



**Definitive Interconnection
System Impact Study for
Generation Interconnection
Requests**

(DISIS-2014-002-3)

Group 3 Restudy

(Cost Allocation for All Groups included)

September 2015

Generator Interconnection



Revision History

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05/18/2015	SPP	Account for Withdrawn Projects, Report Re-Posted (DISIS-2014-002-1)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 To account for Withdrawn Projects, Report Re-Posted (DISIS-2014-002-2)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 To account for Withdrawn Projects, Report Re-Posted (DISIS-2014-002-3)

Executive Summary

Pursuant to the Generator Interconnection Procedures (GIP) of the Southwest Power Pool (SPP) Open Access Transmission Tariff (OATT), SPP has conducted this Definitive Interconnection System Impact Study (DISIS). The Interconnection Customers' requests have been clustered together for the following System Impact Cluster Study window which closed September 30, 2014. The customers will be referred to in this study as the DISIS-2014-002 Interconnection Customers. This System Impact Study analyzes the interconnecting of multiple generation interconnection requests associated with new generation totaling approximately 3,117.37 MW of new generation which would be located within the transmission systems of American Electric Power – Western (AEPW), Empire District Electric Company (EMDE), Kansas City Power and Light Company – Greater Missouri Operations Company (KCPL-GMO), Grand River Dam Authority (GRDA), Midwest Energy, Inc. (MIDW), Nebraska Public Power District (NPPD), Oklahoma Gas and Electric (OKGE), Southwestern Public Service (SPS), Sunflower Electric Power Corporation\Mid-Kansas Electric Company, LLC (SUNC\MKEC), and Westar Energy, Inc. (WERE). The various generation interconnection requests have differing proposed in-service dates¹. The generation interconnection requests included in this System Impact Cluster Study are listed in Appendix A by their queue number, amount, requested interconnection service, area, requested interconnection point, proposed interconnection point, and the requested in-service date. This analysis represents a restudy of the "Stand-Alone" analysis for each Interconnection Request to account for all Interconnection Requests that have met the requirements for an Interconnection Facilities Study that was performed in the original DISIS-2014-002 study. This analysis also includes an analysis of Limited Operation that determines available Interconnection Service assuming all DISIS-2014-002 Customers move forward.

This study, DISIS-2014-002-3, is being performed due to the termination of two (2) Generator Interconnection Agreements for Group 3 projects. The two terminations are for GEN-2006-006 and GEN-2011-017. This study includes a restudy of powerflow and stability for Group 3 Interconnection Requests only. Cost Allocation for the remaining Interconnection Requests in DISIS-2014-002 are also included.

Power flow analysis has indicated that for the power flow cases studied, 3,117.37 MW of nameplate generation may be interconnected with transmission system reinforcements within the SPP transmission system. Dynamic stability and power factor analysis has determined the need for reactive compensation in accordance with SPP stability and voltage recovery requirements and FERC Order #661A for wind farm interconnection requests and those requirements are listed for each interconnection request within the contents of this report. Dynamic stability analysis has

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

determined that the transmission system will remain stable with the assigned Network Upgrades and necessary reactive compensation requirements.

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

The total estimated minimum cost for interconnecting the DISIS-2014-002 Interconnection Customers is estimated at \$294,764,822. These costs are shown in Appendix E and F. Interconnection Service to DISIS-2014-002 Interconnection Customers is also contingent upon higher queued customers paying for certain required network upgrades. **The in-service date for the DISIS customers will be deferred until the construction of these network upgrades can be completed.**

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

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

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

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Introduction

Pursuant to the Southwest Power Pool (SPP) Open Access Transmission Tariff (OATT), SPP has conducted this Definitive Interconnection System Impact Study (DISIS) for certain generation interconnection requests in the SPP Generation Interconnection Queue. These interconnection requests have been clustered together for the following System Impact Study window which closed September 30, 2014. The customers will be referred to in this study as the DISIS-2014-002 Interconnection Customers. This DISIS analyzes the interconnecting of multiple generation interconnection requests associated with new generation totaling 3,117.37 MW of new generation which would be located within the transmission systems of American Electric Power –Western (AEPW), Empire District Electric Company (EMDE), Kansas City Power and Light Company – Greater Missouri Operations Company (KCPL-GMO), Grand River Dam Authority (GRDA), Midwest Energy, Inc. (MIDW), Nebraska Public Power District (NPPD), Oklahoma Gas and Electric (OKGE), Southwestern Public Service (SPS), Sunflower Electric Power Corporation\Mid-Kansas Electric Company, LLC (SUNC\MKEC), and Westar Energy, Inc. (WERE). The various generation interconnection requests have differing proposed in-service dates². The generation interconnection requests included in this System Impact Study are listed in Appendix A by their queue number, amount, requested interconnection service, area, requested interconnection point, proposed interconnection point, and the requested in-service date. This analysis represents a restudy of the “Stand-Alone” analysis for each Interconnection Request to account for all Interconnection Requests that have met the requirements for an Interconnection Facilities Study that was performed in the original DISIS-2014-002 study. This analysis also includes an analysis of Limited Operation that determines available Interconnection Service assuming all DISIS-2014-002 Customers move forward.

This study, DISIS-2014-002-3, is being performed due to the termination of two (2) Generator Interconnection Agreements for Group 3 projects. . The two terminations are for GEN-2006-006 and GEN-2011-017. This study includes a restudy of powerflow and stability for Group 3 Interconnection Requests only. Cost Allocation for the remaining Interconnection Requests in DISIS-2014-002 are also included.

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

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

Model Development

Interconnection Requests Included in the Cluster

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

Affected System Interconnection Request

Also included in this Definitive Interconnection System Impact Study is seven (7) Affected System Studies. The Affected System Interconnection Requests have been given the designations with the “ASGI” prefix. These requests are listed in Appendix A. Affected System Interconnection Requests were studied only in a “cluster” scenario.

Previously Queued Interconnection Requests

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

Development of Base Cases

Power Flow

The 2014 series Integrated Transmission Planning models (used in the 2015ITPNT) including the 2015 (spring and summer peak seasons), the 2020 (summer and winter peak seasons), and the 2025 (summer peak season) scenario 0 cases were used for this study. After the cases were developed, each of the control areas’ resources were then re-dispatched to account for the new generation requests using current dispatch orders. Planned High Priority Incremental Loads (HPILs) are accounted for in these models.

Dynamic Stability

The 2014 series SPP Model Development Working Group (MDWG) Models 2014 winter, 2015 summer, and 2025 summer peak cases were used as starting points for this study.

Short Circuit

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

Base Case Upgrades

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

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

- 2012 Integrated Transmission Plan (2012 ITP10) Projects
 - Woodward-Tatonga-Mathewson-Cimarron 345kV transmission line, scheduled for 2021 in-service³
 - Chisholm – Gracemont 345kV transmission line, and Chisholm 345/230kV transformer circuit #1, scheduled for 3/1/2018 in-service⁴
- 2015 Integrated Transmission Plan Near Term (2015 ITPNT) Projects
 - China Draw 115kV Reactive Power Support
 - 200Mvar Capacitive and 50Mvar Inductive Static Var Compensator (SVC)
 - Road Runner 115kV Reactive Power Support
 - 200Mvar Capacitive and 50Mvar Inductive Static Var Compensator (SVC)
 - Agave Hill 115kV reactive Power Support
 - 28.8Mvar Capacitor Bank(s)
 - Potash Junction – Intrepid – IMC #1 – Livingston Ridge 115kV rebuild
- Nebraska City – Mullin Creek – Sibley 345kV circuit #1 build, scheduled for 6/1/2017 in-service⁵
- Hoskins – Neligh East 345/115 kV Project⁶
 - Neligh East 345/115 kV substation and transformer
 - Neligh East Area 115 kV upgrades to support new station
 - Hoskins – Neligh East 345 kV circuit #1
- High Priority Incremental Loads (HPILs) Projects⁷:
 - TUCO Interchange – Yoakum – Hobbs Interchange 345/230 kV Project
 - TUCO Interchange – Yoakum – Hobbs Interchange 345 kV circuit #1 and associated terminal equipment upgrades
 - Hobbs 345/230/13 kV transformer circuit #1
 - Yoakum 345/230/13 kV transformer circuit #1
 - Battle Axe – Road Runner 115 kV circuit #1
 - Chaves County – Price – CV Pines – Capitan 115 kV circuit #1
 - China Draw – Yeso Hills 115 kV circuit #1
 - Dollarhide – Toboso Flats 115 kV circuit #1
 - Hobbs Interchange – Kiowa 345 kV circuit #1

³ SPP Notification to Construct (NTC) 200223

⁴ SPP Notification to Construct (NTC) 200240 and 200255

⁵ SPP Notification to Construct (NTC) 20097 and 20098

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

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

- Kiowa – North Loving – China Draw 345/115 kV Projects
 - Kiowa – North Loving – China Draw circuit #1 and associated terminal equipment upgrades
 - China Draw 345/115/13 kV transformer circuit #1
 - North Loving 345/115/13 kV transformer circuit #1
- Kiowa – Road Runner 345/230/115 kV Projects
 - Kiowa 345/230 kV transformer circuit #1
 - Road Runner 345/115/13 kV transformer circuit #1
- Livingston Ridge – Sage Brush – Lagarto – Cardinal 115 kV circuit #1
- North Loving – South Loving 115 kV circuit #1
- Ponderosa – Ponderosa Tap 115 kV circuit #1
- Potash 230/115/13kV Transformer circuit #1 replacement

Contingent Upgrades

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

- Upgrades assigned to DISIS-2009-001 Interconnection Customers:
 - Spearville Project
 - Spearville 345/115 kV transformer circuit #1 addition
 - Spearville – North Ft. Dodge 115 kV addition
 - Ft Dodge – North Ft. Dodge circuit #2 addition
 - Move Fort Dodge terminal of Shooting Star 115 kV at North Ft Dodge
 - Fort Randall – Meadow Grove – Kelly 230 kV circuit #1 rerate (320 MVA)
- Upgrades assigned to DISIS-2010-002 Interconnection Customers:
 - Twin Church – Dixon County 230 kV circuit #1 rerate (320 MVA)
 - Buckner – Spearville 345 kV terminal equipment
- Upgrades assigned to DISIS-2011-001 Interconnection Customers:
 - Hoskins – Dixon County – Twin Church 230 kV circuit #1 conductor clearance increase
 - (NRIS only) Woodward – FPL Switch – Mooreland 138 kV circuit #1 rebuild
- Upgrades assigned to DISIS-2012-002 Interconnection Customers:
 - Associated Electric Cooperatives Inc. (AECI) Fairfax 138/69 kV transformer replacement
 - Lake Creek – Lone Wolf 69 kV circuit #1 reset CT
 - Remington – Fairfax 138 kV circuit #1 conductor clearance increase
 - (NRIS only) Arkansas City – Paris –Creswell – Oak – Rainbow – City of Winfield 69kV circuit #1 rebuild
 - (NRIS only) Creswell 138/69/13kV Transformer circuit #1 and #2, replacements

- Upgrades assigned to DISIS-2013-002 Interconnection Customers:
 - Battle Creek – County Line – Neligh East 115kV circuit #1 rebuild

Potential Upgrades Not in the Base Case

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

Regional Groupings

The interconnection requests listed in Appendix A were grouped together into eleven (11) active regional groups based on geographical and electrical impacts. These groupings are shown in Appendix C.

To determine interconnection impacts, eleven (11) different generation dispatch scenarios of the spring, summer, and winter base case models were developed to accommodate the regional groupings.

Power Flow

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

Peaking units were not dispatched in the 2015 spring model. To study peaking units' impacts, the 2015 summer, 2020 summer and winter, and 2025 summer seasonal models were chosen and peaking units were modeled at 100% of the nameplate rating and non-dispatchable generating facilities were modeled at 10% of the nameplate rating. Each interconnection request was also modeled separately at 100% nameplate for certain analyses.

Dynamic Stability

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

Short Circuit

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

Identification of Network Constraints

The initial set of network constraints were found by using PSS®MUST First Contingency Incremental Transfer Capability (FCITC) analysis on the entire cluster grouping dispatched at the various levels mentioned above. The Energy Resource Interconnection Service (ERIS) constraints were then screened to determine which of the generation interconnection requests had at least a 20% Distribution Factor (DF) upon outage based constraints (n-1) and 3% DF upon system intact constraints (n-0). In addition, stability issues are also considered for transmission reinforcement under ERIS. Interconnection Requests that have requested Network Resource Interconnection Service (NRIS) were also studied in the NRIS analysis to determine if any constraint measured at least a 3% DF. If so, these constraints were also considered for mitigation under NRIS.

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

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

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

Determination of Cost Allocated Network Upgrades

Cost Allocated Network Upgrades of wind generation interconnection requests were determined using the 2015 spring model. Cost Allocated Network Upgrades of peaking units was determined using the 2020 summer peak model. A PSS®MUST sensitivity analysis was performed to determine the Distribution Factors (DF), a distribution factor with no contingency that each generation interconnection request had on each new upgrade. The impact each generation interconnection request had on each upgrade project was weighted by the size of each request. Finally the costs due by each request for a particular project were then determined by allocating the portion of each request's impact over the impact of all affecting requests.

For example, assume that there are three Generation Interconnection requests, X, Y, and Z that are responsible for the costs of Upgrade Project '1'. Given that their respective PTDF for the project

have been determined, the cost allocation for Generation Interconnection request 'X' for Upgrade Project 1 is found by the following set of steps and formulas:

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

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

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

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

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

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

- Repeat previous for each responsible GI request for each Project

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

Credits/Compensation for Amounts Advanced for Network Upgrades

Interconnection Customer shall be entitled to either credits or potentially Long Term Congestion Rights (LTCR)⁸ in accordance with Attachment Z2 of the SPP Tariff for any Network Upgrades including any tax gross-up or any other tax-related payments associated with the Network Upgrades, and not refunded to the Interconnection Customer.

Required Interconnection Facilities

The requirement to interconnect the 3,117.37 MW of generation into the existing and proposed transmission systems in the affected areas of the SPP transmission footprint consist of the necessary cost allocated shared facilities listed in Appendix F by upgrade. The interconnection requirements for the cluster total an estimated \$294,764,822. Interconnection Facilities specific to each generation interconnection request are listed in Appendix E. A preliminary one-line drawing for each generation interconnection request are listed in Appendix D.

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

⁸ FERC compliance filing pending

Facilities Analysis

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

Power Flow Analysis

Power Flow Analysis Methodology

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

Power Flow Analysis

A power flow analysis was conducted for each Interconnection Customer’s facility using modified versions of the 2015 spring and summer peak, the 2020 summer and winter peak, and the 2025 summer peak models. The output of the Interconnection Customer’s facility was offset in each model by a reduction in output of existing online SPP generation. This method allows the request to be studied as an Energy Resource Interconnection Service request (ERIS). Certain requests that are pursuing Network Resource Interconnection Service (NRIS) had an additional analysis conducted for displacing resources in the interconnecting Transmission Owner’s balancing authority.

Cluster Group 1 (Woodward Area)

In addition to the 3,866.54 MW of previously queued generation in the area, 350.0 MW of new interconnection service was studied. This group was not analyzed for this restudy and previously identified results remain valid.

Cluster Group 2 (Hitchland Area)

In addition to the 2,962.7 MW of previously queued generation in the area, 150.0 MW of new interconnection service was studied. This group was not analyzed for this restudy and previously identified results remain valid.

Cluster Group 3 (Spearville Area)

In addition to the 3,105.8 MW of previously queued generation in the area, 299.0 MW of new interconnection service was studied. The 138kV line overloads from Clearwater – Milan will limit Interconnection Service for GEN-2014-049. This line will need to be rebuilt. The previously assigned Static Var Compensator (SVC) at Clark County is no longer required. However, due to the

withdrawal of GEN-2011-017, the reactor requirements for GEN-2013-010 will need to be re-evaluated.

Cluster ERIS Constraints			
MONITORED ELEMENT	Limiting Rate A/B (MVA)	TC%LOADING (% MVA)	CONTINGENCY
FPL SWITCH - WOODWARD 138KV CKT 1	133	152.1	BASE CASE
CLEARWATER - MILAN TAP 138KV CKT 1	110	104.4	BASE CASE

Cluster NRIS Constraints			
MONITORED ELEMENT	Limiting Rate A/B (MVA)	TC%LOADING (% MVA)	CONTINGENCY
Currently, No NRIS Group 3 constraints			

Group 3 (Limited Operation)

Limited Operation Analysis		
Interconnection Request	MW	Constraint that limits LOIS
GEN-2013-010	99	None
GEN-2014-049	0	Woodward- FPL Switch 138kV Clearwater-Milan 138kV

Cluster Group 4 (Northwest Kansas Area)

In addition to the 1,339.4 MW of previously queued generation in the area, 125.57 MW of new interconnection service was studied. This group was not analyzed for this restudy and previously identified results remain valid.

Cluster Group 5 (Amarillo Area)

In addition to the 653.5 MW of previously queued generation in the area, 320.0 MW of new interconnection service was studied. This group was not analyzed for this restudy and previously identified results remain valid.

Cluster Group 6 (South Texas Panhandle/New Mexico)

In addition to the 3,484.37 MW of previously queued generation in the area, 689.6 MW of new interconnection service was studied. This group was not analyzed for this restudy and previously identified results remain valid.

Cluster Group 7 (Southwestern Oklahoma)

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

Cluster Group 8 (North Oklahoma/South Central Kansas)

In addition to the 3,848.4 MW of previously queued generation in the area, 339.8 MW of new interconnection service was studied. This group was not analyzed for this restudy and previously identified results remain valid.

Cluster Group 9 (Nebraska Area)

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

Cluster Group 10 (Southeast Oklahoma/Northeast Texas)

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

Cluster Group 12 (Northwest Arkansas)

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

Cluster Group 13 (Northwest Missouri)

In addition to the 134.6 MW of previously queued generation in the area, 474.0 MW of new interconnection service was studied. This group was not analyzed for this restudy and previously identified results remain valid.

Cluster Group 14 (South Central Oklahoma)

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

Curtailment and System Reliability

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

Stability & Short Circuit Analysis

A stability and short circuit analysis was conducted for each Interconnection Customer using modified versions of the 2014 series SPP Model Development Working Group (MDWG) Models 2015 winter, 2015 summer, and 2025 summer peak dynamic cases⁹. The stability analysis was conducted with all upgrades in service that were identified in the power flow analysis unless otherwise noted in the individual group stability study. For each group, the interconnection requests were studied at 100% nameplate output while the other groups were dispatched at 20% output for non-dispatchable requests and 100% output for other requests. The output of the Interconnection Customer's facility was offset in each model by a reduction in output of existing online SPP generation. Each Interconnection Request was studied in a Stand Alone scenario in addition to the cluster scenario. The following synopsis is included for each group. The entire stability study for each group can be found in the Appendices.

Cluster Group 1 (Woodward Area)

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

Cluster Group 2 (Hitchland Area)

The Group 2 stability analysis was not performed again for this restudy. The original analysis in DISIS-2014-002 is still valid.

Cluster Group 3 (Spearville Area)

A limited stability study was performed by SPP Staff to determine the sensitivity of the withdrawn Interconnection Requests. A previously queued project was found to trip on high voltage. The determination was that this issue is not caused by DISIS-2014-002 Interconnection Requests. The previously assigned Static Var Compensator (SVC) at Clark County is no longer required. However, due to the withdrawal of GEN-2011-017, the reactor requirements for GEN-2013-010 will need to be re-evaluated. The power factor analysis in the original study is still valid.

Cluster Group 4 (Northwest Kansas)

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

Cluster Group 5 (Amarillo Area)

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

Cluster Group 6 (South Texas Panhandle/New Mexico)

The Group 6 stability analysis was not performed again for this restudy. The original analysis in DISIS-2014-002-2 is still valid.

⁹ Short Circuit analysis performed only on the 2025 Summer Peak seasonal model.

Cluster Group 7 (Southwest Oklahoma)

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

Cluster Group 8 (South Central Kansas/North Oklahoma)

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

Cluster Group 9 (Nebraska)

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

Cluster Group 10 (Southeast Oklahoma/Northeast Texas Area)

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

Cluster Group 12 (Northwest Arkansas Area)

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

Cluster Group 13 (Northwest Missouri Area)

The Group 13 stability analysis was not performed again for this restudy. The original analysis in DISIS-2014-002 is still valid. It is worth noting that the original analysis included identification of certain instabilities at Jeffrey Energy Center during prior outage events that would be mitigated through curtailment of the GEN-2014-051 generator to 0MW.

Cluster Group 14 (South Central Oklahoma)

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

Conclusion

The minimum cost of interconnecting 3,117.37 MW of new interconnection requests included in this Definitive Interconnection System Impact Study is estimated at \$294,764,822 for the Allocated Network Upgrades and Transmission Owner Interconnection Facilities are listed in Appendix E and F. These costs do not include the cost of upgrades of other transmission facilities listed in Appendix H which are Network Constraints.

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

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

Appendices

A: Generation Interconnection Requests Considered for Impact Study

See next page.

A: Generation Interconnection Requests Considered for Study

Request	Amount	Service	Area	Requested Point of Interconnection	Proposed Point of Interconnection	Requested In-Service Date	In Service Date Delayed Until no earlier than*
ASGI-2014-002	49.60	ER	SPS	Tap Tucumcari - Santa Rosa 115kV	Tap Tucumcari - Santa Rosa 115kV		TBD
ASGI-2014-005	10.00	ER	SPS	Strata 69kV	Strata 69kV		TBD
ASGI-2014-008	10.00	ER	SPS	South Loving 69kV	South Loving 69kV		TBD
ASGI-2014-009	10.00	ER	SPS	Wood Draw 115kV	Wood Draw 115kV		TBD
ASGI-2014-010	10.00	ER	SPS	Ochoa 115kV	Ochoa 115kV		TBD
ASGI-2014-012	10.00	ER	SPS	Cooper Ranch 115kV	Cooper Ranch 115kV		TBD
ASGI-2014-014	56.40	ER	GRDA	Ferguson 69kV	Ferguson 69kV		TBD
GEN-2013-010	99.00	ER	SUNCMKEC	Tap Spearville - Post Rock 345kV	Tap Spearville - Post Rock (North of GEN-2011-017 Tap) 345kV	12/31/2015	TBD
GEN-2013-027	150.00	ER	SPS	Tap Tolk - Yoakum 230kV	Tap Tolk - Yoakum 230kV	3/31/2016	TBD
GEN-2014-020	100.00	ER/NR	AEPW	Tuttle 138kV	Tuttle 138kV	12/31/2014	TBD
GEN-2014-021	300.00	ER/NR	GMO	Tap Nebraska City - Mullens Creek 345kV	Tap Nebraska City - Mullin Creek 345kV	12/1/2016	TBD
GEN-2014-025	2.40	ER	MIDW	Tap Nekoma - Bazine (Walnut Creek) 69kV	Tap Nekoma - Bazine (Walnut Creek) 69kV	10/15/2015	TBD
GEN-2014-026	150.00	ER	OKGE	Beaver County 345kV	Beaver County 345kV	12/31/2016	TBD
GEN-2014-028	35.00	ER	EMDE	Riverton 161kV	Riverton 161kV	1/1/2016	TBD
GEN-2014-031	35.80	ER/NR	NPPD	Meadow Grove 230kV	Meadow Grove 230kV	10/1/2015	TBD
GEN-2014-032	10.20	ER/NR	NPPD	Meadow Grove 230kV	Meadow Grove 230kV	10/1/2015	TBD
GEN-2014-033	70.00	ER	SPS	Chaves County 115kV	Chaves County 115kV	12/31/2016	TBD
GEN-2014-034	70.00	ER	SPS	Chaves County 115kV	Chaves County 115kV	12/31/2016	TBD
GEN-2014-035	30.00	ER	SPS	Chaves County 115kV	Chaves County 115kV	12/31/2016	TBD
GEN-2014-039	73.40	ER/NR	NPPD	Friend 115kV	Friend 115kV	12/1/2016	TBD
GEN-2014-040	320.00	ER	SPS	Castro 115kV	Castro 115kV	9/1/2016	TBD
GEN-2014-041	123.17	ER	SUNCMKEC	Arnold 115kV	Arnold 115kV	3/31/2016	TBD
GEN-2014-047	40.00	ER	SPS	Tap Tolk - Eddy County (Crossroads) 345kV	Tap Tolk - Eddy County (Crossroads) 345kV	12/1/2016	TBD
GEN-2014-049	200.00	ER	SUNCMKEC	Thistle 345kV	Thistle 345kV	12/31/2016	TBD
GEN-2014-051	174.00	ER	WERE	Jeffrey Energy Center 345kV	Jeffrey Energy Center 345kV	12/31/2016	TBD
GEN-2014-053	80.00	ER	SPS	Carlisle 230kV	Carlisle 230kV	12/31/2016	TBD
GEN-2014-054	120.00	ER	SPS	Carlisle 230kV	Carlisle 230kV	12/31/2016	TBD
GEN-2014-056	250.00	ER	OKGE	Minco 345kV	Minco 345kV	12/31/2016	TBD
GEN-2014-057	250.00	ER	AEPW	Tap Lawton - Sunnyside 345kV	Tap Lawton - Sunnyside 345kV	12/31/2016	TBD
GEN-2014-064	248.40	ER	OKGE	Otter 138kV	Otter 138kV	12/1/2016	TBD
GEN-2014-066	30.00	ER/NR	SPS	Norton 115kV	Norton 115kV	12/1/2016	TBD
Total:						3,117.37	

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

B: Prior Queued Interconnection Requests

See next page.

B: Prior Queued Interconnection Requests

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
ASGI-2010-006	150.00	AECI	Tap Fairfax (AECI) - Shilder (AEPW) 138kV	AECI queue Affected Study
ASGI-2010-010	42.20	SPS	Lovington 115kV	Lea County Affected Study
ASGI-2010-020	30.00	SPS	Tap LE-Tatum - LE-Crossroads 69kV	Lea County Affected Study
ASGI-2010-021	15.00	SPS	Tap LE-Saunders Tap - LE-Anderson 69kV	Lea County Affected Study
ASGI-2011-001	27.30	SPS	Lovington 115kV	On-Line
ASGI-2011-002	20.00	SPS	Herring 115kV	On-Line
ASGI-2011-003	10.00	SPS	Hendricks 115kV	On-Line
ASGI-2011-004	20.00	SPS	Pleasant Hill 69kV	Under Study (DISIS-2011-002)
ASGI-2012-002	18.15	SPS	FE-Clovis Interchange 115kV	Under Study (DISIS-2012-002)
ASGI-2012-006	22.50	SUNCMKEC	Tap Hugoton - Rolla 69kV	Under Study (DISIS-2012-001)
ASGI-2013-001	11.50	SPS	PanTex South 115kV	Under Study (DISIS-2013-001)
ASGI-2013-002	18.40	SPS	FE Tucumcari 115kV	Under Study (DISIS-2013-001)
ASGI-2013-003	18.40	SPS	FE Clovis 115kV	Under Study (DISIS-2013-001)
ASGI-2013-004	36.60	SUNCMKEC	Morris 115kV	Under Study (DISIS-2013-002)
ASGI-2013-005	1.65	SPS	FE Clovis 115kV	Under Study (DISIS-2013-002)
ASGI-2013-006	2.00	SPS	SP-Erskine 115kV	
ASGI-2014-001	2.50	SPS	SP-Erskine 115kV	Under Study (DISIS-2014-001)
GEN-2001-014	96.00	WFEC	Ft Supply 138kV	On-Line
GEN-2001-026	74.30	WFEC	Washita 138kV	On-Line
GEN-2001-033	180.00	SPS	San Juan Tap 230kV	On-Line at 120MW
GEN-2001-036	80.00	SPS	Norton 115kV	On-Line
GEN-2001-037	100.00	OKGE	FPL Moreland Tap 138kV	On-Line
GEN-2001-039A	105.00	SUNCMKEC	Shooting Star Tap 115kV	On-Line
GEN-2001-039M	100.00	SUNCMKEC	Central Plains Tap 115kV	On-Line
GEN-2002-004	200.00	WERE	Latham 345kV	On-Line at 150MW
GEN-2002-005	120.00	WFEC	Red Hills Tap 138kV	On-Line
GEN-2002-008	240.00	SPS	Hitchland 345kV	On-Line at 120MW
GEN-2002-009	80.00	SPS	Hansford 115kV	On-Line
GEN-2002-022	240.00	SPS	Bushland 230kV	On-Line
GEN-2002-023N	0.80	NPPD	Harmony 115kV	On-Line
GEN-2002-025A	150.00	SUNCMKEC	Spearville 230kV	On-Line
GEN-2003-004	100.00	WFEC	Washita 138kV	On-Line
GEN-2003-005	100.00	WFEC	Anadarko - Paradise (Blue Canyon) 138kV	On-Line
GEN-2003-006A	200.00	SUNCMKEC	Elm Creek 230kV	On-Line
GEN-2003-019	250.00	MIDW	Smoky Hills Tap 230kV	On-Line
GEN-2003-020	160.00	SPS	Martin 115kV	On-Line
GEN-2003-021N	75.00	NPPD	Ainsworth Wind Tap 115kV	On-Line
GEN-2003-022	120.00	AEPW	Washita 138kV	On-Line
GEN-2004-014	154.50	SUNCMKEC	Spearville 230kV	On-Line at 100MW
GEN-2004-020	27.00	AEPW	Washita 138kV	On-Line
GEN-2004-023	20.60	WFEC	Washita 138kV	On-Line
GEN-2004-023N	75.00	NPPD	Columbus Co 115kV	On-Line
GEN-2005-003	30.60	WFEC	Washita 138kV	On-Line
GEN-2005-008	120.00	OKGE	Woodward 138kV	On-Line
GEN-2005-012	250.00	SUNCMKEC	Ironwood 345kV	On-Line at 160MW
GEN-2005-013	201.00	WERE	Caney River 345kV	On-Line
GEN-2006-002	101.00	AEPW	Sweetwater 230kV	On-Line

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2006-018	170.00	SPS	TUCO Interchange 230kV	On-Line
GEN-2006-020N	42.00	NPPD	Bloomfield 115kV	On-Line
GEN-2006-020S	18.90	SPS	DWS Frisco 115kV	On-Line
GEN-2006-021	101.00	SUNCMKEC	Flat Ridge Tap 138kV	On-Line
GEN-2006-024S	19.80	WFEC	Buffalo Bear Tap 69kV	On-Line
GEN-2006-026	502.00	SPS	Hobbs 230kV & Hobbs 115kV	On-Line
GEN-2006-031	75.00	MIDW	Knoll 115kV	On-Line
GEN-2006-035	225.00	AEPW	Sweetwater 230kV	On-Line at 132MW
GEN-2006-037N1	75.00	NPPD	Broken Bow 115kV	On-Line
GEN-2006-038N005	80.00	NPPD	Broken Bow 115kV	On-Line
GEN-2006-038N019	80.00	NPPD	Petersburg North 115kV	On-Line
GEN-2006-043	99.00	AEPW	Sweetwater 230kV	On-Line
GEN-2006-044	370.00	SPS	Hitchland 345kV	On-Line at 120MW
GEN-2006-044N	40.50	NPPD	North Petersburg 115kV	On-Line
GEN-2006-046	131.00	OKGE	Dewey 138kV	On-Line
GEN-2007-011N08	81.00	NPPD	Bloomfield 115kV	On-Line
GEN-2007-021	201.00	OKGE	Tatonga 345kV	On-Line
GEN-2007-025	300.00	WERE	Viola 345kV	On-Line
GEN-2007-040	200.00	SUNCMKEC	Buckner 345kV	On-Line at 132MW
GEN-2007-043	200.00	OKGE	Minco 345kV	On-Line
GEN-2007-044	300.00	OKGE	Tatonga 345kV	On-Line at 199MW
GEN-2007-046	200.00	SPS	Hitchland 115kV	On Schedule for 2015
GEN-2007-050	170.00	OKGE	Woodward EHV 138kV	On-Line at 150MW
GEN-2007-052	150.00	WFEC	Anadarko 138kV	On-Line
GEN-2007-062	765.00	OKGE	Woodward EHV 345kV	On Schedule for 2016 and 2017
GEN-2008-003	101.00	OKGE	Woodward EHV 138kV	On-Line
GEN-2008-013	300.00	OKGE	Hunter 345kV	On-Line at 235MW
GEN-2008-018	250.00	SPS	Finney 345kV	On-Line
GEN-2008-021	42.00	WERE	Wolf Creek 345kV	On-Line
GEN-2008-022	300.00	SPS	Tap Tolk - Eddy County (Crossroads) 345kV	On Schedule for 2015
GEN-2008-023	150.00	AEPW	Hobart Junction 138kV	On-Line
GEN-2008-037	101.00	WFEC	Tap Washita - Blue Canyon Wind 138kV	On-Line
GEN-2008-044	197.80	OKGE	Tatonga 345kV	On-Line
GEN-2008-047	300.00	OKGE	Beaver County 345kV	On-Line
GEN-2008-051	322.00	SPS	Potter County 345kV	On-Line at 161MW
GEN-2008-079	99.20	SUNCMKEC	Crooked Creek 115kV	On-Line
GEN-2008-086N02	201.00	NPPD	Meadow Grove 230kV	On-Line
GEN-2008-092	201.00	MIDW	Post Rock 230kV	On Schedule for 2015
GEN-2008-098	100.80	WERE	Waverly 345kV	On Schedule for 2015
GEN-2008-1190	60.00	OPPD	S1399 161kV	On-Line
GEN-2008-123N	89.70	NPPD	Tap Pauline - Hildreth (Rosemont) 115kV	On Schedule for 2015
GEN-2008-124	200.10	SUNCMKEC	Ironwood 345kV	On Schedule for 2016
GEN-2008-129	80.00	GMO	Pleasant Hill 161kV	On-Line
GEN-2009-008	199.50	MIDW	South Hays 230kV	On Schedule for 2015
GEN-2009-020	48.30	MIDW	Tap Nekoma - Bazine (Walnut Creek) 69kV	On Schedule for 2015
GEN-2009-025	59.80	OKGE	Nardins 69kV	On-Line
GEN-2009-040	73.80	WERE	Marshall 115kV	On Schedule for 2016
GEN-2010-001	300.00	OKGE	Beaver County 345kV	On-Line at 204 MW, On Schedule for 2015 (96 MW)
GEN-2010-003	100.80	WERE	Waverly 345kV	On Schedule for 2015

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2010-005	299.20	WERE	Viola 345kV	On-Line at 170MW
GEN-2010-006	205.00	SPS	Jones 230kV	On-Line
GEN-2010-009	165.60	SUNCMKEC	Buckner 345kV	On-Line
GEN-2010-011	29.70	OKGE	Tatonga 345kV	On-Line
GEN-2010-014	358.80	SPS	Hitchland 345kV	On Suspension
GEN-2010-036	4.60	WERE	6th Street 115kV	On-Line
GEN-2010-040	300.00	OKGE	Cimarron 345kV	On-Line
GEN-2010-041	10.50	OPPD	S1399 161kV	On Schedule for 2015
GEN-2010-045	197.80	SUNCMKEC	Buckner 345kV	On Schedule for 2017
GEN-2010-046	56.00	SPS	TUCO Interchange 230kV	On Schedule for 2016
GEN-2010-051	200.00	NPPD	Tap Twin Church - Hoskins 230kV	On Suspension
GEN-2010-055	4.50	AEPW	Wekiwa 138kV	On-Line
GEN-2010-057	201.00	MIDW	Rice County 230kV	On-Line
GEN-2011-008	600.00	SUNCMKEC	Clark County 345kV	On Schedule for 2016
GEN-2011-010	100.80	OKGE	Minco 345kV	On-Line
GEN-2011-011	50.00	KCPL	Iatan 345kV	On-Line
GEN-2011-014	201.00	OKGE	Tap Hitchland - Woodward Dbl Ckt (GEN-2011-014 Tap) 345kV	On Schedule for 2016
GEN-2011-016	200.10	SUNCMKEC	Spearville 345kV	Facility Study Stage
GEN-2011-018	73.60	NPPD	Steele City 115kV	On-Line
GEN-2011-019	299.00	OKGE	Woodward 345kV	On Suspension
GEN-2011-020	299.00	OKGE	Woodward 345kV	On Suspension
GEN-2011-022	299.00	SPS	Hitchland 345kV	On Suspension
GEN-2011-025	80.00	SPS	Tap Floyd County - Crosby County 115kV	On Schedule for 2016
GEN-2011-027	120.00	NPPD	Tap Hoskins - Twin Church 230kV	On Suspension
GEN-2011-037	7.00	WFEC	Blue Canyon 5 138kV	On-Line
GEN-2011-040	111.00	OKGE	Carter County 138kV	On-Line
GEN-2011-045	205.00	SPS	Jones 230kV	On-Line
GEN-2011-046	27.00	SPS	Lopez 115kV	On-Line
GEN-2011-048	175.00	SPS	Mustang 230kV	On-Line
GEN-2011-049	250.70	OKGE	Border 345kV	On Schedule for 2016
GEN-2011-050	109.80	AEPW	Santa Fe Tap 138kV	On Schedule for 2016
GEN-2011-051	104.40	OKGE	Tap Woodward - Tatonga 345kV (GEN-2011-051 Tap)	On Suspension
GEN-2011-054	300.00	OKGE	Cimarron 345kV	On Schedule for 2015
GEN-2011-056	3.60	NPPD	Jeffrey 115kV	On-Line
GEN-2011-056A	3.60	NPPD	John 1 115kV	On-Line
GEN-2011-056B	4.50	NPPD	John 2 115kV	On-Line
GEN-2011-057	150.40	WERE	Creswell 138kV	On Schedule for 2015
GEN-2012-001	61.20	SPS	Cirrus Tap 230kV	On-Line
GEN-2012-004	41.40	OKGE	Carter County 138kV	On-Line
GEN-2012-007	120.00	SUNCMKEC	Rubart 115kV	On-Line
GEN-2012-009	15.00	SPS	Mustang 230kV	On-Line
GEN-2012-010	15.00	SPS	Mustang 230kV	On-Line
GEN-2012-020	478.00	SPS	TUCO 230kV	On Schedule for 2016
GEN-2012-021	4.80	LES	Terry Bundy Generating Station 115kV	On-Line
GEN-2012-024	180.00	SUNCMKEC	Clark County 345kV	On Schedule for 2016
GEN-2012-027	136.00	AEPW	Shidler 138kV	On Suspension
GEN-2012-028	74.80	WFEC	Gotebo 69kV	On Schedule for 2015
GEN-2012-032	300.00	OKGE	Open Sky 345kV	On Schedule for 2015
GEN-2012-033	98.80	OKGE	Tap and Tie South 4th - Bunch Creek & Enid Tap - Fairmont (GEN-2012-033T) 138kV	On-Line

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2012-034	7.00	SPS	Mustang 230kV	On-Line
GEN-2012-035	7.00	SPS	Mustang 230kV	On-Line
GEN-2012-036	7.00	SPS	Mustang 230kV	On-Line
GEN-2012-037	203.00	SPS	TUCO 345kV	On-Line
GEN-2012-040	76.50	WFEC	Chilocco 138kV	On Suspension
GEN-2012-041	121.50	OKGE	Ranch Road 345kV	On-Line
GEN-2013-002	50.60	LES	Tap Sheldon - Folsom & Pleasant Hill (GEN-2013-002 Tap) 115kV CKT 2	On Schedule for 2016
GEN-2013-007	100.30	OKGE	Tap Prices Falls - Carter 138kV	On Schedule for 2015
GEN-2013-008	1.20	NPPD	Steele City 115kV	On-Line
GEN-2013-011	30.00	AEPW	Turk 138kV	On-Line
GEN-2013-012	147.00	OKGE	Redbud 345kV	On-Line
GEN-2013-014	25.50	NPPD	Tap Guide Rock - Pauline (Rosemont) 115kV	On Suspension
GEN-2013-016	203.00	SPS	TUCO 345kV	On Schedule for 2017
GEN-2013-019	73.60	LES	Tap Sheldon - Folsom & Pleasant Hill (GEN-2013-002 Tap) 115kV CKT 2	On Schedule for 2016
GEN-2013-022	25.00	SPS	Norton 115kV	On Schedule for 2016
GEN-2013-028	559.50	GRDA	Tap N Tulsa - GRDA 1 345kV	On Schedule for 2017
GEN-2013-029	300.00	OKGE	Renfrow 345kV	On Schedule for 2016 (150MW) and 2016 (150MW)
GEN-2013-030	300.00	OKGE	Beaver County 345kV	On Schedule for 2016 (200MW) and 2017 (100MW)
GEN-2013-032	204.00	NPPD	Antelope 115kV	On Schedule for 2017
GEN-2013-033	28.00	MIDW	Goodman Energy Center 115kV	On Schedule for 2016
GEN-2014-001	200.60	WERE	Tap Wichita - Emporia Energy Center 345kV	IA Pending
GEN-2014-002	10.50	OKGE	Tatonga 345kV (GEN-2007-021 POI)	On Schedule for 2015
GEN-2014-003	15.84	OKGE	Tatonga 345kV (GEN-2007-044 POI)	On Schedule for 2015
GEN-2014-004	4.00	NPPD	Steele City 115kV (GEN-2011-018 POI)	On Schedule for 2015
GEN-2014-005	5.70	OKGE	Minco 345kV (GEN-2011-010 POI)	On-Line
GEN-2014-012	225.00	SPS	Tap Hobbs Interchange - Andrews 230kV	On Schedule for 2018
GEN-2014-013	73.50	NPPD	Meadow Grove (GEN-2008-086N2 Sub) 230kV	On Schedule for 2015
Gray County Wind (Montezuma)	110.00	SUNCMKEC	Gray County Tap 115kV	On-Line
Llano Estacado (White Deer)	80.00	SPS	Llano Wind 115kV	On-Line
NPPD Distributed (Broken Bow)	8.30	NPPD	Broken Bow 115kV	On-Line
NPPD Distributed (Buffalo County Solar)	10.00	NPPD	Kearney Northeast	On-Line
NPPD Distributed (Burt County Wind)	12.00	NPPD	Tekamah & Oakland 115kV	On-Line
NPPD Distributed (Burwell)	3.00	NPPD	Ord 115kV	On-Line
NPPD Distributed (Columbus Hydro)	45.00	NPPD	Columbus 115kV	On-Line
NPPD Distributed (North Platte - Lexington)	54.00	NPPD	Multiple: Jeffrey 115kV, John_1 115kV, John_2 115kV	On-Line
NPPD Distributed (Ord)	11.90	NPPD	Ord 115kV	On-Line
NPPD Distributed (Stuart)	2.10	NPPD	Ainsworth 115kV	On-Line
SPS Distributed (Dumas 19th St)	20.00	SPS	Dumas 19th Street 115kV	On-Line
SPS Distributed (Etter)	20.00	SPS	Etter 115kV	On-Line
SPS Distributed (Hopi)	10.00	SPS	Hopi 115kV	On-Line
SPS Distributed (Jal)	10.00	SPS	S Jal 115kV	On-Line
SPS Distributed (Lea Road)	10.00	SPS	Lea Road 115kV	On-Line
SPS Distributed (Monument)	10.00	SPS	Monument 115kV	On-Line
SPS Distributed (Moore E)	25.00	SPS	Moore East 115kV	On-Line
SPS Distributed (Ocotillo)	10.00	SPS	S_Jal 115kV	On-Line
SPS Distributed (Sherman)	20.00	SPS	Sherman 115kV	On-Line

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
SPS Distributed (Spearman)	10.00	SPS	Spearman 69kV	On-Line
SPS Distributed (TC-Texas County)	20.00	SPS	Texas County 115kV	On-Line
SPS Distributed (Yuma)	2.57	SPS	SP-Yuma 69kV	On-Line
Total:	23,511.9			

C: Study Groupings

See next page

C. Study Groups

GROUP 1: WOODWARD AREA			
Request	Capacity	Area	Proposed Point of Interconnection
GEN-2001-014	96.00	WFEC	Ft Supply 138kV
GEN-2001-037	100.00	OKGE	FPL Moreland Tap 138kV
GEN-2005-008	120.00	OKGE	Woodward 138kV
GEN-2006-024S	19.80	WFEC	Buffalo Bear Tap 69kV
GEN-2006-046	131.00	OKGE	Dewey 138kV
GEN-2007-021	201.00	OKGE	Tatonga 345kV
GEN-2007-043	200.00	OKGE	Minco 345kV
GEN-2007-044	300.00	OKGE	Tatonga 345kV
GEN-2007-050	170.00	OKGE	Woodward EHV 138kV
GEN-2007-062	765.00	OKGE	Woodward EHV 345kV
GEN-2008-003	101.00	OKGE	Woodward EHV 138kV
GEN-2008-044	197.80	OKGE	Tatonga 345kV
GEN-2010-011	29.70	OKGE	Tatonga 345kV
GEN-2010-040	300.00	OKGE	Cimarron 345kV
GEN-2011-010	100.80	OKGE	Minco 345kV
GEN-2011-019	299.00	OKGE	Woodward 345kV
GEN-2011-020	299.00	OKGE	Woodward 345kV
GEN-2011-051	104.40	OKGE	Tap Woodward - Tatonga 345kV (GEN-2011-051 Tap)
GEN-2011-054	300.00	OKGE	Cimarron 345kV
GEN-2014-002	10.50	OKGE	Tatonga 345kV (GEN-2007-021 POI)
GEN-2014-003	15.84	OKGE	Tatonga 345kV (GEN-2007-044 POI)
GEN-2014-005	5.70	OKGE	Minco 345kV (GEN-2011-010 POI)
PRIOR QUEUED SUBTOTAL	3,866.54		
GEN-2014-020	100.00	AEPW	Tuttle 138kV
GEN-2014-056	250.00	OKGE	Minco 345kV
CURRENT CLUSTER SUBTOTAL	350.00		
AREA TOTAL	4,216.54		

GROUP 2: HITCHLAND AREA

Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2011-002	20.00	SPS	Herring 115kV
GEN-2002-008	240.00	SPS	Hitchland 345kV
GEN-2002-009	80.00	SPS	Hansford 115kV
GEN-2003-020	160.00	SPS	Martin 115kV
GEN-2006-020S	18.90	SPS	DWS Frisco 115kV
GEN-2006-044	370.00	SPS	Hitchland 345kV
GEN-2007-046	200.00	SPS	Hitchland 115kV
GEN-2008-047	300.00	OKGE	Beaver County 345kV
GEN-2010-001	300.00	OKGE	Beaver County 345kV
GEN-2010-014	358.80	SPS	Hitchland 345kV
GEN-2011-014	201.00	OKGE	Tap Hitchland - Woodward Dbl Ckt (GEN-2011-014 Tap) 345kV
GEN-2011-022	299.00	SPS	Hitchland 345kV
GEN-2013-030	300.00	OKGE	Beaver County 345kV
SPS Distributed (Dumas 19th St)	20.00	SPS	Dumas 19th Street 115kV
SPS Distributed (Etter)	20.00	SPS	Etter 115kV
SPS Distributed (Moore E)	25.00	SPS	Moore East 115kV
SPS Distributed (Sherman)	20.00	SPS	Sherman 115kV
SPS Distributed (Spearman)	10.00	SPS	Spearman 69kV
SPS Distributed (TC-Texas County)	20.00	SPS	Texas County 115kV
PRIOR QUEUED SUBTOTAL	2,962.70		
GEN-2014-026	150.00	OKGE	Beaver County 345kV
CURRENT CLUSTER SUBTOTAL	150.00		
AREA TOTAL	3,112.70		

GROUP 3: SPEARVILLE AREA

Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2012-006	22.50	SUNCMKEC	Tap Hugoton - Rolla 69kV
GEN-2001-039A	105.00	SUNCMKEC	Shooting Star Tap 115kV
GEN-2002-025A	150.00	SUNCMKEC	Spearville 230kV
GEN-2004-014	154.50	SUNCMKEC	Spearville 230kV
GEN-2005-012	250.00	SUNCMKEC	Ironwood 345kV
GEN-2006-021	101.00	SUNCMKEC	Flat Ridge Tap 138kV
GEN-2007-040	200.00	SUNCMKEC	Buckner 345kV
GEN-2008-018	250.00	SPS	Finney 345kV
GEN-2008-079	99.20	SUNCMKEC	Crooked Creek 115kV
GEN-2008-124	200.10	SUNCMKEC	Ironwood 345kV
GEN-2010-009	165.60	SUNCMKEC	Buckner 345kV
GEN-2010-045	197.80	SUNCMKEC	Buckner 345kV
GEN-2011-008	600.00	SUNCMKEC	Clark County 345kV
GEN-2011-016	200.10	SUNCMKEC	Spearville 345kV
GEN-2012-007	120.00	SUNCMKEC	Rubart 115kV
GEN-2012-024	180.00	SUNCMKEC	Clark County 345kV
Gray County Wind (Montezuma)	110.00	SUNCMKEC	Gray County Tap 115kV
PRIOR QUEUED SUBTOTAL	3,105.80		
GEN-2013-010	99.00	SUNCMKEC	Tap Spearville - Post Rock (North of GEN-2011-017 Tap) 345kV
GEN-2014-049	200.00	SUNCMKEC	Thistle 345kV
CURRENT CLUSTER SUBTOTAL	299.00		
AREA TOTAL	3,404.80		

GROUP 4: NORTHWEST KANSAS AREA

Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2013-004	36.60	SUNCMKEC	Morris 115kV
GEN-2001-039M	100.00	SUNCMKEC	Central Plains Tap 115kV
GEN-2003-006A	200.00	SUNCMKEC	Elm Creek 230kV
GEN-2003-019	250.00	MIDW	Smoky Hills Tap 230kV
GEN-2006-031	75.00	MIDW	Knoll 115kV
GEN-2008-092	201.00	MIDW	Post Rock 230kV
GEN-2009-008	199.50	MIDW	South Hays 230kV
GEN-2009-020	48.30	MIDW	Tap Nekoma - Bazine (Walnut Creek) 69kV
GEN-2010-057	201.00	MIDW	Rice County 230kV
GEN-2013-033	28.00	MIDW	Goodman Energy Center 115kV
PRIOR QUEUED SUBTOTAL	1,339.40		
GEN-2014-025	2.40	MIDW	Tap Nekoma - Bazine (Walnut Creek) 69kV
GEN-2014-041	123.17	SUNCMKEC	Arnold 115kV
CURRENT CLUSTER SUBTOTAL	125.57		
AREA TOTAL	1,464.97		

GROUP 5: AMARILLO AREA

Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2013-001	11.50	SPS	PanTex South 115kV
GEN-2002-022	240.00	SPS	Bushland 230kV
GEN-2008-051	322.00	SPS	Potter County 345kV
Llano Estacado (White Deer)	80.00	SPS	Llano Wind 115kV
PRIOR QUEUED SUBTOTAL	653.50		
GEN-2014-040	320.00	SPS	Castro 115kV
CURRENT CLUSTER SUBTOTAL	320.00		
AREA TOTAL	973.50		

GROUP 6: SOUTH TEXAS PANHANDLE/NEW MEXICO AREA

Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2010-010	42.20	SPS	Lovington 115kV
ASGI-2010-020	30.00	SPS	Tap LE-Tatum - LE-Crossroads 69kV
ASGI-2010-021	15.00	SPS	Tap LE-Saunders Tap - LE-Anderson 69kV
ASGI-2011-001	27.30	SPS	Lovington 115kV
ASGI-2011-003	10.00	SPS	Hendricks 115kV
ASGI-2011-004	20.00	SPS	Pleasant Hill 69kV
ASGI-2012-002	18.15	SPS	FE-Clovis Interchange 115kV
ASGI-2013-002	18.40	SPS	FE Tucumcari 115kV
ASGI-2013-003	18.40	SPS	FE Clovis 115kV
ASGI-2013-005	1.65	SPS	FE Clovis 115kV
ASGI-2013-006	2.00	SPS	SP-Erskine 115kV
ASGI-2014-001	2.50	SPS	SP-Erskine 115kV
GEN-2001-033	180.00	SPS	San Juan Tap 230kV
GEN-2001-036	80.00	SPS	Norton 115kV
GEN-2006-018	170.00	SPS	TUCO Interchange 230kV
GEN-2006-026	502.00	SPS	Hobbs 230kV & Hobbs 115kV
GEN-2008-022	300.00	SPS	Tap Tolk - Eddy County (Crossroads) 345kV
GEN-2010-006	205.00	SPS	Jones 230kV
GEN-2010-046	56.00	SPS	TUCO Interchange 230kV
GEN-2011-025	80.00	SPS	Tap Floyd County - Crosby County 115kV
GEN-2011-045	205.00	SPS	Jones 230kV
GEN-2011-046	27.00	SPS	Lopez 115kV
GEN-2011-048	175.00	SPS	Mustang 230kV
GEN-2012-001	61.20	SPS	Cirrus Tap 230kV
GEN-2012-009	15.00	SPS	Mustang 230kV
GEN-2012-010	15.00	SPS	Mustang 230kV
GEN-2012-020	478.00	SPS	TUCO 230kV
GEN-2012-034	7.00	SPS	Mustang 230kV
GEN-2012-035	7.00	SPS	Mustang 230kV
GEN-2012-036	7.00	SPS	Mustang 230kV
GEN-2012-037	203.00	SPS	TUCO 345kV
GEN-2013-016	203.00	SPS	TUCO 345kV
GEN-2013-022	25.00	SPS	Norton 115kV
GEN-2014-012	225.00	SPS	Tap Hobbs Interchange - Andrews 230kV
SPS Distributed (Hopi)	10.00	SPS	Hopi 115kV
SPS Distributed (Jal)	10.00	SPS	S_Jal 115kV
SPS Distributed (Lea Road)	10.00	SPS	Lea Road 115kV
SPS Distributed (Monument)	10.00	SPS	Monument 115kV
SPS Distributed (Ocotillo)	10.00	SPS	S_Jal 115kV
SPS Distributed (Yuma)	2.57	SPS	SP-Yuma 69kV
PRIOR QUEUED SUBTOTAL	3,484.37		
ASGI-2014-002	49.60	SPS	Tap Tucumcari - Santa Rosa 115kV
ASGI-2014-005	10.00	SPS	Strata 69kV
ASGI-2014-008	10.00	SPS	South Loving 69kV
ASGI-2014-009	10.00	SPS	Wood Draw 115kV
ASGI-2014-010	10.00	SPS	Ochoa 115kV
ASGI-2014-012	10.00	SPS	Cooper Ranch 115kV
GEN-2013-027	150.00	SPS	Tap Tolk - Yoakum 230kV
GEN-2014-033	70.00	SPS	Chaves County 115kV
GEN-2014-034	70.00	SPS	Chaves County 115kV

GEN-2014-035	30.00	SPS	Chaves County 115kV
GEN-2014-047	40.00	SPS	Tap Tolk - Eddy County (Crossroads) 345kV
GEN-2014-053	80.00	SPS	Carlisle 230kV
GEN-2014-054	120.00	SPS	Carlisle 230kV
GEN-2014-066	30.00	SPS	Norton 115kV
CURRENT CLUSTER SUBTOTAL	689.60		
AREA TOTAL	4,173.97		

GROUP 7: SOUTHWEST OKLAHOMA AREA

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

GROUP 8: NORTH OKLAHOMA/SOUTH CENTRAL KANSAS AREA

Request	Capacity	Area	Proposed Point of Interconnection
ASGI-2010-006	150.00	AECI	Tap Fairfax (AECI) - Schilder (AEPW) 138kV
GEN-2002-004	200.00	WERE	Latham 345kV
GEN-2005-013	201.00	WERE	Caney River 345kV
GEN-2007-025	300.00	WERE	Viola 345kV
GEN-2008-013	300.00	OKGE	Hunter 345kV
GEN-2008-021	42.00	WERE	Wolf Creek 345kV
GEN-2008-098	100.80	WERE	Waverly 345kV
GEN-2009-025	59.80	OKGE	Nardins 69kV
GEN-2010-003	100.80	WERE	Waverly 345kV
GEN-2010-005	299.20	WERE	Viola 345kV
GEN-2010-055	4.50	AEPW	Wekiwa 138kV
GEN-2011-057	150.40	WERE	Creswell 138kV
GEN-2012-027	136.00	AEPW	Shidler 138kV
GEN-2012-032	300.00	OKGE	Open Sky 345kV
GEN-2012-033	98.80	OKGE	Tap and Tie South 4th - Bunch Creek & Enid Tap - Fairmont (GEN-2012-033T) 138kV
GEN-2012-040	76.50	WFEC	Chilocco 138kV
GEN-2012-041	121.50	OKGE	Ranch Road 345kV
GEN-2013-012	147.00	OKGE	Redbud 345kV
GEN-2013-028	559.50	GRDA	Tap N Tulsa - GRDA 1 345kV
GEN-2013-029	300.00	OKGE	Renfrow 345kV
GEN-2014-001	200.60	WERE	Tap Wichita - Emporia Energy Center 345kV
PRIOR QUEUED SUBTOTAL	3,848.40		
ASGI-2014-014	56.40	GRDA	Ferguson 69kV
GEN-2014-028	35.00	EMDE	Riverton 161kV
GEN-2014-064	248.40	OKGE	Otter 138kV
CURRENT CLUSTER SUBTOTAL	339.80		
AREA TOTAL	4,188.20		

GROUP 9: NEBRASKA AREA

Request	Capacity	Area	Proposed Point of Interconnection
GEN-2002-023N	0.80	NPPD	Harmony 115kV
GEN-2003-021N	75.00	NPPD	Ainsworth Wind Tap 115kV
GEN-2004-023N	75.00	NPPD	Columbus Co 115kV
GEN-2006-020N	42.00	NPPD	Bloomfield 115kV
GEN-2006-037N1	75.00	NPPD	Broken Bow 115kV
GEN-2006-038N005	80.00	NPPD	Broken Bow 115kV
GEN-2006-038N019	80.00	NPPD	Petersburg North 115kV
GEN-2006-044N	40.50	NPPD	North Petersburg 115kV
GEN-2007-011N08	81.00	NPPD	Bloomfield 115kV
GEN-2008-086N02	201.00	NPPD	Meadow Grove 230kV
GEN-2008-119O	60.00	OPPD	S1399 161kV
GEN-2008-123N	89.70	NPPD	Tap Pauline - Hildreth (Rosemont) 115kV
GEN-2009-040	73.80	WERE	Marshall 115kV
GEN-2010-041	10.50	OPPD	S1399 161kV
GEN-2010-051	200.00	NPPD	Tap Twin Church - Hoskins 230kV
GEN-2011-018	73.60	NPPD	Steele City 115kV
GEN-2011-027	120.00	NPPD	Tap Hoskins - Twin Church 230kV
GEN-2011-056	3.60	NPPD	Jeffrey 115kV
GEN-2011-056A	3.60	NPPD	John 1 115kV
GEN-2011-056B	4.50	NPPD	John 2 115kV
GEN-2012-021	4.80	LES	Terry Bundy Generating Station 115kV
GEN-2013-002	50.60	LES	Tap Sheldon - Folsom & Pleasant Hill (GEN-2013-002 Tap) 115kV CKT 2
GEN-2013-008	1.20	NPPD	Steele City 115kV
GEN-2013-014	25.50	NPPD	Tap Guide Rock - Pauline (Rosemont) 115kV
GEN-2013-019	73.60	LES	Tap Sheldon - Folsom & Pleasant Hill (GEN-2013-002 Tap) 115kV CKT 2
GEN-2013-032	204.00	NPPD	Antelope 115kV
GEN-2014-004	4.00	NPPD	Steele City 115kV (GEN-2011-018 POI)
GEN-2014-013	73.50	NPPD	Meadow Grove (GEN-2008-086N2 Sub) 230kV
NPPD Distributed (Broken Bow)	8.30	NPPD	Broken Bow 115kV
NPPD Distributed (Buffalo County Solar)	10.00	NPPD	Kearney Northeast
NPPD Distributed (Burt County Wind)	12.00	NPPD	Tekamah & Oakland 115kV
NPPD Distributed (Burwell)	3.00	NPPD	Ord 115kV
NPPD Distributed (Columbus Hydro)	45.00	NPPD	Columbus 115kV
NPPD Distributed (North Platte - Lexington)	54.00	NPPD	Multiple: Jeffrey 115kV, John_1 115kV, John_2 115kV
NPPD Distributed (Ord)	11.90	NPPD	Ord 115kV
NPPD Distributed (Stuart)	2.10	NPPD	Ainsworth 115kV
PRIOR QUEUED SUBTOTAL	1,973.10		
GEN-2014-031	35.80	NPPD	Meadow Grove 230kV
GEN-2014-032	10.20	NPPD	Meadow Grove 230kV
GEN-2014-039	73.40	NPPD	Friend 115kV
CURRENT CLUSTER SUBTOTAL	119.40		
AREA TOTAL	2,092.50		

GROUP 10: SOUTHEAST OKLAHOMA/NORTHEAST TEXAS AREA

Request	Capacity	Area	Proposed Point of Interconnection
AREA TOTAL	0.00		

GROUP 12: NORTHWEST ARKANSAS AREA

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

GROUP 13: NORTHWEST MISSOURI AREA

Request	Capacity	Area	Proposed Point of Interconnection
GEN-2008-129	80.00	GMO	Pleasant Hill 161kV
GEN-2010-036	4.60	WERE	6th Street 115kV
GEN-2011-011	50.00	KCPL	Iatan 345kV
PRIOR QUEUED SUBTOTAL	134.60		
GEN-2014-021	300.00	GMO	Tap Nebraska City - Mullin Creek 345kV
GEN-2014-051	174.00	WERE	Jeffrey Energy Center 345kV
CURRENT CLUSTER SUBTOTAL	474.00		
AREA TOTAL	608.60		

GROUP 14: SOUTH CENTRAL OKLAHOMA AREA

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

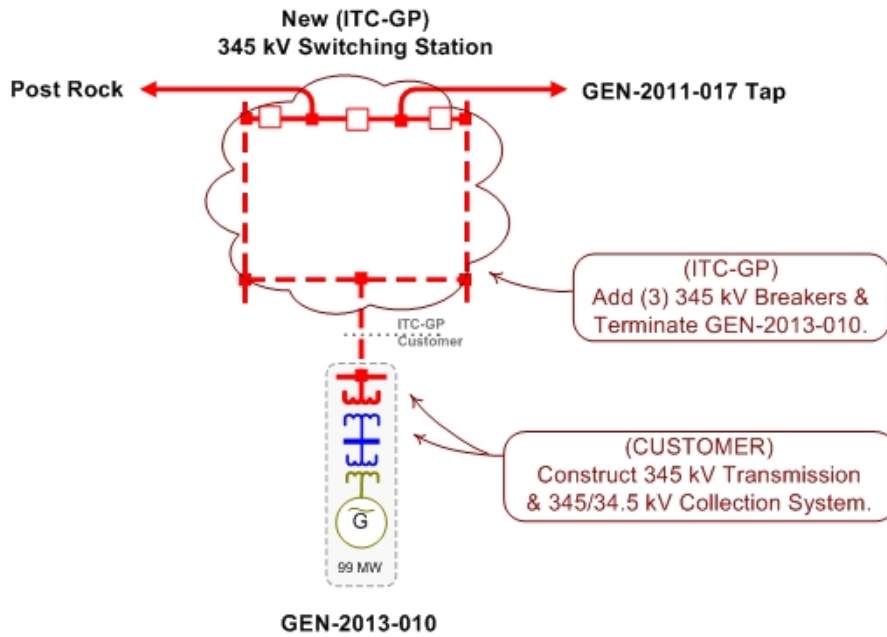
CLUSTER TOTAL (CURRENT STUDY)	3,117.4	MW
PQ TOTAL (PRIOR QUEUED)	23,511.9	MW
CLUSTER TOTAL (INCLUDING PRIOR QUEUED)	26,629.3	MW

D: Proposed Point of Interconnection One Line Diagrams

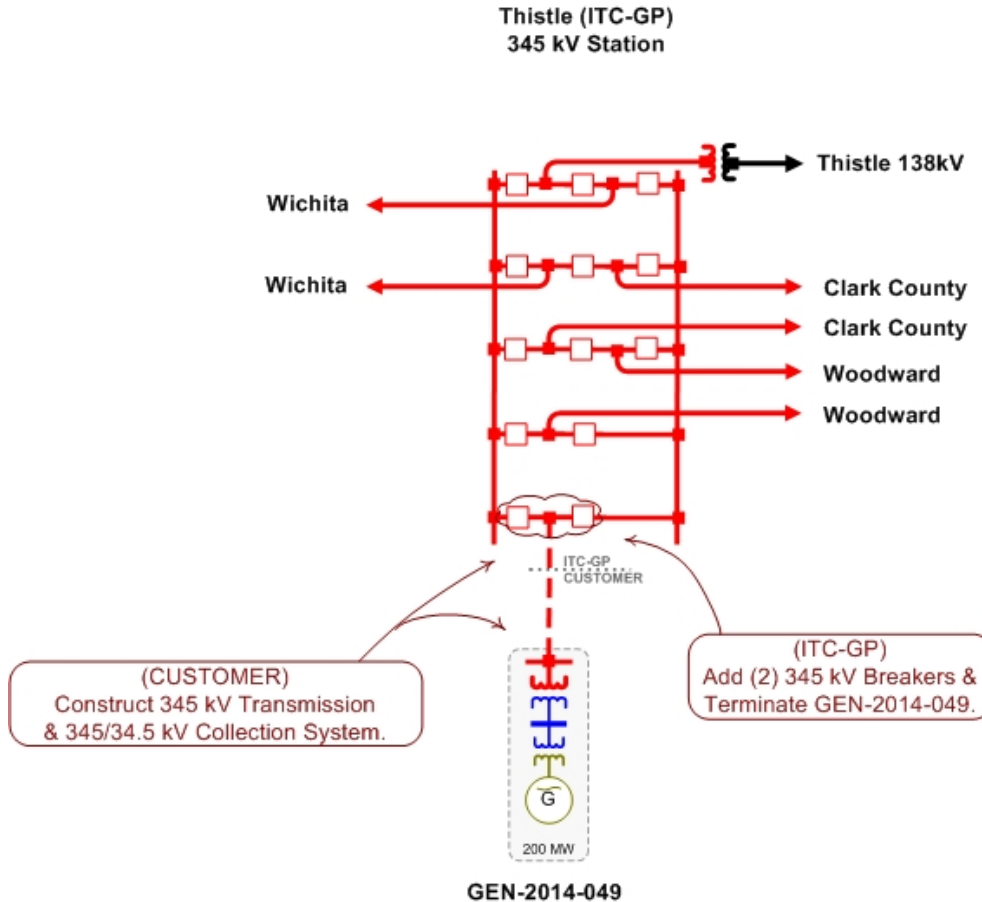
See next page

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

GEN-2013-010
Estimated Interconnection Cost: \$11,216,355



GEN-2014-049
Estimated Interconnection Cost: \$3,923,113



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

Important Note:

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

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

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

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

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

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

Appendix E. Cost Allocation Per Request

(Including Previously Allocated Network Upgrades*)

Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
ASGI-2014-002			
ASGI-2014-002 Interconnection Costs See One-Line Diagram.	Current Study	\$6,403,000	\$6,403,000
Norton - Pleasant Hill 230kV CKT 1 Build approximately 60 miles of new 230kV line. Modify Norton substation to add 230kV bus and autotransformer.	Current Study	\$30,901,860	\$49,592,501
Oklaunion 345kV Reactive Power Support Install (2) 150MVA SVCs at Oklaunion.	Current Study	\$2,684,525	\$40,000,000
Tolk - Plant X 230kV CKT 1 & 2 Rebuild circuit 1 and 2 between Tolk - Plant X 230kV to 1200 amps each.	Current Study	\$1,084,922	\$9,921,693
TUCO 2 (Crawfish Draw) Substation Upgrade 345/230kV Tap Border-TUCO approximately 2 miles from TUCO and build TUCO 2 (Crawfish Draw) 345kV substation and add 345/230/13.2kV transformer and tie on TUCO-Swisher 230kV.	Current Study	\$1,738,147	\$24,764,205
Agave Hill 115kV Reactive Power Support Build Agave Hill 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT.	Previously Allocated		\$17,142,313
Livingston Ridge - Sage Brush - Lagarto - Cardinal 115kV CKT 1 Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$37,316,546
Ochoa 115kV Reactive Power Support Build Ochoa 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Potash Junction 230/115 kV Ckt 1 Per HPILs SPP-NTC-200282 (Total Project E&C Cost Shown)	Previously Allocated		\$3,508,346
Potash Junction 230kV Reactive Power Support Build Potash Junction 100Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$6,465,875
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) and 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$18,761,593
	Current Study Total	\$42,812,454	

ASGI-2014-005

ASGI-2014-005 Interconnection Costs See One-Line Diagram.	Current Study	\$2,759,383	\$2,759,383
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* 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
Oklaunion 345kV Reactive Power Support Install (2) 150MVA SVCs at Oklaunion.	Current Study	\$562,023	\$40,000,000
Tolk - Plant X 230kV CKT 1 & 2 Rebuild circuit 1 and 2 between Tolk - Plant X 230kV to 1200 amps each.	Current Study	\$151,224	\$9,921,693
TUCO 2 (Crawfish Draw) Substation Upgrade 345/230kV Tap Border-TUCO approximately 2 miles from TUCO and build TUCO 2 (Crawfish Draw) 345kV substation and add 345/230/13.2kV transformer and tie on TUCO-Swisher 230kV.	Current Study	\$356,374	\$24,764,205
TUCO Interchange - TUCO 2 230kV CKT 1 Replace wave trap at TUCO	Current Study	\$12,738	\$1,000,000
Agave Hill 115kV Reactive Power Support Build Agave Hill 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Amoco Wasson - Oxy Tap 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$200,000
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT.	Previously Allocated		\$17,142,313
Kiowa - North Loving - China Draw 345/115kV Projects Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$62,619,690
Livingston Ridge - Sage Brush - Lagarto - Cardinal 115kV CKT 1 Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$37,316,546
Ochoa 115kV Reactive Power Support Build Ochoa 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Potash Junction 230kV Reactive Power Support Build Potash Junction 100Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$6,465,875
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) and 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$18,761,593
	Current Study Total	\$3,841,742	

ASGI-2014-008

ASGI-2014-008 Interconnection Costs See One-Line Diagram.	Current Study	\$2,799,543	\$2,799,543
Oklaunion 345kV Reactive Power Support Install (2) 150MVA SVCs at Oklaunion.	Current Study	\$560,631	\$40,000,000
Tolk - Plant X 230kV CKT 1 & 2 Rebuild circuit 1 and 2 between Tolk - Plant X 230kV to 1200 amps each.	Current Study	\$158,605	\$9,921,693

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

Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
TUCO 2 (Crawfish Draw) Substation Upgrade 345/230kV Tap Border-TUCO approximately 2 miles from TUCO and build TUCO 2 (Crawfish Draw) 345kV substation and add 345/230/13.2kV transformer and tie on TUCO-Swisher 230kV.	Current Study	\$356,062	\$24,764,205
TUCO Interchange - TUCO 2 230kV CKT 1 Replace wave trap at TUCO	Current Study	\$12,532	\$1,000,000
Agave Hill 115kV Reactive Power Support Build Agave Hill 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Amoco Wasson - Oxy Tap 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$200,000
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT.	Previously Allocated		\$17,142,313
Livingston Ridge - Sage Brush - Lagarto - Cardinal 115kV CKT 1 Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$37,316,546
Ochoa 115kV Reactive Power Support Build Ochoa 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Potash Junction 230kV Reactive Power Support Build Potash Junction 100Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$6,465,875
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) and 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$18,761,593
	Current Study Total	\$3,887,374	

ASGI-2014-009

ASGI-2014-009 Interconnection Costs See One-Line Diagram.	Current Study	\$3,293,228	\$3,293,228
Oklauunion 345kV Reactive Power Support Install (2) 150MVA SVCs at Oklauunion.	Current Study	\$563,458	\$40,000,000
Tolk - Plant X 230kV CKT 1 & 2 Rebuild circuit 1 and 2 betweek Tolk - Plant X 230kV to 1200 amps each.	Current Study	\$143,625	\$9,921,693
TUCO 2 (Crawfish Draw) Substation Upgrade 345/230kV Tap Border-TUCO approximately 2 miles from TUCO and build TUCO 2 (Crawfish Draw) 345kV substation and add 345/230/13.2kV transformer and tie on TUCO-Swisher 230kV.	Current Study	\$356,661	\$24,764,205
TUCO Interchange - TUCO 2 230kV CKT 1 Replace wave trap at TUCO	Current Study	\$12,951	\$1,000,000
Agave Hill 115kV Reactive Power Support Build Agave Hill 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280

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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
Amoco Wasson - Oxy Tap 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$200,000
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT.	Previously Allocated		\$17,142,313
Livingston Ridge - Sage Brush - Lagarto - Cardinal 115kV CKT 1 Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$37,316,546
Ochoa 115kV Reactive Power Support Build Ochoa 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Potash Junction 230kV Reactive Power Support Build Potash Junction 100Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$6,465,875
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) and 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$18,761,593
	Current Study Total	\$4,369,924	

ASGI-2014-010

ASGI-2014-010 Interconnection Costs See One-Line Diagram.	Current Study	\$2,708,891	\$2,708,891
Oklauion 345kV Reactive Power Support Install (2) 150MVA SVCs at Oklauion.	Current Study	\$564,045	\$40,000,000
Tolk - Plant X 230kV CKT 1 & 2 Rebuild circuit 1 and 2 between Tolk - Plant X 230kV to 1200 amps each.	Current Study	\$140,564	\$9,921,693
TUCO 2 (Crawfish Draw) Substation Upgrade 345/230kV Tap Border-TUCO approximately 2 miles from TUCO and build TUCO 2 (Crawfish Draw) 345kV substation and add 345/230/13.2kV transformer and tie on TUCO-Swisher 230kV.	Current Study	\$356,791	\$24,764,205
TUCO Interchange - TUCO 2 230kV CKT 1 Replace wave trap at TUCO	Current Study	\$13,038	\$1,000,000
Agave Hill 115kV Reactive Power Support Build Agave Hill 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Amoco Wasson - Oxy Tap 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$200,000
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT.	Previously Allocated		\$17,142,313
Ochoa 115kV Reactive Power Support Build Ochoa 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280

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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
Potash Junction 230kV Reactive Power Support Build Potash Junction 100Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$6,465,875
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) and 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$18,761,593
	Current Study Total	\$3,783,329	

ASGI-2014-012

ASGI-2014-012 Interconnection Costs See One-Line Diagram.	Current Study	\$2,672,441	\$2,672,441
Oklauion 345kV Reactive Power Support Install (2) 150MVA SVCs at Oklauion.	Current Study	\$565,372	\$40,000,000
Tolk - Plant X 230kV CKT 1 & 2 Rebuild circuit 1 and 2 betweek Tolk - Plant X 230kV to 1200 amps each.	Current Study	\$133,635	\$9,921,693
TUCO 2 (Crawfish Draw) Substation Upgrade 345/230kV Tap Border-TUCO approximately 2 miles from TUCO and build TUCO 2 (Crawfish Draw) 345kV substation and add 345/230/13.2kV transformer and tie on TUCO-Swisher 230kV.	Current Study	\$357,078	\$24,764,205
TUCO Interchange - TUCO 2 230kV CKT 1 Replace wave trap at TUCO	Current Study	\$13,231	\$1,000,000
Agave Hill 115kV Reactive Power Support Build Agave Hill 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Amoco Wasson - Oxy Tap 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$200,000
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT.	Previously Allocated		\$17,142,313
Ochoa 115kV Reactive Power Support Build Ochoa 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Potash Junction 230kV Reactive Power Support Build Potash Junction 100Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$6,465,875
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) and 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$18,761,593
	Current Study Total	\$3,741,757	

ASGI-2014-014

ASGI-2014-014 Interconnection Costs See One-Line Diagram.	Current Study	\$134,164	\$134,164
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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
	Current Study Total	\$134,164	
GEN-2013-010			
GEN-2013-010 Interconnection Costs See One-Line Diagram.	Current Study	\$11,021,522	\$11,021,522
Bucker - Spearville 345V CKT 1 Replace Terminal equipment	Previously Allocated		\$1,480,238
	Current Study Total	\$11,021,522	
GEN-2013-027			
GEN-2013-027 Interconnection Costs See One-Line Diagram.	Current Study	\$6,004,592	\$6,004,592
Oklaunion 345kV Reactive Power Support Install (2) 150MVA SVCs at Oklaunion.	Current Study	\$8,278,674	\$40,000,000
Tolk - Plant X 230kV CKT 1 & 2 Rebuild circuit 1 and 2 between Tolk - Plant X 230kV to 1200 amps each.	Current Study	\$3,379,101	\$9,921,693
TUCO 2 (Crawfish Draw) Substation Upgrade 345/230kV Tap Border-TUCO approximately 2 miles from TUCO and build TUCO 2 (Crawfish Draw) 345kV substation and add 345/230/13.2kV transformer and tie on TUCO-Swisher 230kV.	Current Study	\$5,322,161	\$24,764,205
TUCO Interchange - TUCO 2 230kV CKT 1 Replace wave trap at TUCO	Current Study	\$166,524	\$1,000,000
Agave Hill 115kV Reactive Power Support Build Agave Hill 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT.	Previously Allocated		\$17,142,313
Ochoa 115kV Reactive Power Support Build Ochoa 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Potash Junction 230/115 kV Ckt 1 Per HPILs SPP-NTC-200282 (Total Project E&C Cost Shown)	Previously Allocated		\$3,508,346
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) and 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$18,761,593
	Current Study Total	\$23,151,052	
GEN-2014-020			
GEN-2014-020 Interconnection Costs See One-Line Diagram.	Current Study	\$7,664,803	\$7,664,803

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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
	Current Study Total	\$7,664,803	
GEN-2014-021			
GEN-2014-021 Interconnection Costs See One-Line Diagram.	Current Study	\$18,384,455	\$18,384,455
Nashua 345/161/13.8KV Autotransformer CKT 1 Balanced Portfolio: Nashua/161/13.8 Autotransformer 345kV CKT 1 (Total Project E&C Cost Shown).	In-Service		\$4,230,000
Nebraska City - Sibley 345kV CKT 1 Priority Project: Nebraska City - Mullin Creek - Sibley 345kV circuit 1 per NTC (SPP-NTC-20097 and SPP-NTC-20098). (Total Project E&C Cost Shown).	Previously Allocated		\$407,764,364
	Current Study Total	\$18,384,455	
GEN-2014-025			
GEN-2014-025 Interconnection Costs See One-Line Diagram.	Current Study	\$184,473	\$184,473
Iatan - Nashua 345KV CKT 1 Balanced Portfolio: Iatan - Nashua 345kV CKT 1 (Total Project E&C Cost Shown).	In-Service		\$60,569,180
Nashua 345/161/13.8KV Autotransformer CKT 1 Balanced Portfolio: Nashua/161/13.8 Autotransformer 345kV CKT 1 (Total Project E&C Cost Shown).	In-Service		\$4,230,000
	Current Study Total	\$184,473	
GEN-2014-026			
Beaver County 345kV Reactive Power Support Install 75Mvar SVC at Beaver County Substation.	Current Study	\$21,823,556	\$21,823,556
GEN-2014-026 Interconnection Costs See One-Line Diagram.	Current Study	\$0	\$0
FPL Switch - Mooreland 138kV CKT 1 Rebuild approximately 0.2 miles of 138kV line	Previously Allocated		\$820,000
FPL Switch - Woodward 138kV CKT 1 Rebuild approximately 12 miles of 138kV line	Previously Allocated		\$8,499,000
	Current Study Total	\$21,823,556	
GEN-2014-028			
GEN-2014-028 Interconnection Costs See One-Line Diagram.	Current Study	\$0	\$0
	Current Study Total	\$0	

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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
GEN-2014-031			
GEN-2014-031 Interconnection Costs See One-Line Diagram.	Current Study	\$100,000	\$100,000
Battle Creek-County Line 115kV CKT 1 Rebuild approximately 11 miles of 115kV from Battle Creek to County Line.	Previously Allocated		\$4,000,000
County Line-Neligh East 115kV CKT 1 Rebuild approximately 12 miles of 115kV from County Line to Neligh East.	Previously Allocated		\$8,050,000
Hoskins - Dixon County - Twin Church 230kV Rerate per NPPD Facility Study	Previously Allocated		\$500,000
Hoskins - Neligh 345/115kV Projects Per SPP 2014 ITP NT and NTC 200253 for 6/1/2016 in-service.	Previously Allocated		\$98,697,720
Twin Church - Dixon County 230kV Increase conductor clearances to accommodate 320MVA facility rating	Previously Allocated		\$100,000
	Current Study Total	\$100,000	

GEN-2014-032			
GEN-2014-032 Interconnection Costs See One-Line Diagram.	Current Study	\$0	\$0
Battle Creek-County Line 115kV CKT 1 Rebuild approximately 11 miles of 115kV from Battle Creek to County Line.	Previously Allocated		\$4,000,000
County Line-Neligh East 115kV CKT 1 Rebuild approximately 12 miles of 115kV from County Line to Neligh East.	Previously Allocated		\$8,050,000
Hoskins - Dixon County - Twin Church 230kV Rerate per NPPD Facility Study	Previously Allocated		\$500,000
Hoskins - Neligh 345/115kV Projects Per SPP 2014 ITP NT and NTC 200253 for 6/1/2016 in-service.	Previously Allocated		\$98,697,720
Twin Church - Dixon County 230kV Increase conductor clearances to accommodate 320MVA facility rating	Previously Allocated		\$100,000
	Current Study Total	\$0	

GEN-2014-033			
GEN-2014-033 Interconnection Costs See One-Line Diagram.	Current Study	\$2,090,343	\$2,090,343

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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
Oklaunion 345kV Reactive Power Support Install (2) 150MVA SVCs at Oklaunion.	Current Study	\$3,874,036	\$40,000,000
Tolk - Plant X 230kV CKT 1 & 2 Rebuild circuit 1 and 2 between Tolk - Plant X 230kV to 1200 amps each.	Current Study	\$1,311,591	\$9,921,693
TUCO 2 (Crawfish Draw) Substation Upgrade 345/230kV Tap Border-TUCO approximately 2 miles from TUCO and build TUCO 2 (Crawfish Draw) 345kV substation and add 345/230/13.2kV transformer and tie on TUCO-Swisher 230kV.	Current Study	\$2,479,297	\$24,764,205
TUCO Interchange - TUCO 2 230kV CKT 1 Replace wave trap at TUCO	Current Study	\$80,823	\$1,000,000
Agave Hill 115kV Reactive Power Support Build Agave Hill 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Amoco Wasson - Oxy Tap 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$200,000
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT.	Previously Allocated		\$17,142,313
Livingston Ridge - Sage Brush - Lagarto - Cardinal 115kV CKT 1 Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$37,316,546
Ochoa 115kV Reactive Power Support Build Ochoa 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Potash Junction 230kV Reactive Power Support Build Potash Junction 100Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$6,465,875
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) and 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$18,761,593
	Current Study Total	\$9,836,090	

GEN-2014-034

GEN-2014-034 Interconnection Costs See One-Line Diagram.	Current Study	\$1,257,430	\$1,257,430
Oklaunion 345kV Reactive Power Support Install (2) 150MVA SVCs at Oklaunion.	Current Study	\$3,874,036	\$40,000,000
Tolk - Plant X 230kV CKT 1 & 2 Rebuild circuit 1 and 2 between Tolk - Plant X 230kV to 1200 amps each.	Current Study	\$1,311,591	\$9,921,693
TUCO 2 (Crawfish Draw) Substation Upgrade 345/230kV Tap Border-TUCO approximately 2 miles from TUCO and build TUCO 2 (Crawfish Draw) 345kV substation and add 345/230/13.2kV transformer and tie on TUCO-Swisher 230kV.	Current Study	\$2,479,297	\$24,764,205

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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
TUCO Interchange - TUCO 2 230kV CKT 1 Replace wave trap at TUCO	Current Study	\$80,823	\$1,000,000
Agave Hill 115kV Reactive Power Support Build Agave Hill 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Amoco Wasson - Oxy Tap 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$200,000
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT.	Previously Allocated		\$17,142,313
Livingston Ridge - Sage Brush - Lagarto - Cardinal 115kV CKT 1 Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$37,316,546
Ochoa 115kV Reactive Power Support Build Ochoa 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Potash Junction 230kV Reactive Power Support Build Potash Junction 100Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$6,465,875
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) and 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$18,761,593
	Current Study Total	\$9,003,177	

GEN-2014-035

GEN-2014-035 Interconnection Costs See One-Line Diagram.	Current Study	\$0	\$0
Oklaunion 345kV Reactive Power Support Install (2) 150MVA SVCs at Oklaunion.	Current Study	\$1,660,301	\$40,000,000
Tolk - Plant X 230kV CKT 1 & 2 Rebuild circuit 1 and 2 between Tolk - Plant X 230kV to 1200 amps each.	Current Study	\$562,110	\$9,921,693
TUCO 2 (Crawfish Draw) Substation Upgrade 345/230kV Tap Border-TUCO approximately 2 miles from TUCO and build TUCO 2 (Crawfish Draw) 345kV substation and add 345/230/13.2kV transformer and tie on TUCO-Swisher 230kV.	Current Study	\$1,062,556	\$24,764,205
TUCO Interchange - TUCO 2 230kV CKT 1 Replace wave trap at TUCO	Current Study	\$34,638	\$1,000,000
Agave Hill 115kV Reactive Power Support Build Agave Hill 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Amoco Wasson - Oxy Tap 230kV CKT 1 Replace line traps at both terminals	Previously Allocated		\$200,000

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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT.	Previously Allocated		\$17,142,313
Livingston Ridge - Sage Brush - Lagarto - Cardinal 115kV CKT 1 Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$37,316,546
Ochoa 115kV Reactive Power Support Build Ochoa 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Potash Junction 230kV Reactive Power Support Build Potash Junction 100Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$6,465,875
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) and 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$18,761,593
	Current Study Total	\$3,319,606	

GEN-2014-039

GEN-2014-039 Interconnection Costs See One-Line Diagram.	Current Study	\$4,900,000	\$4,900,000
Battle Creek-County Line 115kV CKT 1 Rebuild approximately 11 miles of 115kV from Battle Creek to County Line.	Previously Allocated		\$4,000,000
County Line-Neligh East 115kV CKT 1 Rebuild approximately 12 miles of 115kV from County Line to Neligh East.	Previously Allocated		\$8,050,000
Hoskins - Neligh 345/115kV Projects Per SPP 2014 ITP NT and NTC 200253 for 6/1/2016 in-service.	Previously Allocated		\$98,697,720
Twin Church - Dixon County 230kV Increase conductor clearances to accommodate 320MVA facility rating	Previously Allocated		\$100,000
	Current Study Total	\$4,900,000	

GEN-2014-040

GEN-2014-040 Interconnection Costs See One-Line Diagram.	Current Study	\$1,510,017	\$1,510,017
	Current Study Total	\$1,510,017	

GEN-2014-041

Arnold - Ransom 115kV CKT 1 Replace terminal equipment and relay panels at Ransom Substation	Current Study	\$268,321	\$268,321
GEN-2014-041 Interconnection Costs See One-Line Diagram.	Current Study	\$4,832,230	\$4,832,230

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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
latan - Nashua 345KV CKT 1 Balanced Portfolio: Iatan - Nashua 345kV CKT 1 (Total Project E&C Cost Shown).	In-Service		\$60,569,180
Nashua 345/161/13.8KV Autotransformer CKT 1 Balanced Portfolio: Nashua/161/13.8 Autotransformer 345kV CKT 1 (Total Project E&C Cost Shown).	In-Service		\$4,230,000
Ellsworth - Mullergren 115kV CKT 1 Per SPP 2012 NT and SPP-NTC-200173 for 6/1/2015 in-service(Total Project E&C Cost Shown).	Not Active		\$19,459,597
Bucker - Spearville 345V CKT 1 Replace Terminal equipment	Previously Allocated		\$1,480,238
	Current Study Total	\$5,100,551	

GEN-2014-047

GEN-2014-047 Interconnection Costs See One-Line Diagram.	Current Study	\$3,164,380	\$3,164,380
Oklaunion 345kV Reactive Power Support Install (2) 150MVA SVCs at Oklaunion.	Current Study	\$2,205,646	\$40,000,000
Tolk - Plant X 230kV CKT 1 & 2 Rebuild circuit 1 and 2 between Tolk - Plant X 230kV to 1200 amps each.	Current Study	\$888,523	\$9,921,693
TUCO 2 (Crawfish Draw) Substation Upgrade 345/230kV Tap Border-TUCO approximately 2 miles from TUCO and build TUCO 2 (Crawfish Draw) 345kV substation and add 345/230/13.2kV transformer and tie on TUCO-Swisher 230kV.	Current Study	\$1,418,200	\$24,764,205
TUCO Interchange - TUCO 2 230kV CKT 1 Replace wave trap at TUCO	Current Study	\$44,265	\$1,000,000
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT.	Previously Allocated		\$17,142,313
Livingston Ridge - Sage Brush - Lagarto - Cardinal 115kV CKT 1 Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$37,316,546
Ochoa 115kV Reactive Power Support Build Ochoa 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Potash Junction 230/115 kV Ckt 1 Per HPILs SPP-NTC-200282 (Total Project E&C Cost Shown)	Previously Allocated		\$3,508,346
Potash Junction 230kV Reactive Power Support Build Potash Junction 100Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$6,465,875
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) and 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$18,761,593

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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
	Current Study Total	\$7,721,014	
GEN-2014-049			
GEN-2014-049 Interconnection Costs See One-Line Diagram.	Current Study	\$3,936,574	\$3,936,574
Milan Tap - Clearwater 138kV CKT 1 Rebuild approximately 5.7 miles (MKEC) and 6.1 miles (WERE) of 138kV transmission.	Current Study	\$12,459,248	\$12,459,248
Bucker - Spearville 345V CKT 1 Replace Terminal equipment	Previously Allocated		\$1,480,238
FPL Switch - Woodward 138kV CKT 1 Rebuild approximately 12 miles of 138kV line	Previously Allocated		\$8,499,000
	Current Study Total	\$16,395,822	
GEN-2014-051			
GEN-2014-051 Interconnection Costs See One-Line Diagram.	Current Study	\$18,802,941	\$18,802,941
Iatan - Nashua 345KV CKT 1 Balanced Portfolio: Iatan - Nashua 345kV CKT 1 (Total Project E&C Cost Shown).	In-Service		\$60,569,180
Nashua 345/161/13.8KV Autotransformer CKT 1 Balanced Portfolio: Nashua/161/13.8 Autotransformer 345kV CKT 1 (Total Project E&C Cost Shown).	In-Service		\$4,230,000
	Current Study Total	\$18,802,941	
GEN-2014-053			
Carlisle 230/115/13kV Transformer CKT 1 Replace existing Carlisle 230/115/13kV Transformer circuit #1 with 250 MVA.	Current Study	\$1,677,165	\$4,192,913
GEN-2014-053 Interconnection Costs See One-Line Diagram.	Current Study	\$2,740,324	\$2,740,324
Oklauion 345kV Reactive Power Support Install (2) 150MVA SVCs at Oklauion.	Current Study	\$5,193,419	\$40,000,000
TUCO 2 (Crawfish Draw) Substation Upgrade 345/230kV Tap Border-TUCO approximately 2 miles from TUCO and build TUCO 2 (Crawfish Draw) 345kV substation and add 345/230/13.2kV transformer and tie on TUCO-Swisher 230kV.	Current Study	\$2,972,113	\$24,764,205
TUCO Interchange - TUCO 2 230kV CKT 1 Replace wave trap at TUCO	Current Study	\$211,375	\$1,000,000
Agave Hill 115kV Reactive Power Support Build Agave Hill 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280

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Interconnection Request and Upgrades	Upgrade Type	Allocated Cost	Upgrade Cost
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT.	Previously Allocated		\$17,142,313
Hobbs Interchange - Kiowa 345kV CKT 1 Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$65,989,591
Kiowa - North Loving - China Draw 345/115kV Projects Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$62,619,690
Kiowa - Road Runner 345/230/115kV Projects Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$21,560,659
Ochoa 115kV Reactive Power Support Build Ochoa 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Potash Junction 230kV Reactive Power Support Build Potash Junction 100Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$6,465,875
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) and 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$18,761,593
	Current Study Total	\$12,794,396	

GEN-2014-054

Carlisle 230/115/13kV Transformer CKT 1 Replace existing Carlisle 230/115/13kV Transformer circuit #1 with 250 MVA.	Current Study	\$2,515,748	\$4,192,913
GEN-2014-054 Interconnection Costs See One-Line Diagram.	Current Study	\$0	\$0
Oklaunion 345kV Reactive Power Support Install (2) 150MVA SVCs at Oklaunion.	Current Study	\$7,790,128	\$40,000,000
TUCO 2 (Crawfish Draw) Substation Upgrade 345/230kV Tap Border-TUCO approximately 2 miles from TUCO and build TUCO 2 (Crawfish Draw) 345kV substation and add 345/230/13.2kV transformer and tie on TUCO-Swisher 230kV.	Current Study	\$4,458,169	\$24,764,205
TUCO Interchange - TUCO 2 230kV CKT 1 Replace wave trap at TUCO	Current Study	\$317,062	\$1,000,000
Agave Hill 115kV Reactive Power Support Build Agave Hill 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT.	Previously Allocated		\$17,142,313
Hobbs Interchange - Kiowa 345kV CKT 1 Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$65,989,591

* 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
Kiowa - North Loving - China Draw 345/115kV Projects Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$62,619,690
Kiowa - Road Runner 345/230/115kV Projects Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$21,560,659
Ochoa 115kV Reactive Power Support Build Ochoa 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Potash Junction 230kV Reactive Power Support Build Potash Junction 100Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$6,465,875
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) and 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$18,761,593
	Current Study Total	\$15,081,107	

GEN-2014-056

GEN-2014-056 Interconnection Costs See One-Line Diagram.	Current Study	\$40,000	\$40,000
	Current Study Total	\$40,000	

GEN-2014-057

GEN-2014-057 Interconnection Costs See One-Line Diagram.	Current Study	\$20,120,000	\$20,120,000
	Current Study Total	\$20,120,000	

GEN-2014-064

GEN-2014-064 Interconnection Costs See One-Line Diagram.	Current Study	\$3,217,651	\$3,217,651
Fairfax 138/69kV CKT 1 Per AECL Affected System Study for DISIS-2012-002	Previously Allocated		\$2,200,000
Remington - Fairfax 138KV CKT 1 Increase conductor clearance	Previously Allocated		\$400,000
	Current Study Total	\$3,217,651	

GEN-2014-066

GEN-2014-066 Interconnection Costs See One-Line Diagram.	Current Study	\$0	\$0
Norton - Pleasant Hill 230kV CKT 1 Build approximately 60 miles of new 230kV line. Modify Norton substation to add 230kV bus and autotransformer.	Current Study	\$18,690,641	\$49,592,501

* 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
Oklaunion 345kV Reactive Power Support Install (2) 150MVA SVCs at Oklaunion.	Current Study	\$1,623,704	\$40,000,000
Tolk - Plant X 230kV CKT 1 & 2 Rebuild circuit 1 and 2 between Tolk - Plant X 230kV to 1200 amps each.	Current Study	\$656,203	\$9,921,693
TUCO 2 (Crawfish Draw) Substation Upgrade 345/230kV Tap Border-TUCO approximately 2 miles from TUCO and build TUCO 2 (Crawfish Draw) 345kV substation and add 345/230/13.2kV transformer and tie on TUCO-Swisher 230kV.	Current Study	\$1,051,299	\$24,764,205
Agave Hill 115kV Reactive Power Support Build Agave Hill 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
China Draw 115kV Reactive Power Support Build China Draw SVC (+200Mvar/-50Mvar) per 2015 ITPNT.	Previously Allocated		\$17,142,313
Livingston Ridge - Sage Brush - Lagarto - Cardinal 115kV CKT 1 Per HPILs SPP-NTC-200283 (Total Project E&C Cost Shown)	Previously Allocated		\$37,316,546
Ochoa 115kV Reactive Power Support Build Ochoa 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$1,619,280
Potash Junction 230/115 kV Ckt 1 Per HPILs SPP-NTC-200282 (Total Project E&C Cost Shown)	Previously Allocated		\$3,508,346
Potash Junction 230kV Reactive Power Support Build Potash Junction 100Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$6,465,875
Road Runner 115kV Reactive Power Support Build Road Runner SVC (+200Mvar/-50Mvar) and 28.8Mvar Capacitor bank per 2015 ITPNT.	Previously Allocated		\$18,761,593
	Current Study Total	\$22,021,847	
TOTAL CURRENT STUDY COSTS:		\$294,764,822	

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

F: Cost Allocation per Proposed Study Network Upgrade

Important Note:

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

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

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

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

Appendix F. Cost Allocation by Upgrade

Arnold - Ransom 115kV CKT 1		\$268,321
Replace terminal equipment and relay panels at Ransom Substation		
	GEN-2014-041	\$268,321
	Total Allocated Costs	\$268,321
ASGI-2014-002 Interconnection Costs		\$6,403,000
See One-Line Diagram.		
	ASGI-2014-002	\$6,403,000
	Total Allocated Costs	\$6,403,000
ASGI-2014-005 Interconnection Costs		\$2,759,383
See One-Line Diagram.		
	ASGI-2014-005	\$2,759,383
	Total Allocated Costs	\$2,759,383
ASGI-2014-008 Interconnection Costs		\$2,799,543
See One-Line Diagram.		
	ASGI-2014-008	\$2,799,543
	Total Allocated Costs	\$2,799,543
ASGI-2014-009 Interconnection Costs		\$3,293,228
See One-Line Diagram.		
	ASGI-2014-009	\$3,293,228
	Total Allocated Costs	\$3,293,228
ASGI-2014-010 Interconnection Costs		\$2,708,891
See One-Line Diagram.		
	ASGI-2014-010	\$2,708,891
	Total Allocated Costs	\$2,708,891
ASGI-2014-012 Interconnection Costs		\$2,672,441
See One-Line Diagram.		
	ASGI-2014-012	\$2,672,441
	Total Allocated Costs	\$2,672,441

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

ASGI-2014-014 Interconnection Costs		\$134,164
See One-Line Diagram.		
	ASGI-2014-014	\$134,164
	Total Allocated Costs	\$134,164
Beaver County 345kV Reactive Power Support		\$21,823,556
Install 75Mvar SVC at Beaver County Substation.		
	GEN-2014-026	\$21,823,556
	Total Allocated Costs	\$21,823,556
Carlisle 230/115/13kV Transformer CKT 1		\$4,192,913
Replace existing Carlisle 230/115/13kV Transformer circuit #1 with 250 MVA.		
	GEN-2014-053	\$1,677,165
	GEN-2014-054	\$2,515,748
	Total Allocated Costs	\$4,192,913
GEN-2013-010 Interconnection Costs		\$11,021,522
See One-Line Diagram.		
	GEN-2013-010	\$11,021,522
	Total Allocated Costs	\$11,021,522
GEN-2013-027 Interconnection Costs		\$6,004,592
See One-Line Diagram.		
	GEN-2013-027	\$6,004,592
	Total Allocated Costs	\$6,004,592
GEN-2014-020 Interconnection Costs		\$7,664,803
See One-Line Diagram.		
	GEN-2014-020	\$7,664,803
	Total Allocated Costs	\$7,664,803
GEN-2014-021 Interconnection Costs		\$18,384,455
See One-Line Diagram.		
	GEN-2014-021	\$18,384,455
	Total Allocated Costs	\$18,384,455
GEN-2014-025 Interconnection Costs		\$184,473
See One-Line Diagram.		
	GEN-2014-025	\$184,473
	Total Allocated Costs	\$184,473

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

GEN-2014-026 Interconnection Costs		\$0
See One-Line Diagram.		
	GEN-2014-026	\$0
	Total Allocated Costs	\$0
GEN-2014-028 Interconnection Costs		\$0
See One-Line Diagram.		
	GEN-2014-028	\$0
	Total Allocated Costs	\$0
GEN-2014-031 Interconnection Costs		\$100,000
See One-Line Diagram.		
	GEN-2014-031	\$100,000
	Total Allocated Costs	\$100,000
GEN-2014-032 Interconnection Costs		\$0
See One-Line Diagram.		
	GEN-2014-032	\$0
	Total Allocated Costs	\$0
GEN-2014-033 Interconnection Costs		\$2,090,343
See One-Line Diagram.		
	GEN-2014-033	\$2,090,343
	Total Allocated Costs	\$2,090,343
GEN-2014-034 Interconnection Costs		\$1,257,430
See One-Line Diagram.		
	GEN-2014-034	\$1,257,430
	Total Allocated Costs	\$1,257,430
GEN-2014-035 Interconnection Costs		\$0
See One-Line Diagram.		
	GEN-2014-035	\$0
	Total Allocated Costs	\$0
GEN-2014-039 Interconnection Costs		\$4,900,000
See One-Line Diagram.		
	GEN-2014-039	\$4,900,000
	Total Allocated Costs	\$4,900,000

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

GEN-2014-040 Interconnection Costs		\$1,510,017
See One-Line Diagram.		
	GEN-2014-040	\$1,510,017
	Total Allocated Costs	\$1,510,017
GEN-2014-041 Interconnection Costs		\$4,832,230
See One-Line Diagram.		
	GEN-2014-041	\$4,832,230
	Total Allocated Costs	\$4,832,230
GEN-2014-047 Interconnection Costs		\$3,164,380
See One-Line Diagram.		
	GEN-2014-047	\$3,164,380
	Total Allocated Costs	\$3,164,380
GEN-2014-049 Interconnection Costs		\$3,936,574
See One-Line Diagram.		
	GEN-2014-049	\$3,936,574
	Total Allocated Costs	\$3,936,574
GEN-2014-051 Interconnection Costs		\$18,802,941
See One-Line Diagram.		
	GEN-2014-051	\$18,802,941
	Total Allocated Costs	\$18,802,941
GEN-2014-053 Interconnection Costs		\$2,740,324
See One-Line Diagram.		
	GEN-2014-053	\$2,740,324
	Total Allocated Costs	\$2,740,324
GEN-2014-054 Interconnection Costs		\$0
See One-Line Diagram.		
	GEN-2014-054	\$0
	Total Allocated Costs	\$0
GEN-2014-056 Interconnection Costs		\$40,000
See One-Line Diagram.		
	GEN-2014-056	\$40,000
	Total Allocated Costs	\$40,000

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

GEN-2014-057 Interconnection Costs		\$20,120,000
See One-Line Diagram.		
	GEN-2014-057	\$20,120,000
	Total Allocated Costs	\$20,120,000
GEN-2014-064 Interconnection Costs		\$3,217,651
See One-Line Diagram.		
	GEN-2014-064	\$3,217,651
	Total Allocated Costs	\$3,217,651
GEN-2014-066 Interconnection Costs		\$0
See One-Line Diagram.		
	GEN-2014-066	\$0
	Total Allocated Costs	\$0
Milan Tap - Clearwater 138kV CKT 1		\$12,459,248
Rebuild approximately 5.7 miles (MKEC) and 6.1 miles (WERE) of 138kV transmission.		
	GEN-2014-049	\$12,459,248
	Total Allocated Costs	\$12,459,248
Norton - Pleasant Hill 230kV CKT 1		\$49,592,501
Build approximately 60 miles of new 230kV line. Modify Norton substation to add 230kV bus and autotransformer.		
	ASGI-2014-002	\$30,901,860
	GEN-2014-066	\$18,690,641
	Total Allocated Costs	\$49,592,501

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

Oklaunion 345kV Reactive Power Support**\$40,000,000**

Install (2) 150MVA SVCs at Oklaunion.

ASGI-2014-002	\$2,684,525
ASGI-2014-005	\$562,023
ASGI-2014-008	\$560,631
ASGI-2014-009	\$563,458
ASGI-2014-010	\$564,045
ASGI-2014-012	\$565,372
GEN-2013-027	\$8,278,674
GEN-2014-033	\$3,874,036
GEN-2014-034	\$3,874,036
GEN-2014-035	\$1,660,301
GEN-2014-047	\$2,205,646
GEN-2014-053	\$5,193,419
GEN-2014-054	\$7,790,128
GEN-2014-066	\$1,623,704

Total Allocated Costs	\$40,000,000
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Tolk - Plant X 230kV CKT 1 & 2**\$9,921,693**

Rebuild circuit 1 and 2 between Tolk - Plant X 230kV to 1200 amps each.

ASGI-2014-002	\$1,084,922
ASGI-2014-005	\$151,224
ASGI-2014-008	\$158,605
ASGI-2014-009	\$143,625
ASGI-2014-010	\$140,564
ASGI-2014-012	\$133,635
GEN-2013-027	\$3,379,101
GEN-2014-033	\$1,311,591
GEN-2014-034	\$1,311,591
GEN-2014-035	\$562,110
GEN-2014-047	\$888,523
GEN-2014-066	\$656,203

Total Allocated Costs	\$9,921,693
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* Withdrawal of higher queued projects will cause a restudy and may result in higher costs

TUCO 2 (Crawfish Draw) Substation Upgrade 345/230kV**\$24,764,205**

Tap Border-TUCO approximately 2 miles from TUCO and build TUCO 2 (Crawfish Draw) 345kV substation and add 345/230/13.2kV transformer and tie on

ASGI-2014-002	\$1,738,147
ASGI-2014-005	\$356,374
ASGI-2014-008	\$356,062
ASGI-2014-009	\$356,661
ASGI-2014-010	\$356,791
ASGI-2014-012	\$357,078
GEN-2013-027	\$5,322,161
GEN-2014-033	\$2,479,297
GEN-2014-034	\$2,479,297
GEN-2014-035	\$1,062,556
GEN-2014-047	\$1,418,200
GEN-2014-053	\$2,972,113
GEN-2014-054	\$4,458,169
GEN-2014-066	\$1,051,299
<hr/>	
Total Allocated Costs	\$24,764,205

TUCO Interchange - TUCO 2 230kV CKT 1**\$1,000,000**

Replace wave trap at TUCO

ASGI-2014-005	\$12,738
ASGI-2014-008	\$12,532
ASGI-2014-009	\$12,951
ASGI-2014-010	\$13,038
ASGI-2014-012	\$13,231
GEN-2013-027	\$166,524
GEN-2014-033	\$80,823
GEN-2014-034	\$80,823
GEN-2014-035	\$34,638
GEN-2014-047	\$44,265
GEN-2014-053	\$211,375
GEN-2014-054	\$317,062
<hr/>	
Total Allocated Costs	\$1,000,000

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

G: Power Flow Analysis (Constraints Used For Mitigation)

See next page.

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	104	BASE CASE
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	152	BASE CASE
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03942	102	BASE CASE

H: Power Flow Analysis (Other Constraints Not Requiring

Transmission Reinforcement) Available upon request. Contact SPP Generation Interconnection

Studies for details.

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	15G	G13_010	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.03743	102	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G13_010	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.03743	101	SPSCONT-05B
FDNS	03ALL	0	15G	G13_010	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.03743	100	SPSCONT-04
FDNS	03ALL	0	15G	G13_010	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.03743	95	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03743	182	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03743	179	SPSCONT-05B
FDNS	03ALL	0	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03743	178	SPSCONT-04
FDNS	03ALL	0	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03743	169	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03743	167	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03743	164	SPSCONT-05AX
FDNS	03ALL	0	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.02956	157	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	03ALL	0	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.02956	155	DEWEY - IODINE 138KV CKT 1
FDNS	03ALL	0	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03061	143	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0343	139	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03061	138	VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04163	135	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04163	132	SPSCONT-05B
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04163	131	SPSCONT-04
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0324	124	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04163	122	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	20WP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.0415	121	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04163	120	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	20WP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.0415	119	SPSCONT-05B
FDNS	03ALL	0	20WP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.0415	118	SPSCONT-04
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04163	117	SPSCONT-05AX
FDNS	03ALL	0	15WP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.04316	117	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15WP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.04316	114	SPSCONT-04
FDNS	03ALL	0	15WP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.04316	114	SPSCONT-05B
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03411	113	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03411	111	DEWEY - IODINE 138KV CKT 1
FDNS	03ALL	0	20SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0406	111	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	20WP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.0415	110	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	20SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0406	108	SPSCONT-05B
FDNS	03ALL	0	20WP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.0415	108	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	20SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0406	107	SPSCONT-04
FDNS	03ALL	0	20SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03193	107	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	15WP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.04316	106	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	20WP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.0415	106	SPSCONT-05AX
FDNS	03ALL	0	20WP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.03287	106	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03274	104	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03274	104	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.02997	104	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15WP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.04316	104	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0324	102	WOODWARD - WOODWARD 69KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03003	102	DBL-THIS-WIC
FDNS	03ALL	0	15WP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.04316	102	SPSCONT-05AX
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03037	101	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03037	101	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0347	100	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	03ALL	0	15WP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.03386	100	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	20WP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.03452	100	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0386	98	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03081	98	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03037	98	SPP-SWPS-02A
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.02973	98	SPP-SWPS-03
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.02955	98	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	03ALL	0	20WP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.03452	98	DEWEY - IODINE 138KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0313	97	BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	20SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0406	97	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0347	96	VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03081	96	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03081	96	SPP-SWPS-04
FDNS	03ALL	0	20SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0406	96	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	15SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0313	95	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	15WP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.03024	95	GEN520998 1-MORLND3
FDNS	03ALL	0	20SP	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03363	95	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	03ALL	0	15G	G13_010	TO->FROM	HAYS PLANT - SOUTH HAYS 115KV CKT 1	83	99	0.06788	150	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	15SP	G13_010	FROM->TO	HAYS PLANT - VINE STREET 115KV CKT 1	80	88	0.06818	149	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	15G	G13_010	FROM->TO	HAYS PLANT - VINE STREET 115KV CKT 1	80	88	0.06788	147	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	15WP	G13_010	FROM->TO	HAYS PLANT - VINE STREET 115KV CKT 1	80	88	0.06822	139	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	20WP	G13_010	FROM->TO	HAYS PLANT - VINE STREET 115KV CKT 1	80	99	0.0676	131	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	20SP	G13_010	FROM->TO	HAYS PLANT - VINE STREET 115KV CKT 1	80	99	0.06784	128	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	HAYS PLANT - VINE STREET 115KV CKT 1	80	99	0.06754	125	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1	560	644	0.03545	101	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1	560	644	0.03545	100	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2	560	644	0.03617	104	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2	560	644	0.03617	102	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	15G	G13_010	TO->FROM	KNOLL - N HAYS3 115.00 115KV CKT 1	80	88	0.06788	133	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	20WP	G13_010	TO->FROM	KNOLL - N HAYS3 115.00 115KV CKT 1	80	88	0.0676	131	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	KNOLL - N HAYS3 115.00 115KV CKT 1	80	88	0.06818	127	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	15WP	G13_010	TO->FROM	KNOLL - N HAYS3 115.00 115KV CKT 1	80	88	0.06822	123	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	20SP	G13_010	TO->FROM	KNOLL - N HAYS3 115.00 115KV CKT 1	80	88	0.06784	121	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	TO->FROM	KNOLL - N HAYS3 115.00 115KV CKT 1	80	88	0.06754	116	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.14102	123	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	15WP	G13_010	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.14052	119	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	20SP	G13_010	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.1406	117	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	20WP	G13_010	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.14049	117	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	15G	G13_010	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.13966	113	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.1391	106	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.08686	102	POST ROCK (POSTROCK T1) 345/230/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	20SP	G13_010	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.08602	98	POST ROCK (POSTROCK T1) 345/230/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15WP	G13_010	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.08591	96	POST ROCK (POSTROCK T1) 345/230/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15G	G13_010	TO->FROM	N HAYS3 115.00 - VINE STREET 115KV CKT 1	83	99	0.06788	123	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	20WP	G13_010	TO->FROM	N HAYS3 115.00 - VINE STREET 115KV CKT 1	83	99	0.0676	122	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	15SP	G13_010	TO->FROM	N HAYS3 115.00 - VINE STREET 115KV CKT 1	83	99	0.06818	120	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	15WP	G13_010	TO->FROM	N HAYS3 115.00 - VINE STREET 115KV CKT 1	83	99	0.06822	115	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	20SP	G13_010	TO->FROM	N HAYS3 115.00 - VINE STREET 115KV CKT 1	83	99	0.06784	115	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	TO->FROM	N HAYS3 115.00 - VINE STREET 115KV CKT 1	83	99	0.06754	112	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNSLock-Blown up	03ALL	0	15G	G13_010	-	Non-Converged Contingency	-	-	0.32761	-	DBL-CLRK-THI
FDNSLock-Blown up	03ALL	0	15G	G13_010	-	Non-Converged Contingency	-	-	0.19487	-	DBL-THIS-WIC
FDNSLock-Blown up	03ALL	0	15SP	G13_010	-	Non-Converged Contingency	-	-	0.32674	-	DBL-CLRK-THI
FDNSLock-Blown up	03ALL	0	15WP	G13_010	-	Non-Converged Contingency	-	-	0.32486	-	DBL-CLRK-THI
FDNSLock-Blown up	03ALL	0	20SP	G13_010	-	Non-Converged Contingency	-	-	0.3237	-	DBL-CLRK-THI
FDNSLock-Blown up	03ALL	0	20WP	G13_010	-	Non-Converged Contingency	-	-	0.32098	-	DBL-CLRK-THI
FDNSLock-Blown up	03ALL	0	25SP	G13_010	-	Non-Converged Contingency	-	-	0.32554	-	DBL-CLRK-THI
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	113	GEN525561 1-TOLK GEN #1 24 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.05215	112	BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	112	GEN525562 1-TOLK GEN #2 24 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.05218	111	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.05218	111	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.05215	110	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.05215	109	BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	109	GEN525561 1-TOLK GEN #1 24 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	109	GEN525562 1-TOLK GEN #2 24 KV

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04376	109	SPP-SWPS-01
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04361	109	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04361	109	SPSCONT-01
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.05218	108	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.05218	108	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.05215	107	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	107	GEN523971 1-HARRINGTON GEN #1 24 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	107	GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	107	GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04376	106	SPP-SWPS-01
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04361	106	SPSCONT-01
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04361	105	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	104	GEN523971 1-HARRINGTON GEN #1 24 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	104	GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	104	GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04193	104	SPP-SWPS-02
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04193	104	STATELINE INTERCHANGE - STLN-DEMAR6 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04193	104	STLN-DEMAR6 - SWEETWATER 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	103	GEN524023 1-NICHOLS GEN #3 22 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	102	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04193	102	SPP-SWPS-02
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04193	102	STATELINE INTERCHANGE - STLN-DEMAR6 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04193	102	STLN-DEMAR6 - SWEETWATER 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	101	GEN526331 1-JONES GEN #1 22 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	101	GEN526332 1-JONES GEN #2 21 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	101	GEN526495 1-G14_012_2 18.000
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04652	100	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	100	GEN524023 1-NICHOLS GEN #3 22 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	100	GEN525494 1-PLANT X GEN #4 20 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	100	GEN525844 1-ELK_1 118.000
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	100	GEN526333 1-JONES GEN #3 21 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	100	GEN526334 1-JONES_4 116.500

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	100	GEN527166 1-MUSTANG_6 118.000
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	100	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	100	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	100	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04193	100	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04665	99	Hansford County Switch Station - SPEARMAN INTERCHANGE 115KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04665	99	HITCHLAND INTERCHANGE - Hansford County Switch Station 115KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04609	99	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	99	GEN527161 1-MUSTANG GEN #1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	99	GEN527162 1-MUSTANG GEN #2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	99	GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	99	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	99	GEN562495 1-G14_012_2 18.000
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04361	99	DBL-THIS-WIC
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04953	98	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04953	98	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04652	98	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.0461	98	DWS FRISCO - HITCHLAND INTERCHANGE 115KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.0461	98	DWS FRISCO - SHERMAN COUNTY TAP 115KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	98	GEN524021 1-NICHOLS GEN #1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	98	GEN525844 1-ELK_1 118.000
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	98	GEN526331 1-JONES GEN #1 22 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	98	GEN526332 1-JONES GEN #2 21 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	98	GEN526333 1-JONES GEN #3 21 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	98	GEN526334 1-JONES_4 116.500
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	98	GEN527164 1-MUSTANG GEN #4 22 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	98	GEN527165 1-Mustang Gen #5
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	98	GEN527166 1-MUSTANG_6 118.000
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04665	97	Hansford County Switch Station - SPEARMAN INTERCHANGE 115KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04609	97	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04593	97	GRACEMONT - MINCO 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04538	97	TUCO INTERCHANGE - YOAKUM_345 345.00 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04521	97	HITCHLAND INTERCHANGE - OCHILTREE 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04521	97	OCHILTREE (H TP80219401) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	97	GEN523461 1-BLACKHAWK GEN #1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	97	GEN523462 1-BLACKHAWK GEN #2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	97	GEN524022 1-NICHOLS GEN #2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	97	GEN525492 1-PLANT X GEN #2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	97	GEN525493 1-PLANT X GEN #3
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	97	GEN525494 1-PLANT X GEN #4 20 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	97	GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	97	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	97	GEN527883 1-CUNNINGHAM GEN #3 22 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	97	GEN527884 1-CUNNINGHAM GEN #4 22 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	97	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	97	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	97	GEN528361 1-MADDOX GEN #1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04361	97	DBL-THIS-WIC
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04356	97	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04356	97	CHISHOLM7 345.00 () 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04343	97	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04193	97	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04953	96	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04953	96	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04665	96	HITCHLAND INTERCHANGE - Hansford County Switch Station 115KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.0461	96	DWS FRISCO - HITCHLAND INTERCHANGE 115KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.0461	96	DWS FRISCO - SHERMAN COUNTY TAP 115KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04593	96	CIMARRON - MINCO 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04518	96	HITCHLAND INTERCHANGE (H TP80148301) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04518	96	HITCHLAND INTERCHANGE (UPDATE LATER) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	96	GEN527161 1-MUSTANG GEN #1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	96	GEN527162 1-MUSTANG GEN #2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	96	GEN527164 1-MUSTANG GEN #4 22 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	96	GEN527165 1-Mustang Gen #5

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	96	GEN527881 1-CUNNINGHAM GEN #1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	96	GEN528362 1-MADDOX GEN #2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	96	GEN560105 1-G08-22 0.6900
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	96	GEN562550 1-G14_040_3 0.6900
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.05194	95	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04664	95	CLARKCOUNTY7345.00 - THISTLE7 345.00 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04664	95	CLARKCOUNTY7345.00 - THISTLE7 345.00 345KV CKT 2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04623	95	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04623	95	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04593	95	GRACEMONT - MINCO 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04574	95	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04574	95	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04551	95	OCHILTREE - TEXAS FARMS SUB 115KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04551	95	SPEARMAN SUB - TEXAS FARMS SUB 115KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04551	95	SPP-SWPS-V92
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04539	95	MINGO - SETAB 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04538	95	TUCO INTERCHANGE - YOAKUM_345 345.00 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04522	95	MOORELAND - NINE MILE 138KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04522	95	MOREWOOD SW - NINE MILE 138KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04521	95	HITCHLAND INTERCHANGE - OCHILTREE 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04521	95	OCHILTREE (H TP80219401) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04514	95	HOLCOMB - SETAB 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04514	95	RB-SPURLOCK3115.00 - SHERMAN COUNTY TAP 115KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04506	95	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04495	95	SHERMAN COUNTY SUB - SHERMAN COUNTY TAP 115KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04482	95	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04478	95	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04477	95	MOORE COUNTY INTERCHANGE (ENRCO 136402) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04475	95	HOBBS - YOAKUM_345 345.00 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN335831 1-RIVERBEND UNIT#1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN336153 1-WATERFORD UNIT#3
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN336821 1-GRAND GULF UNIT

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN337911 1-ARKANSAS NUCLEAR ONE UNIT #2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN501801 1-DOLET HILLS UNIT1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN522814 1-LUBBOCK POWER & LIGHT-MACKENZIE GEN
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN522866 1-LUBBOCK POWER & LIGHT-HOLLY GEN
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN523461 1-BLACKHAWK GEN #1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN523462 1-BLACKHAWK GEN #2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN524021 1-NICHOLS GEN #1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN524022 1-NICHOLS GEN #2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN524285 1-WILDORADO WIND GEN
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN525491 1-PLANT X GEN #1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN525492 1-PLANT X GEN #2
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN525493 1-PLANT X GEN #3
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN527883 1-CUNNINGHAM GEN #3 22 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN527884 1-CUNNINGHAM GEN #4 22 KV
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN528361 1-MADDOX GEN #1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN562269 1-G12-020-1 0.6900
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN562270 1-G12-020-2 0.6900
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04465	95	GEN562483 1-G13_027_3 0.6900
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04451	95	Graves Sub - STATELINE INTERCHANGE 115KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04451	95	STATELINE INTERCHANGE (H TP80154301) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04356	95	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04356	95	CHISHOLM7 345.00 () 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04285	95	SPP-SWPS-03
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03707	95	G13-010T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03625	95	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	0	15SP	G13_010	FROM->TO	SOUTH HAYS (S HAYS T1) 230/115/12.47KV TRANSFORMER CKT 1	166	166	0.06818	104	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	15SP	G13_010	FROM->TO	SOUTH HAYS (S HAYS T1) 230/115/12.47KV TRANSFORMER CKT 1	166	166	0.06818	104	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	20SP	G13_010	FROM->TO	SOUTH HAYS (S HAYS T1) 230/115/12.47KV TRANSFORMER CKT 1	166	166	0.06784	102	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	20SP	G13_010	FROM->TO	SOUTH HAYS (S HAYS T1) 230/115/12.47KV TRANSFORMER CKT 1	166	166	0.06784	102	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	SOUTH HAYS (S HAYS T1) 230/115/12.47KV TRANSFORMER CKT 1	166	166	0.06754	102	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	SOUTH HAYS (S HAYS T1) 230/115/12.47KV TRANSFORMER CKT 1	166	166	0.06754	102	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	20WP	G13_010	FROM->TO	SOUTH HAYS (S HAYS T1) 230/115/12.47KV TRANSFORMER CKT 1	166	166	0.0676	98	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	20WP	G13_010	FROM->TO	SOUTH HAYS (S HAYS T1) 230/115/12.47KV TRANSFORMER CKT 1	166	166	0.0676	97	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	15G	G13_010	FROM->TO	SOUTH HAYS (S HAYS T1) 230/115/12.47KV TRANSFORMER CKT 1	166	166	0.06788	95	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	15G	G13_010	FROM->TO	SOUTH HAYS (S HAYS T1) 230/115/12.47KV TRANSFORMER CKT 1	166	166	0.06788	95	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	0	25SP	G13_010	FROM->TO	SPPSPSTIES	1011	1011	0.10696	117	BASE CASE
FDNS	03ALL	2	15G	G13_010	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.04161	117	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	2	15G	G13_010	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.04161	115	SPSCONT-05B
FDNS	03ALL	2	15G	G13_010	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.04161	114	SPSCONT-04

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	2	15G	G13_010	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.04161	109	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	2	15G	G13_010	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.04161	108	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	2	15G	G13_010	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.04161	106	SPSCONT-05AX
FDNS	03ALL	2	15G	G13_010	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.03047	103	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	2	15G	G13_010	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.03263	100	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	03ALL	2	15G	G13_010	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.03263	99	DEWEY - IODINE 138KV CKT 1
FDNS	03ALL	2	15G	G13_010	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.03177	96	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	2	15G	G13_010	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.03177	96	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	2	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	287	287	0.04161	111	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	2	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	287	287	0.04161	109	SPSCONT-05B
FDNS	03ALL	2	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	287	287	0.04161	108	SPSCONT-04
FDNS	03ALL	2	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	287	287	0.04161	103	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	2	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	287	287	0.04161	102	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	2	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	287	287	0.04161	100	SPSCONT-05AX
FDNS	03ALL	2	15G	G13_010	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	287	287	0.03047	97	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	2	15G	G13_010	TO->FROM	HAYS PLANT - SOUTH HAYS 115KV CKT 1	83	99	0.06785	150	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	2	15SP	G13_010	FROM->TO	HAYS PLANT - VINE STREET 115KV CKT 1	80	88	0.06816	149	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	2	15G	G13_010	FROM->TO	HAYS PLANT - VINE STREET 115KV CKT 1	80	88	0.06785	147	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	2	15G	G13_010	TO->FROM	KNOLL - N HAYS3 115.00 115KV CKT 1	80	88	0.06785	133	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	2	15SP	G13_010	TO->FROM	KNOLL - N HAYS3 115.00 115KV CKT 1	80	88	0.06816	126	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	2	15SP	G13_010	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.1409	122	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	2	15G	G13_010	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.13954	113	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	2	15SP	G13_010	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.08678	102	POST ROCK (POSTROCK T1) 345/230/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	2	15G	G13_010	TO->FROM	N HAYS3 115.00 - VINE STREET 115KV CKT 1	83	99	0.06785	123	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	2	15SP	G13_010	TO->FROM	N HAYS3 115.00 - VINE STREET 115KV CKT 1	83	99	0.06816	120	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNSLock-Blown up	03ALL	2	15G	G13_010	-	Non-Converged Contingency	-	-	0.32772	-	DBL-CLRK-THI
FDNSLock-Blown up	03ALL	2	15SP	G13_010	-	Non-Converged Contingency	-	-	0.32688	-	DBL-CLRK-THI
FDNS	03ALL	2	15SP	G13_010	FROM->TO	SOUTH HAYS (S HAYS T1) 230/115/12.47KV TRANSFORMER CKT 1	166	166	0.06816	104	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	2	15SP	G13_010	FROM->TO	SOUTH HAYS (S HAYS T1) 230/115/12.47KV TRANSFORMER CKT 1	166	166	0.06816	104	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	2	15G	G13_010	FROM->TO	SOUTH HAYS (S HAYS T1) 230/115/12.47KV TRANSFORMER CKT 1	166	166	0.06785	95	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	2	15G	G13_010	FROM->TO	SOUTH HAYS (S HAYS T1) 230/115/12.47KV TRANSFORMER CKT 1	166	166	0.06785	95	KNOLL 230 - POSTROCK6 230.00 230KV CKT 1
FDNS	03ALL	2	15G	G13_010	TO->FROM	WOODWARD - WOODWARD EHV 138KV CKT 1	287	287	0.03134	98	WOODWARD - WOODWARD EHV 138KV CKT 2
FDNS	03ALL	2	15G	G13_010	TO->FROM	WOODWARD - WOODWARD EHV 138KV CKT 1	287	287	0.03363	97	SPSCONT-05B
FDNS	03ALL	0	15G	G14_049	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.04405	95	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.04405	95	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.04405	134	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.04405	134	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03451	119	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03451	118	SPSCONT-04
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03451	118	SPSCONT-05B
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	116	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03451	115	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03136	115	45TH ST4 138.00 - COWSKIN 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03136	115	45TH ST4 138.00 - EVANS ENERGY CENTER SOUTH 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03451	114	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03451	114	SPSCONT-05AX
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03255	114	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03592	113	BENTON - WICHITA 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03148	113	EVANS ENERGY CENTER SOUTH - LAKERIDGE 138KV CKT 1
FDNS	03ALL	0	20WP	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.0496	113	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	20WP	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.0496	113	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03255	112	G13-010T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03178	112	WICHITA (WICH TX-12) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03148	112	HOOVER NORTH - LAKERIDGE 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03148	112	SPP-WR-416
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03144	111	WR-B3-14
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03163	110	WICHITA (WICH TX-11) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03136	110	CENTENNIAL - COWSKIN 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03212	109	AXTELL - POST ROCK 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03139	109	CIRCLE - MULLERGREN 230KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03136	109	CENTENNIAL - WACO 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03136	109	WR-B3-7
FDNS	03ALL	0	15WP	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.04405	109	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	15WP	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.04405	109	THISTLE7 345.00 - WICHITA 345KV CKT 2

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03244	108	ALEXANDER - SAWYER 3 115.00 115KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03244	108	BARBER 3 115.00 - SAWYER 3 115.00 115KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03244	108	SPP-MKEC-12
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03185	108	BUCKNER7 345.00 - HOLCOMB 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03136	108	SPP-WR-415
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03131	108	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.0313	108	DBL-THIS-WIC
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03154	107	MINGO - SETAB 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03141	107	ST JOHN - ST JOHN 115KV CKT Z1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03133	107	MULLERGREN - SPEARVILLE 230KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03121	107	HOOVER NORTH - HOOVERS4 138.00 138KV CKT Z1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.0446	104	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.0446	104	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	101	GEN523971 1-HARRINGTON GEN #1 24 KV
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	101	GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	101	GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	101	GEN539670 4-JUDSON LARGE GENERATOR
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	101	GEN539807 1-G05-12-1 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	101	GEN560694 1-G11-008-2 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	101	GEN560695 1-G11-008-3 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	101	GEN659118 1-LARAMIE RIVER UNIT1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	100	GEN531503 1-CIMRRN 1 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	100	GEN539762 1-SSWIND 1 34.500
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	100	GEN560329 1-G10-45 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	100	GEN560432 1-G08-124 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	100	GEN560693 1-G11-008-1 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	100	GEN562035 1-G11_016_3 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	100	GEN562298 1-G12-024 0.6500
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03085	100	GILL ENERGY CENTER EAST - GILL ENERGY CENTER WEST 138KV CKT Z1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03154	99	BARBER 3 115.00 - MEDICINE LODGE 115KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	99	GEN525561 1-TOLK GEN #1 24 KV
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03191	98	CLARKCOUNTY7345.00 - THISTLE7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03191	98	CLARKCOUNTY7345.00 - THISTLE7 345.00 345KV CKT 2
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03154	98	DBL-THIS-WIC
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03154	98	DBL-THIS-WIC
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03154	98	SPP-MKEC-09B
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	98	GEN531447 1-HOLCOMB GENERATOR
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	98	GEN562565 1-G14_049_3 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03013	98	LACYGNE - WAVERLY7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03013	98	WAVERLY7 345.00 - WOLF CREEK 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03154	97	GREENSBURG - SSTARTP3 115.00 115KV CKT 1
FDNS	03ALL	0	20WP	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.0393	97	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	20WP	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.0393	97	SPSCONT-05B
FDNS	03ALL	0	20WP	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.0393	96	SPSCONT-04
FDNS	03ALL	0	15G	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03102	95	GEN539630 1-FLTRDG-WG1 0.6000
FDNS	03ALL	0	15WP	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03457	95	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15WP	G14_049	TO->FROM	CLEARWATER - MILAN TAP 138KV CKT 1	110	110	0.03457	95	SPSCONT-05B
FDNS	03ALL	0	15G	G14_049	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.05234	102	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.05234	101	SPSCONT-05B
FDNS	03ALL	0	15G	G14_049	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.05234	100	SPSCONT-04
FDNS	03ALL	0	15G	G14_049	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.05234	95	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.05234	182	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.05234	179	SPSCONT-05B
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.05234	178	SPSCONT-04
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.05234	169	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.05234	167	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.05234	164	SPSCONT-05AX
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03938	163	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04177	157	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04177	155	DEWEY - IODINE 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03938	149	WOODWARD - WOODWARD 69KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04424	147	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04424	147	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03618	145	DBL-CLRK-THI

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03568	145	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03619	144	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNSLock	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03568	144	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04202	143	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03401	143	RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0357	142	SPP-SWPS-03
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03844	141	BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03608	141	DEWEY - TALOGA 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03568	141	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03568	141	SPP-SWPS-02A
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03535	140	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03401	140	SAND RDG_138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03844	139	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03653	139	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	139	GEN514805 1-SOONER UNIT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04202	138	VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03676	138	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03653	138	G13-010T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	138	GEN520443 1-REDHIL-WTG1 12.000
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03676	137	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03676	137	SPP-SWPS-04
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03525	137	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03618	136	SPSCONT-01
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03616	136	AXTELL - POST ROCK 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0359	136	MINGO - SETAB 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03568	136	SPP-SWPS-02
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03568	136	STATELINE INTERCHANGE - STLN-DEMAR6 230KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03568	136	STLN-DEMAR6 - SWEETWATER 230KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	136	GEN514806 1-SOONER UNIT 2
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	136	GEN515787 1-OKLA WIND ENERGY CENTER
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03772	135	BENTON - WICHITA 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03676	135	SPSCONT-02
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03632	135	SPP-MKEC-08
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03613	135	MINGO - RED WILLOW 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03597	135	DBL-CLRK-THI
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03588	135	FARGO JCT - WOODWARD 69KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03568	135	HOLCOMB - SETAB 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03544	135	CIMARRON - NORTHWEST 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	135	GEN336821 1-GRAND GULF UNIT
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	135	GEN337911 1-ARKANSAS NUCLEAR ONE UNIT #2
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	135	GEN509403 1-PIRKEY GENERATION
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	135	GEN509404 1-WELSH #1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	135	GEN509406 1-WELSH #3
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	135	GEN509416 1-TURK GENERATION
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	135	GEN515223 1-MUSKOGEE 4G
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	135	GEN515225 1-MUSKOGEE 5G
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	135	GEN515226 1-MUSKOGEE 6G
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	135	GEN520922 1-SLEEPING BEAR
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03404	135	SANDY_CN_138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.05674	135	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03634	134	CARTER JCT - MOORELAND 69KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03634	134	CARTER JCT - WOODWARD 69KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03634	134	MOORELAND (MOORELND) 138/69/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03626	134	SPP-SWPS-01
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03618	134	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03597	134	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03597	134	DBL-CLRK-THI
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03597	134	DBL-THIS-WIC
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03597	134	SPP-MKEC-03A
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03597	134	SPP-MKEC-03B
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03597	134	SPP-MKEC-05
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03597	134	SPP-WR-418A
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03597	134	SPP-WR-418B

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03588	134	FARGO JCT - FT SUPPLY 69KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03535	134	MULLERGREN - SPEARVILLE 230KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03527	134	GRAND ISLAND - SWEETWATER 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03526	134	CIRCLE - MULLERGREN 230KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03524	134	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	134	GEN335831 1-RIVERBEND UNIT#1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	134	GEN336153 1-WATERFORD UNIT#3
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	134	GEN337910 1-ARKANSAS NUCLEAR ONE UNIT #1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	134	GEN501801 1-DOLET HILLS UNIT1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	134	GEN509394 1-FLINT CREEK
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	134	GEN509405 1-WELSH #2
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	134	GEN511839 1-NORTHEASTERN STATION #2
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	134	GEN511840 1-NORTHEASTERN STATION #3
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	134	GEN511841 1-NORTHEASTERN STATION #4
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	134	GEN520947 1-HUGO1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03479	134	ELK CITY - FALCON ROAD 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	132	NC1_GEN-NEBRASKA CITY 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.05674	132	SPSCONT-05B
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.05674	131	SPSCONT-04
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03549	130	CLARKCOUNTY7345.00 - THISTLE7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03549	130	CLARKCOUNTY7345.00 - THISTLE7 345.00 345KV CKT 2
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	130	GEN526332 1-JONES GEN #2 21 KV
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	130	GEN527161 1-MUSTANG GEN #1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	130	GEN527162 1-MUSTANG GEN #2
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	130	GEN560121 1-G08-47 0.5750
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	130	GEN562432 1-G13-030 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03419	130	BUCKNER7 345.00 - HOLCOMB 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03584	129	G11-14T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03584	129	G11-14T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 2
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN515365 1-CENT 21 0.7000
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN515393 1-OGEWND2G
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN523116 1-BUFF_DUNES110.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN523117 1-BUFF_DUNES210.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN527166 1-MUSTANG_6 118.000
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN539670 4-JUDSON LARGE GENERATOR
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN539807 1-G05-12-1 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN542902 1-GPW_G1 0.7000
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN560238 1-G10-09 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN560514 1-G04_014 0.7000
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN560694 1-G11-008-2 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN560695 1-G11-008-3 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN562023 1-G11_020_3 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN562026 1-G11_019_3 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN635023 3-WALTER SCOTT UNIT 3
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN635213 3-NEAL UNIT 3
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN635214 4-NEAL UNIT 4
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	129	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03471	129	KNOBHILL - NOEL_SW 138.00 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03471	129	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03438	129	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03438	129	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03416	129	CIMARRON - MATHWSN7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03416	129	MATHWSN7 345.00 - WOODRING 345KV CKT 1
FDNSLock	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03404	129	BYRON_138 138.00 - SANDY_CN 138138.00 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	128	GEN523971 1-HARRINGTON GEN #1 24 KV
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	128	GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	128	GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	128	GEN526331 1-JONES GEN #1 22 KV
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	128	GEN527903 1-HOBBS PLANT #3 (ST)

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	128	GEN531503 1-CIMRRN 1 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	128	GEN560329 1-G10-45 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	128	GEN560432 1-G08-124 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	128	GEN560693 1-G11-008-1 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	128	GEN562035 1-G11_016_3 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	128	GEN562298 1-G12-024 0.6500
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	128	GEN562565 1-G14_049_3 0.6900
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	128	GEN635024 4-WALTER SCOTT UNIT 4
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03419	128	WOODWARD - WOODWARD EHV 138KV CKT 2
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03416	128	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03404	128	BYRON_138 138.00 - C_CITY_138 138.00 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03404	128	C_CITY_138 138.00 - NOEL_SW 138.00 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03261	128	ELLIS 4 138.00 - MOREWOOD SW 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	127	GEN659118 1-LARAMIE RIVER UNIT1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03443	127	CLINTON JUNCTION - ELK CITY 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03358	127	EL RENO - ROMAN NOSE 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03358	127	ROMAN NOSE - SOUTHARD 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03358	126	DEWEY - SOUTHARD 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03244	126	DOVER SW - OKEENE 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	125	GEN531447 1-HOLCOMB GENERATOR
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03136	125	CLEOPLT4 138.00 - MEN TAP 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03136	125	IMO TAP - MEN TAP 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03502	124	GEN525561 1-TOLK GEN #1 24 KV
FDNSLock	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03136	124	CLEO CORNER - CLEOPLT4 138.00 138KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0442	124	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.05674	122	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03416	121	FINNEY SWITCHING STATION - Hitchland Interchange 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03416	121	SPP-SWPS-05
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03182	121	WOODWARD DISTRICT EHV (WWDEHV) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03166	121	WOODWARD DISTRICT EHV (WWDEHV-T2) 345/138/13.8KV TRANSFORMER CKT 2
FDNS	03ALL	0	20WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.05687	121	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03144	120	CEDARDALE - OKEENE 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03131	120	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03131	120	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.05674	120	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03144	119	CEDARDALE - MOORELAND 138KV CKT 1
FDNS	03ALL	0	20WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.05687	119	SPSCONT-05B
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.02989	118	MOREWOOD SW - NINE MILE 138KV CKT 1
FDNS	03ALL	0	20WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.05687	118	SPSCONT-04
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03278	117	MOORELAND - NOEL_SW 138.00 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03123	117	WOODWARD - WOODWARD EHV 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.02989	117	MOORELAND - NINE MILE 138KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.05674	117	SPSCONT-05AX
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03942	117	GEN520998 1-MORLND3
FDNS	03ALL	0	15WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.05828	117	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03261	116	ELK CITY - RED HILLS WIND 138KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03942	115	GEN520997 1-MORLND2
FDNS	03ALL	0	15WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.05828	114	SPSCONT-04
FDNS	03ALL	0	15WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.05828	114	SPSCONT-05B
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0465	113	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0465	111	DEWEY - IODINE 138KV CKT 1
FDNS	03ALL	0	20SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.05597	111	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	20WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.05687	110	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	20SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.05597	108	SPSCONT-05B
FDNS	03ALL	0	20WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.05687	108	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	20SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.05597	107	SPSCONT-04
FDNS	03ALL	0	20SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04392	107	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	15WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.05828	106	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	20WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.05687	106	SPSCONT-05AX
FDNS	03ALL	0	20WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.04487	106	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04866	104	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04866	104	THISTLE7 345.00 - WICHITA 345KV CKT 2

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04058	104	RENFROW7 345.00 (BANK 1) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.05828	104	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0442	102	WOODWARD - WOODWARD 69KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04083	102	DBL-THIS-WIC
FDNS	03ALL	0	15WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.05828	102	SPSCONT-05AX
FDNS	03ALL	0	20SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03918	102	GEN520998 1-MORLND3
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04053	101	ELK CITY 230KV - SWEETWATER 230KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04053	101	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04626	100	RENFROW7 345.00 - VIOLA 7 345.00 345KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03874	100	RENFROW4 138.00 - SAND RDG_138138.00 138KV CKT 1
FDNS	03ALL	0	15WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.04566	100	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	20SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03918	100	GEN520997 1-MORLND2
FDNS	03ALL	0	20WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.04715	100	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	03ALL	0	20WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.04005	100	GEN520998 1-MORLND3
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03942	99	GEN520996 1-MORLND1
FDNS	03ALL	0	20WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.04005	99	GEN520997 1-MORLND2
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04109	98	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04098	98	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04053	98	SPP-SWPS-02A
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04006	98	SPP-SWPS-03
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03993	98	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
FDNS	03ALL	0	20WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.04715	98	DEWEY - IODINE 138KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04274	97	BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04098	97	G13-010T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03969	97	WOODRING (WOODRNG2) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03874	97	SAND RDG_138138.00 - WAKITA_138 138.00 138KV CKT 1
FDNS	03ALL	0	20SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.05597	97	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04626	96	VIOLA 7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04109	96	Hitchland Interchange - POTTER COUNTY INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04109	96	SPP-SWPS-04
FDNS	03ALL	0	20SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.05597	96	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04274	95	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.03942	95	GEN514805 1-SOONER UNIT 1
FDNS	03ALL	0	15WP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	171	185	0.04075	95	GEN520998 1-MORLND3
FDNS	03ALL	0	20SP	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.04626	95	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.04405	111	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.04405	111	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	0	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.0446	107	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.0446	107	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	0	15WP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143	143	0.04405	104	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	15WP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	143	143	0.04405	104	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03451	100	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03451	100	SPSCONT-05B
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03451	99	SPSCONT-04
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03451	97	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03451	97	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03136	97	45TH ST4 138.00 - COWSKIN 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03136	97	45TH ST4 138.00 - EVANS ENERGY CENTER SOUTH 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03102	97	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03592	96	BENTON - WICHITA 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03451	96	SPSCONT-05AX
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03255	96	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03148	96	EVANS ENERGY CENTER SOUTH - LAKERIDGE 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03255	95	G13-010T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03178	95	WICHITA (WICH TX-12) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03148	95	HOOVER NORTH - LAKERIDGE 138KV CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03148	95	SPP-WR-416
FDNS	03ALL	0	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03199	95	EVANS ENERGY CENTER SOUTH - LAKERIDGE 138KV CKT 1
FDNS	03ALL	0	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03193	95	45TH ST4 138.00 - COWSKIN 138KV CKT 1
FDNS	03ALL	0	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03193	95	45TH ST4 138.00 - EVANS ENERGY CENTER SOUTH 138KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1	560	644	0.03023	101	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	25SP	G14_049	FROM->TO	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1	560	644	0.03023	100	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2	560	644	0.03085	104	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2	560	644	0.03085	102	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.04619	123	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	15WP	G14_049	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.04568	119	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	20SP	G14_049	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.04582	117	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	20WP	G14_049	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.04571	117	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	15SP	G14_049	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.04619	116	G13-010T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.04552	113	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	15WP	G14_049	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.04568	112	G13-010T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	0	20SP	G14_049	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.04582	111	G13-010T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	0	20WP	G14_049	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.04571	110	G13-010T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	0	15G	G14_049	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.04552	107	G13-010T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.04417	106	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.04417	99	G13-010T 345.00 - SPEARVILLE 345KV CKT 1
FDNSLock-Blown up	03ALL	0	15G	G14_049	-	Non-Converged Contingency	-	-	0.46793	-	DBL-THIS-WIC
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	113	GEN525561 1-TOLK GEN #1 24 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04837	112	BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	112	GEN525562 1-TOLK GEN #2 24 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04445	111	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04445	111	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04837	110	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04837	109	BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	109	GEN525561 1-TOLK GEN #1 24 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	109	GEN525562 1-TOLK GEN #2 24 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03689	109	SPP-SWPS-01
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03663	109	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03663	109	SPSCONT-01
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04445	108	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04445	108	HITCHLAND INTERCHANGE - MOORE COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04837	107	BORDER 7345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	107	GEN523971 1-HARRINGTON GEN #1 24 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	107	GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	107	GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03689	106	SPP-SWPS-01
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03663	106	SPSCONT-01
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03663	105	OKLAUNION - TUCO INTERCHANGE 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	104	GEN523971 1-HARRINGTON GEN #1 24 KV

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	104	GEN523972 1-HARRINGTON GEN #2 24 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	104	GEN523973 1-HARRINGTON GEN #3 24 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03612	104	SPP-SWPS-02
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03612	104	STATELINE INTERCHANGE - STLN-DEMAR6 230KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03612	104	STLN-DEMAR6 - SWEETWATER 230KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	103	GEN524023 1-NICHOLS GEN #3 22 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	102	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03612	102	SPP-SWPS-02
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03612	102	STATELINE INTERCHANGE - STLN-DEMAR6 230KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03612	102	STLN-DEMAR6 - SWEETWATER 230KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	101	GEN526331 1-JONES GEN #1 22 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	101	GEN526332 1-JONES GEN #2 21 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	101	GEN562495 1-G14_012_2 18.000
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03962	100	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	100	GEN524023 1-NICHOLS GEN #3 22 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	100	GEN525494 1-PLANT X GEN #4 20 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	100	GEN525844 1-ELK_1 118.000
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	100	GEN526333 1-JONES GEN #3 21 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	100	GEN526334 1-JONES_4 116.500
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	100	GEN527166 1-MUSTANG_6 118.000
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	100	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	100	GEN527901 1-HOBBS PLANT #1 (CT)
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	100	GEN527903 1-HOBBS PLANT #3 (ST)
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03612	100	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03973	99	Hansford County Switch Station - SPEARMAN INTERCHANGE 115KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03973	99	HITCHLAND INTERCHANGE - Hansford County Switch Station 115KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03926	99	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	99	GEN527161 1-MUSTANG GEN #1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	99	GEN527162 1-MUSTANG GEN #2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	99	GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	99	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	99	GEN562495 1-G14_012_2 18.000

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03663	99	DBL-THIS-WIC
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04218	98	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04218	98	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03962	98	Hitchland Interchange (SIEM 8743067) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03926	98	DWS FRISCO - HITCHLAND INTERCHANGE 115KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03926	98	DWS FRISCO - SHERMAN COUNTY TAP 115KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	98	GEN524021 1-NICHOLS GEN #1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	98	GEN525844 1-ELK_1 118.000
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	98	GEN526331 1-JONES GEN #1 22 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	98	GEN526332 1-JONES GEN #2 21 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	98	GEN526333 1-JONES GEN #3 21 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	98	GEN526334 1-JONES_4 116.500
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	98	GEN527164 1-MUSTANG GEN #4 22 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	98	GEN527165 1-Mustang Gen #5
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	98	GEN527166 1-MUSTANG_6 118.000
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03973	97	GRACEMONT - MINCO 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03973	97	Hansford County Switch Station - SPEARMAN INTERCHANGE 115KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03926	97	Hitchland Interchange (H TB80155502) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03885	97	TUCO INTERCHANGE - YOAKUM_345 345.00 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.0385	97	HITCHLAND INTERCHANGE - OCHILTREE 230KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.0385	97	OCHILTREE (H TP80219401) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	97	GEN523461 1-BLACKHAWK GEN #1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	97	GEN523462 1-BLACKHAWK GEN #2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	97	GEN524022 1-NICHOLS GEN #2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	97	GEN525492 1-PLANT X GEN #2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	97	GEN525493 1-PLANT X GEN #3
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	97	GEN525494 1-PLANT X GEN #4 20 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	97	GEN527163 1-MUSTANG GEN #3 22 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	97	GEN527882 1-CUNNINGHAM GEN #2 20 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	97	GEN527883 1-CUNNINGHAM GEN #3 22 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	97	GEN527884 1-CUNNINGHAM GEN #4 22 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	97	GEN527901 1-HOBBS PLANT #1 (CT)

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	97	GEN527902 1-HOBBS PLANT #2 (CT)
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	97	GEN528361 1-MADDOX GEN #1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03717	97	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03697	97	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03697	97	CHISHOLM7 345.00 () 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03663	97	DBL-THIS-WIC
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03612	97	CHISHOLM6 230.00 - SWEETWATER 230KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04218	96	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04218	96	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03973	96	CIMARRON - MINCO 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03973	96	HITCHLAND INTERCHANGE - Hansford County Switch Station 115KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03926	96	DWS FRISCO - HITCHLAND INTERCHANGE 115KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03926	96	DWS FRISCO - SHERMAN COUNTY TAP 115KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03848	96	HITCHLAND INTERCHANGE (H TP80148301) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03848	96	HITCHLAND INTERCHANGE (UPDATE LATER) 230/115/13.2KV TRANSFORMER CKT 2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	96	GEN527161 1-MUSTANG GEN #1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	96	GEN527162 1-MUSTANG GEN #2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	96	GEN527164 1-MUSTANG GEN #4 22 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	96	GEN527165 1-Mustang Gen #5
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	96	GEN527881 1-CUNNINGHAM GEN #1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	96	GEN528362 1-MADDOX GEN #2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	96	GEN560105 1-G08-22 0.6900
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	96	GEN562550 1-G14_040_3 0.6900
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04079	95	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04079	95	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04023	95	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.04023	95	MATHWSN7 345.00 - TATONGA7 345.00 345KV CKT 2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03973	95	GRACEMONT - MINCO 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.0396	95	MINGO - SETAB 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03925	95	HOLCOMB - SETAB 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03916	95	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03916	95	G13-010T 345.00 - SPEARVILLE 345KV CKT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03886	95	MOORELAND - NINE MILE 138KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03886	95	MOREWOOD SW - NINE MILE 138KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03885	95	TUCO INTERCHANGE - YOAKUM_345 345.00 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03876	95	OCHILTREE - TEXAS FARMS SUB 115KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03876	95	SPEARMAN SUB - TEXAS FARMS SUB 115KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03876	95	SPP-SWPS-V92
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03857	95	GRACEMONT - LAWTON EASTSIDE 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.0385	95	HITCHLAND INTERCHANGE - OCHILTREE 230KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.0385	95	OCHILTREE (H TP80219401) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03844	95	RB-SPURLOCK3115.00 - SHERMAN COUNTY TAP 115KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03832	95	TUCO INTERCHANGE (GE M1022338) 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03829	95	SHERMAN COUNTY SUB - SHERMAN COUNTY TAP 115KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03826	95	TUCO INTERCHANGE (SIEM 8743066) 345/230/13.2KV TRANSFORMER CKT 2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03814	95	HOBBS - YOAKUM_345 345.00 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03813	95	MOORE COUNTY INTERCHANGE (ENRCO 136402) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN335831 1-RIVERBEND UNIT#1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN336153 1-WATERFORD UNIT#3
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN336821 1-GRAND GULF UNIT
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN337911 1-ARKANSAS NUCLEAR ONE UNIT #2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN501801 1-DOLET HILLS UNIT1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN522814 1-LUBBOCK POWER & LIGHT-MACKENZIE GEN
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN522866 1-LUBBOCK POWER & LIGHT-HOLLY GEN
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN523461 1-BLACKHAWK GEN #1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN523462 1-BLACKHAWK GEN #2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN524021 1-NICHOLS GEN #1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN524022 1-NICHOLS GEN #2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN524285 1-WILDORADO WIND GEN
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN525491 1-PLANT X GEN #1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN525492 1-PLANT X GEN #2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN525493 1-PLANT X GEN #3
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN527883 1-CUNNINGHAM GEN #3 22 KV
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN527884 1-CUNNINGHAM GEN #4 22 KV

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA (MVA)	RATEB (MVA)	TDF	TC%LOADING (% MVA)	CONTINGENCY
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN528361 1-MADDOX GEN #1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN562269 1-G12-020-1 0.6900
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN562270 1-G12-020-2 0.6900
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03803	95	GEN562483 1-G13_027_3 0.6900
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03793	95	Graves Sub - STATELINE INTERCHANGE 115KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03793	95	STATELINE INTERCHANGE (H TP80154301) 230/115/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03697	95	CHISHOLM7 345.00 - GRACEMONT 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03697	95	CHISHOLM7 345.00 () 345/230/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03692	95	CLARKCOUNTY7345.00 - THISTLE7 345.00 345KV CKT 1
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03692	95	CLARKCOUNTY7345.00 - THISTLE7 345.00 345KV CKT 2
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03675	95	SPP-SWPS-03
FDNS	03ALL	0	25SP	G14_049	FROM->TO	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1	560	560	0.03366	95	BUCKNER7 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	0	15WP	G14_049	FROM->TO	WICHITA (WICH TX-11) 345/138/13.8KV TRANSFORMER CKT 1	400	430	0.03204	103	WICHITA (WICH TX-12) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	WICHITA (WICH TX-11) 345/138/13.8KV TRANSFORMER CKT 1	400	430	0.03216	102	WICHITA (WICH TX-12) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	WICHITA (WICH TX-11) 345/138/13.8KV TRANSFORMER CKT 1	400	430	0.03216	99	WICHITA (WICH TX-12) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15WP	G14_049	FROM->TO	WICHITA (WICH TX-11) 345/138/13.8KV TRANSFORMER CKT 1	400	430	0.03204	98	WICHITA (WICH TX-12) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	WICHITA (WICH TX-12) 345/138/13.8KV TRANSFORMER CKT 1	400	430	0.03424	109	WICHITA (WICH TX-11) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15WP	G14_049	FROM->TO	WICHITA (WICH TX-12) 345/138/13.8KV TRANSFORMER CKT 1	400	430	0.03414	109	WICHITA (WICH TX-11) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15G	G14_049	FROM->TO	WICHITA (WICH TX-12) 345/138/13.8KV TRANSFORMER CKT 1	400	430	0.03424	106	WICHITA (WICH TX-11) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	15WP	G14_049	FROM->TO	WICHITA (WICH TX-12) 345/138/13.8KV TRANSFORMER CKT 1	400	430	0.03414	104	WICHITA (WICH TX-11) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	20WP	G14_049	FROM->TO	WICHITA (WICH TX-12) 345/138/13.8KV TRANSFORMER CKT 1	400	430	0.03732	100	WICHITA (WICH TX-11) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	0	20WP	G14_049	FROM->TO	WICHITA (WICH TX-12) 345/138/13.8KV TRANSFORMER CKT 1	400	430	0.03732	96	WICHITA (WICH TX-11) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.04598	101	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1	143	143	0.04598	101	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	2	15G	G14_049	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.05818	117	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.05818	115	SPSCONT-05B
FDNS	03ALL	2	15G	G14_049	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.05818	114	SPSCONT-04
FDNS	03ALL	2	15G	G14_049	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.05818	109	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.05818	108	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.05818	106	SPSCONT-05AX
FDNS	03ALL	2	15G	G14_049	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.04319	103	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.04609	100	IODINE - WOODWARD EHV 138KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.04609	99	DEWEY - IODINE 138KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.04926	96	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	FPL SWITCH - MOORELAND 138KV CKT 1	268	287	0.04926	96	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	2	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	287	287	0.05818	111	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	287	287	0.05818	109	SPSCONT-05B
FDNS	03ALL	2	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	287	287	0.05818	108	SPSCONT-04
FDNS	03ALL	2	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	287	287	0.05818	103	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	287	287	0.05818	102	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	287	287	0.05818	100	SPSCONT-05AX
FDNS	03ALL	2	15G	G14_049	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	287	287	0.04319	97	WOODWARD (WOODWRD2) 138/69/13.2KV TRANSFORMER CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.04598	117	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.04598	117	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.04655	112	THISTLE7 345.00 - WICHITA 345KV CKT 1
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.04655	112	THISTLE7 345.00 - WICHITA 345KV CKT 2
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03601	105	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03601	104	SPSCONT-04
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03601	104	SPSCONT-05B
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03275	102	45TH ST4 138.00 - COWSKIN 138KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03275	102	45TH ST4 138.00 - EVANS ENERGY CENTER SOUTH 138KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03242	102	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1

SOLUTION	GROUP	SCENARIO	SEASON	SOURCE	DIRECTION	MONITORED ELEMENT	RATEA	RATEB	TC%LOADING		CONTINGENCY
							(MVA)	(MVA)	TDF	(% MVA)	
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03601	101	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03601	101	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03601	101	SPSCONT-05AX
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03401	101	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03288	101	EVANS ENERGY CENTER SOUTH - LAKERIDGE 138KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03753	100	BENTON - WICHITA 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03401	100	G13-010T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.0332	100	WICHITA (WICH TX-12) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03288	100	HOOVER NORTH - LAKERIDGE 138KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03288	99	SPP-WR-416
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03284	99	WR-B3-14
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03656	99	NORTHWEST - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03341	99	EVANS ENERGY CENTER SOUTH - LAKERIDGE 138KV CKT 1
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03333	99	45TH ST4 138.00 - COWSKIN 138KV CKT 1
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03333	99	45TH ST4 138.00 - EVANS ENERGY CENTER SOUTH 138KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03305	98	WICHITA (WICH TX-11) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03275	98	CENTENNIAL - COWSKIN 138KV CKT 1
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03656	98	SPSCONT-04
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03656	98	SPSCONT-05B
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03341	98	HOOVER NORTH - LAKERIDGE 138KV CKT 1
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03299	98	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03357	97	AXTELL - POST ROCK 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03281	97	CIRCLE - MULLERGREN 230KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03275	97	CENTENNIAL - WACO 138KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03275	97	WR-B3-7
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03804	97	BENTON - WICHITA 345KV CKT 1
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03463	97	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03341	97	SPP-WR-416
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03333	97	WR-B3-7
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03389	96	ALEXANDER - SAWYER 3 115.00 115KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03389	96	BARBER 3 115.00 - SAWYER 3 115.00 115KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03389	96	SPP-MKEC-12
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03329	96	BUCKNER7 345.00 - HOLCOMB 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03296	96	MINGO - SETAB 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03282	96	ST JOHN - ST_JOHN 115KV CKT Z1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03275	96	SPP-WR-415
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03272	96	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.0327	96	DBL-THIS-WIC
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.0326	96	HOOVER NORTH - HOOVERS4 138.00 138KV CKT Z1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03242	96	BASE CASE
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03656	96	G11_051T 345.00 - TATONGA7 345.00 345KV CKT 1
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03463	96	G13-010T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03338	96	WR-B3-14
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03292	95	FPL SWITCH - MOORELAND 138KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03274	95	MULLERGREN - SPEARVILLE 230KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03242	95	GEN542956 2-LACYGNE UNIT #2
FDNS	03ALL	2	15G	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	138	143	0.03206	95	EL PASO - ROSE HILL 138KV CKT 1
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03656	95	G11_051T 345.00 - WOODWARD DISTRICT EHV 345KV CKT 1
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03656	95	SPSCONT-05AX
FDNS	03ALL	2	15SP	G14_049	FROM->TO	HARPER - MILAN TAP 138KV CKT 1	127	136	0.03327	95	CENTENNIAL - COWSKIN 138KV CKT 1
FDNS	03ALL	2	15SP	G14_049	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.04604	122	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	2	15SP	G14_049	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.04604	116	G13-010T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.04539	113	G13-010T 345.00 - POST ROCK 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	TO->FROM	MULLERGREN - SPEARVILLE 230KV CKT 1	398	398	0.04539	106	G13-010T 345.00 - SPEARVILLE 345KV CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	WICHITA (WICH TX-11) 345/138/13.8KV TRANSFORMER CKT 1	400	430	0.03161	102	WICHITA (WICH TX-12) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	WICHITA (WICH TX-11) 345/138/13.8KV TRANSFORMER CKT 1	400	430	0.03161	98	WICHITA (WICH TX-12) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	WICHITA (WICH TX-12) 345/138/13.8KV TRANSFORMER CKT 1	400	430	0.03366	108	WICHITA (WICH TX-11) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	2	15G	G14_049	FROM->TO	WICHITA (WICH TX-12) 345/138/13.8KV TRANSFORMER CKT 1	400	430	0.03366	105	WICHITA (WICH TX-11) 345/138/13.8KV TRANSFORMER CKT 1
FDNS	03ALL	2	15G	G14_049	TO->FROM	WOODWARD - WOODWARD EHV 138KV CKT 1	287	287	0.04441	98	WOODWARD - WOODWARD EHV 138KV CKT 2
FDNS	03ALL	2	15G	G14_049	TO->FROM	WOODWARD - WOODWARD EHV 138KV CKT 1	287	287	0.04699	97	SPSCONT-05B