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## Revision History

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| Date or Version Number | Author               | Change Description  | Comments      |
|------------------------|----------------------|---|---------------|
| 06/28/2011             | Southwest Power Pool | N/A   | Report Issued |
| 8/19/2011              | Southwest Power Pool | Report reposted for Incorrect Generator Size for GEN-2011-031 | Report Posted |
|                        |                      |   |               |
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## Executive Summary

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Generation Interconnection customers have requested a Feasibility Study under the Generation Interconnection Procedures (GIP) in the Southwest Power Pool Open Access Transmission Tariff (OATT). The Interconnection Customers' requests have been clustered together for the following Feasibility Cluster Study. This Feasibility Cluster Study analyzes the interconnecting of multiple generation interconnection requests associated with new generation totaling approximately 2,227 MW of new generation which would be located within the transmission systems of Midwest Energy Inc. (MIDW), Missouri Public Service (MIPU), Southwestern Public Service (SPS), and Sunflower Electric Power Corporation (SUNC). The various generation interconnection requests have differing proposed in-service dates<sup>1</sup>. The generation interconnection requests included in this Feasibility Cluster Study are listed in Appendix A by their queue number, amount, requested interconnection service, area, requested interconnection point, proposed interconnection point, and the requested in-service date.

Power flow analysis has indicated that for the power flow cases studied, 2,227 MW of nameplate generation may be interconnected with transmission system reinforcements within the SPP transmission system. The need for reactive compensation in accordance with Order No. 661-A for wind farm interconnection requests will be evaluated in the Interconnection System Impact Study based on the wind turbine manufacturer and type requested by the Customer. Dynamic stability studies performed as part of the System Impact Cluster Study will provide additional guidance as to whether the required reactive compensation can be static or a portion must be dynamic (such as a SVC).

The total estimated minimum cost for interconnecting the studied generation interconnection request is \$187,700,000. These costs are shown in Appendix E. 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 the possible need for reactive compensation or additional interconnection facilities or network upgrades that may be identified through additional analyses performed in the Preliminary Interconnection System Impact Study (PISIS).

Network Constraints listed in Appendix F are in the local area of the new generation when this generation is injected throughout the SPP footprint for the Energy Resource (ER) Interconnection Request. Certain interconnection requests have been studied for Network Resource (NR) 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 does 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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<sup>1</sup> The generation interconnection requests in-service dates will need to be deferred based on the required lead time for the Network Upgrades necessary. The Interconnection Customer's that proceed to the Facility Study will be provided a new in-service date based on the competition of the Facility Study.

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## Introduction

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Generation Interconnection customers have requested a Feasibility Study under the Generation Interconnection Procedures (GIP) in the Southwest Power Pool Open Access Transmission Tariff (OATT). The Interconnection Customers' requests have been clustered together for the following Feasibility Cluster Study. This Feasibility Cluster Study analyzes the interconnecting of multiple generation interconnection requests associated with new generation totaling approximately 2,227 MW of new generation which would be located within the transmission systems of Midwest Energy Inc. (MIDW), Missouri Public Service (MIPU), Southwestern Public Service (SPS), and Sunflower Electric Power Corporation (SUNC). The various generation interconnection requests have differing proposed in-service dates<sup>2</sup>. The generation interconnection requests included in this Feasibility Cluster Study are listed in Appendix A by their queue number, amount, area, requested interconnection service, requested interconnection point, proposed interconnection point, and the requested in-service date.

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

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## Model Development

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**Interconnection Requests Included in the Cluster** – SPP has included the interconnection requests listed in Appendix A to be analyzed in this cluster study. These interconnection requests represent requests with an executed Feasibility Study Agreement signed by 03/30/2011.

**Electrically Isolated Interconnection Requests** – Electrically isolated requests are discussed in the “Regional Groupings” section.

**Previous Queued Projects** - The previous queued projects included in this study are listed in Appendix B. In addition to the Base Case Upgrades, the previous queued projects 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.

**Development of Base Cases** - The 2010 series Transmission Service Request (TSR) Models 2011 spring, 2011 summer and winter, and 2016 summer and winter scenario 0 peak cases were used for this study. After the cases were developed, each of the control areas' resources were then redispatched using current dispatch orders.

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<sup>2</sup> The generation interconnection requests in-service dates will need to be deferred based on the required lead time for the Network Upgrades necessary. The Interconnection Customer's that proceed to the Facility Study will be provided a new in-service date based on the competition of the Facility Study.

**Base Case Upgrades** - The following facilities are part of the SPP Transmission Expansion Plan, Balanced Portfolio, or Priority Projects. These facilities have been approved or are in the construction stages and were assumed to be in-service at the time of dispatch and added to the base case models. The FCS-2011-002 Customers do not have cost for the below listed projects. **However, the FCS-2011-002 Customer Generation Facilities in service dated may need to be delayed until the completion of the following upgrades (See Appendix A for more detail).** If for some reason, construction on these projects is discontinued, additional restudies will be needed to determine the interconnection needs of the FCS-2011-002 customers.

- Hitchland 345/230/115kV upgrades to be built by SPS for 2010/2011 in-service<sup>3</sup>.
  - Hitchland – Moore County 230kV line
  - Hitchland – Perryton 230kV line
  - Hitchland – Texas County 115kV line
  - Hitchland – Hansford County 115kV line
  - Hitchland – Sherman County Tap 115kV line
- Valliant – Hugo – Sunnyside 345kV – assigned to Aggregate Study AG3-2006 Customers.
- Wichita – Reno County – Summit 345kV to be built by WERE<sup>4</sup>.
- Rose Hill – Sooner 345kV to be built by WERE/OKGE.
- Knob Hill – Steele City 115kV to be built by NPPD/WERE.
- Balanced Portfolio Projects<sup>5</sup>:
  - Gracemont 345/138/13.2kV Autotransformer
  - Woodward– Tuco 345kV line
  - Iatan– Nashua 345kV line
  - Muskogee– Seminole 345kV line
  - Post Rock – Axtell 345kV line
  - Spearville– Post Rock 345kV line
  - Tap Stillwell – Swissvale 345kV line at West Gardner
- Priority Projects<sup>6</sup>:
  - Hitchland - Woodward double circuit 345kV
  - Woodward – Medicine Lodge double circuit 345kV
  - Spearville – Comanche (Clark) double circuit 345kV
  - Comanche (Clark) – Medicine Lodge double circuit 345kV
  - Medicine Lodge – Wichita double circuit 345kV
  - Medicine Lodge 345/138kV autotransformer

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<sup>3</sup> Approved 230kV upgrades are based on SPP 2007 STEP. Upgrades may need to be re-evaluated in the system impact study.

<sup>4</sup> Approved based on an order of the Kansas Corporation Commission issued in Docket no. 07-WSEE-715-MIS

<sup>5</sup> Notice to Construct (NTC) issued June, 2009

<sup>6</sup> Notice to Construct (NTC) issued June, 2010. NTC for double circuit lines indicated that NTC may be revised at a later time to be built at a higher voltage.

**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 FCS-2011-002 study and are assumed to be in service. The FCS-2011-002 Customers at this time do not have responsibility for these facilities but may later be assigned the cost of these facilities if higher queued customers terminate their GIA, withdraw from the interconnection queue, or withdraw from NRIS interconnection queue. The FCS-2011-002 Customer Generation Facilities in service dates may need to be delayed until the completion of the following upgrades.

- Finney – Holcomb 345kV ckt #2 line assigned to GEN-2006-044 interconnection customer. This customer is currently in suspension<sup>7</sup>.
- Central Plains – Setab 115kV transmission line assigned to GEN-2007-013 interconnection customer.
- Grassland 230/115kV autotransformer #2 assigned to 1<sup>st</sup> Cluster Interconnection Customers (100% to GEN-2008-016)
- Judson Large – North Judson Large – Spearville Ckt #2 assigned to DISIS-2009-001-1 Interconnection Customers (100% to GEN-2008-079)
- Hitchland – Wheeler (Border) double circuit 345kV assigned to DISIS-2010-001 Interconnection Customers
- Madison County - Hoskins 230kV Ckt #1 assigned to DISIS-2010-001 Interconnection Customers
- Washita – Gracemont 138kV Ckt #2 assigned to DISIS-2010-001 Interconnection Customers
- Post Rock 345/230kV autotransformer #2 assigned to DISIS-2010-001 Interconnection Customers
- Washita – Weatherford 138kV Ckt #1 assigned to DISIS-2010-001 Interconnection Customers
- Spearville 345/115kV autotransformer #1 assigned to DISIS-2010-001 Interconnection Customers
- Beaver County – Gray County 345kV Ckt #1 assigned to DISIS-2010-002 Interconnection Customers
- Circle – Reno double circuit 345kV assigned to DISIS-2010-002 Interconnection Customers
- Medicine Lodge 345/115kV autotransformer #1 assigned to DISIS-2010-002 Interconnection Customers
- Mullergren – Circle double circuit 345kV assigned to DISIS-2010-002 Interconnection Customers
- Spearville – Mullergren double circuit 345kV assigned to DISIS-2010-002 Interconnection Customers
- St. John – St. John 115kV Ckt #1 assigned to DISIS-2010-002 Interconnection Customers
- Northwest 345/138/13.8kV autotransformer Ckt #1 assigned to DISIS-2010-002 NRIS Interconnection Customer Gen-2010-040

**Potential Upgrades Not in the Base Case** - Any potential upgrades that do not have a Notification to Construct (NTC) to construct 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.

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<sup>7</sup> Based on Facility Study Posting November 2008

**Regional Groupings** - The interconnection requests listed in Appendix A were grouped together in four different regional groups based on geographical and electrical impacts. These groupings are shown in Appendix C.

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

For each group, the various wind generating plants were modeled at 80% nameplate of maximum generation. The wind generating plants in the other areas were modeled at 20% nameplate of maximum generation. This process created four different scenarios with each group being studied at 80% nameplate rating. These projects were dispatched as Energy Resources with equal distribution across the SPP footprint. Certain projects that requested Network Resource Interconnection Service were dispatched in an additional analysis into the balancing authority of the interconnecting transmission owner. This method allowed for the identification of network constraints that were common to the regional groupings that could then in turn have the mitigating upgrade cost allocated throughout the entire cluster. Each interconnection request was also modeled separately at 100% nameplate for certain analyses.

Peaking units were not dispatched in the 2010 spring model. To study peaking units' impacts, the 2016 summer peak model was chosen and peaking units were modeled at 100% of the nameplate rating and wind generating facilities were modeled at 10% of the nameplate rating. Each interconnection request was also modeled separately at 100% nameplate for certain analyses.

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## Identification of Network Constraints

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The initial set of network constraints were found by using PTI MUST First Contingency Incremental Transfer Capability (FCITC) analysis on the entire cluster grouping dispatched at the various levels mentioned above. These constraints were then screened to determine if any of the generation interconnection requests had at least a 20% Distribution Factor (DF) upon the constraint. Constraints that measured at least a 20% DF from at least one interconnection request were considered for mitigation. Interconnection Requests that were being studied for Network Resource Interconnection Service were studied in the additional NRIS analysis to determine if any constraint had at least a 3% DF. If so, these constraints were considered for mitigation.

**Identification of Electrically Isolated Groups and Requests** – From the FCITC analysis, it was determined that some of the regional groups had no common impacts with the other groups. However, this determination may change as the Interconnection Customers depending upon the time at which the interconnection customers enter either the Preliminary Interconnection System Impact Study (PISIS) or the Definitive Interconnection System Impact Study (DISIS).



## Determination of Cost Allocated Network Upgrades

Cost Allocated Network Upgrades of wind generation interconnection requests were determined using the 2011 spring model. Cost Allocated Network Upgrades of peaking units was determined using the 2016 summer peak model. Once a determination of the required Network Upgrades was made, a powerflow model of the 2011 spring case was developed with all cost allocated Network Upgrades in-service. A MUST FCITC analysis was performed to determine the Power Transfer Distribution Factors (PTDF), a distribution factor with no contingency that each generation interconnection request had on each new upgrade. The impact each generation interconnection request had on each upgrade project was weighted by the size of each request. Finally the costs due by each request for a particular project were then determined by allocating the portion of each request's impact over the impact of all affecting requests.

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

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

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

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

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

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

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

- Repeat previous for each responsible GI request for each Project

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

**Credits for Amounts Advanced for Network Upgrades** - Interconnection Customer shall be entitled to credits in accordance with Attachment Z1 of the SPP Tariff for any Network Upgrades including any tax gross-up or any other tax-related payments associated with the Network Upgrades, and not refunded to the Interconnection Customer.

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## Interconnection Facilities

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The requirement to interconnect the 2,227 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 E with an approximate cost of \$187,700,000. Appendix E also includes Interconnection Facilities specific to each generation interconnection request.

A list of constraints with greater than or equal to a 20% OTDF that were identified and used for mitigation are listed in Appendix F. Other Network Constraints in the AEPW, MIDW, OKGE, SPS, MIPU, NPPD, SUNC, MKEC, WERE, and WFEC transmission systems that were identified that may be needed to deliver to load are listed in Appendix F. With a defined source and sink in a TSR, a list of Network Constraints will be refined and expanded to account for all Network Upgrade requirements.

A preliminary one-line drawing for each generation interconnection request are listed in Appendix D.

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## Power flow Analysis Methodology

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The Southwest Power Pool (SPP) Criteria states that:

“The transmission system of the SPP region shall be planned and constructed so that the contingencies as set forth in the Criteria will meet the applicable *NERC Reliability Standards* for transmission planning. All MDWG power flow models shall be tested to verify compliance with the System Performance Standards from NERC Table 1 – Category A.”

The FCITC function of MUST was used to simulate single contingencies in portions or all of the modeled control areas of AEPW, EMDE, Grand River Dam Authority (GRDA), Kansas City Power & Light (KCPL), LES, MIDW, MIPU, NPPD, OPPD, OKGE, SPS, SUNC, WERE, WFEC and other control areas were applied and the resulting scenarios analyzed. This satisfies the “more probable” contingency testing criteria mandated by NERC and the SPP criteria.

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## Powerflow Analysis

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A powerflow analysis was conducted for each Interconnection Customer's facility using modified versions of the 2011 (spring, summer, and winter) peak models and the 2016 (summer and winter) peak models. The output of the Interconnection Customer's facility was offset in each model by a reduction in output of existing online SPP generation. This method allows the request to be studied as an Energy Resource (ER) Interconnection Request. The available seasonal models used were through the 2016 Winter Peak. Certain requests that requested Network Resource Interconnection Service (NRIS) had an additional analysis conducted for sinking the energy in the interconnecting Transmission Owner's balancing authority.

This analysis was conducted assuming that previous queued requests in the immediate area of these interconnect requests were in-service. The analysis of each Customer's project indicates that additional criteria violations will occur on the AEPW, MIDW, MIPU, NPPD, OKGE, SPS, SUNC, SWPA, MKEC, WERE, and WFEC transmission systems under steady state and contingency conditions in the peak seasons.

The need for reactive compensation will be determined during the Interconnection System Impact Study. The need for reactive compensation will be based on the Interconnection Customer's choice of wind turbine make and manufacturer. Dynamic Stability studies performed as part of the System Impact Cluster Study will provide additional guidance as to whether the reactive compensation can be static or a portion must be dynamic (such as a SVC or STATCOM). It is possible that an SVC or STATCOM device will be required at the Customer facility because of FERC Order 661A Low Voltage Ride-Through Provisions (LVRT) which went into effect January 1, 2006. FERC Order 661A orders that wind farms stay on-line for 3-phase faults at the point of interconnection even if that requires the installation of a SVC or STATCOM device.

**Hitchland Area** – The Hitchland group had 300.8 MW of interconnection requests in addition to the 4,436.3 MW of previously queued generation in the area. No additional constraints were observed in this area. This determination is depended on higher queued customers paying for certain upgrades. Withdrawal of higher queued customers may change this result.

**Spearville Area** – The Spearville group had 1,030 MW of interconnection requests in addition to the 5,626.7 MW of previously queued generation in the area. No additional constraints were observed in this area. This determination is depended on higher queued customers paying for certain upgrades. Withdrawal of higher queued customers may change this result.

**South Panhandle/New Mexico Area** – There are approximately 195.6 MW of interconnection requests in the southern panhandle area in addition to the 2,566.3 MW of previously queued generation in the area. Certain higher queued interconnection requests withdrew since the posting of the original study. As a result, the Group 6 interconnection request was seen to cause constraints for the loss of the Midland-Hobbs 230kV transmission line. The mitigation is to construct a new 230kV line (insulated at 345kV) to the SPS Borden substation.

**Southwest Oklahoma Area** - The Southwest Oklahoma group had 200 MW of interconnection requests in addition to the 2,895.8 MW of previously queued generation in the area. The major constraint in the Southwest Oklahoma area was noticed on the Rush Springs Tap – OMPA Marlow – OMPA Duncan – Duncan Eastside – AEPW Duncan transmission line. To mitigate this constraint, the entire section will need to be rebuilt. Other constraints were seen on the Duncan – Tosco – Comanche 69kV line and the entire section will also need to be rebuilt and a second

138/69kV transformer installed at Duncan. In addition, the switches on the Cornville – Rush Springs Natural Gas Tap 138kV transmission line switches will need to be replaced due to overloads on the line.

**North Oklahoma Area** - The North Oklahoma area had 350.4MW of interconnection requests in addition to the 3,356 MW of previously queued generation in the area. The major constraint noticed in this area was caused by GEN-2011-006 overloading the Shidler – West Pawhuska 138kV transmission line. To mitigate the constraint, a new 138kV transmission line from Hominy – Shidler will need to be built as well as rebuilding the line section to Sand Springs

**Nebraska Area** - The Nebraska area had 150.4MW of interconnection requests in addition to the 1,259.8 MW of previously queued generation in the area. No additional constraints were observed in this area.

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## Conclusion

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The minimum cost of interconnecting all of the interconnection requests included in the Feasibility Cluster Study is estimated at \$187,700,000 for the Allocated Network Upgrades and Transmission Owner Interconnection Facilities are listed in Appendix E. These costs do not include the cost of upgrades of other transmission facilities listed in Appendix F which are Network Constraints.

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

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

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# Appendix

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**A: Generation Interconnection Requests Considered for Feasibility Study**

| Request      | MW             | Service | Area | Requested Point of Interconnection                        | Proposed Point of Interconnection                         | Requested In-Service Date | EARLIEST IN SERVICE DATE AVAILABLE** |
|--------------|----------------|---------|------|---|---|---------------------------|--------------------------------------|
| GEN-2011-003 | 10             | ER      | MKEC | Tap Judson Large – Cudahy 115kV                           | GEN-2008-079 115kV  | 05/29/2012                | Determined in Facility Study         |
| GEN-2011-004 | 150.4          | ER      | WERE | Creswell 138kV  | Creswell 138kV  | 12/31/2013                | Determined in Facility Study         |
| GEN-2011-005 | 150.4          | ER/NR   | NPPD | Rising City 115kV   | Rising City 115kV   | 12/15/2013                | Determined in Facility Study         |
| GEN-2011-006 | 200            | ER/NR   | AEPW | Shidler 138kV   | Shidler 138kV   | 06/01/2013                | Determined in Facility Study         |
| GEN-2011-028 | 300.8          | ER/NR   | OKGE | Tap Guymon – Woodward 345kV                               | Tap Guymon – Woodward 345kV                               | 11/01/2014                | 12/31/2014                           |
| GEN-2011-029 | 200            | ER/NR   | WFEC | Tap Rush Springs (Nat. Gas) – Rush Springs (Marlow) 115kV | Tap Rush Springs (Nat. Gas) – Rush Springs (Marlow) 138kV | 12/31/2013                | Determined in Facility Study         |
| GEN-2011-030 | 1020           | ER      | SUNC | Holcomb 345kV   | Holcomb 345kV   | 06/01/2017                | 6/1/2017                             |
| GEN-2011-031 | 195.6          | ER      | SPS  | Midland 230kV   | Midland 230kV   | 12/31/2014                | Determined in Facility Study         |
| <b>TOTAL</b> | <b>2,227.2</b> |         |      |   |   |                           |                                      |

\* Planned Facility

^ Proposed Facility

\*\* Interconnection Customer may be delayed until the completion of certain Base Case Upgrades. Interconnection Customer may explore the possibility of an earlier in service date with a Limited Operation Study available under GIA 5.9.

**B: Prior Queued Interconnection Requests**

| Request          | Amount | Area | Requested/Proposed Point of Interconnection            | Status or In-Service Date |
|------------------|--------|------|--|---------------------------|
| GEN-2001-014     | 96     | WFEC | Fort Supply 138kV                                      | On-Line                   |
| GEN-2001-026     | 74     | WFEC | Washita 138kV  | On-Line                   |
| GEN-2001-033     | 180    | SPS  | San Juan Mesa Tap 230kV                                | On-Line                   |
| GEN-2001-036     | 80     | SPS  | Caprock Tap 115kV                                      | On-Line                   |
| GEN-2001-037     | 100    | OKGE | Windfarm Switching 138kV                               | On-Line                   |
| GEN-2001-039A    | 105    | MKEC | Greensburg - Judson-Large 115kV                        | On Schedule for 2011      |
| GEN-2001-039M    | 100    | SUNC | Central Plains Tap 115kV                               | On-Line                   |
| GEN-2002-004     | 200    | WERE | Latham 345kV   | On-Line at 150MW          |
| GEN-2002-005     | 120    | WFEC | Red Hills Tap 138kV                                    | On-Line                   |
| GEN-2002-008     | 240    | SPS  | *Hitchland 345kV                                       | On-Line at 120MW          |
| GEN-2002-009     | 80     | SPS  | Hansford County 115kV                                  | On-Line                   |
| GEN-2002-022     | 240    | SPS  | Bushland 230kV   | On-Line at 160MW          |
| GEN-2002-025A    | 150    | MKEC | Spearville 230kV                                       | On-Line at 100.5MW        |
| GEN-2003-005     | 100    | WFEC | Anadarko - Paradise 138kV                              | On Line                   |
| GEN-2003-006A-E  | 100    | MKEC | Elm Creek 230kV  | On-Line                   |
| GEN-2003-006A-W  | 100    | MKEC | Elm Creek 230kV  | On-Line                   |
| GEN-2003-013**   | 198    | SPS  | *Hitchland - Finney 345kV                              | On Schedule for 2012      |
| GEN-2003-019     | 250    | MIDW | Smoky Hills Tap 230kV                                  | On-Line                   |
| GEN-2003-020     | 160    | SPS  | Martin 115kV   | On-Line at 80MW           |
| GEN-2003-022     | 120    | AEPW | Washita 138kV  | On-Line                   |
| GEN-2004-014     | 154.5  | MKEC | Spearville 230kV                                       | On Schedule for 2012      |
| GEN-2004-020     | 27     | AEPW | Washita 138kV  | On-Line                   |
| GEN-2005-005     | 18     | OKGE | Windfarm Tap 138kV                                     | IA Pending                |
| GEN-2005-008     | 120    | OKGE | Woodward 138kV   | On-Line                   |
| GEN-2005-012     | 250    | SUNC | Spearville 345kV                                       | On Schedule for 2012      |
| GEN-2005-013     | 201    | WERE | Tap Latham - Neosho                                    | On Schedule for 2012      |
| GEN-2005-017     | 340    | SPS  | Tap *Hitchland - Potter County 345kV                   | On Suspension             |
| GEN-2006-002     | 101    | AEPW | Grapevine - Elk City 230kV                             | On-Line                   |
| GEN-2006-006     | 206    | MKEC | Spearville 230kV                                       | IA Pending                |
| GEN-2006-014     | 300    | MIPU | Tap Maryville – Clarinda and tie Midway (WFARMS) 161kV | On Suspension             |
| GEN-2006-017     | 300    | MIPU | Tap Maryville – Clarinda and tie Midway (WFARMS) 161kV | On Suspension             |
| GEN-2006-018     | 170    | SPS  | Tuco 230kV   | On Schedule for 2011      |
| GEN-2006-020S    | 20     | SPS  | DWS Frisco Tap   | On Schedule for 2011      |
| GEN-2006-020N    | 42     | NPPD | Bloomfield 115kV                                       | 1/1/2009                  |
| GEN-2006-021     | 101    | MKEC | Flat Ridge Tap 138kV                                   | On-Line                   |
| GEN-2006-022     | 150    | MKEC | Ninnescah Tap 115kV                                    | On Suspension             |
| GEN-2006-024S    | 20     | WFEC | South Buffalo Tap 69kV                                 | On-Line                   |
| GEN-2006-026     | 502    | SPS  | Hobbs 230kV  | On-Line                   |
| GEN-2006-031     | 75     | MIDW | Knoll 115kV  | On-Line                   |
| GEN-2006-032     | 200    | MIDW | South Hays 230kV                                       | On Suspension             |
| GEN-2006-034     | 81     | SUNC | Tap Kanarado - Sharon Springs 115kV                    | On Suspension             |
| GEN-2006-035     | 225    | AEPW | Tap Grapevine - Elk City 230kV                         | On Schedule for 2011      |
| GEN-2006-037N1   | 75     | NPPD | Broken Bow 115kV                                       | On Suspension             |
| GEN-2006-038N005 | 80     | NPPD | Broken Bow 115kV                                       | On Schedule for 2012      |
| GEN-2006-038N019 | 80     | NPPD | Petersburg 115kV                                       | On-Line                   |
| GEN-2006-038     | 750    | WFEC | Hugo 345kV   | On Suspension             |



| Request         | Amount | Area | Requested/Proposed Point of Interconnection                                    | Status or In-Service Date    |
|-----------------|--------|------|--|------------------------------|
| GEN-2006-039    | 400    | SPS  | Tap and Tie both Potter County - Plant X 230kV and Bushland - Deaf Smith 230kV | On Suspension                |
| GEN-2006-040    | 108    | SUNC | Mingo 115kV  | On Schedule for 2010         |
| GEN-2006-043    | 99     | AEPW | Grapevine - Elk City 230kV   | On Line                      |
| GEN-2006-044    | 370    | SPS  | *Hitchland 345kV   | On Schedule for 2014         |
| GEN-2006-044N   | 40.5   | NPPD | Tap Neligh – Petersburg 115kV  | On Schedule for 12/2011      |
| GEN-2006-044N02 | 100.5  | NPPD | GEN-2008-086N02 230kV  | Under Study (DISIS-2010-001) |
| GEN-2006-045    | 240    | SPS  | Tap and Tie both Potter County - Plant X 230kV and Bushland - Deaf Smith 230kV | On Suspension                |
| GEN-2006-046    | 131    | OKGE | Dewey 138kV  | On-Line                      |
| GEN-2006-047    | 240    | SPS  | Tap and Tie both Potter County - Plant X 230kV and Bushland - Deaf Smith 230kV | On Suspension                |
| GEN-2006-049    | 400    | SPS  | *Hitchland - Finney 345kV  | On Schedule for 2014         |
| GEN-2007-002    | 160    | SPS  | Grapevine 115kV  | On Suspension                |
| GEN-2007-006    | 160    | OKGE | Roman Nose 138kV   | On Suspension                |
| GEN-2007-011    | 135    | SUNC | Syracuse 115kV   | On Schedule                  |
| GEN-2007-011N08 | 81     | NPPD | Bloomfield 115kV   | On-Line                      |
| GEN-2007-013    | 99     | SUNC | Selkirk 115kV  | On Suspension                |
| GEN-2007-015    | 135    | WERE | Tap Humboldt – Kelly 161kV   | On Suspension                |
| GEN-2007-017    | 101    | MIPU | Tap Maryville – Clarinda and tie Midway (WFARMS) 161kV                         | On Suspension                |
| GEN-2007-021    | 201    | OKGE | *Tatonga 345kV   | On Schedule for 2014         |
| GEN-2007-025    | 300    | WERE | Tap Woodring – Wichita 345kV   | On Schedule for 2012         |
| GEN-2007-032    | 150    | WFEC | Tap Clinton Junction – Clinton 138kV   | On Schedule for 2012         |
| GEN-2007-038    | 200    | SUNC | Spearville 345kV   | On Schedule for 2014         |
| GEN-2007-040    | 200    | SUNC | Tap Holcomb – Spearville 345kV   | On Schedule for 2012         |
| GEN-2007-043    | 200    | OKGE | Tap Lawton Eastside – Cimarron 345kV   | On-Line (100MW)              |
| GEN-2007-044    | 300    | OKGE | *Tatonga 345kV   | On Schedule for 2014         |
| GEN-2007-046    | 200    | SPS  | Tap & Tie Texas County – Hitchland & DWS Frisco Tap – Hitchland 115kV          | On Schedule for 2014         |
| GEN-2007-048    | 400    | SPS  | Tap Amarillo South – Swisher 230kV   | On Schedule for 2014         |
| GEN-2007-050    | 170    | OKGE | *Woodward 138kV  | On-Line at 150MW             |
| GEN-2007-051    | 200    | WFEC | Mooreland 138kV  | On Schedule for 2014         |
| GEN-2007-052    | 150    | WFEC | Anadarko 138kV   | On-Line                      |
| GEN-2007-053    | 110    | MIPU | Tap Maryville – Clarinda and tie Midway (WFARMS) 161kV                         | On Schedule for 2013         |
| GEN-2007-057    | 35     | SPS  | Moore County East 115kV  | On Schedule for 2014         |
| GEN-2007-062    | 765    | OKGE | *Woodward 345kV  | On Schedule for 2014         |
| GEN-2008-003    | 101    | OKGE | *Woodward EHV 138kV  | On-Line                      |
| GEN-2008-008    | 60     | SPS  | Graham 115kV   | On Schedule for 2014         |
| GEN-2008-009    | 60     | SPS  | San Juan Mesa Tap 230kV  | On Schedule for 2014         |
| GEN-2008-013    | 300    | OKGE | Tap Woodring – Wichita 345kV   | On Schedule for 2013         |
| GEN-2008-014    | 150    | SPS  | Tap Tuco – Oklaunion 345kV   | On Schedule for 2014         |
| GEN-2008-016    | 248    | SPS  | Grassland 230kV  | IA Pending                   |
| GEN-2008-017    | 300    | SUNC | Setab 345kV  | On Schedule for 2014         |
| GEN-2008-018    | 405    | SUNC | Finney 345kV   | IA Pending                   |
| GEN-2008-019**  | 300    | OKGE | *Tatonga 345kV   | On Schedule for 2015         |
| GEN-2008-021    | 42     | WERE | Wolf Creek 345kV   | IA Pending                   |
| GEN-2008-022    | 300    | SPS  | Tap Eddy – GEN-2007-034 345kV  | IA Pending                   |
| GEN-2008-023    | 150    | AEPW | Hobart Junction 138kV  | On Schedule for 2012         |
| GEN-2008-025    | 101.2  | SUNC | Ruleton 115kV  | IA Pending                   |
| GEN-2008-029    | 250.5  | OKGE | Woodward EHV 138kV   | On Schedule for 2014         |
| GEN-2008-037    | 100.8  | WFEC | Tap Washita – Blue Canyon 138kV  | IA Pending                   |
| GEN-2008-044    | 197.8  | OKGE | Tatonga 345kV  | On Schedule for 2011         |
| GEN-2008-046    | 200    | OKGE | Sunnyside 345kV  | IA Pending                   |

| Request         | Amount | Area | Requested/Proposed Point of Interconnection        | Status or In-Service Date    |
|-----------------|--------|------|--|------------------------------|
| GEN-2008-047    | 300    | SPS  | Tap Hitchland - Woodward 345kV                     | IA Pending                   |
| GEN-2008-051    | 322    | SPS  | Potter 345kV                                       | On Schedule for 2014         |
| GEN-2008-071    | 76.8   | OKGE | Newkirk 138kV                                      | IA Pending                   |
| GEN-2008-079    | 100.5  | MKEC | Tap Fort Dodge – Cudahy 115kV                      | IA Pending                   |
| GEN-2008-086N02 | 200    | NPPD | Tap Ft. Randall – Columbus 230kV                   | On Schedule for 2014         |
| GEN-2008-088    | 50.6   | SPS  | Vega 69kV  | IA Pending                   |
| GEN-2008-092    | 201    | MIDW | Knoll 115kV  | IA Pending                   |
| GEN-2008-098    | 100.8  | WERE | Tap Wolf Creek – LaCygne 345kV                     | IA Pending                   |
| GEN-2008-110    | 299.2  | SPS  | Hitchland 345kV                                    | IA Pending                   |
| GEN-2008-1190   | 60     | OPPD | Tap Humboldt – Kelly (North of GEN-2007-015) 161kV | On-Line                      |
| GEN-2008-123N   | 89.7   | NPPD | Tap Guide - Pauline 115kV                          | IA Pending                   |
| GEN-2008-124    | 200.1  | MKEC | Spearville 230kV                                   | IA Pending                   |
| GEN-2008-127    | 200.1  | WERE | Tap Sooner – Rose Hill 345kV                       | On Schedule for 2012         |
| GEN-2008-129    | 80     | MIPU | Pleasant Hill 161kV                                | On-Line                      |
| GEN-2009-008    | 200    | SUNC | South Hays 230kV                                   | IA Pending                   |
| GEN-2009-011    | 50     | MKEC | Tap Plainville – Phillipsburg 115kV                | IA Pending                   |
| GEN-2009-016    | 140    | AEPW | Falcon Road 138kV                                  | IA Pending                   |
| GEN-2009-017**  | 60     | SPS  | Tap Pembroke – Stiles 138kV                        | Under Study (DISIS-2009-001) |
| GEN-2009-020    | 48.6   | MIDW | Tap Bazine – Nekoma 69kV                           | IA Pending                   |
| GEN-2009-025    | 60     | OKGE | Tap Deer Creek – Sinclair 69kV                     | On Suspension                |
| GEN-2009-030    | 100.8  | WFEC | Weatherford 138kV                                  | IA Pending                   |
| GEN-2009-040    | 73.8   | WERE | Tap Smittyville - Knob Hill 115kV                  | IA Pending                   |
| GEN-2009-060    | 84     | WFEC | Gotebo 69kV  | IA Pending                   |
| GEN-2009-062    | 115    | SUNC | Hugoton 115kV                                      | IA Pending                   |
| GEN-2009-067S   | 20     | SPS  | 7 Rivers 69kV                                      | IA Pending                   |
| GEN-2010-001    | 300    | WFEC | Tap Woodward – Hitchland 230kV                     | Under Study (DISIS-2010-002) |
| GEN-2010-003    | 100.8  | WERE | GEN-2008-098 345kV                                 | IA Pending                   |
| GEN-2010-005    | 300    | WERE | GEN-2007-025 345kV                                 | IA Pending                   |
| GEN-2010-006    | 205    | SPS  | Jones 230kV  | IA Pending                   |
| GEN-2010-007    | 73.8   | SPS  | Tap Pringle - Riverview 115kV                      | IA Pending                   |
| GEN-2010-008    | 64.4   | WFEC | Fargo 69kV   | IA Pending                   |
| GEN-2010-009    | 165.6  | SUNC | Gray County 345kV                                  | IA Pending                   |
| GEN-2010-010    | 100.5  | NPPD | Emerick 69kV                                       | IA Pending                   |
| GEN-2010-011    | 29.7   | OKGE | GEN-2008-044 345kV                                 | IA Pending                   |
| GEN-2010-014    | 358.8  | SPS  | Hitchland 345kV                                    | IA Pending                   |
| GEN-2010-015    | 200.1  | SUNC | Spearville 345kV                                   | IA Pending                   |
| GEN-2010-016    | 199.8  | SUNC | Tap Spearville - Knoll 345kV                       | IA Pending                   |
| GEN-2010-020    | 20     | SPS  | Roswell 69kV                                       | Under Study (DISIS-2011-001) |
| GEN-2010-029    | 450    | SUNC | Spearville 345kV                                   | Under Study (DISIS-2011-001) |
| GEN-2010-036    | 4.6    | WERE | 6 <sup>th</sup> Street 115kV                       | Under Study (DISIS-2010-002) |
| GEN-2010-040    | 300    | OKGE | Cimarron 345kV                                     | Under Study (DISIS-2010-002) |
| GEN-2010-041    | 10.5   | OPPD | S 1399 161kV                                       | Under Study (DISIS-2010-002) |
| GEN-2010-043    | 320    | WFEC | Mooreland 138kV                                    | Under Study (DISIS-2010-002) |
| GEN-2010-045    | 197.8  | SUNC | Tap Holcomb – Spearville 345kV                     | Under Study (DISIS-2010-002) |
| GEN-2010-046    | 56     | SPS  | Tuco 230kV   | Under Study (DISIS-2010-002) |
| GEN-2010-047    | 72     | NPPD | Tap Beatrice – Harbine 115kV                       | Under Study (DISIS-2010-002) |
| GEN-2010-048    | 70     | MIDW | Tap Beach Station – Redline 115kV                  | Under Study (DISIS-2010-002) |

| Request              | Amount | Area | Requested/Proposed Point of Interconnection | Status or In-Service Date       |
|----------------------|--------|------|---|---------------------------------|
| GEN-2010-049         | 49.6   | MKEC | Pratt 115kV                                 | Under Study<br>(DISIS-2010-002) |
| GEN-2010-051         | 200    | NPPD | Tap Twin Church – Hoskins 230kV             | Under Study<br>(DISIS-2010-002) |
| GEN-2010-052         | 301.3  | SPS  | Finney 345kV                                | Under Study<br>(DISIS-2010-002) |
| GEN-2010-053         | 199.8  | SUNC | Comanche 345kV                              | Under Study<br>(DISIS-2010-002) |
| GEN-2010-055         | 4.5    | AEPW | Wekiwa 138kV                                | Under Study<br>(DISIS-2011-001) |
| GEN-2010-056         | 151.2  | MIPU | Tap Saint Joseph - Cooper 345kV             | Under Study<br>(DISIS-2011-001) |
| GEN-2010-057         | 201    | MIDW | Rice County 230kV                           | Under Study<br>(DISIS-2011-001) |
| GEN-2010-058         | 20     | SPS  | Chaves County 69kV                          | Under Study<br>(DISIS-2011-001) |
| GEN-2011-007         | 250    | OKGE | Tap Cimarron - Woodring 345kV               | Under Study<br>(DISIS-2011-001) |
| GEN-2011-008         | 600    | SUNC | Clark County 345kV                          | Under Study<br>(DISIS-2011-001) |
| GEN-2011-009         | 150.4  | AEPW | Hobart 138kV                                | Under Study<br>(DISIS-2011-001) |
| GEN-2011-010         | 100.8  | OKGE | Minco 345kV                                 | Under Study<br>(DISIS-2011-001) |
| GEN-2011-011         | 50     | KCPL | Iatan 345kV                                 | Under Study<br>(DISIS-2011-001) |
| GEN-2011-012         | 104.5  | SPS  | Tap Moore County - Hitchland 230kV          | Under Study<br>(DISIS-2011-001) |
| GEN-2011-013         | 101.7  | OKGE | Sunnyside 345kV                             | Under Study<br>(DISIS-2011-001) |
| GEN-2011-014         | 201    | OKGE | Tap Hitchland - Woodward 345kV              | Under Study<br>(DISIS-2011-001) |
| GEN-2011-015         | 300.6  | OKGE | Tap Tatonga - Northwest 345kV               | Under Study<br>(DISIS-2011-001) |
| GEN-2011-016         | 200.1  | SUNC | Spearville 345kV                            | Under Study<br>(DISIS-2011-001) |
| GEN-2011-017         | 299    | SUNC | Tap Spearville - Knoll 345kV                | Under Study<br>(DISIS-2011-001) |
| GEN-2011-018         | 73.6   | NPPD | Steele City 115kV                           | Under Study<br>(DISIS-2011-001) |
| GEN-2011-019         | 299    | OKGE | Woodward 345kV                              | Under Study<br>(DISIS-2011-001) |
| GEN-2011-020         | 299    | OKGE | Woodward 345kV                              | Under Study<br>(DISIS-2011-001) |
| GEN-2011-021         | 299    | SPS  | Tap Hitchland - Woodward 345kV              | Under Study<br>(DISIS-2011-001) |
| GEN-2011-022         | 299    | SPS  | Hitchland 345kV                             | Under Study<br>(DISIS-2011-001) |
| GEN-2011-023         | 299    | SUNC | Tap Clark - Spearville 345kV                | Under Study<br>(DISIS-2011-001) |
| GEN-2011-024         | 299    | OKGE | Tatonga 345kV                               | Under Study<br>(DISIS-2011-001) |
| GEN-2011-025         | 82.3   | SPS  | Tap Floyd County - Crosby County 115kV      | Under Study<br>(DISIS-2011-001) |
| GEN-2011-027         | 120    | NPPD | Tap Twin Church - Hoskins 230kV             | Under Study<br>(DISIS-2011-001) |
| Broken Bow           | 8.3    | NPPD | Genoa 115kV                                 | On-Line                         |
| Ord                  | 13.9   | NPPD | Bloomfield 115kV                            | On-Line                         |
| Stuart               | 2.1    | NPPD | Petersburg 115kV                            | On-Line                         |
| Ainsworth            | 75     | NPPD | Ainsworth Wind Tap 115kV                    | On-Line                         |
| Rosebud Wind Project | 30     | NPPD | St. Francis 115kV                           | On-Line                         |
| Wolf Creek           | 1170   | WERE | Wolf Creek 345kV                            | On-Line                         |
| Genoa                | 4      | NPPD | Genoa 115kV                                 | On-Line                         |
| ASGI-2010-001        | 400    | AECI | Tap Cooper – Fairport 345kV                 | AECI queue Affected Study       |
| ASGI-2010-004        | 50     | AECI | Tap Queen City - Lancaster 69kV             | AECI queue Affected Study       |
| ASGI-2010-005        | 99     | AECI | Lathrop 161kV                               | AECI queue Affected Study       |

| Request              | Amount          | Area | Requested/Proposed Point of Interconnection | Status or In-Service Date       |
|----------------------|-----------------|------|---|---------------------------------|
| ASGI-2010-006        | 150             | AECI | Tap Fairfax – Fairfax Tap138kV              | AECI queue Affected Study       |
| ASGI-2010-007        | 150             | AECI | Tap Fairfax – Fairfax Tap138kV              | AECI queue Affected Study       |
| ASGI-2010-008        | 100             | AECI | Maryville 161kV                             | AECI queue Affected Study       |
| ASGI-2010-009        | 201             | AECI | Osborn 161kV                                | AECI queue Affected Study       |
| ASGI-2010-010        | 42              | SPS  | Lovington 115kV                             | AECI queue Affected Study       |
| ASGI-2010-011        | 48              | SPS  | Texas County 69kV                           | Affected Study                  |
| ASGI-2010-020        | 50              | SPS  | Tap (LE) Tatum – (LE) Crossroads 69kV       | Affected Study                  |
| ASGI-2010-021        | 36.6            | SPS  | Tap (LE) Saunders Tap – (LE) Anderson 69kV  | Affected Study                  |
| ASGI-2011-001        | 28.8            | SPS  | Lovington 115kV                             | Affected Study                  |
| ASGI-2011-002        | 10              | SPS  | Herring 115kV                               | Under Study<br>(DISIS-2011-001) |
| ASGI-2011-003        | 10              | SPS  | Hendricks 115kV                             | Under Study<br>(DISIS-2011-001) |
| Llanoest             | 80              | SPS  | Llano Wind Farm Tap 115kV                   | On-Line                         |
| SPSDISTR             | 90              | SPS  | DUMAS_19ST 115kV                            | On-Line                         |
|                      |                 |      | Etter 115kV                                 | On-Line                         |
|                      |                 |      | Sherman 115kV                               | On-Line                         |
|                      |                 |      | Spearman 115kV                              | On-Line                         |
|                      |                 |      | Texas County 115kV                          | On-Line                         |
| BLUCAN2              | 153             | WFEC | Washita 138kV (GEN-2003-004)                | On-Line                         |
|                      |                 |      | Washita 138kV (GEN-2004-023)                | On-Line                         |
|                      |                 |      | Washita 138kV (GEN-2005-003)                | On-Line                         |
| Monte                | 110             | MKEC | Haggard 115kV                               | On-Line                         |
| <b>GROUPED TOTAL</b> | <b>32,728.3</b> |      |   |                                 |

\*\* Interconnection on Caprock Electric tested for impacts on SPP

\* Planned Facility

^ Proposed Facility

**C: Study Groupings**

| Cluster                      | Request       | Amount       | Area           | Proposed Point of Interconnection |
|------------------------------|---------------|--------------|----------------|-----------------------------------|
| <b>Prior Queued</b>          | GEN-2001-014  | 96           | WFEC           | Fort Supply 138kV                 |
|                              | GEN-2001-037  | 100          | OKGE           | Windfarm Switching 138kV          |
|                              | GEN-2005-005  | 18           | OKGE           | Windfarm Tap 138kV                |
|                              | GEN-2005-008  | 120          | OKGE           | Woodward 138kV                    |
|                              | GEN-2006-024S | 20           | WFEC           | South Buffalo Tap 69kV            |
|                              | GEN-2006-046  | 131          | OKGE           | Dewey 138kV                       |
|                              | GEN-2007-006  | 160          | OKGE           | Roman Nose 138kV                  |
|                              | GEN-2007-021  | 201          | OKGE           | *Tatonga 345kV                    |
|                              | GEN-2007-044  | 300          | OKGE           | *Tatonga 345kV                    |
|                              | GEN-2007-050  | 170          | OKGE           | *Woodward 138kV                   |
|                              | GEN-2007-051  | 200          | WFEC           | Mooreland 138kV                   |
|                              | GEN-2007-062  | 765          | OKGE           | *Woodward 345kV                   |
|                              | GEN-2008-003  | 101          | OKGE           | *Woodward EHV 138kV               |
|                              | GEN-2008-019  | 300          | OKGE           | *Tatonga 345kV                    |
|                              | GEN-2008-029  | 250.5        | OKGE           | Woodward EHV 138kV                |
|                              | GEN-2008-044  | 197.8        | OKGE           | Tatonga 345kV                     |
|                              | GEN-2010-008  | 64.4         | WFEC           | Fargo 69kV                        |
|                              | GEN-2010-011  | 29.7         | OKGE           | GEN-2008-044 345kV                |
|                              | GEN-2010-043  | 320          | WFEC           | Mooreland 138kV                   |
|                              | GEN-2011-015  | 300.6        | OKGE           | Tap Tatonga – Woodward 345kV      |
| GEN-2011-019                 | 299           | OKGE         | Woodward 345kV |                                   |
| GEN-2011-020                 | 299           | OKGE         | Woodward 345kV |                                   |
| GEN-2011-024                 | 299           | OKGE         | Tatonga 345kV  |                                   |
| <b>PRIOR QUEUED SUBTOTAL</b> |               | <b>4,742</b> |                |                                   |
| <b>WOODWARD SUBTOTAL</b>     |               | <b>4,742</b> |                |                                   |

| Cluster                      | Request          | Amount         | Area            | Proposed Point of Interconnection                                     |
|------------------------------|------------------|----------------|-----------------|---|
| <b>Prior Queued</b>          | SPS Distribution | 90             | SPS             | Various   |
|                              | ASGI-2010-011    | 48             | SPS             | Texas County 69kV   |
|                              | ASGI-2011-002    | 10             | SPS             | Herring 115kV   |
|                              | ASGI-2011-003    | 10             | SPS             | Hendricks 115kV   |
|                              | GEN-2002-008     | 240            | SPS             | *Hitchland 345kV  |
|                              | GEN-2002-009     | 80             | SPS             | Hansford County 115kV   |
|                              | GEN-2003-013     | 198            | SPS             | *Tap Hitchland - Finney 345kV   |
|                              | GEN-2003-020     | 160            | SPS             | Martin 115kV  |
|                              | GEN-2005-017     | 340            | SPS             | *Tap Hitchland - Potter County 345kV                                  |
|                              | GEN-2006-020     | 20             | SPS             | DWS Frisco Tap  |
|                              | GEN-2006-044     | 370            | SPS             | *Hitchland 345kV  |
|                              | GEN-2006-049     | 400            | SPS             | *Tap Hitchland - Finney 345kV   |
|                              | GEN-2007-046     | 200            | SPS             | Tap & Tie Texas County – Hitchland & DWS Frisco Tap – Hitchland 115kV |
|                              | GEN-2007-057     | 35             | SPS             | Moore County East 115kV   |
|                              | GEN-2008-047     | 300            | SPS             | Tap Hitchland – Woodward 345kV  |
|                              | GEN-2008-110     | 299.2          | SPS             | Hitchland 345kV   |
|                              | GEN-2010-001     | 300            | WFEC            | Tap Woodward – Hitchland 230kV  |
|                              | GEN-2010-007     | 73.8           | SPS             | Tap Pringle – Riverview 115kV   |
|                              | GEN-2010-014     | 358.8          | SPS             | Hitchland 345kV   |
|                              | GEN-2011-012     | 104.5          | SPS             | Tap Moore County - Hitchland 230kV                                    |
|                              | GEN-2011-014     | 201            | SPS             | Tap Hitchland - Woodward 345kV  |
|                              | GEN-2011-021     | 299            | SPS             | Tap Hitchland - Woodward 345kV  |
| GEN-2011-022                 | 299              | SPS            | Hitchland 345kV |   |
| <b>PRIOR QUEUED SUBTOTAL</b> |                  | <b>4,436.3</b> |                 |   |
| Cluster                      | Request          | Amount         | Area            | Proposed Point of Interconnection                                     |
| <b>Hitchland</b>             | GEN-2011-028     | 300.8          | OKGE            | Tap Guymon – Woodward 345kV   |
| <b>HITCHLAND SUBTOTAL</b>    |                  | <b>300.8</b>   |                 |   |
| <b>AREA SUBTOTAL</b>         |                  | <b>4,737.1</b> |                 |   |

| Cluster                      | Request       | Amount         | Area                         | Proposed Point of Interconnection   |
|------------------------------|---------------|----------------|------------------------------|-------------------------------------|
| <b>Prior Queued</b>          | Montezuma     | 110            | MKEC                         | Haggard 115kV                       |
|                              | GEN-2001-039A | 105            | MKEC                         | Tap Greensburg - Judson-Large 115kV |
|                              | GEN-2002-025A | 150            | MKEC                         | Spearville 230kV                    |
|                              | GEN-2004-014  | 154.5          | MKEC                         | Spearville 230kV                    |
|                              | GEN-2005-012  | 250            | SUNC                         | Spearville 345kV                    |
|                              | GEN-2006-006  | 206            | MKEC                         | Spearville 230kV                    |
|                              | GEN-2006-021  | 101            | MKEC                         | Flat Ridge Tap 138kV                |
|                              | GEN-2006-022  | 150            | MKEC                         | Ninnescah Tap 115kV                 |
|                              | GEN-2007-038  | 200            | SUNC                         | Spearville 345kV                    |
|                              | GEN-2007-040  | 200            | SUNC                         | Tap Holcomb – Spearville 345kV      |
|                              | GEN-2008-018  | 405            | SPS                          | Finney 345kV                        |
|                              | GEN-2008-079  | 100.5          | MKEC                         | Tap Fort Dodge – Cudahy 115kV       |
|                              | GEN-2008-124  | 200.1          | MKEC                         | Spearville 230kV                    |
|                              | GEN-2009-062  | 115            | SUNC                         | Hugoton 115kV                       |
|                              | GEN-2010-009  | 165.6          | SUNC                         | Gray County 345kV                   |
|                              | GEN-2010-015  | 200.1          | SUNC                         | Spearville 345kV                    |
|                              | GEN-2010-016  | 199.8          | SUNC                         | Tap Spearville – Knoll 345kV        |
|                              | GEN-2010-029  | 450            | SUNC                         | Spearville 345kV                    |
|                              | GEN-2010-045  | 197.8          | SUNC                         | Tap Holcomb – Spearville 345kV      |
|                              | GEN-2010-049  | 49.6           | MKEC                         | Pratt 115kV                         |
|                              | GEN-2010-052  | 301.3          | SPS                          | Finney 345kV                        |
|                              | GEN-2010-053  | 199.8          | SUNC                         | Comanche 345kV                      |
|                              | GEN-2011-008  | 600            | SUNC                         | Clark County 345kV                  |
| GEN-2011-016                 | 200.1         | SUNC           | Spearville 345kV             |                                     |
| GEN-2011-017                 | 299           | SUNC           | Tap Spearville - Knoll 345kV |                                     |
| GEN-2011-023                 | 299           | SUNC           | Tap Clark - Spearville 345kV |                                     |
| <b>PRIOR QUEUED SUBTOTAL</b> |               | <b>5,609.2</b> |                              |                                     |
| Cluster                      | Request       | Amount         | Area                         | Proposed Point of Interconnection   |
| <b>Spearville</b>            | GEN-2011-003  | 10             | MKEC                         | GEN-2008-079 115kV                  |
|                              | GEN-2011-030  | 1,020          | SUNC                         | Holcomb 345kV                       |
| <b>SPEARVILLE SUBTOTAL</b>   |               | <b>1,030</b>   |                              |                                     |
| <b>AREA SUBTOTAL</b>         |               | <b>6,656.7</b> |                              |                                     |

| Cluster                         | Request       | Amount       | Area          | Proposed Point of Interconnection   |
|---------------------------------|---------------|--------------|---------------|-------------------------------------|
| <b>Prior Queued</b>             | GEN-2001-039M | 100          | SUNC          | Central Plains Tap 115kV            |
|                                 | GEN-2006-034  | 81           | SUNC          | Tap Kanarado - Sharon Springs 115kV |
|                                 | GEN-2006-040  | 108          | SUNC          | Mingo 115kV                         |
|                                 | GEN-2007-011  | 135          | SUNC          | Syracuse 115kV                      |
|                                 | GEN-2007-013  | 99           | SUNC          | Selkirk 115kV                       |
|                                 | GEN-2008-017  | 300          | SUNC          | Setab 345kV                         |
| GEN-2008-025                    | 101.2         | SUNC         | Ruleton 115kV |                                     |
| <b>PRIOR QUEUED SUBTOTAL</b>    |               | <b>924.2</b> |               |                                     |
| <b>MINGO/NW KANSAS SUBTOTAL</b> |               | <b>924.2</b> |               |                                     |

| Cluster                      | Request        | Amount         | Area | Proposed Point of Interconnection  |
|------------------------------|----------------|----------------|------|--|
| <b>Prior Queued</b>          | Llano Estacado | 80             | SPS  | Llano Estacado Tap 115kV   |
|                              | GEN-2002-022   | 240            | SPS  | Bushland 230kV   |
|                              | GEN-2006-039   | 400            | SPS  | Tap and Tie both Potter County - Plant X 230kV and Bushland - Deaf Smith 230kV |
|                              | GEN-2006-045   | 240            | SPS  | Tap and Tie both Potter County - Plant X 230kV and Bushland - Deaf Smith 230kV |
|                              | GEN-2006-047   | 240            | SPS  | Tap and Tie both Potter County - Plant X 230kV and Bushland - Deaf Smith 230kV |
|                              | GEN-2007-002   | 160            | SPS  | Grapevine 115kV  |
|                              | GEN-2007-048   | 400            | SPS  | Tap Amarillo South – Swisher 230kV   |
|                              | GEN-2008-051   | 322            | SPS  | Potter 345kV   |
|                              | GEN-2008-088   | 50.6           | SPS  | Vega 69kV  |
| <b>PRIOR QUEUED SUBTOTAL</b> |                | <b>2,132.6</b> |      |  |
| <b>AMARILLO SUBTOTAL</b>     |                | <b>2,132.6</b> |      |  |

| Cluster                            | Request       | Amount         | Area                                   | Proposed Point of Interconnection          |
|------------------------------------|---------------|----------------|--|--|
| <b>Prior Queued</b>                | ASGI-2010-010 | 42             | SPS                                    | Lovington 115kV                            |
|                                    | ASGI-2010-020 | 50             | SPS                                    | Tap (LE) Tatum – (LE) Crossroads 69kV      |
|                                    | ASGI-2010-021 | 36.6           | SPS                                    | Tap (LE) Saunders Tap – (LE) Anderson 69kV |
|                                    | ASGI-2011-001 | 28.8           | SPS                                    | Lovington 115kV                            |
|                                    | GEN-2001-033  | 180            | SPS                                    | San Juan Mesa Tap 230kV                    |
|                                    | GEN-2001-036  | 80             | SPS                                    | Caprock Tap 115kV                          |
|                                    | GEN-2006-018  | 170            | SPS                                    | Tuco 230kV                                 |
|                                    | GEN-2006-026  | 502            | SPS                                    | Hobbs 230kV                                |
|                                    | GEN-2008-008  | 60             | SPS                                    | Graham 115kV                               |
|                                    | GEN-2008-009  | 60             | SPS                                    | San Juan Mesa Tap 230kV                    |
|                                    | GEN-2008-014  | 150            | SPS                                    | Tap Tuco – Oklaunion 345kV                 |
|                                    | GEN-2008-016  | 248            | SPS                                    | Grassland 230kV                            |
|                                    | GEN-2008-022  | 300            | SPS                                    | Tap Eddy – GEN-2007-034 345kV              |
|                                    | GEN-2009-017  | 60             | SPS                                    | Tap Pembroke – Stiles 138kV                |
|                                    | GEN-2009-067S | 20             | SPS                                    | 7 Rivers 69kV                              |
|                                    | GEN-2010-006  | 205            | SPS                                    | Jones 345kV                                |
|                                    | GEN-2010-020  | 20             | SPS                                    | Roswell 69kV                               |
|                                    | GEN-2010-046  | 56             | SPS                                    | Tuco 230kV                                 |
| GEN-2010-058                       | 20            | SPS            | Chaves County 69kV                     |  |
| GEN-2011-025                       | 82.3          | SPS            | Tap Floyd County - Crosby County 115kV |  |
| <b>PRIOR QUEUED SUBTOTAL</b>       |               | <b>2,370.7</b> |  |  |
| Cluster                            | Request       | Amount         | Area                                   | Proposed Point of Interconnection          |
| <b>South Panhandle</b>             | GEN-2011-031  | 195.6          | SPS                                    | Midland 230kV                              |
| <b>SOUTH PANHANDLE/NM SUBTOTAL</b> |               | <b>195.6</b>   |  |  |
| <b>AREA SUBTOTAL</b>               |               | <b>2,566.3</b> |  |  |



| Cluster                      | Request      | Amount         | Area                          | Proposed Point of Interconnection                        |
|------------------------------|--------------|----------------|-------------------------------|--|
| <b>Prior Queued</b>          | GEN-2001-026 | 74             | WFEC                          | Washita 138kV  |
|                              | GEN-2002-005 | 120            | WFEC                          | Tap Morewood - Elk City 138kV                            |
|                              | GEN-2003-004 | 101            | WFEC                          | Washita 138kV  |
|                              | GEN-2003-005 | 100            | WFEC                          | Anadarko - Paradise 138kV                                |
|                              | GEN-2003-022 | 120            | AEPW                          | Washita 138kV  |
|                              | GEN-2004-020 | 27             | AEPW                          | Washita 138kV  |
|                              | GEN-2004-023 | 21             | WFEC                          | Washita 138kV  |
|                              | GEN-2005-003 | 31             | WFEC                          | Washita 138kV  |
|                              | GEN-2006-002 | 101            | AEPW                          | Grapevine - Elk City 230kV                               |
|                              | GEN-2006-035 | 225            | AEPW                          | Grapevine - Elk City 230kV                               |
|                              | GEN-2006-043 | 99             | AEPW                          | Grapevine - Elk City 230kV                               |
|                              | GEN-2007-032 | 150            | WFEC                          | Tap Clinton Junction – Clinton 138kV                     |
|                              | GEN-2007-043 | 200            | OKGE                          | Tap Lawton Eastside – Cimarron 345kV                     |
|                              | GEN-2007-052 | 150            | WFEC                          | Anadarko 138kV   |
|                              | GEN-2008-023 | 150            | AEPW                          | Hobart Junction 138kV                                    |
|                              | GEN-2008-037 | 100.8          | WFEC                          | Tap Washita – Blue Canyon 138kV                          |
|                              | GEN-2009-016 | 140            | AEPW                          | Falcon Road 138kV  |
|                              | GEN-2009-030 | 100.8          | WFEC                          | Weatherford 138kV  |
|                              | GEN-2009-060 | 84             | WFEC                          | Gotebo 69kV  |
|                              | GEN-2010-040 | 300            | OKGE                          | Cimarron 345kV   |
| GEN-2011-007                 | 250          | OKGE           | Tap Cimarron - Woodring 345kV |  |
| GEN-2011-009                 | 150.4        | AEPW           | Hobart 138kV                  |  |
| GEN-2011-010                 | 100.8        | OKGE           | Minco 345kV                   |  |
| <b>PRIOR QUEUED SUBTOTAL</b> |              | <b>2,895.8</b> |                               |  |
| Cluster                      | Request      | Amount         | Area                          | Proposed Point of Interconnection                        |
| <b>SW Oklahoma</b>           | GEN-2011-029 | 200            | WFEC                          | Tap Rush Springs (Nat. Gas) – Rush Springs (Marlow) 69kV |
| <b>SW OKLAHOMA SUBTOTAL</b>  |              | <b>200</b>     |                               |  |
| <b>AREA SUBTOTAL</b>         |              | <b>3,095.8</b> |                               |  |

| Cluster                        | Request       | Amount         | Area | Proposed Point of Interconnection |
|--------------------------------|---------------|----------------|------|-----------------------------------|
| <b>Prior Queued</b>            | Wolf Creek    | 1170           | WERE | Wolf Creek 345kV                  |
|                                | ASGI-2010-006 | 150            | AECI | Tap Fairfax – Fairfax Tap 138kV   |
|                                | ASGI-2010-007 | 150            | AECI | Tap Fairfax – Fairfax Tap 138kV   |
|                                | GEN-2002-004  | 200            | WERE | Latham 345kV                      |
|                                | GEN-2005-013  | 201            | WERE | Tap Latham - Neosho               |
|                                | GEN-2007-025  | 300            | WERE | Tap Woodring – Wichita 345kV      |
|                                | GEN-2008-013  | 300            | OKGE | Tap Woodring – Wichita 345kV      |
|                                | GEN-2008-021  | 42             | WERE | Wolf Creek 25kV                   |
|                                | GEN-2008-071  | 76.8           | OKGE | Newkirk 138kV                     |
|                                | GEN-2008-098  | 100.8          | WERE | Tap Wolf Creek – LaCygne 345kV    |
|                                | GEN-2008-127  | 200.1          | WERE | Tap Sooner – Rose Hill 345kV      |
|                                | GEN-2009-025  | 60             | OKGE | Tap Deer Creek – Sinclair 69kV    |
|                                | GEN-2010-003  | 100.8          | WERE | GEN-2008-098 345kV                |
|                                | GEN-2010-005  | 300            | WERE | GEN-2007-025 345kV                |
|                                | GEN-2010-055  | 4.5            | AEPW | Wekiwa 138kV                      |
| <b>PRIOR QUEUED SUBTOTAL</b>   |               | <b>3,356</b>   |      |                                   |
| Cluster                        | Request       | Amount         | Area | Proposed Point of Interconnection |
| <b>North Oklahoma</b>          | GEN-2011-004  | 150.4          | WERE | Creswell 138kV                    |
|                                | GEN-2011-006  | 200            | AEPW | Shidler 138kV                     |
| <b>NORTH OKLAHOMA SUBTOTAL</b> |               | <b>350.4</b>   |      |                                   |
| <b>AREA SUBTOTAL</b>           |               | <b>3,706.4</b> |      |                                   |

| Cluster                      | Request              | Amount         | Area                            | Proposed Point of Interconnection |
|------------------------------|----------------------|----------------|---------------------------------|-----------------------------------|
| Prior Queued                 | Broken Bow           | 8.3            | NPPD                            | Genoa 115kV                       |
|                              | Genoa                | 4              | NPPD                            | Genoa 115kV                       |
|                              | Ord                  | 13.9           | NPPD                            | Bloomfield 115kV                  |
|                              | Stuart               | 2.1            | NPPD                            | Petersburg 115kV                  |
|                              | Ainsworth            | 75             | NPPD                            | Ainsworth Wind Tap 115kV          |
|                              | Rosebud Wind Project | 30             | NPPD                            | St. Francis 115kV                 |
|                              | GEN-2006-020N        | 42             | NPPD                            | Bloomfield 115kV                  |
|                              | GEN-2006-037N1       | 75             | NPPD                            | Broken Bow 115kV                  |
|                              | GEN-2006-038N005     | 80             | NPPD                            | Broken Bow 115kV                  |
|                              | GEN-2006-038N019     | 80             | NPPD                            | Petersburg 115kV                  |
|                              | GEN-2006-044N        | 40.5           | NPPD                            | Tap Neligh – Petersburg 115kV     |
|                              | GEN-2006-044N02      | 100.5          | NPPD                            | GEN-2008-086N02 230kV             |
|                              | GEN-2007-011N08      | 81             | NPPD                            | Bloomfield 115kV                  |
|                              | GEN-2008-086N02      | 200            | NPPD                            | Tap Ft. Randall – Columbus 230kV  |
|                              | GEN-2010-010         | 100.5          | NPPD                            | Emerick 69kV                      |
| GEN-2010-051                 | 200                  | NPPD           | Tap Twin Church – Hoskins 230kV |                                   |
| GEN-2011-027                 | 120                  | NPPD           | Tap Twin Church - Hoskins 230kV |                                   |
| <b>PRIOR QUEUED SUBTOTAL</b> |                      | <b>1,252.8</b> |                                 |                                   |
| Cluster                      | Request              | Amount         | Area                            | Proposed Point of Interconnection |
| Nebraska                     | GEN-2011-005         | 150.4          | NPPD                            | Rising City 115kV                 |
| <b>NEBRASKA SUBTOTAL</b>     |                      | <b>150.4</b>   |                                 |                                   |
| <b>AREA SUBTOTAL</b>         |                      | <b>1,410.2</b> |                                 |                                   |

| Cluster                      | Request         | Amount         | Area | Proposed Point of Interconnection   |
|------------------------------|-----------------|----------------|------|-------------------------------------|
| Prior Queued                 | GEN-2003-006A-E | 100            | MKEC | Elm Creek 230kV                     |
|                              | GEN-2003-006A-W | 100            | MKEC | Elm Creek 230kV                     |
|                              | GEN-2003-019    | 250            | MIDW | Smoky Hills Tap 230kV               |
|                              | GEN-2006-031    | 75             | MIDW | Knoll 115kV                         |
|                              | GEN-2006-032    | 200            | MIDW | South Hays 230kV                    |
|                              | GEN-2008-092    | 201            | MIDW | Knoll 115kV                         |
|                              | GEN-2009-008    | 200            | SUNC | South Hays 230kV                    |
|                              | GEN-2009-011    | 50             | MKEC | Tap Plainville – Phillipsburg 115kV |
|                              | GEN-2009-020    | 48.6           | MIDW | Tap Bazine – Nekoma 69kV            |
|                              | GEN-2010-048    | 70             | MIDW | Tap Beach Station – Redline 115kV   |
|                              | GEN-2010-057    | 201            | MIDW | Rice County 230kV                   |
| <b>PRIOR QUEUED SUBTOTAL</b> |                 | <b>1,495.6</b> |      |                                     |
| <b>NORTH KANSAS SUBTOTAL</b> |                 | <b>1,495.6</b> |      |                                     |

| Cluster                        | Request       | Amount         | Area              | Proposed Point of Interconnection                    |
|--------------------------------|---------------|----------------|-------------------|--|
| <b>Prior Queued</b>            | ASGI-2010-001 | 400            | AECI              | Tap Cooper – Fairport 345kV                          |
|                                | ASGI-2010-004 | 50             | AECI              | Tap Queen City – Lancaster 69kV                      |
|                                | ASGI-2010-005 | 99             | AECI              | Lathrop 161kV  |
|                                | ASGI-2010-008 | 100            | AECI              | Maryville 161kV                                      |
|                                | ASGI-2010-009 | 201            | AECI              | Osborn 161kV   |
|                                | GEN-2006-014  | 300            | MIPU              | Tap Maryville – Clarinda 161kV & Tie to Midway 161kV |
|                                | GEN-2006-017  | 300            | MIPU              | Tap Maryville – Clarinda 161kV & Tie to Midway 161kV |
|                                | GEN-2007-015  | 135            | WERE              | Tap Humboldt – Kelly 161kV                           |
|                                | GEN-2007-017  | 101            | MIPU              | Tap Maryville – Clarinda 161kV & Tie to Midway 161kV |
|                                | GEN-2007-053  | 110            | MIPU              | Tap Maryville – Clarinda 161kV & Tie to Midway 161kV |
|                                | GEN-2008-1190 | 60             | OPPD              | Tap Humboldt – Kelly 161kV                           |
|                                | GEN-2008-129  | 80             | MIPU              | Pleasant Hill 161kV                                  |
|                                | GEN-2009-040  | 73.8           | WERE              | Tap Smittyville – Knob Hill 115kV                    |
|                                | GEN-2010-036  | 4.6            | WERE              | 6 <sup>th</sup> Street 115kV                         |
|                                | GEN-2010-041  | 10.5           | OPPD              | S 1399 161kV   |
|                                | GEN-2010-047  | 72             | NPPD              | Tap Beatrice – Harbine 115kV                         |
|                                | GEN-2010-056  | 151.2          | MIPU              | Tap St. Joe – Cooper 345kV                           |
|                                | GEN-2011-011  | 50             | KCPL              | Iatan 345kV  |
| GEN-2011-018                   | 73.6          | NPPD           | Steele City 115kV |  |
| <b>PRIOR QUEUED SUBTOTAL</b>   |               | <b>2,371.7</b> |                   |  |
| <b>NORTH MISSOURI SUBTOTAL</b> |               |                |                   |  |

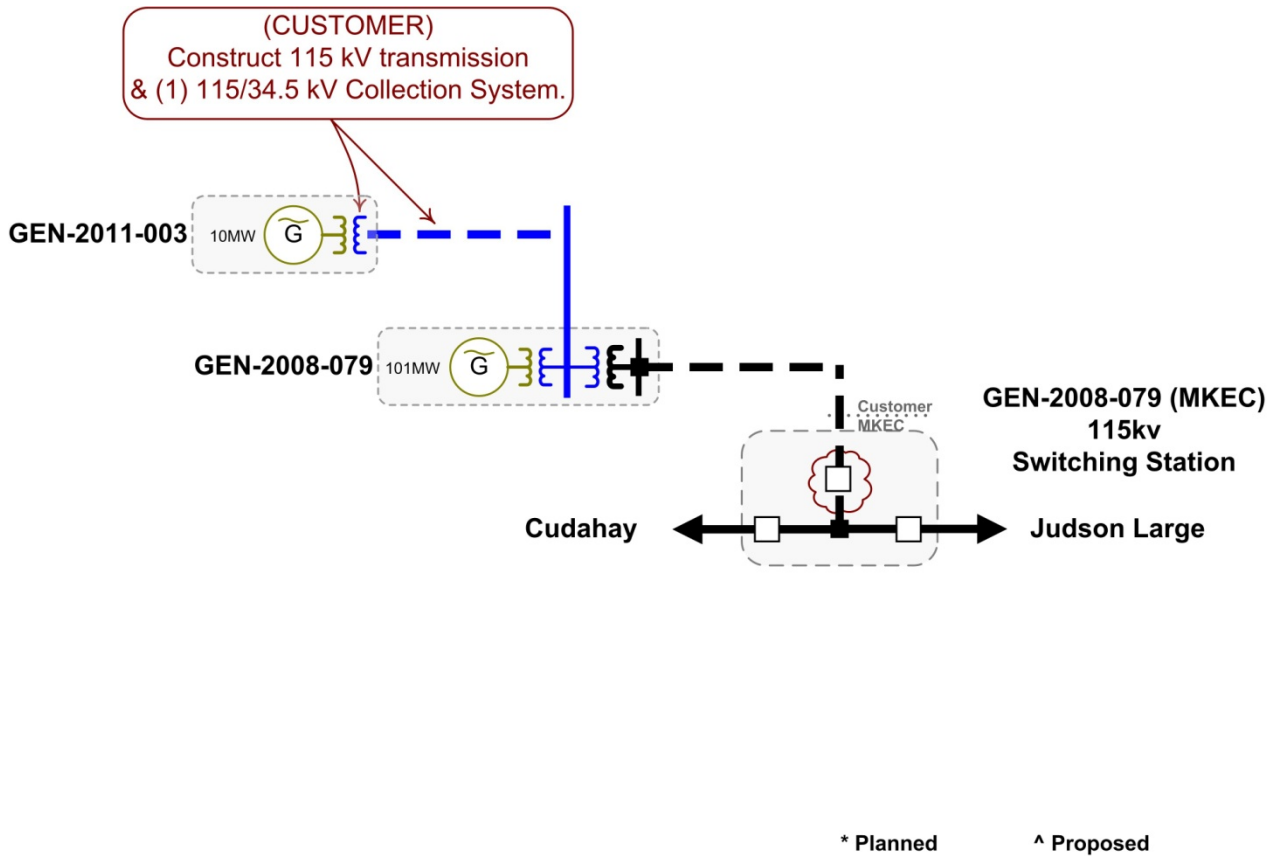
| Cluster                                | Request      | Amount         | Area | Proposed Point of Interconnection |
|--|--------------|----------------|------|-----------------------------------|
| <b>Prior Queued</b>                    | GEN-2006-038 | 750            | WFEC | Hugo 345kV                        |
|  | GEN-2008-046 | 200            | OKGE | Sunnyside 345kV                   |
|  | GEN-2011-013 | 101.7          | OKGE | Sunnyside 345kV                   |
| <b>PRIOR QUEUED SUBTOTAL</b>           |              | <b>1,051.7</b> |      |                                   |
| <b>SOUTH CENTRAL OKLAHOMA SUBTOTAL</b> |              | <b>1,051.7</b> |      |                                   |

| Cluster                                      | Request       | Amount          | Area | Proposed Point of Interconnection |
|--|---------------|-----------------|------|-----------------------------------|
| <b>Prior Queued</b>                          | GEN-2008-123N | 89.7            | NPPD | Tap Guide – Pauline 115kV         |
| <b>SOUTHWEST NEBRASKA</b>                    |               | <b>89.7</b>     |      |                                   |
| <b>***CLUSTERED TOTAL (w/o PRIOR QUEUED)</b> |               | <b>2,227.2</b>  |      |                                   |
| <b>***CLUSTERED TOTAL (w/PRIOR QUEUED)</b>   |               | <b>34,955.5</b> |      |                                   |

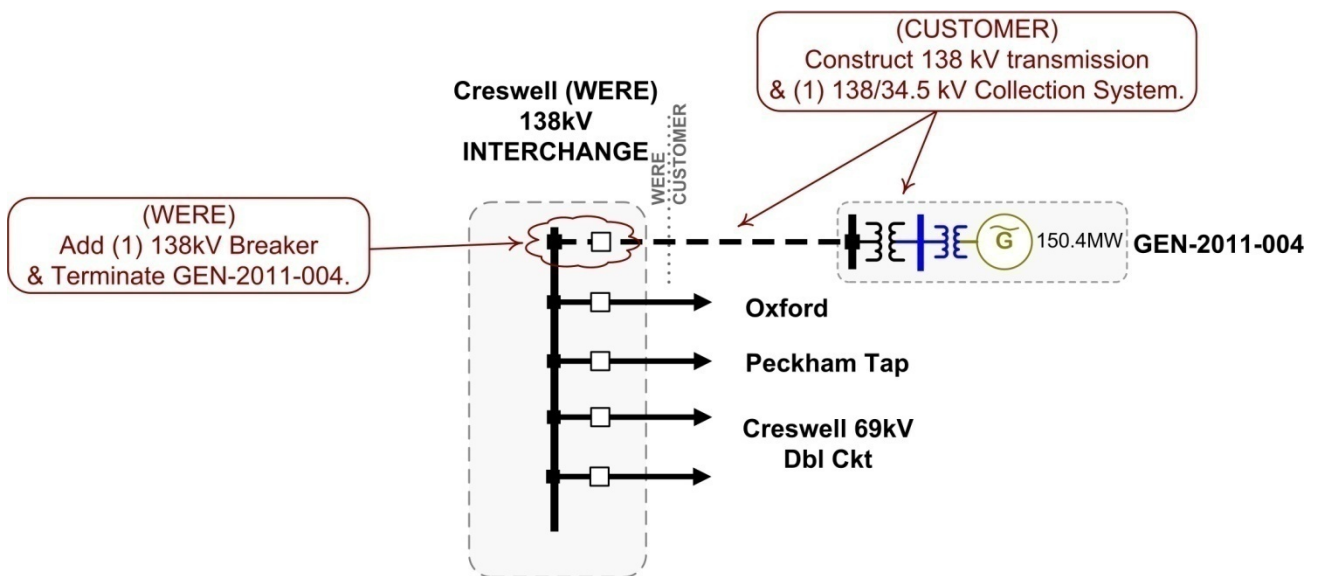
- \* Planned Facility
- ^ Proposed Facility
- \*\* Alternate requests - counted as one request for study purpose
- \*\*\* Electrically Remote Interconnection Requests

### D: Proposed Point of Interconnection One line Diagrams

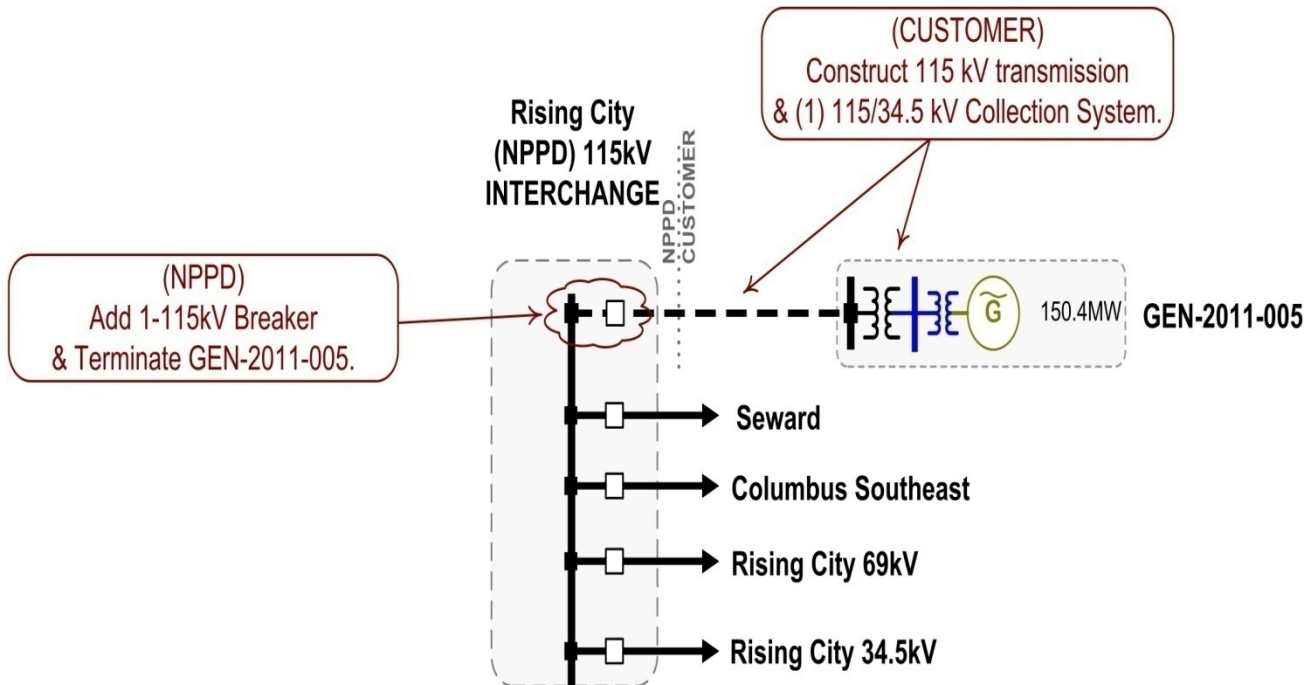
GEN-2011-003



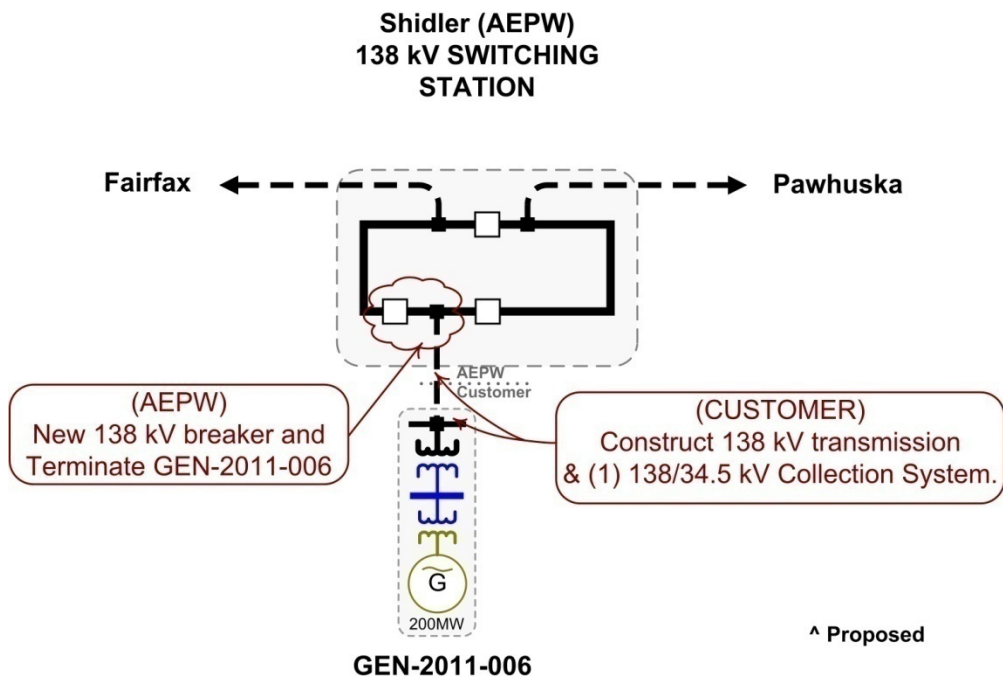
GEN-2011-004



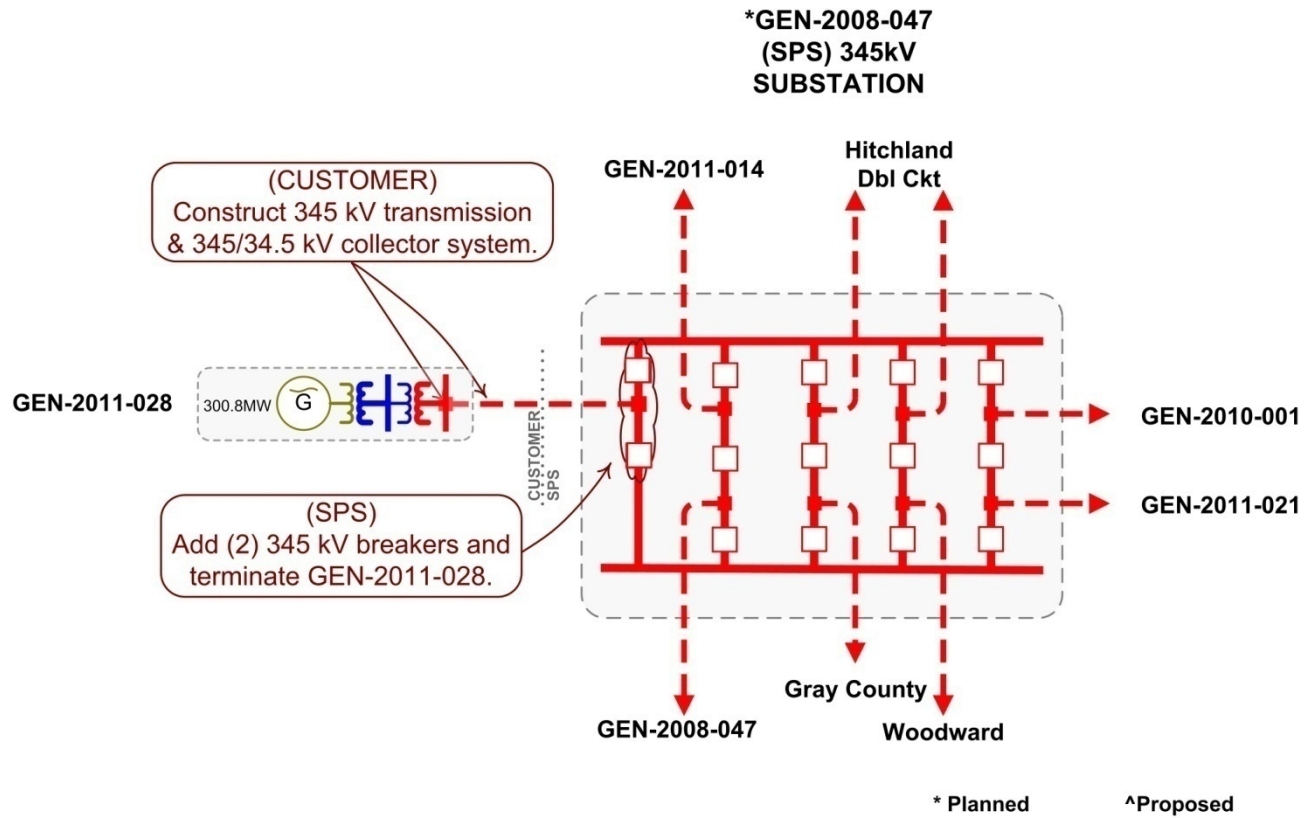
GEN-2011-005



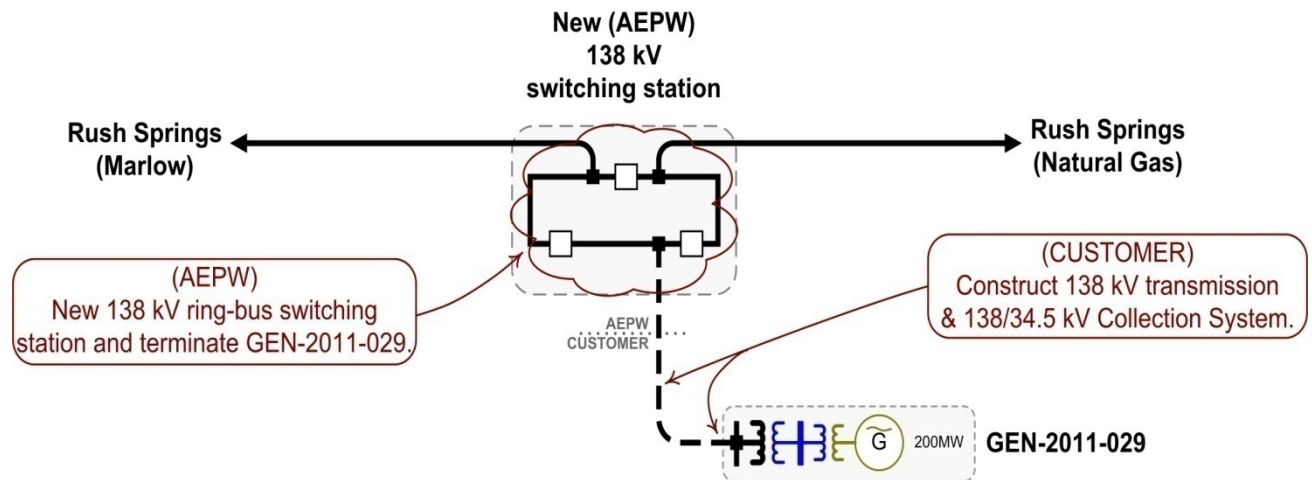
GEN-2011-006



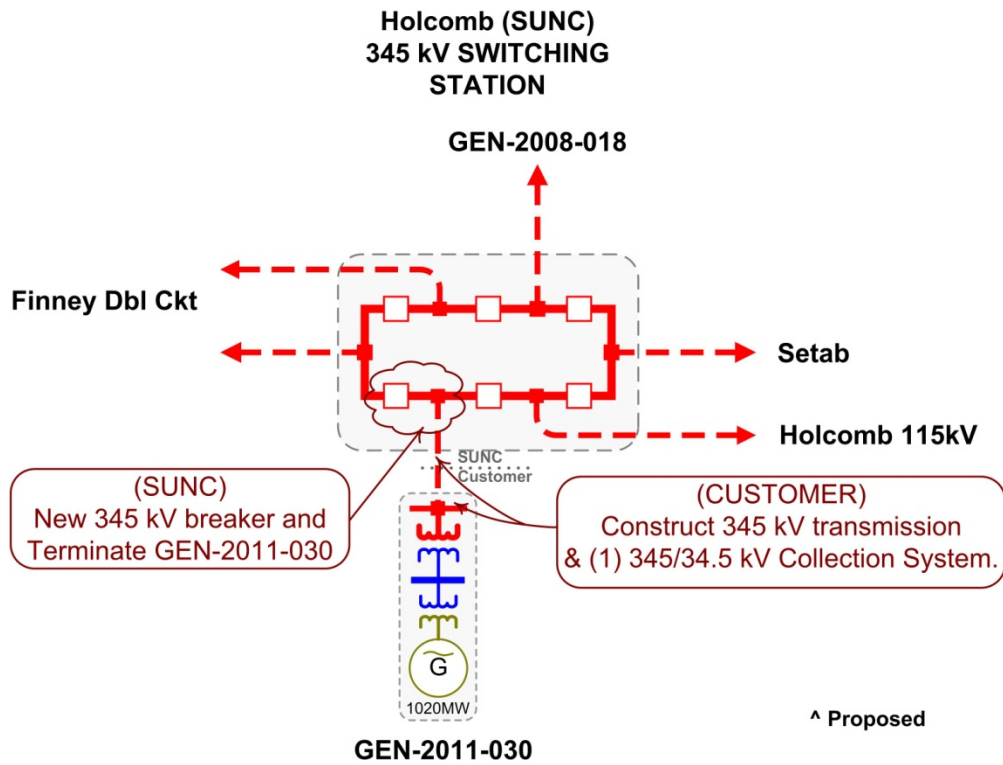
GEN-2011-028



GEN-2011-029

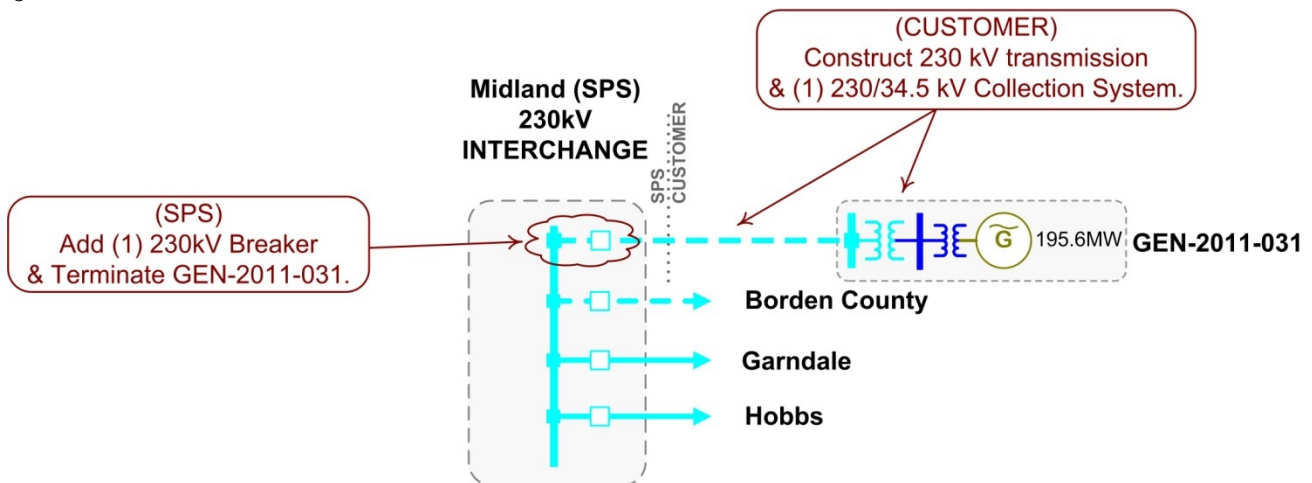


GEN-2011-030



GEN-2011-031

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## **E: Cost Allocation per Interconnection Request**



# E. Cost Allocation Per Request

(Including Previously Allocated Network Upgrades\*)

| Interconnection Request and Upgrades  | Upgrade Type         | Allocated Cost | Upgrade Cost     |
|---|----------------------|----------------|------------------|
| <b>GEN 2011-003</b>   |                      |                |                  |
| GEN-2011-003 Interconnection Costs<br>See Online Diagram.   | Current Study        | \$0.00         | \$0.00           |
| Axtell - PostRock 345KV CKT 1<br>Balanced Portfolio: Spearville - PostRock - Axtell 345KV CKT (Total Project E&C Cost Shown)                          | Previously Allocated |                | \$112,700,000.00 |
| Beaver County - Gray County 345kV<br>Build approximately 90 miles of 345kV from Beaver County - Gray County   | Previously Allocated |                | \$90,000,000.00  |
| Border - Tuco Interchange 345KV CKT 1<br>Balanced Portfolio: Tuco - Woodward 345kV (Total Project E&C Cost Shown)                                     | Previously Allocated |                | \$148,727,500.00 |
| Fort Dodge - North Fort Dodge 115kV CKT 2<br>Construct approximately 1 mile of new 115kV for 2nd circuit  | Previously Allocated |                | \$6,113,000.00   |
| Matthewson - Cimarron 345kV CKT 2<br>Build second 345kV circuit from Matthewson - Cimarron  | Previously Allocated |                | \$15,000,000.00  |
| Medicine Lodge - Wichita 345KV Dbl CKT<br>Priority Project: Spearville - Comanche - Med Lodge - Wichita Dbl 345kV CKT (Total Project E&C Cost Shown.) | Previously Allocated |                | \$356,300,000.00 |
| Medicine Lodge 345/115kV transformer<br>Install new 345/115kV transformer at Medicine Lodge   | Previously Allocated |                | \$10,000,000.00  |
| Mullegreen - Circle 345kV Dbl CKT<br>Build new 345kV line from Mullergreen - Circle   | Previously Allocated |                | \$132,000,000.00 |
| North Fort Dodge - Spearville 115kV<br>DIS-2009-001-1 upgrade.  | Previously Allocated |                | \$9,660,000.00   |
| PostRock - GEN-2010-016 Tap 345KV CKT 1<br>Balanced Portfolio: Spearville - PostRock - Axtell 345KV CKT (Total Project E&C Cost Shown)                | Previously Allocated |                | \$112,700,000.00 |
| Spearville - GEN-2010-016 Tap 345KV CKT 1<br>Balanced Portfolio: Spearville - PostRock - Axtell 345KV CKT (Total Project E&C Cost Shown)              | Previously Allocated |                | \$112,700,000.00 |
| Spearville - Mullergreen 345kV Dbl CKT<br>Build new 345kV line from Spearville - Mullergreen  | Previously Allocated |                | \$124,000,000.00 |
| Spearville 345/115/13.8kV Transformer CKT 1<br>New 345/115kV Spearville Transformer (Partial Cost allocation)   | Previously Allocated |                | \$3,745,000.00   |
| Tatonga - Matthewson 345kV CKT 2<br>Build second 345kV circuit from Tatonga - Matthewson  | Previously Allocated |                | \$60,000,000.00  |

| <b>Interconnection Request and Upgrades</b>   | <b>Upgrade Type</b>        | <b>Allocated Cost</b> | <b>Upgrade Cost</b> |
|---|----------------------------|-----------------------|---------------------|
| Tuco Interchange 345/230/13.2KV Autotransformer CKT 2<br>Balanced Portfolio: Tuco 345/230 kV Transformer CKT 2 (Total Project E&C Cost Shown) | Previously Allocated       |                       | \$11,250,000.00     |
|   | <b>Current Study Total</b> | \$0.00                |                     |
| <b>GEN 2011-004</b>   |                            |                       |                     |
| GEN-2011-004 Interconnection Costs<br>See Oonline Diagram.  | Current Study              | \$2,000,000.00        | \$2,000,000.00      |
| Cleveland - Sooner 345KV CKT 1<br>Balanced Portfolio: Cleveland - Sooner 345kV CKT (Total Project E&C Cost Shown).                            | Previously Allocated       |                       | \$17,000,000.00     |
|   | <b>Current Study Total</b> | \$2,000,000.00        |                     |
| <b>GEN 2011-005</b>   |                            |                       |                     |
| GEN-2011-005 Interconnection Costs<br>See Oonline Diagram.  | Current Study              | \$2,000,000.00        | \$2,000,000.00      |
| Rising City - Seward 115kV<br>Rebuild approximately 31.7 miles of 115kV line  | Current Study              | \$23,800,000.00       | \$23,800,000.00     |
| Madison County - Hoskins 230kV<br>Build approximately 30 miles of 230kV between Madison County and Hoskins                                    | Previously Allocated       |                       | \$30,000,000.00     |
|   | <b>Current Study Total</b> | \$25,800,000.00       |                     |
| <b>GEN 2011-006</b>   |                            |                       |                     |
| GEN-2011-006 Interconnection Costs<br>See Oonline Diagram.  | Current Study              | \$2,000,000.00        | \$2,000,000.00      |
| Highway 20 Tap - Highway 20 138kV<br>Rebuild approximately 6 miles of 138kV line  | Current Study              | \$5,000,000.00        | \$5,000,000.00      |
| Sand Springs - Highway 20 tap 138kV<br>Rebuild approximately 19 miles of 138kV line   | Current Study              | \$18,000,000.00       | \$18,000,000.00     |
| Shidler - Hominy 138kV<br>Build new 138kV line from Shidler - Hominy  | Current Study              | \$31,000,000.00       | \$31,000,000.00     |
| Shilder - West Pawhuska 138kV<br>Replace switches at Shidler 138kV substation   | Current Study              | \$200,000.00          | \$200,000.00        |
|   | <b>Current Study Total</b> | \$56,200,000.00       |                     |
| <b>GEN 2011-028</b>   |                            |                       |                     |
| GEN-2011-028 Interconnection Costs<br>See Oonline Diagram.  | Current Study              | \$4,000,000.00        | \$4,000,000.00      |

| <b>Interconnection Request and Upgrades</b>   | <b>Upgrade Type</b>        | <b>Allocated Cost</b> | <b>Upgrade Cost</b> |
|---|----------------------------|-----------------------|---------------------|
| Beaver County - Gray County 345kV<br>Build approximately 90 miles of 345kV from Beaver County - Gray County   | Previously Allocated       |                       | \$90,000,000.00     |
| Border - Tuco Interchange 345KV CKT 1<br>Balanced Portfolio: Tuco - Woodward 345kV (Total Project E&C Cost Shown)   | Previously Allocated       |                       | \$148,727,500.00    |
| Finney Switching Station - Holcomb 345KV CKT 2<br>Per GEN-2006-044 Facility Study   | Previously Allocated       |                       | \$6,299,839.00      |
| Hitchland - Border 345 kV Dbl CKT<br>Build approximately 105 miles of 345kV and SVC at Hitchland.   | Previously Allocated       |                       | \$224,831,940.00    |
| Matthewson - Cimarron 345kV CKT 2<br>Build second 345kV circuit from Matthewson - Cimarron  | Previously Allocated       |                       | \$15,000,000.00     |
| Medicine Lodge - Wichita 345KV Dbl CKT<br>Priority Project: Spearville - Comanche - Med Lodge - Wichita Dbl 345kV CKT (Total Project E&C Cost Shown.)     | Previously Allocated       |                       | \$356,300,000.00    |
| Medicine Lodge - Woodward 345KV Dbl CKT<br>Priority Project: Med Lodge - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)                            | Previously Allocated       |                       | \$194,972,759.00    |
| Medicine Lodge 345/138KV Transformer CKT 1<br>Priority Project: Spearville - Comanche - Med Lodge - Wichita Dbl 345kV CKT (Total Project E&C Cost Shown.) | Previously Allocated       |                       | \$356,300,000.00    |
| Tatonga - Matthewson 345kV CKT 2<br>Build second 345kV circuit from Tatonga - Matthewson  | Previously Allocated       |                       | \$60,000,000.00     |
| Tuco Interchange 345/230/13.2KV Autotransformer CKT 2<br>Balanced Portfolio: Tuco 345/230 kV Transformer CKT 2 (Total Project E&C Cost Shown)             | Previously Allocated       |                       | \$11,250,000.00     |
|   | <b>Current Study Total</b> | <b>\$4,000,000.00</b> |                     |

## GEN 2011-029

|   |               |                |                |
|---|---------------|----------------|----------------|
| AEPW Duncan - Duncan Eastside 138kV<br>Rebuild approximately 5.1 miles of 138kV line                              | Current Study | \$3,800,000.00 | \$3,800,000.00 |
| Commanche tap - Commanche 69kV<br>Rebuild approximately 2.6 miles of 69kV line                                    | Current Study | \$3,000,000.00 | \$3,000,000.00 |
| Cornville - Rush Springs Natural Gas 138kV<br>Replace switches on Cornville - Rush Springs Natural Gas 138kV line | Current Study | \$3,000,000.00 | \$3,000,000.00 |
| Duncan - Tosco 69kV<br>Rebuild approximately 3.9 miles of 69kV line   | Current Study | \$3,000,000.00 | \$3,000,000.00 |
| Duncan 138/69kV transformer #2<br>Install 2nd 138/69/13.8kV transformer at Duncan                                 | Current Study | \$2,000,000.00 | \$2,000,000.00 |

| <b>Interconnection Request and Upgrades</b>   | <b>Upgrade Type</b>        | <b>Allocated Cost</b>  | <b>Upgrade Cost</b> |
|---|----------------------------|------------------------|---------------------|
| GEN-2011-029 Interconnection Costs<br>See Online Diagram.   | Current Study              | \$4,000,000.00         | \$4,000,000.00      |
| Marlow - OMPA Duncan 138kV<br>Rebuild approximately 3.2 miles of 138kV line   | Current Study              | \$2,000,000.00         | \$2,000,000.00      |
| OMPA Duncan - Duncan Eastside 138kV<br>Rebuild approximately 1.2 miles of 138kV line  | Current Study              | \$900,000.00           | \$900,000.00        |
| Rush Springs - Marlow 138kV<br>Rebuild approximately 8.6 miles of 138kV line  | Current Study              | \$6,000,000.00         | \$6,000,000.00      |
| Tosco - Commanche Tap 69kV<br>Rebuild approximately 3.2 miles of 69kV line  | Current Study              | \$2,000,000.00         | \$2,000,000.00      |
| Gracemont Transformer 345/138/13.8KV CKT 1<br>Priority Project: Gracemont Transformer 345/138/13.8KV CKT 1 (Total Project E&C Cost Shown) | Previously Allocated       |                        | \$8,000,000.00      |
| Washita - Gracemont 138kV CKT 2<br>Build approximately 11 miles of 138kV.   | Previously Allocated       |                        | \$5,621,986.00      |
|   | <b>Current Study Total</b> | <b>\$29,700,000.00</b> |                     |

### **GEN 2011-030**

|   |                      |                |                  |
|---|----------------------|----------------|------------------|
| GEN-2011-030 Interconnection Costs<br>See Online Diagram.   | Current Study        | \$5,000,000.00 | \$5,000,000.00   |
| Axtell - PostRock 345KV CKT 1<br>Balanced Portfolio: Spearville - PostRock - Axtell 345kV CKT (Total Project E&C Cost Shown)                              | Previously Allocated |                | \$112,700,000.00 |
| Beaver County - Gray County 345kV<br>Build approximately 90 miles of 345kV from Beaver County - Gray County   | Previously Allocated |                | \$90,000,000.00  |
| Border - Tuco Interchange 345KV CKT 1<br>Balanced Portfolio: Tuco - Woodward 345kV (Total Project E&C Cost Shown)   | Previously Allocated |                | \$148,727,500.00 |
| Border - Woodward 345KV CKT 1<br>Balanced Portfolio: Tuco - Woodward 345kV (Total Project E&C Cost Shown)   | Previously Allocated |                | \$148,727,500.00 |
| Matthewson - Cimarron 345kV CKT 2<br>Build second 345kV circuit from Matthewson - Cimarron  | Previously Allocated |                | \$15,000,000.00  |
| Medicine Lodge - Wichita 345KV Dbl CKT<br>Priority Project: Spearville - Comanche - Med Lodge - Wichita Dbl 345kV CKT (Total Project E&C Cost Shown.)     | Previously Allocated |                | \$356,300,000.00 |
| Medicine Lodge 345/138KV Transformer CKT 1<br>Priority Project: Spearville - Comanche - Med Lodge - Wichita Dbl 345kV CKT (Total Project E&C Cost Shown.) | Previously Allocated |                | \$356,300,000.00 |

| <b>Interconnection Request and Upgrades</b>   | <b>Upgrade Type</b>        | <b>Allocated Cost</b>   | <b>Upgrade Cost</b> |
|---|----------------------------|-------------------------|---------------------|
| Mullegreen - Circle 345kV Dbl CKT<br>Build new 345kV line from Mullegreen - Circle  | Previously Allocated       |                         | \$132,000,000.00    |
| PostRock - GEN-2010-016 Tap 345KV CKT 1<br>Balanced Portfolio: Spearville - PostRock - Axtell 345kV CKT (Total Project E&C Cost Shown)                | Previously Allocated       |                         | \$112,700,000.00    |
| Spearville - GEN-2010-016 Tap 345KV CKT 1<br>Balanced Portfolio: Spearville - PostRock - Axtell 345kV CKT (Total Project E&C Cost Shown)              | Previously Allocated       |                         | \$112,700,000.00    |
| Spearville - Mullegreen 345kV Dbl CKT<br>Build new 345kV line from Spearville - Mullegreen  | Previously Allocated       |                         | \$124,000,000.00    |
| Tatonga - Matthewson 345kV CKT 2<br>Build second 345kV circuit from Tatonga - Matthewson  | Previously Allocated       |                         | \$60,000,000.00     |
| Tuco Interchange 345/230/13.2KV Autotransformer CKT 2<br>Balanced Portfolio: Tuco 345/230 kV Transformer CKT 2 (Total Project E&C Cost Shown)         | Previously Allocated       |                         | \$11,250,000.00     |
|   | <b>Current Study Total</b> | <b>\$5,000,000.00</b>   |                     |
| <b>GEN 2011-031</b>   |                            |                         |                     |
| GEN-2011-031 Interconnection Costs<br>See Online Diagram.   | Current Study              | \$5,000,000.00          | \$5,000,000.00      |
| Midland - Borden 230kV<br>Build new 230kV line from Midland - Borden  | Current Study              | \$60,000,000.00         | \$60,000,000.00     |
| Border - Tuco Interchange 345KV CKT 1<br>Balanced Portfolio: Tuco - Woodward 345kV (Total Project E&C Cost Shown)                                     | Previously Allocated       |                         | \$148,727,500.00    |
| Border - Woodward 345KV CKT 1<br>Balanced Portfolio: Tuco - Woodward 345kV (Total Project E&C Cost Shown)   | Previously Allocated       |                         | \$148,727,500.00    |
| Hitchland - Beaver 345kV Dbl CKT<br>Priority Project: Hitchland - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)                               | Previously Allocated       |                         | \$247,005,793.00    |
| Hitchland - Border 345 kV Dbl CKT<br>Build approximately 105 miles of 345kV and SVC at Hitchland.   | Previously Allocated       |                         | \$224,831,940.00    |
| Medicine Lodge - Wichita 345KV Dbl CKT<br>Priority Project: Spearville - Comanche - Med Lodge - Wichita Dbl 345kV CKT (Total Project E&C Cost Shown.) | Previously Allocated       |                         | \$356,300,000.00    |
| Medicine Lodge - Woodward 345KV Dbl CKT<br>Priority Project: Med Lodge - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)                        | Previously Allocated       |                         | \$194,972,759.00    |
|   | <b>Current Study Total</b> | <b>\$65,000,000.00</b>  |                     |
| <b>TOTAL CURRENT STUDY COSTS:</b>   |                            | <b>\$187,700,000.00</b> |                     |

## **F: FCITC Analysis (No Upgrades)**

| Season | Scenario | Source  | MontCommonName   | Direction | TDF     | Rating | Contingency Loading % | Contname  |
|--------|----------|---------|--|-----------|---------|--------|-----------------------|---|
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.2538  | 1188.5 | 124.9558              | 'DBL-MEDLO-WIC'   |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.26806 | 1188.5 | 116.9965              | 'DBL-WOOD-MED'  |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.21098 | 1188.5 | 110.5275              | 'LAWTON EASTSIDE - OKLAUNION 345KV CKT 1'                   |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.21098 | 1188.5 | 105.8494              | 'G08-14T 345.00 - OKLAUNION 345KV CKT 1'                    |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.21098 | 1188.5 | 105.4035              | 'G08-14T 345.00 - TUCO INTERCHANGE 345KV CKT 1'             |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.21402 | 1188.5 | 103.2547              | 'MED-LDG5 345.00 - WICHITA 345KV CKT 1'                     |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.21402 | 1188.5 | 103.2547              | 'MED-LDG5 345.00 - WICHITA 345KV CKT 2'                     |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.22072 | 1188.5 | 102.3448              | 'MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 2'             |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.22072 | 1188.5 | 102.3448              | 'MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 1'             |
| 11G    | 0        | G11_028 | 'G11-015T 345.00 - TATONGA7 345.00 345KV CKT 1'        | FROM->TO  | 0.2538  | 1194.9 | 102.4771              | 'DBL-MEDLO-WIC'   |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.21071 | 1188.5 | 101.8311              | 'GRAY CO 345.00 - SPEARVILLE 345KV CKT 1'                   |
| 11G    | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                  | FROM->TO  | 0.34989 | 142.7  | 105.4231              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                  |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.25659 | 1190.6 | 116.7296              | 'DBL-MEDLO-WIC'   |
| 11G    | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                  | FROM->TO  | 0.35    | 142.7  | 103.7004              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                  |
| 11G    | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 132.9  | 117.4557              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 132.9  | 112.1133              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11G    | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 132.9  | 110.0065              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 105    | 110.8558              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.8  | 107.0018              | 'G11-029 138.00 - RUSH SPRINGS TAP 138KV CKT 1'             |
| 11G    | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.8  | 104.3407              | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'                |
| 11G    | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 132.9  | 104.6641              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11G    | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 105    | 104.0939              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 0        | G11_005 | 'RISING CITY - SEWARD 115KV CKT 1'                     | FROM->TO  | 1       | 120    | 103.5                 | 'COLUMNSOUTHEAST - RISING CITY 115KV CKT 1'                 |
| 11G    | 0        | G11_005 | 'RISING CITY - SEWARD 115KV CKT 1'                     | FROM->TO  | 1       | 120    | 111.5833              | 'COLUMNSOUTHEAST - RISING CITY 115KV CKT 1'                 |
| 11WP   | 0        | G11_005 | 'RISING CITY - SEWARD 115KV CKT 1'                     | FROM->TO  | 1       | 120    | 105.0833              | 'COLUMNSOUTHEAST - RISING CITY 115KV CKT 1'                 |
| 16WP   | 0        | G11_005 | 'RISING CITY - SEWARD 115KV CKT 1'                     | FROM->TO  | 1       | 120    | 103.5                 | 'COLUMNSOUTHEAST - RISING CITY 115KV CKT 1'                 |
| 11G    | 0        | G11_005 | 'RISING CITY - SEWARD 115KV CKT 1'                     | FROM->TO  | 1       | 120    | 111.5833              | 'COLUMNSOUTHEAST - RISING CITY 115KV CKT 1'                 |
| 11SP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                  | FROM->TO  | 0.35788 | 143    | 126.0671              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                  |
| 11SP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                  | FROM->TO  | 0.4076  | 143    | 127.7063              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                         |
| 11SP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                  | FROM->TO  | 0.4076  | 143    | 127.7063              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'                   |
| 11SP   | 0        | G11_006 | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'              | FROM->TO  | 0.52299 | 169.9  | 127.9565              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                  |
| 11SP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                  | FROM->TO  | 0.4076  | 143    | 123.7203              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'                         |
| 11SP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                    | TO->FROM  | 0.52299 | 179.9  | 120.8438              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                  |
| 11SP   | 0        | G11_006 | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'              | FROM->TO  | 0.50211 | 169.9  | 118.3178              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                       |
| 11SP   | 0        | G11_006 | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'              | FROM->TO  | 0.50211 | 169.9  | 117.847               | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'                  |
| 11SP   | 0        | G11_006 | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'              | FROM->TO  | 0.50211 | 169.9  | 114.08                | 'DOMES - PAWHUSKA TAP 138KV CKT 1'                          |
| 11SP   | 0        | G11_006 | 'OSAGE - WEBB CITY TAP 138KV CKT 1'                    | TO->FROM  | 0.52299 | 179.8  | 112.9021              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                  |
| 11SP   | 0        | G11_006 | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'              | FROM->TO  | 0.50211 | 169.9  | 112.6674              | 'DOMES - MOUND ROAD 138KV CKT 1'                            |
| 11SP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                    | TO->FROM  | 0.50211 | 179.9  | 111.741               | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                       |
| 11SP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                    | TO->FROM  | 0.50211 | 179.9  | 111.2963              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'                  |
| 11SP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                    | TO->FROM  | 0.50211 | 179.9  | 107.7387              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'                          |
| 11SP   | 0        | G11_006 | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'             | TO->FROM  | 0.4076  | 170    | 106.3647              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                         |
| 11SP   | 0        | G11_006 | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'             | TO->FROM  | 0.4076  | 170    | 106.3647              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'                   |
| 11SP   | 0        | G11_006 | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'             | TO->FROM  | 0.35788 | 170    | 104.9859              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                  |
| 11SP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                    | TO->FROM  | 0.50211 | 179.9  | 106.4047              | 'DOMES - MOUND ROAD 138KV CKT 1'                            |
| 11SP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                  | FROM->TO  | 0.2608  | 143    | 102.9874              | 'NORTHEAST STATION 138/22.0KV TRANSFORMER CKT 1'            |
| 11SP   | 0        | G11_006 | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'              | FROM->TO  | 0.37251 | 169.9  | 103.4738              | 'SOONER 138/22.0KV TRANSFORMER CKT 1'                       |
| 11SP   | 0        | G11_006 | 'OSAGE - WEBB CITY TAP 138KV CKT 1'                    | TO->FROM  | 0.50211 | 179.8  | 103.7942              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                       |
| 11SP   | 0        | G11_006 | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'             | TO->FROM  | 0.4076  | 170    | 103.0118              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'                         |
| 11SP   | 0        | G11_006 | 'OSAGE - WEBB CITY TAP 138KV CKT 1'                    | TO->FROM  | 0.50211 | 179.8  | 103.2937              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'                  |
| 11SP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                    | TO->FROM  | 0.37251 | 135.9  | 100.9581              | 'BASE CASE'   |
| 11WP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                  | FROM->TO  | 0.3569  | 142.9  | 130.077               | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                  |
| 11WP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                  | FROM->TO  | 0.40708 | 142.9  | 127.9328              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                         |
| 11WP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                  | FROM->TO  | 0.40708 | 142.9  | 127.9328              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'                   |
| 11WP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                  | FROM->TO  | 0.40708 | 142.9  | 123.944               | 'OSAGE - WEBB CITY TAP 138KV CKT 1'                         |
| 11WP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                    | TO->FROM  | 0.52411 | 180    | 119.0122              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                  |

| Season | Scenario | Source  | MontCommonName                                  | Direction | TDF     | Rating | Contingency Loading % | Contname   |
|--------|----------|---------|---|-----------|---------|--------|-----------------------|--|
| 11WP   | 0        | G11_006 | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'       | FROM->TO  | 0.52411 | 192    | 111.574               | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 11WP   | 0        | G11_006 | 'OSAGE - WEBB CITY TAP 138KV CKT 1'             | TO->FROM  | 0.52411 | 179.9  | 111.0739              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 11WP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'             | TO->FROM  | 0.50276 | 180    | 108.5844              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'            |
| 11WP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'             | TO->FROM  | 0.50276 | 180    | 108.14                | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'       |
| 11WP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'             | TO->FROM  | 0.50276 | 180    | 106.0289              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'               |
| 11WP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'             | TO->FROM  | 0.50276 | 180    | 104.9178              | 'DOMES - MOUND ROAD 138KV CKT 1'                 |
| 11WP   | 0        | G11_006 | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'       | FROM->TO  | 0.50276 | 192    | 101.7979              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'            |
| 11WP   | 0        | G11_006 | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'       | FROM->TO  | 0.50276 | 192    | 101.3813              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'       |
| 11WP   | 0        | G11_006 | 'OSAGE - WEBB CITY TAP 138KV CKT 1'             | TO->FROM  | 0.50276 | 179.9  | 100.5848              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'            |
| 11WP   | 0        | G11_006 | 'OSAGE - WEBB CITY TAP 138KV CKT 1'             | TO->FROM  | 0.50276 | 179.9  | 100.1957              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'       |
| 11WP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'           | FROM->TO  | 0.2737  | 142.9  | 100.098               | 'FAIRFAX 138/69KV TRANSFORMER CKT 1'             |
| 16WP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'           | FROM->TO  | 0.35824 | 142.9  | 128.0952              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 16WP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'           | FROM->TO  | 0.40778 | 142.9  | 127.1211              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'        |
| 16WP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'           | FROM->TO  | 0.40778 | 142.9  | 127.1211              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'              |
| 16WP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'           | FROM->TO  | 0.40778 | 142.9  | 123.1323              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'              |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'             | TO->FROM  | 0.52269 | 180    | 119.5767              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'       | FROM->TO  | 0.52269 | 192    | 112.1031              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 16WP   | 0        | G11_006 | 'OSAGE - WEBB CITY TAP 138KV CKT 1'             | TO->FROM  | 0.52269 | 179.9  | 111.6387              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'             | TO->FROM  | 0.50196 | 180    | 109.2733              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'            |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'             | TO->FROM  | 0.50196 | 180    | 108.94                | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'       |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'             | TO->FROM  | 0.50196 | 180    | 106.7178              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'               |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'             | TO->FROM  | 0.50196 | 180    | 105.4956              | 'DOMES - MOUND ROAD 138KV CKT 1'                 |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'       | FROM->TO  | 0.50196 | 192    | 102.4438              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'            |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'       | FROM->TO  | 0.50196 | 192    | 102.1312              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'       |
| 16WP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'           | FROM->TO  | 0.26123 | 142.9  | 101.4094              | 'NORTHEAST STATION 138/22.0KV TRANSFORMER CKT 1' |
| 16WP   | 0        | G11_006 | 'OSAGE - WEBB CITY TAP 138KV CKT 1'             | TO->FROM  | 0.50196 | 179.9  | 101.3296              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'            |
| 16WP   | 0        | G11_006 | 'OSAGE - WEBB CITY TAP 138KV CKT 1'             | TO->FROM  | 0.50196 | 179.9  | 100.9405              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'       |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'       | FROM->TO  | 0.50196 | 192    | 100.0479              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'               |
| 16WP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'           | FROM->TO  | 0.35036 | 142.9  | 126.9923              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 16WP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'           | FROM->TO  | 0.40416 | 142.9  | 126.6144              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'        |
| 16WP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'           | FROM->TO  | 0.40416 | 142.9  | 126.6144              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'              |
| 16WP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'           | FROM->TO  | 0.40416 | 142.9  | 122.6256              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'              |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'             | TO->FROM  | 0.53198 | 180    | 120.6089              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'       | FROM->TO  | 0.53198 | 192    | 113.0708              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 16WP   | 0        | G11_006 | 'OSAGE - WEBB CITY TAP 138KV CKT 1'             | TO->FROM  | 0.53198 | 179.9  | 112.6715              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'             | TO->FROM  | 0.5081  | 180    | 109.9556              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'            |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'             | TO->FROM  | 0.5081  | 180    | 109.6222              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'       |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'             | TO->FROM  | 0.5081  | 180    | 107.4                 | 'DOMES - PAWHUSKA TAP 138KV CKT 1'               |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'             | TO->FROM  | 0.5081  | 180    | 106.1778              | 'DOMES - MOUND ROAD 138KV CKT 1'                 |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'       | FROM->TO  | 0.5081  | 192    | 103.0833              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'            |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'       | FROM->TO  | 0.5081  | 192    | 102.7708              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'       |
| 16WP   | 0        | G11_006 | 'OSAGE - WEBB CITY TAP 138KV CKT 1'             | TO->FROM  | 0.5081  | 179.9  | 102.0122              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'            |
| 16WP   | 0        | G11_006 | 'OSAGE - WEBB CITY TAP 138KV CKT 1'             | TO->FROM  | 0.5081  | 179.9  | 101.6231              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'       |
| 16WP   | 0        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'           | FROM->TO  | 0.25373 | 142.9  | 100.7362              | 'NORTHEAST STATION 138/22.0KV TRANSFORMER CKT 1' |
| 16WP   | 0        | G11_006 | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'       | FROM->TO  | 0.5081  | 192    | 100.6875              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'               |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'       | TO->FROM  | 0.2538  | 1188.5 | 126.6129              | 'DBL-MEDLO-WIC'                                  |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'       | TO->FROM  | 0.26806 | 1188.5 | 118.7199              | 'DBL-WOOD-MED'                                   |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'       | TO->FROM  | 0.21098 | 1188.5 | 112.0492              | 'LAWTON EASTSIDE - OKLAUNION 345KV CKT 1'        |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'       | TO->FROM  | 0.21098 | 1188.5 | 107.3711              | 'G08-14T 345.00 - OKLAUNION 345KV CKT 1'         |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'       | TO->FROM  | 0.21098 | 1188.5 | 106.9251              | 'G08-14T 345.00 - TUCO INTERCHANGE 345KV CKT 1'  |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'       | TO->FROM  | 0.21402 | 1188.5 | 104.6462              | 'MED-LDG5 345.00 - WICHITA 345KV CKT 1'          |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'       | TO->FROM  | 0.21402 | 1188.5 | 104.6462              | 'MED-LDG5 345.00 - WICHITA 345KV CKT 2'          |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'       | TO->FROM  | 0.22072 | 1188.5 | 103.7726              | 'MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 2'  |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'       | TO->FROM  | 0.22072 | 1188.5 | 103.7726              | 'MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 1'  |
| 11G    | 0        | G11_028 | 'G11-015T 345.00 - TATONGA7 345.00 345KV CKT 1' | FROM->TO  | 0.2538  | 1194.9 | 104.1254              | 'DBL-MEDLO-WIC'                                  |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'       | TO->FROM  | 0.21071 | 1188.5 | 103.2077              | 'GRAY CO 345.00 - SPEARVILLE 345KV CKT 1'        |



| Season | Scenario | Source  | MontCommonName   | Direction | TDF     | Rating | Contingency Loading % | Contname   |
|--------|----------|---------|--|-----------|---------|--------|-----------------------|--|
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.20877 | 1188.5 | 101.3159              | 'DEWEY - SOUTHARD 138KV CKT 1'                               |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.20278 | 1188.5 | 101.1979              | 'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1' |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.20278 | 1188.5 | 101.1979              | 'ELK CITY 230KV - SWEETWT6 230.00 230KV CKT 1'               |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.20774 | 1188.5 | 101.0795              | 'MINGO - RED WILLOW 345KV CKT 1'                             |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.20581 | 1188.5 | 101.039               | 'FINNEY SWITCHING STATION - STEVENSCO 345.00 345KV CKT 1'    |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.20877 | 1188.5 | 101.0298              | 'EL RENO - ROMAN NOSE 138KV CKT 1'                           |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.20646 | 1188.5 | 101.0134              | 'G10-16T 345.00 - POSTROCK7 345.00 345KV CKT 1'              |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.20703 | 1188.5 | 100.9942              | 'MINGO - SETAB 345KV CKT 1'                                  |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.20877 | 1188.5 | 100.8363              | 'ROMAN NOSE - SOUTHARD 138KV CKT 1'                          |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.20284 | 1188.5 | 100.8039              | 'SPP-SWPS-03'  |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.33212 | 1188.5 | 128.5964              | 'DBL-MEDLO-WIC'  |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.33912 | 1188.5 | 120.5196              | 'DBL-WOOD-MED'   |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.297   | 1188.5 | 114.2278              | 'LAWTON EASTSIDE - OKLAUNION 345KV CKT 1'                    |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.297   | 1188.5 | 109.5496              | 'G08-14T 345.00 - OKLAUNION 345KV CKT 1'                     |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.297   | 1188.5 | 109.1037              | 'G08-14T 345.00 - TUCCO INTERCHANGE 345KV CKT 1'             |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.28716 | 1188.5 | 106.4986              | 'MED-LDG5 345.00 - WICHITA 345KV CKT 2'                      |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.28716 | 1188.5 | 106.4986              | 'MED-LDG5 345.00 - WICHITA 345KV CKT 1'                      |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.29209 | 1188.5 | 105.5801              | 'MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 1'              |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.29209 | 1188.5 | 105.5801              | 'MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 2'              |
| 11G    | 0        | G11_028 | 'G11-015T 345.00 - TATONGA7 345.00 345KV CKT 1'        | FROM->TO  | 0.33212 | 1194.9 | 106.0983              | 'DBL-MEDLO-WIC'  |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.28338 | 1188.5 | 105.0482              | 'GRAY CO 345.00 - SPEARVILLE 345KV CKT 1'                    |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.28291 | 1188.5 | 103.1936              | 'DEWEY - SOUTHARD 138KV CKT 1'                               |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.27744 | 1188.5 | 103.0887              | 'ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1' |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.27744 | 1188.5 | 103.0887              | 'ELK CITY 230KV - SWEETWT6 230.00 230KV CKT 1'               |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.27872 | 1188.5 | 102.8771              | 'MINGO - RED WILLOW 345KV CKT 1'                             |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.27741 | 1188.5 | 102.8524              | 'FINNEY SWITCHING STATION - STEVENSCO 345.00 345KV CKT 1'    |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.28291 | 1188.5 | 102.9075              | 'EL RENO - ROMAN NOSE 138KV CKT 1'                           |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.27737 | 1188.5 | 102.8093              | 'G10-16T 345.00 - POSTROCK7 345.00 345KV CKT 1'              |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.27816 | 1188.5 | 102.7956              | 'MINGO - SETAB 345KV CKT 1'                                  |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.27761 | 1188.5 | 102.6976              | 'SPP-SWPS-03'  |
| 11G    | 0        | G11_028 | 'NORTHWEST - TATONGA7 345.00 345KV CKT 1'              | TO->FROM  | 0.28291 | 1188.5 | 102.714               | 'ROMAN NOSE - SOUTHARD 138KV CKT 1'                          |
| 11G    | 0        | G11_028 | 'G11-015T 345.00 - WWRDEHV7 345.00 345KV CKT 1'        | TO->FROM  | 0.33212 | 1194.7 | 101.4119              | 'DBL-MEDLO-WIC'  |
| 11SP   | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 116.6  | 166.8954              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'  |
| 11SP   | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 116.6  | 158.319               | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'       |
| 11SP   | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 116.7  | 154.7558              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'  |
| 11SP   | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 116.7  | 146.1868              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'       |
| 11SP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.4  | 133.427               | 'G11-029 138.00 - RUSH SPRINGS TAP 138KV CKT 1'              |
| 11SP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.4  | 129.6348              | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'                 |
| 11SP   | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 105    | 132.7619              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'  |
| 11SP   | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'        | TO->FROM  | 1       | 116.9  | 125.1497              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'  |
| 11SP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.4  | 119.8034              | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'                  |
| 11SP   | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 105    | 123.2381              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'       |
| 11SP   | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'        | TO->FROM  | 1       | 116.9  | 116.5954              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'       |
| 11SP   | 0        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                            | FROM->TO  | 0.20282 | 48     | 103.8833              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'  |
| 11SP   | 0        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                      | TO->FROM  | 0.20282 | 48     | 100.9667              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'  |
| 11WP   | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 132.7  | 148.0784              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'  |
| 11WP   | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 104.9  | 156.4347              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'  |
| 11WP   | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 132.7  | 143.1047              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'       |
| 11WP   | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 132.7  | 141.4469              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'  |
| 11WP   | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 104.9  | 150.2383              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'       |
| 11WP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.6  | 135.6241              | 'G11-029 138.00 - RUSH SPRINGS TAP 138KV CKT 1'              |
| 11WP   | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 132.7  | 136.4733              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'       |
| 11WP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.6  | 133.1697              | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'                 |
| 11WP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.6  | 126.9986              | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'                  |
| 11WP   | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'        | TO->FROM  | 1       | 132.9  | 126.9376              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'  |
| 11WP   | 0        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'                   | TO->FROM  | 0.20214 | 47.7   | 113.4759              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'  |

| Season | Scenario | Source  | MontCommonName   | Direction | TDF     | Rating | Contingency Loading % | Contname  |
|--------|----------|---------|--|-----------|---------|--------|-----------------------|---|
| 11WP   | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'        | TO->FROM  | 1       | 132.9  | 122.0466              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11WP   | 0        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                            | FROM->TO  | 0.20214 | 52.8   | 110.6591              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11WP   | 0        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'                   | TO->FROM  | 0.20214 | 47.7   | 110.5409              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11WP   | 0        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                            | FROM->TO  | 0.20214 | 52.8   | 108.197               | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11WP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.6  | 113.7447              | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'             |
| 11WP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.6  | 110.5189              | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                      |
| 11WP   | 0        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                      | TO->FROM  | 0.20214 | 54.8   | 104.7956              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11WP   | 0        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                      | TO->FROM  | 0.20214 | 54.8   | 102.2409              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16SP   | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 116.3  | 167.4978              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16SP   | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 116.3  | 158.6414              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16SP   | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 116.6  | 154.3739              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16SP   | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 116.6  | 145.5403              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16SP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.1  | 133.4975              | 'G11-029 138.00 - RUSH SPRINGS TAP 138KV CKT 1'             |
| 16SP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.1  | 129.8381              | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'                |
| 16SP   | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 105    | 129.2381              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16SP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.1  | 119.4229              | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'                 |
| 16SP   | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'        | TO->FROM  | 1       | 117    | 122.0513              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16SP   | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 105    | 119.4286              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16SP   | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'        | TO->FROM  | 1       | 117    | 113.2479              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 132.6  | 148.3409              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 132.6  | 143.2127              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 104.8  | 154.6756              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 132.6  | 141.3273              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.6  | 135.554               | 'G11-029 138.00 - RUSH SPRINGS TAP 138KV CKT 1'             |
| 16WP   | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 104.8  | 148.2824              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 132.6  | 136.1991              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.6  | 133.1697              | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'                |
| 16WP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.6  | 126.648               | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'                 |
| 16WP   | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'        | TO->FROM  | 1       | 132.8  | 125.6024              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 0        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'                   | TO->FROM  | 0.20815 | 47.8   | 112.6151              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'        | TO->FROM  | 1       | 132.8  | 120.5572              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 0        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                            | FROM->TO  | 0.20815 | 52.8   | 110.4735              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 0        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'                   | TO->FROM  | 0.20815 | 47.8   | 109.477               | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 0        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                            | FROM->TO  | 0.20815 | 52.8   | 107.6326              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.6  | 112.2721              | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'             |
| 16WP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.6  | 108.9762              | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                      |
| 16WP   | 0        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                      | TO->FROM  | 0.20815 | 54.8   | 104.6168              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 0        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                      | TO->FROM  | 0.20815 | 54.8   | 101.8796              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 0        | G11_029 | 'DUNCAN (DUNCAN) 138/69/13.8KV TRANSFORMER CKT 1'      | FROM->TO  | 0.20815 | 71.8   | 100.5989              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 0        | G11_029 | 'DUNCAN (DUNCAN) 138/69/13.8KV TRANSFORMER CKT 1'      | FROM->TO  | 0.20815 | 72     | 100.3194              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 132.9  | 147.5546              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 132.9  | 142.2122              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11G    | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 132.9  | 140.1053              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 105    | 148.9524              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.8  | 135.014               | 'G11-029 138.00 - RUSH SPRINGS TAP 138KV CKT 1'             |
| 11G    | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.8  | 132.3529              | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'                |
| 11G    | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 132.9  | 134.763               | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11G    | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 105    | 142.1905              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11G    | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.8  | 125.4202              | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'                 |
| 11G    | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'        | TO->FROM  | 1       | 133    | 121.3534              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'        | TO->FROM  | 1       | 133    | 116.015               | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11G    | 0        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'                   | TO->FROM  | 0.20347 | 47.9   | 105.4154              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.8  | 108.0532              | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'             |
| 11G    | 0        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                            | FROM->TO  | 0.20347 | 53     | 104.3283              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.8  | 104.5518              | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                      |
| 11G    | 0        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'                   | TO->FROM  | 0.20347 | 47.9   | 102.2839              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |

| Season | Scenario | Source  | MontCommonName   | Direction | TDF     | Rating | Contingency Loading % | Contname  |
|--------|----------|---------|--|-----------|---------|--------|-----------------------|---|
| 11G    | 0        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                            | FROM->TO  | 0.20347 | 53     | 101.4981              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11SP   | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 116.6  | 166.8954              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11SP   | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 116.6  | 158.319               | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11SP   | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 116.7  | 154.7558              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11SP   | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 116.7  | 146.1868              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11SP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.4  | 133.427               | 'G11-029 138.00 - RUSH SPRINGS TAP 138KV CKT 1'             |
| 11SP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.4  | 129.6348              | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'                |
| 11SP   | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 105    | 132.7619              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11SP   | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'        | TO->FROM  | 1       | 116.9  | 125.1497              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11SP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.4  | 119.8034              | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'                 |
| 11SP   | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 105    | 123.2381              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11SP   | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'        | TO->FROM  | 1       | 116.9  | 116.5954              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11SP   | 0        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                            | FROM->TO  | 0.20233 | 48     | 103.6792              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11SP   | 0        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                      | TO->FROM  | 0.20233 | 48     | 100.7625              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16SP   | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 116.3  | 167.4978              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16SP   | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 116.3  | 158.6414              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16SP   | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 116.6  | 154.3739              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16SP   | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 116.6  | 145.5403              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16SP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.1  | 133.4975              | 'G11-029 138.00 - RUSH SPRINGS TAP 138KV CKT 1'             |
| 16SP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.1  | 129.8381              | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'                |
| 16SP   | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 105    | 129.2381              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16SP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.1  | 119.4229              | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'                 |
| 16SP   | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'        | TO->FROM  | 1       | 117    | 122.0513              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16SP   | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 105    | 119.4286              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16SP   | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'        | TO->FROM  | 1       | 117    | 113.2479              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 132.6  | 148.3409              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 132.6  | 143.2127              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 104.8  | 154.6756              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 132.6  | 141.3273              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.6  | 135.554               | 'G11-029 138.00 - RUSH SPRINGS TAP 138KV CKT 1'             |
| 16WP   | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 104.8  | 148.2824              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 132.6  | 136.1991              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.6  | 133.1697              | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'                |
| 16WP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.6  | 126.648               | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'                 |
| 16WP   | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'        | TO->FROM  | 1       | 132.8  | 125.6024              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 0        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'                   | TO->FROM  | 0.20788 | 47.8   | 112.5021              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'        | TO->FROM  | 1       | 132.8  | 120.5572              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 0        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                            | FROM->TO  | 0.20788 | 52.8   | 110.3712              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 0        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'                   | TO->FROM  | 0.20788 | 47.8   | 109.364               | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 0        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                            | FROM->TO  | 0.20788 | 52.8   | 107.5303              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.6  | 112.2721              | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'             |
| 16WP   | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.6  | 108.9762              | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                      |
| 16WP   | 0        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                      | TO->FROM  | 0.20788 | 54.8   | 104.5182              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 0        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                      | TO->FROM  | 0.20788 | 54.8   | 101.781               | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 0        | G11_029 | 'DUNCAN (DUNCAN) 138/69/13.8KV TRANSFORMER CKT 1'      | FROM->TO  | 0.20788 | 71.8   | 100.5237              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 0        | G11_029 | 'DUNCAN (DUNCAN) 138/69/13.8KV TRANSFORMER CKT 1'      | FROM->TO  | 0.20788 | 72     | 100.2445              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 132.9  | 147.5546              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 0        | G11_029 | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'           | TO->FROM  | 1       | 132.9  | 142.2122              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11G    | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 132.9  | 140.1053              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 105    | 148.9524              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.8  | 135.014               | 'G11-029 138.00 - RUSH SPRINGS TAP 138KV CKT 1'             |
| 11G    | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.8  | 132.3529              | 'OMPA-MARLOW - RUSH SPRINGS TAP 138KV CKT 1'                |
| 11G    | 0        | G11_029 | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'            | TO->FROM  | 1       | 132.9  | 134.763               | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11G    | 0        | G11_029 | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                 | TO->FROM  | 1       | 105    | 142.1905              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11G    | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' | TO->FROM  | 1       | 142.8  | 125.4202              | 'OMPA-DUNCAN 821 - OMPA-MARLOW 138KV CKT 1'                 |
| 11G    | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'        | TO->FROM  | 1       | 133    | 121.3534              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |

| Season | Scenario | Source  | MontCommonName   | Direction | TDF     | Rating | Contingency Loading % | Contname   |
|--------|----------|---------|--|-----------|---------|--------|-----------------------|--|
| 11G    | 0        | G11_029 | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'          | TO->FROM  | 1       | 133    | 116.015               | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'       |
| 11G    | 0        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'                     | TO->FROM  | 0.20284 | 47.9   | 105.1524              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'  |
| 11G    | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'   | TO->FROM  | 1       | 142.8  | 108.0532              | 'DUNCAN EASTSIDE - OMPA-DUNCAN 821 138KV CKT 1'              |
| 11G    | 0        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                              | FROM->TO  | 0.20284 | 53     | 104.0906              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'  |
| 11G    | 0        | G11_029 | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'   | TO->FROM  | 1       | 142.8  | 104.5518              | 'DUNCAN - DUNCAN EASTSIDE 138KV CKT 1'                       |
| 11G    | 0        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'                     | TO->FROM  | 0.20284 | 47.9   | 102.0209              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'       |
| 11G    | 0        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                              | FROM->TO  | 0.20284 | 53     | 101.2604              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'       |
| 11SP   | 0        | G11_031 | 'HOBBS INTERCHANGE 230/115KV TRANSFORMER CKT 1'          | FROM->TO  | 0.65744 | 149.1  | 219.3561              | 'HOBBS INTERCHANGE - LEA COUNTY INTERCHANGE 230KV CKT 1'     |
| 11SP   | 0        | G11_031 | 'BORDEN COUNTY INTERCHANGE 230/138KV TRANSFORMER CKT 1'  | TO->FROM  | 1       | 167.7  | 148.718               | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 11SP   | 0        | G11_031 | 'CAPROCK REC-TATE - CAPROCK REC-TRIANGLE 138KV CKT 1'    | FROM->TO  | 1       | 175.3  | 142.5556              | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 11SP   | 0        | G11_031 | 'CAPROCK REC-GRADY - CAPROCK REC-TRIANGLE 138KV CKT 1'   | TO->FROM  | 1       | 175.5  | 142.2222              | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 11SP   | 0        | G11_031 | 'CAPROCK REC-KOCH - CAPROCK REC-REED 138KV CKT 1'        | TO->FROM  | 1       | 175.6  | 142.0843              | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 11SP   | 0        | G11_031 | 'CAPROCK REC-KOCH - CAPROCK REC-VEALMOOR 138KV CKT 1'    | FROM->TO  | 1       | 175.7  | 141.9465              | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 11SP   | 0        | G11_031 | 'MIDLAND COUNTY INTERCHANGE 230/138KV TRANSFORMER CKT 1' | FROM->TO  | 1       | 192.4  | 129.8857              | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 11WP   | 0        | G11_031 | 'HOBBS INTERCHANGE 230/115KV TRANSFORMER CKT 1'          | FROM->TO  | 0.65536 | 149.6  | 221.6176              | 'HOBBS INTERCHANGE - LEA COUNTY INTERCHANGE 230KV CKT 1'     |
| 11WP   | 0        | G11_031 | 'BORDEN COUNTY INTERCHANGE 230/138KV TRANSFORMER CKT 1'  | TO->FROM  | 1       | 167.9  | 148.6599              | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 11WP   | 0        | G11_031 | 'CAPROCK REC-TATE - CAPROCK REC-TRIANGLE 138KV CKT 1'    | FROM->TO  | 1       | 175.5  | 142.3932              | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 11WP   | 0        | G11_031 | 'CAPROCK REC-GRADY - CAPROCK REC-TRIANGLE 138KV CKT 1'   | TO->FROM  | 1       | 175.7  | 142.1742              | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 11WP   | 0        | G11_031 | 'CAPROCK REC-KOCH - CAPROCK REC-REED 138KV CKT 1'        | TO->FROM  | 1       | 175.8  | 142.0364              | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 11WP   | 0        | G11_031 | 'CAPROCK REC-KOCH - CAPROCK REC-VEALMOOR 138KV CKT 1'    | FROM->TO  | 1       | 175.9  | 141.8988              | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 11WP   | 0        | G11_031 | 'MIDLAND COUNTY INTERCHANGE 230/138KV TRANSFORMER CKT 1' | FROM->TO  | 1       | 209.6  | 119.2271              | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 16SP   | 0        | G11_031 | 'HOBBS INTERCHANGE 230/115KV TRANSFORMER CKT 1'          | FROM->TO  | 0.65559 | 148.9  | 195.8345              | 'HOBBS INTERCHANGE - LEA COUNTY INTERCHANGE 230KV CKT 1'     |
| 16SP   | 0        | G11_031 | 'CAPROCK REC-TATE - CAPROCK REC-TRIANGLE 138KV CKT 1'    | FROM->TO  | 1       | 175.9  | 141.8988              | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 16SP   | 0        | G11_031 | 'CAPROCK REC-GRADY - CAPROCK REC-TRIANGLE 138KV CKT 1'   | TO->FROM  | 1       | 175.9  | 141.444               | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 16SP   | 0        | G11_031 | 'CAPROCK REC-KOCH - CAPROCK REC-REED 138KV CKT 1'        | TO->FROM  | 1       | 175.9  | 141.1598              | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 16SP   | 0        | G11_031 | 'CAPROCK REC-KOCH - CAPROCK REC-VEALMOOR 138KV CKT 1'    | FROM->TO  | 1       | 175.9  | 140.9892              | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 16WP   | 0        | G11_031 | 'HOBBS INTERCHANGE 230/115KV TRANSFORMER CKT 1'          | FROM->TO  | 0.65313 | 148.3  | 221.7684              | 'HOBBS INTERCHANGE - LEA COUNTY INTERCHANGE 230KV CKT 1'     |
| 16WP   | 0        | G11_031 | 'CAPROCK REC-KOCH - CAPROCK REC-VEALMOOR 138KV CKT 1'    | FROM->TO  | 1       | 175    | 142.5143              | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 16WP   | 0        | G11_031 | 'CAPROCK REC-KOCH - CAPROCK REC-REED 138KV CKT 1'        | TO->FROM  | 1       | 175.1  | 142.49                | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 16WP   | 0        | G11_031 | 'CAPROCK REC-GRADY - CAPROCK REC-TRIANGLE 138KV CKT 1'   | TO->FROM  | 1       | 175.3  | 142.3845              | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 16WP   | 0        | G11_031 | 'CAPROCK REC-TATE - CAPROCK REC-TRIANGLE 138KV CKT 1'    | FROM->TO  | 1       | 175.5  | 142.2792              | 'HOBBS INTERCHANGE - MIDLAND COUNTY INTERCHANGE 230KV CKT 1' |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.23183 | 92.9   | 126.8683              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                   |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.22737 | 92.9   | 123.8636              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                        |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.22737 | 92.9   | 123.5407              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'                   |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.22737 | 92.9   | 121.3878              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'                           |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.22737 | 92.9   | 120.5267              | 'DOMES - MOUND ROAD 138KV CKT 1'                             |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'                | FROM->TO  | 0.23183 | 108.5  | 111.5767              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                   |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'                | FROM->TO  | 0.22737 | 108.5  | 109.0961              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                        |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'                | FROM->TO  | 0.22737 | 108.5  | 108.8196              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'                   |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.25906 | 92.9   | 110.3007              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                          |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.25906 | 92.9   | 110.3007              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'                    |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'                | FROM->TO  | 0.22737 | 108.5  | 106.9763              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'                           |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'                | FROM->TO  | 0.22737 | 108.5  | 106.239               | 'DOMES - MOUND ROAD 138KV CKT 1'                             |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.25906 | 92.9   | 106.4255              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'                          |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.19403 | 92.9   | 102.5473              | 'BARTLESVILLE COMANCHE - MOUND ROAD 138KV CKT 1'             |
| 11G    | 2        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                    | FROM->TO  | 0.26695 | 142.9  | 100.9288              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                   |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.19204 | 92.9   | 100.5557              | 'CLEVELAND - CLEVELANDTAP138.00 138KV CKT 1'                 |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.2365  | 82.7   | 121.5236              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                   |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.26071 | 82.7   | 118.7932              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                          |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.26071 | 82.7   | 118.7932              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'                    |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.23339 | 82.7   | 116.6602              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                        |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.23339 | 82.7   | 116.1765              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'                   |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.26071 | 82.7   | 114.4401              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'                          |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.23339 | 82.7   | 112.549               | 'DOMES - PAWHUSKA TAP 138KV CKT 1'                           |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'              | FROM->TO  | 0.23339 | 82.7   | 111.2189              | 'DOMES - MOUND ROAD 138KV CKT 1'                             |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'                | FROM->TO  | 0.2365  | 95.8   | 107.9332              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                   |

| Season | Scenario | Source  | MontCommonName                              | Direction | TDF     | Rating | Contingency Loading % | Contname   |
|--------|----------|---------|---|-----------|---------|--------|-----------------------|--|
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.26071 | 95.8   | 105.5762              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'              |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.26071 | 95.8   | 105.5762              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'        |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23339 | 95.8   | 103.7349              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'            |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23339 | 95.8   | 103.3173              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'       |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.26071 | 95.8   | 101.8184              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'              |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23339 | 95.8   | 100.1858              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'               |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23515 | 93.5   | 121.1016              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23182 | 93.5   | 115.8973              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'            |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23182 | 93.5   | 115.4695              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'       |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23182 | 93.5   | 113.6513              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'               |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.2597  | 93.5   | 114.8021              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'        |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.2597  | 93.5   | 114.8021              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'              |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23182 | 93.5   | 112.6888              | 'DOMES - MOUND ROAD 138KV CKT 1'                 |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.2597  | 93.5   | 110.8449              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'              |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23515 | 108.8  | 106.4614              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23182 | 108.8  | 101.989               | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'            |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23182 | 108.8  | 101.7132              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'       |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.2597  | 108.8  | 101.0478              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'        |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.2597  | 108.8  | 101.0478              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'              |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23331 | 82.2   | 132.4355              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'            |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23331 | 82.2   | 131.9489              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'       |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.2365  | 82.2   | 132.3601              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23331 | 82.2   | 128.1776              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'               |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23331 | 82.2   | 126.5961              | 'DOMES - MOUND ROAD 138KV CKT 1'                 |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23331 | 95.3   | 117.5887              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'            |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.2607  | 82.2   | 122.6764              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'        |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.2607  | 82.2   | 122.6764              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'              |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.2365  | 95.3   | 117.5236              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23331 | 95.3   | 117.1689              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'       |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.2607  | 82.2   | 118.1752              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'              |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23331 | 95.3   | 113.9161              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'               |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23331 | 95.3   | 112.5519              | 'DOMES - MOUND ROAD 138KV CKT 1'                 |
| 16SP   | 2        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'       | FROM->TO  | 0.27276 | 143    | 106.6098              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.2607  | 95.3   | 109.0661              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'        |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.2607  | 95.3   | 109.0661              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'              |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.19108 | 82.2   | 107.4404              | 'FAIRFAX 138/69KV TRANSFORMER CKT 1'             |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.19066 | 82.2   | 106.2433              | 'CLEVELANDTAP138.00 - STILLWATER 138KV CKT 1'    |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.19916 | 82.2   | 106.4866              | 'BARTLESVILLE COMANCHE - MOUND ROAD 138KV CKT 1' |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.19113 | 82.2   | 105.1411              | 'ASGI-10-06 138.00 - FAIRFAX 138KV CKT 1'        |
| 16SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.2607  | 95.3   | 105.2886              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'              |
| 16SP   | 2        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'       | FROM->TO  | 0.2605  | 143    | 101.7483              | 'OMPA-HOMINY - SHIDLER 138KV CKT 1'              |
| 16SP   | 2        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'       | FROM->TO  | 0.30193 | 143    | 100.6196              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'        |
| 16SP   | 2        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'       | FROM->TO  | 0.30193 | 143    | 100.6196              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'              |
| 16SP   | 2        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'       | FROM->TO  | 0.2605  | 143    | 100.2797              | 'HIGHWAY 20 - OMPA-HOMINY 138KV CKT 1'           |
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23584 | 94.3   | 115.4486              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23288 | 94.3   | 110.2609              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'            |
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23288 | 94.3   | 109.9427              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'       |
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.26001 | 94.3   | 110.5005              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'              |
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.26001 | 94.3   | 110.5005              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'        |
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23288 | 94.3   | 108.0339              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'               |
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23288 | 94.3   | 106.9735              | 'DOMES - MOUND ROAD 138KV CKT 1'                 |
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.26001 | 94.3   | 106.5769              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'              |
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23584 | 109.4  | 101.6161              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23611 | 92.9   | 133.1776              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'       |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23315 | 92.9   | 129.9569              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'            |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23315 | 92.9   | 129.634               | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'       |

| Season | Scenario | Source  | MontCommonName                              | Direction | TDF     | Rating | Contingency Loading % | Contname  |
|--------|----------|---------|---|-----------|---------|--------|-----------------------|---|
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23315 | 92.9   | 127.4812              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'                  |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23315 | 92.9   | 126.62                | 'DOMES - MOUND ROAD 138KV CKT 1'                    |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23611 | 108.5  | 116.9788              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'          |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.2603  | 92.9   | 121.0549              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                 |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.2603  | 92.9   | 121.0549              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'           |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23315 | 108.5  | 114.3134              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'               |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23315 | 108.5  | 114.0369              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'          |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.2603  | 92.9   | 117.1798              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'                 |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23315 | 108.5  | 112.1936              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'                  |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23315 | 108.5  | 111.4562              | 'DOMES - MOUND ROAD 138KV CKT 1'                    |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.1907  | 92.9   | 107.6857              | 'FAIRFAX 138/69KV TRANSFORMER CKT 1'                |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.19884 | 92.9   | 107.7158              | 'BARTLESVILLE COMANCHE - MOUND ROAD 138KV CKT 1'    |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.19022 | 92.9   | 107.1518              | 'CLEVELANDTAP138.00 - STILLWATER 138KV CKT 1'       |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.19073 | 92.9   | 106.831               | 'ASGI-10-06 138.00 - FAIRFAX 138KV CKT 1'           |
| 11G    | 2        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'       | FROM->TO  | 0.27345 | 142.9  | 105.8712              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'          |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.19209 | 92.9   | 105.8321              | 'SOONER (SOONER5) 345/138/13.8KV TRANSFORMER CKT 1' |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.2603  | 108.5  | 106.6912              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                 |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.2603  | 108.5  | 106.6912              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'           |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.19659 | 92.9   | 105.6168              | 'CLEAVELAND - CLEVELANDTAP138.00 138KV CKT 1'       |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.2603  | 108.5  | 103.2811              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'                 |
| 11G    | 2        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'       | FROM->TO  | 0.26119 | 142.9  | 101.0063              | 'OMPA-HOMINY - SHIDLER 138KV CKT 1'                 |
| 11G    | 2        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'       | FROM->TO  | 0.26119 | 142.9  | 100.0266              | 'HIGHWAY 20 - OMPA-HOMINY 138KV CKT 1'              |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23162 | 82.7   | 120.3434              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'          |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.25885 | 82.7   | 118.3434              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                 |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.25885 | 82.7   | 118.3434              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'           |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.22721 | 82.7   | 115.1657              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'               |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.22721 | 82.7   | 114.682               | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'          |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.25885 | 82.7   | 113.9903              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'                 |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.22721 | 82.7   | 111.0544              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'                  |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.22721 | 82.7   | 109.7243              | 'DOMES - MOUND ROAD 138KV CKT 1'                    |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23162 | 95.8   | 106.9144              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'          |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.25885 | 95.8   | 105.1879              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                 |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.25885 | 95.8   | 105.1879              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'           |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.22721 | 95.8   | 102.4447              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'               |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.22721 | 95.8   | 102.0271              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'          |
| 11SP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.25885 | 95.8   | 101.4301              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'                 |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23146 | 93.5   | 120.3123              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'          |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.22698 | 93.5   | 114.862               | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'               |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.22698 | 93.5   | 114.4342              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'          |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.25882 | 93.5   | 114.6139              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'           |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.25882 | 93.5   | 114.6139              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                 |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.22698 | 93.5   | 112.6161              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'                  |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.22698 | 93.5   | 111.6535              | 'DOMES - MOUND ROAD 138KV CKT 1'                    |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.25882 | 93.5   | 110.6567              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'                 |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.23146 | 108.8  | 105.7831              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'          |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.22698 | 108.8  | 101.0993              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'               |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.25882 | 108.8  | 100.886               | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'           |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.25882 | 108.8  | 100.886               | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                 |
| 11WP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'   | FROM->TO  | 0.22698 | 108.8  | 100.8235              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'          |
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.23179 | 94.3   | 114.5896              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'          |
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.2273  | 94.3   | 109.0774              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'               |
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.25883 | 94.3   | 110.2503              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                 |
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.25883 | 94.3   | 110.2503              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'           |
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.2273  | 94.3   | 108.7593              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'          |
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.2273  | 94.3   | 106.8505              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'                  |
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1' | FROM->TO  | 0.2273  | 94.3   | 105.79                | 'DOMES - MOUND ROAD 138KV CKT 1'                    |

| Season | Scenario | Source  | MontCommonName                                    | Direction | TDF     | Rating | Contingency Loading % | Contname  |
|--------|----------|---------|---|-----------|---------|--------|-----------------------|---|
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'       | FROM->TO  | 0.25883 | 94.3   | 106.3266              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'                         |
| 16WP   | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'         | FROM->TO  | 0.23179 | 109.4  | 100.8757              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                  |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'       | FROM->TO  | 0.23183 | 92.9   | 132.2562              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                  |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'       | FROM->TO  | 0.22737 | 92.9   | 128.7126              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                       |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'       | FROM->TO  | 0.22737 | 92.9   | 128.3897              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'                  |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'       | FROM->TO  | 0.22737 | 92.9   | 126.2368              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'                          |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'       | FROM->TO  | 0.22737 | 92.9   | 125.3757              | 'DOMES - MOUND ROAD 138KV CKT 1'                            |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'         | FROM->TO  | 0.23183 | 108.5  | 116.1899              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                  |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'       | FROM->TO  | 0.25906 | 92.9   | 120.7879              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                         |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'       | FROM->TO  | 0.25906 | 92.9   | 120.7879              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'                   |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'         | FROM->TO  | 0.22737 | 108.5  | 113.2479              | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'                       |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'         | FROM->TO  | 0.22737 | 108.5  | 112.9714              | 'PAWHUSKA TAP - WEST PAWHUSKA 138KV CKT 1'                  |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'       | FROM->TO  | 0.25906 | 92.9   | 116.9128              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'                         |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'         | FROM->TO  | 0.22737 | 108.5  | 111.1281              | 'DOMES - PAWHUSKA TAP 138KV CKT 1'                          |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'         | FROM->TO  | 0.22737 | 108.5  | 110.3908              | 'DOMES - MOUND ROAD 138KV CKT 1'                            |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'       | FROM->TO  | 0.19403 | 92.9   | 106.6803              | 'BARTLESVILLE COMANCHE - MOUND ROAD 138KV CKT 1'            |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'         | FROM->TO  | 0.25906 | 108.5  | 106.4627              | 'FAIRFAX TAP - SHIDLER 138KV CKT 1'                         |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'         | FROM->TO  | 0.25906 | 108.5  | 106.4627              | 'FAIRFAX TAP - WEBB CITY TAP 138KV CKT 1'                   |
| 11G    | 2        | G11_006 | 'SHIDLER - WEST PAWHUSKA 138KV CKT 1'             | FROM->TO  | 0.26695 | 142.9  | 104.9615              | 'CLEVELANDTAP138.00 - FAIRFAX 138KV CKT 1'                  |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 TAP - SAND SPRINGS 138KV CKT 1'       | FROM->TO  | 0.19204 | 92.9   | 104.6372              | 'CLEVELAND - CLEVELANDTAP138.00 138KV CKT 1'                |
| 11G    | 2        | G11_006 | 'HIGHWAY 20 - HIGHWAY 20 TAP 138KV CKT 1'         | FROM->TO  | 0.25906 | 108.5  | 103.0525              | 'OSAGE - WEBB CITY TAP 138KV CKT 1'                         |
| 11SP   | 2        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                       | FROM->TO  | 0.20281 | 48     | 103.8792              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11SP   | 2        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                 | TO->FROM  | 0.20281 | 48     | 100.9625              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11WP   | 2        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'              | TO->FROM  | 0.20214 | 47.7   | 113.4759              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11WP   | 2        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                       | FROM->TO  | 0.20214 | 52.8   | 110.6591              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11WP   | 2        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'              | TO->FROM  | 0.20214 | 47.7   | 110.5409              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11WP   | 2        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                       | FROM->TO  | 0.20214 | 52.8   | 108.197               | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11WP   | 2        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                 | TO->FROM  | 0.20214 | 54.8   | 104.7956              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11WP   | 2        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                 | TO->FROM  | 0.20214 | 54.8   | 102.2409              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 2        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'              | TO->FROM  | 0.20814 | 47.8   | 112.6109              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 2        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                       | FROM->TO  | 0.20814 | 52.9   | 110.2609              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 2        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'              | TO->FROM  | 0.20814 | 47.8   | 109.4728              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 2        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                       | FROM->TO  | 0.20814 | 52.9   | 107.4253              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 2        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                 | TO->FROM  | 0.20814 | 54.8   | 104.6131              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 2        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                 | TO->FROM  | 0.20814 | 54.8   | 101.8759              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 2        | G11_029 | 'DUNCAN (DUNCAN) 138/69/13.8KV TRANSFORMER CKT 1' | FROM->TO  | 0.20814 | 71.8   | 100.5961              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 2        | G11_029 | 'DUNCAN (DUNCAN) 138/69/13.8KV TRANSFORMER CKT 1' | FROM->TO  | 0.20814 | 72     | 100.3167              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 2        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'              | TO->FROM  | 0.20347 | 47.9   | 105.6242              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 2        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                       | FROM->TO  | 0.20347 | 53     | 104.3283              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 2        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'              | TO->FROM  | 0.20347 | 47.9   | 102.4927              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11G    | 2        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                       | FROM->TO  | 0.20347 | 53     | 101.4981              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11SP   | 2        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                       | FROM->TO  | 0.20233 | 48     | 103.6792              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11SP   | 2        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                 | TO->FROM  | 0.20233 | 48     | 100.7625              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11WP   | 2        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'              | TO->FROM  | 0.20192 | 47.7   | 113.3837              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11WP   | 2        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                       | FROM->TO  | 0.20192 | 52.8   | 110.5758              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11WP   | 2        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'              | TO->FROM  | 0.20192 | 47.7   | 110.4486              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11WP   | 2        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                       | FROM->TO  | 0.20192 | 52.8   | 108.1136              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11WP   | 2        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                 | TO->FROM  | 0.20192 | 54.8   | 104.7153              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11WP   | 2        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                 | TO->FROM  | 0.20192 | 54.8   | 102.1606              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 2        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'              | TO->FROM  | 0.20788 | 47.8   | 112.5021              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 2        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                       | FROM->TO  | 0.20788 | 52.9   | 110.1626              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 2        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'              | TO->FROM  | 0.20788 | 47.8   | 109.364               | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 2        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                       | FROM->TO  | 0.20788 | 52.9   | 107.327               | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 2        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                 | TO->FROM  | 0.20788 | 54.8   | 104.5182              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 16WP   | 2        | G11_029 | 'COMANCHE TAP - TOSCO 69KV CKT 1'                 | TO->FROM  | 0.20788 | 54.8   | 101.781               | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 16WP   | 2        | G11_029 | 'DUNCAN (DUNCAN) 138/69/13.8KV TRANSFORMER CKT 1' | FROM->TO  | 0.20788 | 71.8   | 100.5237              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |

| Season | Scenario | Source  | MontCommonName                                    | Direction | TDF     | Rating | Contingency Loading % | Contname  |
|--------|----------|---------|---|-----------|---------|--------|-----------------------|---|
| 16WP   | 2        | G11_029 | 'DUNCAN (DUNCAN) 138/69/13.8KV TRANSFORMER CKT 1' | FROM->TO  | 0.20788 | 72     | 100.2445              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 2        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'              | TO->FROM  | 0.20284 | 47.9   | 105.3612              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 2        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                       | FROM->TO  | 0.20284 | 53     | 104.0906              | 'G11-029 138.00 - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1' |
| 11G    | 2        | G11_029 | 'COMANCHE - COMANCHE TAP 69KV CKT 1'              | TO->FROM  | 0.20284 | 47.9   | 102.2296              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |
| 11G    | 2        | G11_029 | 'DUNCAN - TOSCO 69KV CKT 1'                       | FROM->TO  | 0.20284 | 53     | 101.2604              | 'CORNVILLE - RUSH SPRINGS NATURAL GAS TAP 138KV CKT 1'      |