014 summer and winter, 2019 summer and winter, and 2024 summer peak 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.

### Dynamic Stability

For each group, all interconnection requests were dispatched 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 PTI MUST First Contingency Incremental Transfer Capability (FCITC) analysis on the entire cluster grouping dispatched at the various levels mentioned above. These constraints were then screened to determine if any 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 mitigation. Interconnection Requests that have requested Network Resource Interconnection Service (NRIS) were also studied in the NRIS analysis to determine if any constraint had at least a 3% DF. If so, these constraints were considered for mitigation.

## 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 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:

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

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

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

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

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

- 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.

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## Required Interconnection Facilities

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The requirement to interconnect the 380 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 \$40,040,000. 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.

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## Power Flow Analysis

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### 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. NERC Category "B" and "C" 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, and 2024 summer peak models. The output of the Interconnection Customer's facility was offset in each model by a reduction in output of existing online SPP generation. This method allows the request to be studied as an Energy Resource (ER) Interconnection Request. Certain requests that requested 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 AECI, SPS, SUNC, WERE and WFEC transmission systems under system intact and contingency conditions in the peak seasons.

### **Cluster Group 1 (Woodward Area)**

In addition to the 4,084.6 MW of previously queued generation in the area, 200.0 MW of new interconnection service was studied to determine impacts for the withdrawal of higher and equally queued Interconnection Requests. No new constraints were found in this area.

### **Cluster Group 3 (Spearville Area)**

In addition to the 4,030.4 MW of previously queued generation in the area, 180.0 MW of new interconnection service was studied. Due to the withdrawal of GEN-2010-061, GEN-2011-043, and GEN-2011-044 and their associated Network Upgrades, power flow analysis indicates a need for a 125Mvar SVC and 100Mvar Cap bank at Thistle due to potential voltage collapse for multiple outages.

Group 3: ERIS Constraints				
MONITORED ELEMENT	RATE B (MVA)	TC%LOAD NG (% MVA)	CONTINGENCY	
Non-converged Contingency	1793	-	G11-17T	345.00 - G12-011T 345.00 345KV CKT 1
Non-converged Contingency	1793	-	G12-011T	345.00 - POST ROCK 345KV CKT 1
Non-converged Contingency	1517	-	BUCKNER7	345.00 - SPEARVILLE 345KV CKT 1
Non-converged Contingency	1793	-	CLARKCOUNTY7	345.00 - THISTLE7 345.00 345KV CKT 1
Non-converged Contingency	1793	-	CLARKCOUNTY7	345.00 - THISTLE7 345.00 345KV CKT 2
Non-converged Contingency	1792	-	AXTELL - POST ROCK	345KV CKT 1
Non-converged Contingency	1792	-	BEAVER CO	345.00 - BUCKNER7 345.00 345KV CKT 1

### **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 under certain system conditions to allow system operators to maintain the reliability of the transmission network.

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## Stability Analysis

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A stability analysis was conducted for each Interconnection Customer's facility using modified versions of the 2013 series SPP Model Development Working Group (MDWG) Models 2014 winter, 2015 summer, and 2024 summer peak dynamic models. The stability analysis was conducted with all upgrades in service that were identified in the power flow analysis. 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 fossil 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.

### **Cluster Group 1 (Woodward Area)**

The Group 1 stability analysis for this restudy was performed by SPP Staff. . Stability analysis has determined that when all previously assigned and currently assigned network upgrades are placed in-service the transmission system will remain stable and low voltage ride through requirements are satisfied for the contingencies studied.

Power Factor analysis was not performed again for this restudy. With the power factor requirements and all network upgrades in service, all interconnection requests in Group 1 will meet FERC Order #661A low voltage ride through (LVRT) requirements.

### **Cluster Group 3 (Spearville Area)**

The Group 3 stability analysis for this restudy was performed by SPP Staff. Stability analysis has determined that when all previously assigned and currently assigned network upgrades are placed in-service the transmission system will remain stable and low voltage ride through requirements are satisfied for the contingencies studied.

Power Factor analysis was not performed again for this restudy. With the power factor requirements and all network upgrades in service, all interconnection request in Group 3 will meet FERC Order #661A low voltage ride through (LVRT) requirements.

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## Conclusion

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The minimum cost of interconnecting 380 MW of new interconnection requests included in this Definitive Interconnection System Impact Study is estimated at \$40,040,000 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.

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).

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## Appendix

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## **A: Generation Interconnection Requests Considered for Impact Study**

See next page.

## **A: Generation Interconnection Requests Considered for Impact Restudy**

Request	Amount	Service	Area	Requested Point of Interconnection	Proposed Point of Interconnection	Requested In-Service Date	In Service Date Delayed Until no earlier than*
GEN-2012-024	180.00	ER	SUNCMKEC	Clark County 345kV	Clark County 345kV	12/31/2015	12/31/2014
GEN-2012-031	200.00	ER	OKGE	Cimarron 345kV (GEN-2010-040 Sub)	Cimarron 345kV (GEN-2010-040 Sub)	11/30/2014	TBD
<b>Total: 380.00</b>							

Requests included in Appendix A are those found to be affected and considered for this system impact restudy.

## **B: All Interconnection Request in Impact Study Cluster**

See next page.

## B: Generation Interconnection Requests in 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-2012-002	18.15	ER	SPS	FE-Clovis Interchange 115kV	FE-Clovis Interchange 115kV		
GEN-2012-020	478.00	ER	SPS	TUCO 230kV	TUCO 230kV	9/30/2015	12/31/2014
GEN-2012-021	4.80	ER	LES	Terry Bundy Generating Station 115kV	Terry Bundy Generating Station 115kV	8/1/2013	TBD
GEN-2012-023	115.00	ER	WERE	Viola 345kV	Viola 345kV	12/31/2014	TBD
GEN-2012-024	180.00	ER	SUNCMKEC	Clark County 345kV	Clark County 345kV	12/31/2015	12/31/2014
GEN-2012-026	100.00	ER/NR	MIDW	Colby 115kV	Colby 115kV	12/31/2014	TBD
GEN-2012-027	136.00	ER	AEPW	Shidler 138kV	Shidler 138kV	12/1/2014	TBD
GEN-2012-028	74.80	ER	WFEC	Gotebo 69kV	Gotebo 69kV	12/1/2014	TBD
GEN-2012-031	200.00	ER	OKGE	Cimarron 345kV (GEN-2010-040 Sub)	Cimarron 345kV (GEN-2010-040 Sub)	11/30/2014	TBD
GEN-2012-032	300.00	ER	OKGE	Tap Rose Hill - Sooner 345kV	Tap Rose Hill - Sooner (Ranch) 345kV	11/30/2014	TBD
GEN-2012-033	98.80	ER	OKGE	Tap and Tie South 4th - Bunch Creek & Enid Tap - Fairmont (GEN-2012-033T) 138kV	Tap and Tie South 4th - Bunch Creek & Enid Tap - Fairmont (GEN-2012-033T) 138kV	12/1/2014	TBD
GEN-2012-034	7.00	ER	SPS	Mustang 230kV	Mustang 230kV	6/1/2013	TBD
GEN-2012-035	7.00	ER	SPS	Mustang 230kV	Mustang 230kV	6/1/2013	TBD
GEN-2012-036	7.00	ER	SPS	Mustang 230kV	Mustang 230kV	6/1/2013	TBD
GEN-2012-037	203.00	ER	SPS	TUCO 345kV	TUCO 345kV	3/1/2015	12/31/2014
GEN-2012-040	76.50	ER/NR	WFEC	Chilocco 138kV	Chilocco 138kV	12/1/2013	TBD
GEN-2012-041	121.50	ER	OKGE	Tap Rose Hill - Sooner 345kV	Tap Rose Hill - Sooner 345kV	4/15/2015	TBD
<b>Total: 2,127.55</b>							

Appendix B is a complete list of Generation Interconnection Requests in the original system impact study.

## **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
PRIOR QUEUED SUBTOTAL	<b>4,084.60</b>		
GEN-2012-031	200.00	OKGE	Cimarron 345kV (GEN-2010-040 Sub)
CURRENT CLUSTER SUBTOTAL	<b>200.00</b>		
AREA TOTAL	<b>4,284.60</b>		

### 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
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	<b>2,662.20</b>		
AREA TOTAL	<b>2,662.20</b>		

**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-2007-038	200.00	SUNCMKEC	Spearville 345kV
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)
Gray County Wind (Montezuma)	110.00	SUNCMKEC	Gray County Tap 115kV
<b>PRIOR QUEUED SUBTOTAL</b>	<b>4,030.40</b>		
GEN-2012-024	180.00	SUNCMKEC	Clark County 345kV
<b>CURRENT CLUSTER SUBTOTAL</b>	<b>180.00</b>		
<b>AREA TOTAL</b>	<b>4,210.40</b>		

**GROUP 4/11: NW KANSAS AREA**

Request	Capacity	Area	Proposed Point of Interconnection
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
<b>PRIOR QUEUED SUBTOTAL</b>	<b>1,888.10</b>		
GEN-2012-026	100.00	MIDW	Colby 115kV
<b>CURRENT CLUSTER SUBTOTAL</b>	<b>100.00</b>		
<b>AREA TOTAL</b>	<b>1,988.10</b>		

**GROUP 5: AMARILLO AREA**

Request	Capacity	Area	Proposed Point of Interconnection
GEN-2002-022	240.00	SPS	Bushland 230kV
GEN-2006-047	240.00	SPS	Tap Bushland - Deaf Smith (Buffalo) 230kV
GEN-2008-051	322.00	SPS	Potter County 345kV
GEN-2008-088	50.60	SPS	Vega 69kV
Llano Estacado (White Deer)	80.00	SPS	Llano Wind 115kV
<b>PRIOR QUEUED SUBTOTAL</b>	<b>932.60</b>		
<b>AREA TOTAL</b>	<b>932.60</b>		

**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
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
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
<b>PRIOR QUEUED SUBTOTAL</b>	<b>2,371.50</b>		
ASGI-2012-002	18.15	SPS	FE-Clovis Interchange 115kV
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
<b>CURRENT CLUSTER SUBTOTAL</b>	<b>720.15</b>		
<b>AREA TOTAL</b>	<b>3,091.65</b>		

**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
<b>PRIOR QUEUED SUBTOTAL</b>	<b>1,825.20</b>		
GEN-2012-028	74.80	WFEC	Gotebo 69kV
<b>CURRENT CLUSTER SUBTOTAL</b>	<b>74.80</b>		
<b>AREA TOTAL</b>	<b>1,900.00</b>		

**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
<b>PRIOR QUEUED SUBTOTAL</b>	<b>1,909.50</b>		
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
<b>CURRENT CLUSTER SUBTOTAL</b>	<b>847.80</b>		
<b>AREA TOTAL</b>	<b>2,757.30</b>		

**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 (Madison County) 230kV
GEN-2008-119O	60.00	OPPD	S1399 161kV
GEN-2008-123N	89.70	NPPD	Tap Guide Rock - Pauline (Rosemont) 115kV
GEN-2009-040	108.00	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
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
<b>PRIOR QUEUED SUBTOTAL</b>	<b>1,557.90</b>		
GEN-2012-021	4.80	LES	Terry Bundy Generating Station 115kV
<b>CURRENT CLUSTER SUBTOTAL</b>	<b>4.80</b>		
<b>AREA TOTAL</b>	<b>1,562.70</b>		

**GROUP 12: NW-AR AREA**

Request	Capacity	Area	Proposed Point of Interconnection
AREA TOTAL	0.00		

**GROUP 13: NW MISSOURI AREA**

Request	Capacity	Area	Proposed Point of Interconnection
GEN-2008-129	80.00	MIPU	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	<b>285.80</b>		
AREA TOTAL	<b>285.80</b>		

**GROUP 14: S-OKLAHOMA AREA**

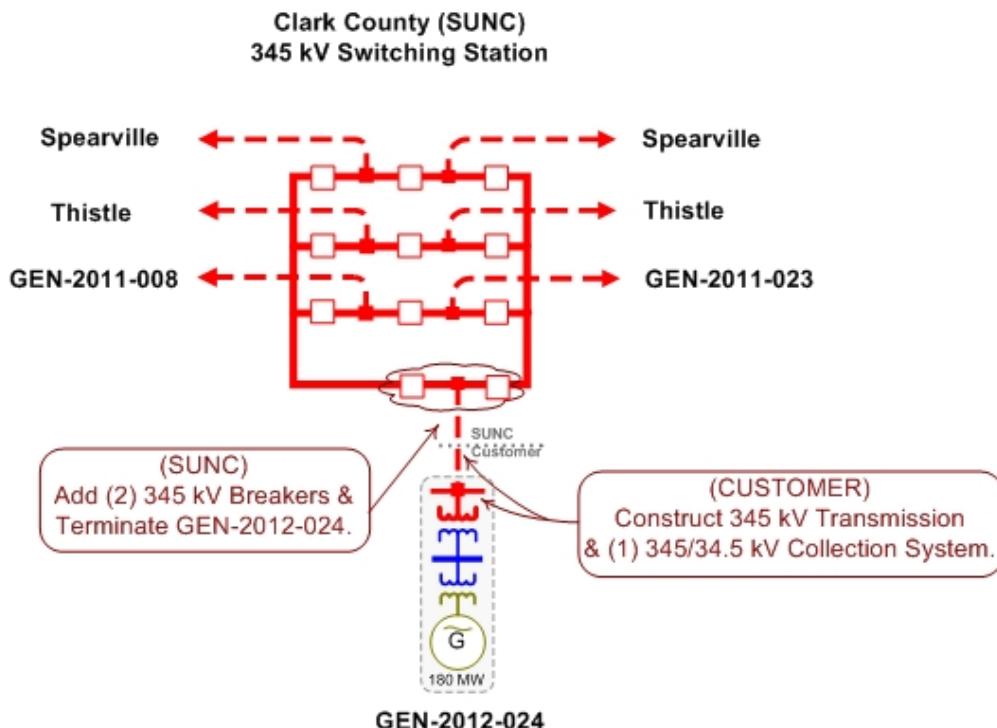
Request	Capacity	Area	Proposed Point of Interconnection
GEN-2011-040	111.00	OKGE	Tap Ratliff - Pooleville (Carter County) 138kV
GEN-2011-050	109.80	AEPW	Santa Fe Station 138kV
GEN-2012-004	41.40	OKGE	Tap Ratliff - Pooleville (Carter County) 138kV
PRIOR QUEUED SUBTOTAL	<b>262.20</b>		
AREA TOTAL	<b>262.20</b>		

CLUSTER TOTAL (CURRENT STUDY)	<b>2,127.6</b>	MW
PQ TOTAL (PRIOR QUEUED)	<b>21,810.0</b>	MW
CLUSTER TOTAL (INCLUDING PRIOR QUEUED)	<b>23,937.6</b>	MW

## D: Proposed Point of Interconnection One line Diagrams

\*\*Refer to most recent Facility study for each request for an updated one-line.\*\*

**GEN-2012-024**



**GEN-2012-031**

\*\*Refer to Facility Study for an updated one-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.

# Appendix E. Cost Allocation Per Request

**(Including Previously Allocated Network Upgrades\*)**

Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
<b>GEN-2012-024</b>			
GEN-2012-024 Interconnection Cost See One-Line Diagram.	Current Study	\$5,000,000.00	\$5,000,000.00
Thistle SVC and Cap Bank Build Thistle SVC (+125Mvar) and 100Mvar switchable cap bank.	Current Study	\$35,000,000.00	\$35,000,000.00
Beaver County - Woodward 345kV Dbl CKT Priority Project: Hitchland - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)	In-Service	\$226,040,727.00	
Hitchland - Beaver County 345kV Dbl CKT Priority Project: Hitchland - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)	In-Service	\$226,040,727.00	
Hitchland 345/230kV Autotransformer CKT 2 Priority Project: Hitchland 345/230kV Autotransformer CKT 2 (Total Project E&C Cost Shown).	In-Service	\$8,883,760.00	
Beaver County - Buckner 345kV Build approximately 90 miles of 345kV from Beaver County - Gray County @ 3000 amps	Previously Allocated	\$170,209,050.00	
Beaver County 345kV Expansion Beaver County Expansion: Tap & Tie in Hitchland - Woodward 345kV CKT 2	Previously Allocated	\$3,500,000.00	
Border - Tuco Interchange 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV CKT 1 (Total Project E&C Cost Shown)	Previously Allocated	\$249,247,072.00	
Border - Woodward 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV CKT 1 (Total Project E&C Cost Shown)	Previously Allocated	\$249,247,072.00	
Buckner - Spearville 345kV CKT 1 Replace wave trap and relays at Spearville to get the line rating up.	Previously Allocated	\$771,000.00	
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	
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	
Thistle - Flat Ridge 138kV CKT 1 Priority Project: Thistle - Flat Ridge 138kV CKT 1 (Total Project E&C Cost Shown.)	Previously Allocated	\$5,776,280.00	
Thistle - Wichita 345KV Dbl CKT Priority Project: Thistle - Wichita Dbl 345kV CKT (Total Project E&C Cost Shown.)	Previously Allocated	\$426,504,292.00	

\* 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	
Thistle 345/138KV Transformer CKT 1 Priority Project: Thistle 345/138kV Transformer CKT 1 (Total Project E&C Cost Shown.)	Previously Allocated	\$6,585,986.00	
TUCO Interchange 345/230/13.2KV Autotransformer CKT 2 Balanced Portfolio: TUCO 345/230 kV Transformer CKT 2 (Total Project E&C Cost Shown)	Previously Allocated	\$14,900,907.00	
Woodward XFMR 345/138/13.8kV CKT 2 Balanced Portfolio: Woodward 345/138kV Transformer CKT 2 & 50 MVAR Reactor (Total Project E&C Cost Shown).	Previously Allocated	\$249,247,072.00	
	<b>Current Study Total</b>	<b>\$40,000,000.00</b>	
<b>GEN-2012-031</b>			
GEN-2012-031 Interconnection Cost See One-Line Diagram.	Current Study	\$40,000.00	\$40,000.00
Border - Tuco Interchange 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV CKT 1 (Total Project E&C Cost Shown)	Previously Allocated	\$249,247,072.00	
Border - Woodward 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV CKT 1 (Total Project E&C Cost Shown)	Previously Allocated	\$249,247,072.00	
Thistle - Woodward 345KV Dbl CKT Priority Project: Thistle - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated	\$207,782,000.00	
Thistle 345/138KV Transformer CKT 1 Priority Project: Thistle 345/138kV Transformer CKT 1 (Total Project E&C Cost Shown.)	Previously Allocated	\$6,585,986.00	
TUCO Interchange 345/230/13.2KV Autotransformer CKT 2 Balanced Portfolio: TUCO 345/230 kV Transformer CKT 2 (Total Project E&C Cost Shown)	Previously Allocated	\$14,900,907.00	
	<b>Current Study Total</b>	<b>\$40,000.00</b>	
<b>TOTAL CURRENT STUDY COSTS:</b>		<b>\$40,040,000.00</b>	

\* 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

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## GEN-2012-024 Interconnection Cost

See One-Line Diagram.

GEN-2012-024	\$5,000,000.00
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<b>Total Allocated Costs</b>	<b>\$5,000,000.00</b>
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## GEN-2012-031 Interconnection Cost

See One-Line Diagram.

GEN-2012-031	\$40,000.00
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<b>Total Allocated Costs</b>	<b>\$40,000.00</b>
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## Thistle SVC and Cap Bank

Build Thistle SVC (+125Mvar) and 100Mvar switchable cap bank.

GEN-2012-024	\$35,000,000.00
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<b>Total Allocated Costs</b>	<b>\$35,000,000.00</b>
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\* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

## **G: Power Flow Analysis (Constraints For Transmission Reinforcement)**

See next page.

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB		TC%LOADING		CONTINGENCY
							(MVA)	TDF	(% MVA)		
FNSL-Blown up	03ALL	014G	G12_024	-	Non-converged Contingency		1793	0.2575	-	CLARKCOUNTY7345.00 - THISTLE7	345.00 345KV CKT 1
FNSL-Blown up	03ALL	014G	G12_024	-	Non-converged Contingency		1793	0.2575	-	CLARKCOUNTY7345.00 - THISTLE7	345.00 345KV CKT 2
FNSL-Blown up	03ALL	014G	G12_024	-	Non-converged Contingency		1517	0.24751	-	BUCKNER7	345.00 - SPEARVILLE 345KV CKT 1
FNSL-Blown up	03ALL	014G	G12_024	-	Non-converged Contingency		1793	0.14764	-	G11-17T	345.00 - G12-011T 345.00 345KV CKT 1
FNSL-Blown up	03ALL	014G	G12_024	-	Non-converged Contingency		1793	0.14764	-	G12-011T	345.00 - POST ROCK 345KV CKT 1
FNSL-Blown up	03ALL	014G	G12_024	-	Non-converged Contingency		1792	0.12025	-	BEAVER CO	345.00 - BUCKNER7 345.00 345KV CKT 1
FNSL-Blown up	03ALL	014G	G12_024	-	Non-converged Contingency		1792	0.09782	-	AXTELL	- POST ROCK 345KV CKT 1

## **H: Power Flow Analysis (Other Constraints Not Requiring Transmission Reinforcement)**

Available upon request

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	14G	G12_024	TO->FROM	CHISHOLM - MAIZEF 4 138.00 138KV CKT 1	287	0.05181	105.1939 BENTON - WICHITA 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.08046	127.3053 DBL-WICH-THI
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.05445	123.1929 SMOKYHL6 230.00 - SUMMIT 230KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.08057	121.4898 DBL-WICH-THI
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.05445	114.8448 KNOLL 230 - SMOKYHL6 230.00 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.05361	112.0481 THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.05361	112.0481 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04782	111.1906 DBL-BVR-WWRD
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.0488	107.1023 ST.JOHN - ST.JOHN 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04874	107.1018 NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04968	106.7867 KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FNSL	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04776	105.6396 MINGO - RED WILLOW 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04874	105.6175 G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.0472	105.5654 SPP-MKEC-06
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04874	105.5147 G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04719	105.5054 SEWARD - ST.JOHN 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04548	104.162 GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.0488	104.0731 HUNTSVILLE - ST.JOHN 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.0488	103.8594 MIDW-CATB05
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04739	103.7086 SPP-SWPS-05
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04739	103.6106 FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.0488	103.5056 HUNTSVILLE - HUTCHINSON ENERGY CENTER 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04659	103.4113 GRAND ISLAND - SWEETWATER 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04724	103.4105 AXTELL - PAULINE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04574	102.8333 LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04677	102.7204 SPP-MKEC-02
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04548	102.705 GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04548	102.7046 GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04699	102.6418 MOORE - PAULINE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04677	102.5473 ELLSWTP3 115.00 - MULLERGREEN 115KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.05492	102.5213 SMOKYHL6 230.00 - SUMMIT 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04629	102.5173 GREAT BEND TAP - SEWARD 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04629	102.514 GREAT BEND TAP - MULLERGREEN 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04548	102.4232 GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.03942	101.9407 CLARKCOUNTY7345.00 - IRONWOOD7 345.00 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04655	101.9308 SPP-MKEC-08
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.03942	101.8196 CLARKCOUNTY7345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04585	101.6211 MINGO - SETAB 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04677	101.515 ELLSWTP3 115.00 - RUSSELL 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04602	101.0494 BEAVER CO 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04602	101.0494 BEAVER CO 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04548	100.9645 GEN530690 1-PRWINDG1 0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04642	100.8835 FLATRDG3 - HARPER 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04642	100.8716 SPP-SWPS-04
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04642	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04642	100.8503 CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04548	100.6603 GEN532722 1-EVANS ENERGY CENTER UNIT 2
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04564	100.5176 STEGALL - STEGALL TY 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04564	100.5164 TRF-STEGALL
FNSL	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04564	100.5145 NEB01WAPAB3
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04662	100.4898 ELM CREEK - NORTHWEST MANHATTAN 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04642	100.4851 Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04642	100.4548 HARPER - MILAN TAP 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04677	100.4157 RUSSELL - WALDO 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04548	100.352 GEN542962 2-IATAN UNIT #2
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04601	100.3442 GRAND ISLAND - MCCOOL 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04548	100.3335 GEN542956 2-LACYGNE UNIT #2
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04642	100.33 SPP-MKEC-05
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04642	100.3264 SPP-MKEC-03A
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04548	100.3191 GEN542955 1-LACYGNE UNIT #1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04642	100.299 CLEARWATER - MILAN TAP 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04642	100.2789 SPP-MKEC-03B
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04642	100.1291 CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04572	100.1054 SPP-SWPS-01
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04574	100.1029 OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04739	100. FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04677	100 COVERT 3 115.00 - SMITH CENTER 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04677	100 COVERT 3 115.00 - WALDO 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04601	100 MCCOOL - MOORE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04574	100 SPP-AEPW-32
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04548	100 GEN542957 1-IATAN UNIT #1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04597	99.9 MULLERGREN (MULGREN6) 230/115/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04596	99.9 HEIZER 6 230.00 - MULLERGREN 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04596	99.9 HEIZER 6 230.00 (HEIZER T1) 230/115/12.5KV TRANSFORMER CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04548	99.9 GEN532663 1-LAWRENCE ENERGY CENTER UNIT 5
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04538	99.9 EVANS ENERGY CENTER NORTH - SEDGWICK COUNTY NO. 12 COLWICH 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04565	99.8 G10-056T 345.00 - ST JOE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04538	99.8 BENTLEY4 138.00 - SEDGWICK COUNTY NO. 12 COLWICH 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	191	0.06265	130.268 DBL-WICH-THI
FDNS	3	0	14G	G12_024	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	191	0.06272	123.6629 DBL-WICH-THI
FDNS	01ALL	0	14G	G12_024	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	191	0.06307	102.4713 DBL-WICH-THI
FDNS	03G12_024	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.06265	238.6135 DBL-WICH-THI
FDNS	3	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.06272	227.0844 DBL-WICH-THI
FDNS	01ALL	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.06307	190.1407 DBL-WICH-THI
FDNS	1	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.0632	167.5003 DBL-WICH-THI
FDNS	03ALL	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03288	162.713 THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03288	162.713 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	06ALL	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.0628	150.1117 DBL-WICH-THI
FDNS	03G12_024	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03308	139.5723 THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03308	139.5723 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	3	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03312	134.7074 THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03312	134.7074 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	6	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.063	134.5963 DBL-WICH-THI
FDNS	07ALL	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.0633	123.7563 DBL-WICH-THI
FDNS	7	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.06329	119.6624 DBL-WICH-THI
FDNS	00G12_024	0	14WP	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.06268	117.6578 DBL-WICH-THI
FDNS	03ALL	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03512	115.9174 DBL-SPRVL-CL
FNSL	00G12_024	0	19WP	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.06512	111.0478 DBL-WICH-THI
FDNS	01ALL	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03334	107.9642 THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03334	107.9642 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03G12_024	0	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03524	104.6834 DBL-SPRVL-CL
FDNS	01ALL	0	14G	G12_024	TO->FROM	FLATRDG3 - THISTLE4 138.00 138KV CKT 1	286	0.07456	106.7435 DBL-WICH-THI
FDNS	01ALL	0	14G	G12_024	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05313	118.914 NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05151	107.8316 NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	01ALL	0	14G	G12_024	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06432	105.6635 DBL-WICH-THI
FDNS	03G12_024	0	14G	G12_024	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.06334	101.6944 DBL-WICH-THI
FDNS	03ALL	0	14G	G12_024	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05151	100.9652 G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05151	100.2912 G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05151	193.5419 NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06334	182.7464 DBL-WICH-THI
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05151	180.9394 G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05151	179.8064 G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05313	172.5391 NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06342	171.2505 DBL-WICH-THI
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05176	163.2191 NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04054	157.1721 WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05183	156.4621 NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04254	155.3826 IODINE - WOODWARD EHV 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04254	153.6711 DEWEY - IODINE 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05176	150.7938 G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05176	149.2737 G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04244	148.9434 THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04244	148.9434 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	148.8461 GEN520997 1-MORLND2
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06432	146.2209 DBL-WICH-THI
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03681	144.9428 LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04054	144.0422 WOODWARD - WOODWARD 69KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04244	148.9434 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	143.7875 BASE CASE
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05183	143.7462 G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	1	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05292	143.5416 NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	142.7912 GEN520998 1-MORLND3

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATE (MVA)	TC%LOADING (% MVA)	CONTINGENCY
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05183	142.1965 G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03692	141.0445 SPP-SWPS-03
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0369	140.577 ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0369	140.5651 ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0369	139.9565 GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04235	139.7722 RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0369	137.0209 SPP-SWPS-02A
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03652	136.9882 GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
									POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03862	136.5636 CTK 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03974	136.5425 BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
FNSL	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0376	135.8508 MINGO - RED WILLOW 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03681	135.6461 SPP-AEPW-32
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03661	135.5777 RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03727	135.3735 MINGO - SETAB 345KV CKT 1
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0501	134.9153 NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03862	134.7788 Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03974	134.7527 BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04235	134.6261 VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03862	134.5032 SPP-SWPS-04
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04073	133.5642 WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03561	133.5267 RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0369	133.3983 SPP-SWPS-01
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03681	133.0767 OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03928	132.212 G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0369	131.8496 STATELINE INTERCHANGE - STLDEMARC6 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0369	131.8396 SPP-SWPS-02
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0369	131.8137 STLDEMARC6 - SWEETWATER 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03809	131.4793 BENTON - WICHITA 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.037	131.4706 MULLERGREN - SPEARVILLE 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03688	131.4089 CIRCLE - MULLERGREN 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03675	131.3632 SMOKYHL6 230.00 - SUMMIT 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03694	131.3377 HOLCOMB - SETAB 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03949	131.0678 DBL-HITCH-BVR
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	130.5315 GEN514805 1-SOONER UNIT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04273	130.3667 IODINE - WOODWARD EHV 138KV CKT 1
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06175	130.1553 DBL-WICH-THI
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03631	129.6718 WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03679	129.6633 FLATRDG3 - HARPER 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03561	129.5441 SAND RDG_138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	129.4138 GEN515787 1-OOKLA WIND ENERGY CENTER
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	129.3988 GEN520997 1-MORLND2
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03675	129.1837 KNOLL 230 - SMOKYHL6 230.00 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03679	129.1251 SPP-MKEC-08
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03644	128.9794 GRAND ISLAND - SWEETWATER 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	128.9434 GEN514806 1-SOONER UNIT 2
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03679	128.7538 HARPER - MILAN TAP 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03661	128.6807 CIMARRON - NORTHWEST 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03733	128.6636 DEWEY - TALOGA 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03679	128.6597 SPP-MKEC-03A
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04273	128.6336 DEWEY - IODINE 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03679	128.5852 SPP-MKEC-05
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	128.524 GEN520922 1-SLEEPING BEAR
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03653	128.5153 POST ROCK (POSTROCK T1) 345/230/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03655	128.4233 AXTELL - PAULINE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03679	128.4195 SPP-MKEC-03B
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03679	128.3458 CLEARWATER - MILAN TAP 138KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04078	128.2943 WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03693	128.1317 FARGO JCT - WOODWARD 69KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03671	128.0079 HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03679	127.9911 CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03671	127.924 GERALD GENTLEMAN STATION - RED WILLOW 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0365	127.8429 MOORE - PAULINE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03722	127.8282 BENTON - ROSE HILL 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03643	127.5339 KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03613	127.3949 TRF-STEGALL

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATE (MVA)	TC%LOADING (% MVA)	CONTINGENCY
FNSL	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03613	127.3897 NEB01WAPAB3
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	127.3869 GEN515225 1-MUSKOGEE 5G
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03613	127.3856 STEGALL - STEGALL TY 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	127.376 GEN515226 1-MUSKOGEE 6G
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	127.3561 GEN515223 1-MUSKOGEE 4G
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03619	127.3352 WRTOD400
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	127.316 GEN520947 1-HUGO1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03638	127.2671 HITCHLAND INTERCHANGE (H TP80148301) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03693	127.2597 FARGO JCT - FT SUPPLY 69KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03618	127.1942 HOYT - JEFFREY ENERGY CENTER 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03628	125.1511 GEN520997 1-MORLND2
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	124.9918 NC1_GEN-NEBRASKA CITY 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04279	124.8507 IODINE - WOODWARD EHV 138KV CKT 1
FDNS	1	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06428	123.7915 DBL-WICH-THI
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	123.2162 GEN520998 1-MORLND3
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04279	123.121 DEWEY - IODINE 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	122.7138 GEN562017 1-G11_022_3_0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	122.6216 EASTDC - WELSH 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03653	122.6142 IODINE - MOORELAND 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	122.5829 GEN560121 1-G08-47_0.5750
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	122.5143 GEN515393 1-OGEWND2G
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	122.4492 GEN515365 1-CENT 21_34.500
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03535	122.421 DOVER - TWIN LAKES 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	122.4164 GEN527161 1-MUSTANG GEN #1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	122.4164 GEN527162 1-MUSTANG GEN #2
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03525	122.4156 MATHWSN7_345.00_WOODRING 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0358	122.413 KNOBHIIL (KNOBHLIA) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	122.3808 GEN542957 1-IATAN UNIT #1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03578	122.3284 LYDIA - VALLIANT 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03578	122.3223 SPP-AEPW-01
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03535	122.3194 DOVER - DOVER SW 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	122.2514 GEN562023 1-G11_020_3_0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	122.2514 GEN562026 1-G11_019_3_0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03525	122.0096 CIMARRON - MATHWSN7_345.00 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	122.0023 GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0501	121.9852 G11_051T_345.00_TATONGA7_345.00 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03545	121.9556 CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.8433 GEN542962 2-IATAN UNIT #2
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.8351 GEN531208 1-FLTRDG-WG1_0.6000
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03521	121.8048 WOODWARD - WOODWARD EHV 138KV CKT 2
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.7801 GEN645001 1-FORT CALHOUN 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03545	121.7543 CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.7409 GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.6765 GEN539762 1-SSWIND 1_34.500
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.653 GEN531459 2-S2 GENERATOR
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.6469 GEN539785 1-ENSNGW 1_0.5750
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.6359 GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.6126 GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.5941 GEN560267 1-G10-15-1_0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03502	121.5623 FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03108	121.5618 THISTLE7_345.00_WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03107	121.5536 THISTLE7_345.00_WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.527 GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.5266 GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.5163 GEN560268 1-G10-15-2_0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03502	121.5089 SPP-SWPS-05
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.4726 GEN645011 1-NEBRASKA CITY 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.4511 GEN526331 1-JONES GEN #1 22 KV
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.437 GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.4304 GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04264	121.4221 THISTLE7_345.00_WICHITA 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04264	121.4221 THISTLE7_345.00_WICHITA 345KV CKT 2
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.3083 GEN659111 2-LELAND OLDS UNIT2
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.2986 GEN526334 1-JONES_4_116.500

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATE (MVA)	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.037	121.2542 LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.2471 GEN539767 1-GRAY COUNTY WIND FARM
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.2453 GEN560696 1-G11-008-4 0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.0902 GEN659103 1-ANTELOPE VALLEY UNIT1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.0902 GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03549	121.0868 CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	121.0433 GEN526332 1-JONES GEN #2 21 KV
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	120.6961 GEN645012 2-NEBRASKA CITY 2
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	120.4908 GEN539670 4-JUDSON LARGE GENERATOR
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	120.4211 GEN640009 1-COOPER NUCLEAR STATION
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03535	120.3571 LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0501	120.3477 G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04073	120.2056 WOODWARD - WOODWARD 69KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	120.198 GEN560695 1-G11-008-3 0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	120.0377 GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03553	120.0022 BYRON_138 138.00 - SANDY CN_138138.00 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	119.9579 GEN560694 1-G11-008-2 0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	119.9408 GEN542902 1-GPW_G1 0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	119.7481 GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	119.707 GEN560514 1-G04_014 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	119.6325 BASE CASE
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	119.6269 GEN562123 1-G12_011_3 0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	119.599 GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	119.4286 GEN523971 1-HARRINGTON GEN #1 24 KV
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	119.4283 GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	119.4128 GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	119.1668 GEN539807 1-G05-12 0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0347	119.0553 EL RENO - ROMAN NOSE 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	119.0296 GEN560238 1-G10-09 0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	118.9562 GEN562298 1-G12_024 0.6500
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03628	118.9134 GEN520998 1-MORLND3
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03553	118.8656 BYRON_138 138.00 - C_CITY_138 138.00 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0347	118.6897 ROMAN NOSE - SOUTHARD 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	118.2812 GEN560693 1-G11-008-1 0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03553	118.2791 C_CITY_138 138.00 - KNOBHILL 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	118.2679 GEN560659 1-G07-38 0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	118.2392 GEN562035 1-G11_016_3 0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	118.1899 GEN560432 1-G08-124 0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	118.0514 GEN560549 1-G06-06 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03711	117.9062 SPP-SWPS-03
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0347	117.8229 DEWEY - SOUTHARD 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	117.7861 GEN560329 1-G10-45 0.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	117.7579 GEN531503 1-CIMRRN 1 34.500
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03511	117.7078 BEAVER CO 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03511	117.7078 BEAVER CO 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0371	117.5734 ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0371	117.5725 ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03592	117.5195 MOORELAND - TALOGA 138KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04168	117.0686 WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04251	117.0594 RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0371	116.9403 GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03403	116.6208 MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	116.2437 GEN523117 1-BUFF_DUNES210.6900
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	116.1666 GEN525561 1-TOLK GEN #1 24 KV
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03885	116.1475 WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	116.1016 GEN525562 1-TOLK GEN #2 24 KV
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03706	115.9452 LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	115.7886 GEN562032 1-G11_017_3 0.6900
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0427	115.6993 THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0427	115.6993 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	6	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0506	115.6595 NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03947	115.5842 G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	115.5552 GEN659118 1-LARAMIE RIVER UNIT1
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0345	115.4599 GEN520997 1-MORLND2
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03391	115.321 DOVER SW - OKEENE 138KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03706	115.0813 GEN520997 1-MORLND2

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATE (MVA)	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03676	115.0167 RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04078	114.7169 WOODWARD - WOODWARD 69KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03706	114.6658 GEN515787 1-OOKA WIND ENERGY CENTER
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0367	114.6421 GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0371	114.5576 SPP-SWPS-02A
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03303	114.3069 WOODWARD DISTRICT EHV (WWDEHV) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03628	114.2804 BASE CASE
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0326	113.7272 DBL-BVR-WWRD
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03575	113.4315 RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03988	113.1019 BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03606	113.0367 GEN51447 1-HOLCOMB GENERATOR
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03717	112.9199 SPP-SWPS-03
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03403	112.8659 ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03263	112.8605 WOODWARD DISTRICT EHV (WWDEHV-T2) 345/138/13.8KV TRANSFORMER CKT 2
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03947	112.6545 G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.037	112.5835 SPP-AEPW-32
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03716	112.5623 ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03716	112.5615 ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03524	112.3305 SPP-SWPS-03
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03716	111.942 GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03522	111.8926 ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03522	111.8881 ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04256	111.6719 RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
									POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03878	111.6716 CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03294	111.6332 IMO TAP - MEN TAP 138KV CKT 1
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03535	111.5481 SPP-AEPW-32
FDNS	6	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.06227	111.3223 DBL-WICH-THI
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04251	111.2255 VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03522	111.117 GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03988	111.0333 BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03294	110.9133 CLEO CORNER - MEN TAP 138KV CKT 1
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04089	110.6895 IODINE - WOODWARD EHV 138KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03681	110.3798 RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03812	110.2856 AXTELL - POST ROCK 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0371	110.18 SPP-SWPS-01
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03952	110.1681 G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03878	110.0554 SPP-SWPS-04
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.037	110.0127 OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03217	110.003 WOODWARD - WOODWARD EHV 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03878	109.927 Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03746	109.7978 MINGO - SETAB 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03676	109.7968 GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03706	109.7877 GEN520922 1-SLEEPING BEAR
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03716	109.6542 SPP-SWPS-02A
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03575	109.5704 SAND RDG_138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03706	109.4001 GEN520998 1-MORLND3
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0378	109.3411 MINGO - RED WILLOW 345KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03203	109.341 THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03204	109.3146 THISTLE7 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0371	109.1233 STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	109.1203 GEN514805 1-SOONER UNIT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0371	109.1199 STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0371	109.1134 SPP-SWPS-02
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03535	108.9758 OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04089	108.9493 DEWEY - IODINE 138KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0358	108.8961 RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03522	108.7955 SPP-SWPS-02A
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03544	108.7725 SPP-SWPS-01
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03647	108.7636 WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03826	108.7631 BENTON - WICHITA 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03947	108.5535 G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	108.4206 GEN515787 1-OOKA WIND ENERGY CENTER
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03993	108.0268 BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03692	107.9803 SMOKYHLL 230.00 - SUMMIT 230KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATE (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04376	107.9634	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03717	107.6728	MULLERGREN - SPEARVILLE 230KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03705	107.6701	CIRCLE - MULLERGREN 230KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03706	107.5432	SPP-AEPW-32
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03677	107.511	CIMARRON - NORTHWEST 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	107.5098	GENS20922 1-SLEEPING BEAR
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03712	107.4856	HOLCOMB - SETAB 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03952	107.4064	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	107.3725	GEN514806 1-SOONER UNIT 2
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03696	107.1933	FLATRDG3 - HARPER 138KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03832	107.1295	DEWEY - TALOGA 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03694	107.1254	SPP-MKEC-08
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03749	106.8613	DEWEY - TALOGA 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03661	106.858	GRAND ISLAND - SWEETWATER 345KV CKT 1
										POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03883	106.6276	CTK 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0371	106.6064	FARGO JCT - WOODWARD 69KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03696	106.5698	HARPER - MILAN TAP 138KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03706	106.5572	BASE CASE
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03696	106.4742	SPP-MKEC-05
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03696	106.4688	SPP-MKEC-03A
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0407	106.4304	BORDER 7345.00 - TUO INTERCHANGE 345KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04376	106.3713	DEWEY - IODINE 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03692	106.3055	KNOLL 230 - SMOKYHL6 230.00 230KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03696	106.2559	CLEARWATER - MILAN TAP 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03696	106.2504	SPP-MKEC-03B
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03671	106.2364	AXTELL - PAULINE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03297	106.2218	CLEAR CORNER - GLASS MOUNTAIN 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03302	106.1665	CEDARDALE - OKEENE 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03449	106.1009	KNOBHILL - MOORELAND 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03696	106.0904	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03687	106.0565	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03993	105.966	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04256	105.7571	VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04036	105.6547	DBL-HTCH-BVR
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03297	105.5065	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03302	105.3846	CEDARDALE - MOORELAND 138KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05313	105.3632	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03817	105.219	AXTELL - POST ROCK 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03716	105.1489	SPP-SWPS-01
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04351	105.1449	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04351	105.1449	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0349	105.0836	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03883	105.0281	SPP-SWPS-04
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0358	105.0276	SAND RDG_138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03706	104.9835	OKLAUNION - TUO INTERCHANGE 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03883	104.9127	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03752	104.5718	MINGO - SETAB 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03628	104.4526	GEN514805 1-SOONER UNIT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03754	104.3049	FT SUPPLY - IODINE 138KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0407	104.2553	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03716	104.206	STATELINE INTERCHANGE - STLDEMARC6 230KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04168	104.1989	WOODWARD - WOODWARD 69KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03716	104.196	SPP-SWPS-02
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03716	104.1898	STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03652	104.0938	WOODRNG (WOODRNG2) 345/138.00 13.8KV TRANSFORMER CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03786	104.0732	MINGO - RED WILLOW 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	103.9943	NC1_GEN-NEBRASKA CITY 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03628	103.8041	GEN515787 1-OKLA WIND ENERGY CENTER
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03831	103.5575	BENTON - WICHITA 345KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03799	103.2807	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03952	103.2661	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	6	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0506	103.0156	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03697	102.9654	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03522	102.9063	STATELINE INTERCHANGE - STLDEMARC6 230KV CKT 1
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03522	102.8985	SPP-SWPS-02

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATE (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03885	102.8951	WOODWARD - WOODWARD 69KV CKT 1
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03522	102.89	STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03628	102.8882	GEN520922 1-SLEEPING BEAR
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03682	102.8371	CIMARRON - NORTHWEST 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0371	102.7948	CIRCLE - MULLERGREN 230KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03722	102.7594	MULLERGREN - SPEARVILLE 230KV CKT 1
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03754	102.753	IODINE - MOORELAND 138KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03628	102.7364	GEN514806 1-SOONER UNIT 2
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03718	102.5572	HOLCOMB - SETAB 345KV CKT 1
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0345	102.5322	BASE CASE
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03701	102.4135	FLATRDG3 - HARPER 138KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03699	102.3511	SPP-MKEC-08
FDNS	1	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03695	102.2253	GEN520997 1-MORLND2
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03666	102.0825	GRAND ISLAND - SWEETWATER 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03755	102.0735	DEWEY - TALOGA 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	102.0428	GEN560221 1-G07-62-1 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	102.0428	GEN560222 1-G07-62-2 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	102.0428	GEN560223 1-G07-62-3 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	102.0428	GEN560224 1-G07-62-4 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.9544	GEN539785 1-ENSNGW 1 0.5750
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.9454	GEN560268 1-G10-15-2 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.9296	GEN562017 1-G11_022_3 0.6900
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03715	101.8801	FARGO JCT - WOODWARD 69KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03701	101.8768	HARPER - MILAN TAP 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.8346	GEN539767 1-GRAY COUNTY WIND FARM
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.8321	GEN560121 1-G08-47 0.5750
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.8291	EASTDC - WELSH 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03701	101.8078	SPP-MKEC-05
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03701	101.7933	SPP-MKEC-03A
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03594	101.7479	LYDIA - VALLIANT 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03594	101.7437	SPP-AEPW-01
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.6207	GEN527161 1-MUSTANG GEN #1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.6207	GEN527162 1-MUSTANG GEN #2
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03551	101.5979	DOVER - TWIN LAKES 138KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03697	101.5135	KNOLL 230 - SMOKYHL6 230.00 230KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03701	101.5093	CLEARWATER - MILAN TAP 138KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03701	101.5076	SPP-MKEC-03B
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03551	101.4943	DOVER - DOVER SW 138KV CKT 1
FDNS	6	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03932	101.4926	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03676	101.4913	AXTELL - PAULINE 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.4601	GEN515365 1-CENT 21 34.500
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.4419	GEN542957 1-IATAN UNIT #1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03542	101.4416	MATHWSN7 345.00 - WOODRING 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03596	101.4394	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.4074	GEN531459 2-S2 GENERATOR
FDNS	6	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0506	101.3901	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03669	101.3601	IODINE - MOORELAND 138KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03692	101.3504	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03701	101.3503	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.2536	GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03537	101.2382	WOODWARD - WOODWARD EHV 138KV CKT 2
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.1789	GEN560696 1-G11-008-4 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.1508	GEN515393 1-OGEWND2G
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03561	101.1469	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.0802	GEN645001 1-FORT CALHOUN 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.0768	GEN542902 1-GPW_G1 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.073	GEN562023 1-G11_020_3 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.073	GEN562026 1-G11_019_3 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03517	101.0704	SPP-SWPS-05
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.0182	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	101.0094	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.9886	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03542	100.9762	CIMARRON - MATHWSN7 345.00 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03517	100.9638	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03173	100.9629	MOREWOOD SW - NINE MILE 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03561	100.9355	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATE (MVA)	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.9284 GEN560514 1-G04_014 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.8781 GEN542962 2-IATAN UNIT #2
FDNS	6	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03493	100.8354 GEN520997 1-MORLND2
FDNS	1	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04155	100.8308 WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.7997 GEN659111 2-LELAND OLDS UNIT2
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.7971 GEN645011 1-NEBRASKA CITY 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.7312 GEN562123 1-G12_011_3 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.6901 GEN526331 1-JONES GEN #1 22 KV
FDNS	03ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03173	100.6614 MOORELAND - NINE MILE 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.6407 GEN526334 1-JONES_4 116.500
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.6103 GEN659103 1-ANTELOPE VALLEY UNIT1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.6103 GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.5621 GEN539807 1-G05-12 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.533 GEN539670 4-JUDSON LARGE GENERATOR
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.4996 GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.4992 GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	01ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03706	100.4974 GEN515389 1-TLGAWN1 34.500
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.4608 GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.409 GEN560695 1-G11-008-3 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.3066 GEN526332 1-JONES GEN #2 21 KV
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.2743 GEN560238 1-G10-09 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03565	100.2541 CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.2061 GEN560694 1-G11-008-2 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.168 GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.0941 GEN645012 2-NEBRASKA CITY 2
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	100.0659 GEN560659 1-G07-38 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	99.9 GEN560432 1-G08-124 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	99.9 GEN562035 1-G11_016_3 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	99.8 GEN560549 1-G06-06 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	99.8 GEN640009 1-COOPER NUCLEAR STATION
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03567	99.8 BYRON_138 138.00 - SANDY_CN_138138.00 138KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	99.6 GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	99.6 GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	06ALL	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03496	99.6 RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	99.5 GEN531503 1-CIMRNN 1 34.500
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	99.5 GEN560329 1-G10-45 0.6900
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	99.5 GEN562298 1-G12-024 0.6500
FDNS	03G12_024	0	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03622	99.5 GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
FDNS	03G12_024	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.06265	251.1781 DBL-WICH-THI
FDNS	3	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.06272	239.737 DBL-WICH-THI
FDNS	01ALL	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.06307	200.4821 DBL-WICH-THI
FDNS	1	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.0632	177.9438 DBL-WICH-THI
FDNS	03ALL	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03288	172.4223 THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03288	172.4223 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	06ALL	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.0628	160.6938 DBL-WICH-THI
FDNS	03G12_024	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03308	149.5055 THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03308	149.5055 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	6	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.063	145.1992 DBL-WICH-THI
FDNS	3	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03312	144.5737 THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	3	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03312	144.5737 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	07ALL	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.0633	134.3184 DBL-WICH-THI
FDNS	7	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.06329	130.2068 DBL-WICH-THI
FDNS	00G12_024	0	14WP	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.06268	127.8178 DBL-WICH-THI
FDNS	03ALL	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03512	125.8909 DBL-SPRVL-CL
FNSL	00G12_024	0	19WP	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.06512	122.3446 DBL-WICH-THI
FDNS	01ALL	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03334	118.1156 THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	01ALL	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03334	118.1156 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03G12_024	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03524	114.4147 DBL-SPRVL-CL
FDNS	3	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03526	108.578 DBL-SPRVL-CL
FDNS	1	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03339	107.1407 THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	1	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03339	107.1407 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03G12_024	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03524	105.9111 DBL-IRON-CLR
FDNS	00G12_024	0	14SP	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.0636	103.8575 DBL-WICH-THI
FDNS	06ALL	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03308	100.8853 THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	06ALL	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03308	100.8853 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	3	0	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03526	100.4153 DBL-IRON-CLR

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATE (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03G12_024	0	14G	G12_024	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	0.10038	121.5318	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	0.10049	116.8663	G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	0.07656	116.3649	POST ROCK (POSTROCK T1) 345/230/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	0.09773	113.4671	G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	0.10038	111.0103	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	03G12_024	0	14G	G12_024	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	0.09154	106.6436	DBL-WICH-THI
FDNS	3	0	14G	G12_024	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	0.10049	106.2042	G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	3	0	14G	G12_024	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	0.09164	101.7695	DBL-WICH-THI
FDNS	03ALL	0	14G	G12_024	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	0.06838	100.2786	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	0.06838	100.2786	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	0	14G	G12_024	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	0.06513	100.0991	MINGO - SETAB 345KV CKT 1
FNSL-Blown up	3	0	14G	G12_024	-	Non-converged Contingency	-	0.5166	-	DBL-THIS-CLR
FNSL-Blown up	03ALL	0	14G	G12_024	-	Non-converged Contingency	-	0.515	-	DBL-THIS-CLR
FNSL-Blown up	03ALL	0	14G	G12_024	-	Non-converged Contingency	-	0.32458	-	DBL-WICH-THI
FNSL-Blown up	03G12_024	0	14G	G12_024	-	Non-converged Contingency	-	0.51637	-	DBL-THIS-CLR
FDNS	03G12_024	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.06793	121.2214	DBL-WICH-THI
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04914	119.9354	CIRCLE - MULLERGREN 230KV CKT 1
FDNS	3	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.06802	116.5195	DBL-WICH-THI
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04669	110.8341	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04669	110.8341	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04222	110.7447	DBL-BVR-VWRD
FDNS	03G12_024	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.05717	108.7208	AXTELL - POST ROCK 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04301	107.5648	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04294	107.2979	AXTELL - PAULINE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04026	106.7297	GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04026	106.729	GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04301	106.6218	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04301	106.5357	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04026	106.4678	GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04174	106.4062	GRAND ISLAND - SWEETWATER 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04024	106.1149	MULLERGREN - SOUTH HAYS 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04249	105.9519	MOORE - PAULINE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04026	105.7004	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	3	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.05725	104.8696	AXTELL - POST ROCK 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04184	104.6356	SPP-SWPS-05
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04184	104.6308	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04258	104.3016	CIRCLE - EAST MCPHERSON 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04048	103.9794	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.03511	103.6772	CLARKCOUNTY7345.00 - IRONWOOD7 345.00 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.03511	103.5741	CLARKCOUNTY7345.00 - SPEARVILLE 345KV CKT 1
FNSL	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04089	103.5359	MINGO - RED WILLOW 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.0406	103.4664	POSTROCK6 230.00 - SOUTH HAYS 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04143	103.3252	PHILLIPSBURG - SMITH CENTER 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04124	103.2227	ST JOHN - ST JOHN 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04026	103.1103	GEN542962 2-IATAN UNIT #2
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04096	103.0673	GRAND ISLAND - MCCOOL 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.0409	102.9933	KNOLL - SALINE RIVER 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04044	102.9442	STEGALL - STEGALL TY 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04044	102.9417	TRF-STEGALL
FNSL	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04044	102.9401	NEB01WAPAB3
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04071	102.9281	BEAVER CO 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04071	102.9281	BEAVER CO 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04026	102.8323	GEN542955 1-LACYGNE UNIT #1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04026	102.827	GEN542956 2-LACYGNE UNIT #2
										POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04105	102.7805	CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.0409	102.7649	PLAINVILLE - SALINE RIVER 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04061	102.7141	SPP-MKEC-09B
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04026	102.7098	GEN532663 1-LAWRENCE ENERGY CENTER UNIT 5
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04026	102.6732	GEN542957 1-IATAN UNIT #1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04097	102.6718	SPP-MKEC-08
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04061	102.5897	GREENSBURG - SSTARTP3 115.00 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04093	102.5784	FLATRDG3 - HARPER 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04129	102.5183	ELM CREEK - NORTHWEST MANHATTAN 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04096	102.5166	MCCOOL - MOORE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04068	102.5114	SPP-MKEC-06

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04068	102.49041 Seward - St John 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04105	102.45151 Hitchland Interchange - Potter County Interchange 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04061	102.42011 Greensburg - Sun City 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04049	102.345 G10-056T 345.00 - St Joe 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04049	102.33051 Phillipsburg - Plainville 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04061	102.30071 Medicine Lodge - Sun City 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04105	102.26751 SPP-SWPS-04
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04124	102.26661 Huntsville - St John 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04026	102.25911 GEN542951 5-Hawthorn Unit #5
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04186	102.256 Emporia Energy Center - Wichita 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04124	102.22931 MIDW-CATB05
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04026	102.22331 GEN532722 1-Evans Energy Center Unit 2
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04093	102.22271 Harper - Milan Tap 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04093	102.18721 SPP-MKEC-03A
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04047	102.13971 SPP-SWPS-01
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04048	102.13841 OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04093	102.13671 SPP-MKEC-05
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04049	102.12251 COOPER - G10-056T 345.00 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04093	102.11811 SPP-MKEC-03B
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04061	102.10451 Barber 3 115.00 - Medicine Lodge 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04044	102.08991 NUNDRWD - Wayside 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04124	102.08951 Huntsville - Hutchinson Energy Center 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04093	102.06331 Clearwater - Milan Tap 138KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04048	102.01071 SPP-AEPW-32
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04184	101.98431 Finney Switching Station - Holcomb 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04068	101.93971 Knoll 230 (Knoll T1) 230/115/11.49KV Transformer CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04026	101.92681 GEN541151 3-Sibley Generating Unit #3
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04065	101.82361 Beach Station - G10-48T 115.00 115KV CKT 1
FDNS	03G12_024	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04954	101.68241 Circle - Mullergren 230KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.03975	100.79471 Mingo - Setab 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04026	100.74951 Base Case
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04026	100.74951 NC1_Gen-Nebraska City 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.03927	99.8 WR-DOUBLE18
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.03927	99.7 SPP-WR-305B
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.03927	99.7 WR-DOUBLE16
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04033	99.6 Colby - Mingo 115KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04026	99.5 GEN640009 1-Cooper Nuclear Station
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04024	99.5 EASTOWN7 345.00 - Iatan 345KV CKT 1
FDNS	03ALL	0	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.03939	99.5 MULLERGREN - Spearville 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CHISHOLM - MAIZEE 4 138.00 138KV CKT 1	287	0.05182	104.77631 Benton - Wichita 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.05445	119.2471 SmokyHL6 230.00 - SUMMIT 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.05477	111.75131 Axtell - Post Rock 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.05445	111.75131 Knoll 230 - SmokyHL6 230.00 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.05868	110.69491 ClarkCounty7345.00 - Thistle7 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.05868	110.69491 ClarkCounty7345.00 - Thistle7 345.00 345KV CKT 2
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.05361	108.0821 Thistle7 345.00 - Wichita 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.05361	108.0821 Thistle7 345.00 - Wichita 345KV CKT 2
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04783	106.93221 DBL-BVR-WWRD
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04888	104.75651 St John - St John 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.05013	104.3751 Beaver Co 345.00 - Buckner 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04968	104.21651 Knoll 230 - PostRock6 230.00 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04874	103.71361 Northwest - Tatonga7 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04772	103.18411 SPP-MKEC-06
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04783	103.12951 Seward - St John 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04874	102.26711 G11_051T 345.00 - Tatonga7 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04874	102.08811 G11_051T 345.00 - Woodward District EHV 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04888	101.77311 Huntsville - St John 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04776	101.62421 Mingo - Red Willow 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04888	101.55521 Midw-Catb05
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04548	101.36561 GEN532751 1-Wolf Creek Generating Station Unit 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04888	101.22251 Huntsville - Hutchinson Energy Center 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04739	100.79371 SPP-SWPS-05
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04739	100.70731 Finney Switching Station - Hitchland Interchange 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04548	100.60911 GEN532652 1-Jeffrey Energy Center Unit 2
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04548	100.60851 GEN532653 1-Jeffrey Energy Center Unit 3
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREN 230KV CKT 1	318.7	0.04724	100.56171 Axtell - Pauline 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04659	100.5596 GRAND ISLAND - SWEETWATER 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04677	100.5113 SPP-MKEC-02
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04677	100.3404 ELLSWTP3 115.00 - MULLERGREEN 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04548	100.3348 GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04629	100.2555 GREAT BEND TAP - SEWARD 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04629	100.2521 GREAT BEND TAP - MULLERGREEN 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.05672	100.2282 BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.04574	99.81641 LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.047	99.8 MOORE - PAULINE 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.03942	99.7 CLARKCOUNTY7345.00 - IRONWOOD7 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CIRCLE - MULLERGREEN 230KV CKT 1	318.7	0.03942	99.6 CLARKCOUNTY7345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03288	157.6704 THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03288	157.6704 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	2	14G	G12_024	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	0.03512	111.4719 DBL-SPRVL-CL
FDNS	03ALL	2	14G	G12_024	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	287	0.05152	103.4554 NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05152	184.7474 NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05152	171.267 G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.05152	169.6009 G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04055	149.0789 WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04254	146.7137 IODINE - WOODWARD EHV 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04254	144.9356 DEWEY - IODINE 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	143.0125 GEN520997 1-MORLND2
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04245	138.5302 THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04245	138.5302 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	136.9015 GEN520998 1-MORLND3
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03681	136.1965 LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04055	135.3067 WOODWARD - WOODWARD 69KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	135.0538 BASE CASE
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03929	134.9133 G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03692	132.892 SPP-SWPS-03
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04236	132.5588 RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03691	132.5139 ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03691	132.513 ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03691	131.8481 GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03653	129.1139 GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03662	128.5678 RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03929	128.2909 G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03974	127.7761 BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03681	127.422 SPP-AEPW-32
									POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03862	126.7629 CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03562	126.5433 RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.04236	126.3021 VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03974	125.6238 BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03795	125.5628 AXTELL - POST ROCK 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03761	125.2974 MINGO - RED WILLOW 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03862	125.0917 SPP-SWPS-04
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03728	125.0797 MINGO - SETAB 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03691	124.9749 SPP-SWPS-01
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03862	124.9698 Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03681	124.755 OOKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03691	123.6999 STATELINE INTERCHANGE - STLN-DEMARC6 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03691	123.69 SPP-SWPS-02
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03691	123.6841 STLN-DEMARC6 - SWEETWATER 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03809	123.0659 BENTON - WICHITA 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	122.7378 GEN514805 1-SOONER UNIT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03929	122.5377 G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03632	122.4401 WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03676	122.269 SMOKYHLL 230.00 - SUMMIT 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03689	122.2029 CIRCLE - MULLERGREEN 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03695	122.1823 HOLCOMB - SETAB 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03562	122.1785 SAND RDG_138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.037	122.173 MULLERGREEN - SPEARVILLE 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	121.9945 GEN515787 1-OOKLA WIND ENERGY CENTER
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0368	121.5754 FLATRDG3 - HARPER 138KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATE (MVA)	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03662	121.3983 CIMARRON - NORTHWEST 345KV CKT 1
FNSL	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03678	121.3705 SPP-MKEC-08
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	121.0578 GEN520922 1-SLEEPING BEAR
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	121.0154 GEN514806 1-SOONER UNIT 2
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03645	120.9344 GRAND ISLAND - SWEETWATER 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0368	120.8783 HARPER - MILAN TAP 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03733	120.8316 DEWEY - TALOGA 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0368	120.8148 SPP-MKEC-05
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0368	120.8116 SPP-MKEC-03A
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0368	120.5905 CLEARWATER - MILAN TAP 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0368	120.5828 SPP-MKEC-03B
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03676	120.5429 KNOLL 230 - SMOKYHL6 230.00 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03694	120.4289 FARGO JCT - WOODWARD 69KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03655	120.3129 AXTELL - PAULINE 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0368	120.2882 CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0395	120.0129 DBL-HTCH-BVR
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0365	119.9084 MOORE - PAULINE 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03654	119.8873 POST ROCK (POSTROCK T1) 345/230/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03723	119.8821 BENTON - ROSE HILL 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03672	119.8332 HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	119.6423 GEN515225 1-MUSKOGEE 5G
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	119.6365 GEN520947 1-HUGO1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	119.633 GEN515226 1-MUSKOGEE 6G
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0362	119.6207 WRTOD400
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	119.616 GEN515223 1-MUSKOGEE 4G
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03672	119.6019 GERALD GENTLEMAN STATION - RED WILLOW 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03694	119.5301 FARGO JCT - FT SUPPLY 69KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03619	119.5106 HOYT - JEFFREY ENERGY CENTER 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	119.4353 GEN509416 1-TURK GENERATION
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03782	119.3561 OPENSKY 345.00 - RANCH 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	117.3997 NC1_GEN-NEBRASKA CITY 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	115.4211 GEN562074 1-G11_049_3 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03091	115.3923 BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	115.3598 GEN560221 1-G07-62-1 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	115.3598 GEN560222 1-G07-62-2 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	115.3598 GEN560223 1-G07-62-3 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	115.3598 GEN560224 1-G07-62-4 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	115.2778 GEN562017 1-G11_022_3 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	115.213 GEN560522 1-G05-12-2 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	115.1479 GEN560121 1-G08-47 0.5750
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	115.0704 EASTDC - WELSH 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.9774 GEN527161 1-MUSTANG GEN #1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.9774 GEN527162 1-MUSTANG GEN #2
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03654	114.95 IODINE - MOORELAND 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03579	114.9408 LYDIA - VALLIANT 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03579	114.9352 SPP-AEPW-01
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.8731 GEN542957 1-IATAN UNIT #1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.821 GEN531208 1-FLTRDG-WG1 0.6000
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.8066 GEN515365 1-CENT 21 34.500
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.7877 GEN539762 1-SSWIND 1 34.500
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.7775 GEN539785 1-ENSNGW 1 0.5750
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.7618 GEN560267 1-G10-15-1 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03581	114.7524 KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03536	114.732 DOVER - TWIN LAKES 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.7153 GEN531459 2-S2 GENERATOR
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.7018 GEN560268 1-G10-15-2 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03526	114.66 MATHWSN7 345.00 - WOODRING 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03536	114.6263 DOVER - DOVER SW 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.6045 GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.5809 GEN539767 1-GRAY COUNTY WIND FARM
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.5567 GEN645001 1-FORT CALHOUN 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.5106 GEN515393 1-OGEWND2G
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.422 GEN560696 1-G11-008-4 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03522	114.3672 WOODWARD - WOODWARD EHV 138KV CKT 2
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.3671 GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.3216 GEN542962 2-IATAN UNIT #2

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATE (MVA)	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.2833 GEN645011 1-NEBRASKA CITY 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.2703 GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.2629 GEN562023 1-G11_020_3 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.2629 GEN562026 1-G11_019_3 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.2486 GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.2056 GEN659111 2-LELAND OLDS UNIT2
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03526	114.1937 CIMARRON - MATHWSN7 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03546	114.1917 CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.0376 GEN526331 1-JONES GEN #1 22 KV
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.017 GEN659103 1-ANTELOPE VALLEY UNIT1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	114.017 GEN659107 2-ANTELOPE VALLEY UNIT2
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03546	113.9785 CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	113.962 GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	113.9617 GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	113.9194 GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	113.8929 GEN526334 1-JONES 4 116.500
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	113.807 GEN539670 4-JUDSON LARGE GENERATOR
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	113.6509 GEN526332 1-JONES GEN #2 21 KV
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	113.6176 GEN560695 1-G11-008-3 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	113.598 GEN645012 2-NEBRASKA CITY 2
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03503	113.5896 SPP-SWPS-05
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	113.5521 GEN542902 1-GPW_G1 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03503	113.4707 FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0355	113.4395 CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	113.4061 GEN560694 1-G11-008-2 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	113.3799 GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	113.3616 GEN560514 1-G04_014 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	113.3072 GEN640009 1-COOPER NUCLEAR STATION
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	113.1357 GEN562123 1-G12_011_3 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	113.0256 GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	112.911 GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	112.9031 GEN539807 1-G05-12 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	112.7831 GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	112.6204 GEN562298 1-G12-024 0.6500
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	112.6043 GEN560238 1-G10-09 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	112.4952 GEN523971 1-HARRINGTON GEN #1 24 KV
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	112.4951 GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	112.4813 GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03553	112.2621 BYRON_138_138.00 - SANDY_CN_138138.00 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	112.1717 GEN560659 1-G07-38 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	112.1211 GEN562035 1-G11_016_3 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	112.1051 GEN560432 1-G08-124 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	112.0403 GEN560693 1-G11-008-1 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	111.9717 GEN560549 1-G06-06 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	111.6575 GEN560329 1-G10-45 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	111.6396 GEN531503 1-CIMRRN 1 34.500
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0347	111.3503 EL RENO - ROMAN NOSE 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03553	111.0556 BYRON_138_138.00 - C_CITY_138_138.00 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0347	110.9602 ROMAN NOSE - SOUTHERN 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03553	110.4497 C_CITY_138_138.00 - KNOBHILL 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	110.3172 GEN523117 1-BUFF_DUNES210.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.0347	110.0971 DEWEY - SOUTHERN 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	109.741 GEN562032 1-G11_017_3 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	109.6917 GEN560549 1-G06-06 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	109.6575 GEN560329 1-G10-45 0.6900
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	109.4855 MOORELAND - TALOGA 138KV CKT 1
FNSL	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	109.4261 GEN659118 1-LARAMIE RIVER UNIT1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	109.1196 GEN525561 1-TOLK GEN #1 24 KV
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03404	109.0527 MOREWOOD SW - RED HILLS WIND 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	109.0075 GEN525562 1-TOLK GEN #2 24 KV
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03299	108.8811 BEAVER CO_345.00 - BUCKNER7_345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03304	107.4644 WOODWARD DISTRICT EHV (WWDEHV) 345/138.13.8KV TRANSFORMER CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03392	107.3966 DOVER SW - OKEENE 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03607	107.1032 GEN531447 1-HOLCOMB GENERATOR
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03264	106.0964 WOODWARD DISTRICT EHV (WWDEHV-T2) 345/138.13.8KV TRANSFORMER CKT 2

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03404	105.0759 ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03295	104.0546 IMO TAP - MEN TAP 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03218	103.3425 WOODWARD - WOODWARD EHV 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	153	0.03295	103.3098 CLEO CORNER - MEN TAP 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03288	168.0337 THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03288	168.0337 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	2	14G	G12_024	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	110	0.03512	122.0926 DBL-SPRVL-CL
FDNS	03ALL	2	14G	G12_024	TO->FROM	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1	398	0.0709	103.3556 AXTELL - POST ROCK 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	0.0971	144.786 G12-011T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	0.0971	129.9305 G11-17T 345.00 - G12-011T 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	0.07654	112.4548 POST ROCK (POSTROCK T1) 345/230/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	0.0971	109.3955 G11-17T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	0.07713	102.4643 CLARKCOUNTY7345.00 - THISTLE7 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	0.07713	102.4643 CLARKCOUNTY7345.00 - THISTLE7 345.00 345KV CKT 2
FNSL-Blown up	03ALL	2	14G	G12_024	-	Non-converged Contingency	-	0.51501	DBL-THIS-CLR
FNSL-Iteration lim	03ALL	2	14G	G12_024	-	Non-converged Contingency	-	0.32457	-
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.05671	125.0344 AXTELL - POST ROCK 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04913	116.3586 CIRCLE - MULLERGREN 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.05148	110.7808 CLARKCOUNTY7345.00 - THISTLE7 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.05148	110.7808 CLARKCOUNTY7345.00 - THISTLE7 345.00 345KV CKT 2
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04669	107.922 THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04669	107.922 THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04222	107.42 DBL-BVR-WWRD
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04419	105.2335 BEAVER CO 345.00 - BUCKNER7 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04301	104.9657 NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04294	104.5503 AXTELL - PAULINE 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04025	104.2445 GEN532652 1-JEFFREY ENERGY CENTER UNIT 2
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04025	104.2439 GEN532653 1-JEFFREY ENERGY CENTER UNIT 3
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04025	103.9923 GEN532651 1-JEFFREY ENERGY CENTER UNIT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04174	103.7267 GRAND ISLAND - SWEETWATER 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04301	103.5208 G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04024	103.4312 MULLERGREN - SOUTH HAYS 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04301	103.3541 G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04249	103.274 MOORE - PAULINE 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04025	103.1214 GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04184	101.9333 SPP-SWPS-05
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04184	101.8588 FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04257	101.8492 CIRCLE - EAST MCPHERSON 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.05021	101.6408 BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04048	101.2236 LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.03511	101.0901 CLARKCOUNTY7345.00 - IRONWOOD7 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.03511	100.9752 CLARKCOUNTY7345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.0406	100.9663 POSTROCK6 230.00 - SOUTH HAYS 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04143	100.7464 PHILLIPSBURG - SMITH CENTER 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04124	100.6689 ST.JOHN - ST.JOHN 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04025	100.6517 GEN542962 2-IATAN UNIT #2
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04089	100.483 KNOLL - SALINE RIVER 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04096	100.4539 GRAND ISLAND - MCCOOL 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04088	100.4427 MINGO - RED WILLOW 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04025	100.3509 GEN542955 1-LACYNE UNIT #1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04025	100.3463 GEN542956 2-LACYNE UNIT #2
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04071	100.3037 BEAVER CO 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04071	100.3037 BEAVER CO 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04043	100.2751 STEGALL TY 345/230KV TRANSFORMER CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04089	100.2686 PLAINVILLE - SALINE RIVER 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04043	100.2675 TRF-STEGALL
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04043	100.267 NEB01WAPAB3
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04043	100.2656 STEGALL - STEGALL TRANSFORMER 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04043	100.2598 STEGALL - STEGALL TY 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04025	100.2297 GEN542957 1-IATAN UNIT #1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04025	100.20261 GEN532663 1-LAWRENCE ENERGY CENTER UNIT 5
FNSL	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04096	100.1777 SPP-MKEC-08
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04061	100.1 SPP-MKEC-09B
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04092	99.97641 FLATRDG3 - HARPER 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.0413	99.9 ELM CREEK - NORTHWEST MANHATTAN 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYH6 230.00 - SUMMIT 230KV CKT 1	330	0.04095	99.9 MCCOOL - MOORE 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEB (MVA)	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04068	99.9 Seward - St John 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04068	99.9 SPP-MKEC-06
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04061	99.9 GREENSBURG - SSTARTP3 115.00 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04124	99.8 HUNTSVILLE - ST JOHN 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04104	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04089	99.8 PHILLIPSBURG - PLAINVILLE 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04048	99.8 G10-056T 345.00 - ST JOE 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04025	99.8 GEN542951 5-HAWTHORN UNIT #5
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04061	99.75642 GREENSBURG - SUN CITY 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04186	99.7 EMPORIA ENERGY CENTER - WICHITA 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04124	99.7 MIDW-CATB05
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04061	99.67157 MEDICINE LODGE - SUN CITY 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04092	99.66577 HARPER - MILAN TAP 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04124	99.6 HUNTSVILLE - HUTCHINSON ENERGY CENTER 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04092	99.6 SPP-MKEC-03A
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04092	99.6 SPP-MKEC-03B
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04092	99.6 SPP-MKEC-05
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04048	99.6 COOPER - G10-056T 345.00 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04092	99.54389 CLEARWATER - MILAN TAP 138KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04104	99.5 Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04061	99.5 BARBER 3 115.00 - MEDICINE LODGE 115KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04044	99.5 NUNDRWD - WAYSIDE 230KV CKT 1
FDNS	03ALL	2	14G	G12_024	FROM->TO	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1	330	0.04025	99.5 GEN541151 3-SIBLEY GENERATING UNIT #3
FDNS	06ALL	0	14G	G12_031	FROM->TO	LAWEASOKLUNI	425	0.05969	144.5 BASE CASE
FDNS	6	0	14G	G12_031	FROM->TO	LAWEASOKLUNI	425	0.05833	107.8 BASE CASE

## **I: Power Flow Analysis (Category "C" Contingencies)**

Available on Request

## **J: Dynamic Stability Analysis Report**

Available upon request