Preliminary Interconnection System Impact Study for Generation Interconnection Requests

(PISIS-2010-002)

February 2011

Generation Interconnection

SPP Southwest Power Pool

Revision History

Date or Version Number	Author	Change Description	Comments
2/28/2010	Southwest Power Pool	N/A	Report Issued

Executive Summary

Generation Interconnection customers have requested a Preliminary Interconnection System Impact Study (PISIS) 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 Impact Study. This Impact Study analyzes the interconnecting of multiple generation interconnection requests associated with new generation totaling approximately 829.5 MW of new generation which would be located within the transmission systems of American Electric Power West (AEPW), Oklahoma Gas and Electric (OKGE), Southwestern Public Service (SPS), and Sunflower Electric Power Corporation (SUNC). The various generation interconnection requests have differing proposed in-service dates[1]. The generation interconnection requests included in this Impact Study are listed in Appendix A by their queue number, amount, requested interconnection service, area, requested interconnection point, proposed interconnection point, and the requested in-service date.

Power flow analysis has indicated that for the powerflow cases studied, 829.5 MW of nameplate generation may be interconnected with transmission system reinforcements within the SPP transmission system. Dynamic Stability and power factor analysis has determined the need for reactive compensation in accordance with Order No. 661-A for wind farm interconnection requests and those requirements are listed for each interconnection request within the contents of this report.

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

The total estimated minimum cost for interconnecting the PISIS-2010-002 interconnection customers is $150,500,000. These costs are shown in Appendix E and F. Interconnection Service to PISIS-2010-002 interconnection customers is also contingent upon higher queued customers paying for certain required network upgrades. The in service date for the PISIS customers will be deferred until the construction of these network upgrades can be completed.

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

Network Constraints listed in Appendix H are in the local area of the new generation when this generation is injected throughout the SPP footprint for the Energy Resource (ER) Interconnection Request. Certain Interconnection Requests were studied for Network Resource Interconnection Service (NR). Those constraints are listed in Appendix H. Additional Network constraints will have to be verified with a Transmission Service Request (TSR) and associated studies. With a defined source and sink in a TSR, this list of Network Constraints will be refined and expanded to account for all Network Upgrade requirements.

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

[1] The generation interconnection requests in-service dates will need to be deferred based on the required

Based on the SPP Tariff Attachment O, transmission facilities that are part of the SPP Transmission Expansion Plan (STEP) including Sponsored Economic Upgrades or the Balanced Portfolio that are approved by the SPP Board of Directors will receive notifications to construct. These projects will then be considered construction pending projects and would not be assignable to the Impact Cluster Study Generation Interconnection Requests.

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Introduction

Pursuant to the Southwest Power Pool (SPP) Open Access Transmission Tariff (OATT), SPP has conducted this Preliminary Interconnection System Impact Study (PISIS) for certain generation interconnection requests in the SPP Generation Interconnection Queue. These interconnection requests have been clustered together for the following Impact Study. The customers will be referred to in this study as the PISIS-2010-002 Interconnection Customers. This Impact Study analyzes the interconnecting of multiple generation interconnection requests associated with new generation totaling 829.5 MW of new generation which would be located within the transmission systems of American Electric Power West (AEPW), Oklahoma Gas and Electric (OKGE), Southwestern Public Service (SPS), and Sunflower Electric Power Corporation (SUNC). The various generation interconnection requests have differing proposed in-service dates[2]. The generation interconnection requests included in this Impact Study are listed in Appendix A by their queue number, amount, requested interconnection service, area, requested interconnection point, proposed interconnection point, and the requested in-service date.

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

Model Development

Interconnection Requests Included in the Cluster

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

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

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 and associated upgrades were assumed to be in-service and added to the Base Case models. These projects were dispatched as Energy Resources with equal distribution across the SPP footprint.

Development of Base Cases

Powerflow - The 2010 series Transmission Service Request (TSR) Models 2011 spring , 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 re-dispatched using current dispatch orders.

Stability – The 2010 series SPP Model Development Working Group (MDWG) Models 2011 winter and 2011 summer were used for this study.

Base Case Upgrades

The following facilities are part of the SPP Transmission Expansion Plan or the Balanced Portfolio or recently approved Priority Projects. These facilities have been approved or are in construction stages and were assumed to be in-service at the time of dispatch and added to the base case models. The PISIS-2010-002 Customers have not been assigned cost for the below listed projects. **The PISIS-2010-002 Customers Generation Facilities in service dates 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 PISIS customers.

- Hitchland 345/230/115kV upgrades to be built by SPS for 2010/2011 in-service[3].
  - 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[4].
- Rose Hill – Sooner 345kV to be built by WERE/OKGE.
- Knob Hill – Steele City 115kV to be built by NPPD/WERE.
- Balanced Portfolio Projects[5]:
  - 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

[3] Approved 230kV upgrades are based on SPP 2007 STEP. Upgrades may need to be re-evaluated in the system impact study.
[4] Approved based on an order of the Kansas Corporation Commission issued in Docket no. 07-WSEE-715-MIS
[5] Notice to Construct (NTC) issued June, 2009

    - Tap Stillwell – Swissvale 345kV line at West Gardner
- Priority Projects[6]:
    - 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

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 PISIS-2010-002 study and are assumed to be in service. The PISIS-2010-002 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 PISIS-2010-002 Customer Generation Facilities in service dates may need to be delayed until the completion of the following upgrades. (See Appendix A for more detail).

- Finney – Holcomb 345kV ckt #2 line assigned to GEN-2006-044 interconnection customer. This customer is currently in suspension[7].
- Central Plains – Setab 115kV transmission line assigned to GEN-2007-013 interconnection customer.
- Spearville 345/230kV autotransformer #2 assigned to 1st Cluster Interconnection Customers (100% to GEN-2006-006)
- Grassland 230/115kV autotransformer #2 assigned to 1st Cluster Interconnection Customers (100% to GEN-2008-016)
- Spearville 230/115kV autotransformer #2 assigned to DISIS-2009-001-1 Interconnection Customers (100% to GEN-2008-079)
- Petersburg – Madison 115kV assigned to DISIS-2009-001-1 Interconnection Customers
- Judson Large – North Judson Large – Spearville Ckt #2 assigned to DISIS-2009-001-1 Interconnection Customers (100% to GEN-2008-079)
- GEN-2008-038 Tap – Barnsdall 138kV assigned to DISIS-2009-001-1 Interconnection Customers (100% to GEN-2008-038)
- Belden – Bloomfield 115kV assigned to DISIS-2009-001-1 Interconnection Customers
- Hitchland – Wheeler (Border) double circuit 345kV assigned to DISIS-2010-001 Interconnection Customers
- Madison County 230/115kV autotransformer #1 assigned to DISIS-2010-001 Interconnection Customer
- Norfolk – Madison County Tap 115kV Ckt #1 assigned to DISIS-2010-001 Interconnection Customers

[6] 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.
[7] Based on Facility Study Posting November 2008

- 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
- GEN-2008-079 Tap – Spearville 115kV Ckt #1 assigned to DISIS-2010-001 Interconnection Customers
- Spearville 345/230kV autotransformer #3 assigned to DISIS-2010-001 Interconnection Customers
- Beaver County – Comanche 345kV Ckt #1 assigned to DISIS-2010-002 Interconnection Customers
- Broken Bow – Ord – North Loup 115kV Ckt #1 assigned to DISIS-2010-002 Interconnection Customers
- Clinton Junction – Elk City 138kV Ckt #1 assigned to DISIS-2010-002 Interconnection Customers
- Harbine – Gen-2010-047 Tap 115kV Ckt #1 rebuild assigned to DISIS-2010-002 Interconnection Customers
- Circle – Reno County 345kV Ckt #1 and Ckt #2 assigned to DISIS-2010-002 Interconnection Customers
- Mullergren – Circle 345kV Ckt #1 and Ckt #2 assigned to DISIS-2010-002 Interconnection Customers
- Spearville – Mullergren 345kV Ckt #1 and Ckt #2 assigned to DISIS-2010-002 Interconnection Customers
- St. John – St. John 115kV Ckt #1 rebuild assigned to DISIS-2010-002 Interconnection Customers
- Northwest 345/138/13.8kV autotransformer Ckt #3 assigned to Aggregate Study 2009-AG2-AFS6

Potential Upgrades Not in the Base Case

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

Regional Groupings

The interconnection requests listed in Appendix A were grouped together in ten 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.

Powerflow - 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.

Identification of Network Constraints

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

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:

  Request X Impact Factor on Upgrade Project 1 = PTDF(%)(X) * MW(X) = X1

  Request Y Impact Factor on Upgrade Project 1 = PTDF(%)(Y) * MW(Y) = Y1

  Request Z Impact Factor on Upgrade Project 1 = PTDF(%)(Z) * 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.

Interconnection Facilities

The requirement to interconnect the 829.5 MW of generation into the existing and proposed transmission systems in the affected areas of the SPP transmission footprint consist of the necessary cost allocated shared facilities listed in Appendix F by upgrade. The interconnection requirements for the cluster total $150,500,000. Interconnection Facilities specific to each generation interconnection request are listed in Appendix E.

A list of constraints with greater than or equal to a 20% OTDF that were identified and used for mitigation are listed in Appendix G. Other Network Constraints in the AEPW, OKGE, SPS, and SUNC transmission systems that were identified are shown in Appendix H. With a defined source and sink in a TSR, this list of Network Constraints will be refined and expanded to account for all Network Upgrade requirements.

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

Powerflow

Powerflow Analysis Methodology

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 ACCC function of PSS/E was used to simulate single contingencies in portions or all of the modeled control areas of American Electric Power West (AEPW), Oklahoma Gas and Electric (OKGE), Southwestern Public Service (SPS), Sunflower Electric Power Corporation (SUNC) 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.

Powerflow Analysis

A powerflow analysis was conducted for each Interconnection Customer's facility using modified versions of the 2011 (spring, summer, and winter) peak 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 the each Customer's project indicates

that additional criteria violations will occur on the AEPW, OKGE, SPS, and SUNC transmission systems under steady state and contingency conditions in the peak seasons.

Cluster Group 1 (Woodward Area)

The Woodward group had 335 MW of interconnection requests in addition to the 3,664.2 MW of previously queued generation in the area. A new double 345kV transmission line from Tatonga – Woodring will need to be constructed to mitigate overloads experienced on the Tatonga – Northwest 345kV line for power flow and stability studies. Also, the previously assigned Northwest 345/138/13.8 Ckt #3 autotransformer for Aggregate Study 2009-AG2-AFS6 upgrade is needed to mitigate overloads for current NRIS request.

Cluster Group 2 (Hitchland Area)

The Hitchland group had 0 MW of interconnection requests in addition to the 3,361.9 MW of previously queued generation in the area. No new constraints were found in this area.

Cluster Group 3 (Spearville Area)

The Spearville group had 450 MW of interconnection requests in addition to the 4,761.2 MW of previously queued generation in the area. With all previous queued network upgrades in service, no new constraints were found in this area.

Cluster Group 4 (Mingo/NW Kansas Group)

The Mingo/NW Kansas group had 0 MW of interconnection requests in addition to the 924.2 MW of previously queued generation in the area. No new constraints were found in this area.

Cluster Group 5 (Amarillo Area)

The Amarillo group had 0 MW of interconnection requests in addition to the 2,218.1 MW of previously queued generation in the area. No new constraints were found in this area.

Cluster Group 6 (South Panhandle/New Mexico)

The South Panhandle/New Mexico group had 40 MW of interconnection requests in addition to the 2,369.6 MW of previously queued generation in the area. No new constraints were found in this area.

Cluster Group 7 (Southwestern Oklahoma)

The Southwestern Oklahoma group had 0 MW of interconnection requests in addition to the 2,200.8 MW of previously queued generation in the area. No new constraints were found in this area.

Cluster Group 8 (South Central Kansas/North Oklahoma)

The South Central Kansas/North Oklahoma group had 4.5 MW of interconnection requests in addition to the 3,551.9 MW of previously queued generation in the area. No new constraints were found in this area.

Cluster Group 9 (Northeast Nebraska)

The Northeast Nebraska group had 0 MW of interconnection requests in addition to the 998.5 MW of previously queued generation in the area. No new constraints were found in this area.

Cluster Group 10 (North Nebraska)

The North Nebraska group had 0 MW of interconnection requests in addition to the 356.1 MW of previously queued generation in the area. No new constraints were found in this area.

Cluster Group 11 (North Kansas)

The North Kansas group had 0 MW of interconnection requests in addition to the 1,367.9 MW of previously queued generation in the area. No new constraints were found in this area.

Cluster Group 12 (Northwest Arkansas)

The Northwest Arkansas group had 0 MW of interconnection requests in addition to the 0 MW of previously queued generation in the area. No new constraints were found in this area.

Cluster Group 13 (Northwest Missouri)

The North Missouri group had 0 MW of interconnection requests in addition to the 2674 MW of previously queued generation in the area. No new constraints were found in this area.

Cluster Group 14 (South Central Oklahoma)

The South Central Oklahoma group had 0 MW of interconnection requests in addition to the 1,256.4 MW of previously queued generation in the area. No new constraints were found in this area.

Cluster Group 15 (Southwest Nebraska)

The Southwest Nebraska group had 0 MW of interconnection requests in addition to the 89.7 MW of previously queued generation in the area. No new constraints were found in this area.

Stability Analysis

A stability analysis was conducted for each Interconnection Customer's facility using modified versions of the 2011 summer and 2011 winter peak models. The stability analysis was conducted with all upgrades in service that were identified in the powerflow analysis. For each group, the interconnection requests were studied at 100% nameplate output while the other groups were dispatched at 20% output for wind requests and 100% output for fossil requests. The output of the Interconnection Customer's facility was offset in each model by a reduction in output of existing online SPP generation. The following synopsis is included for each group. The entire stability study for each group can be found in the Appendices.

Cluster Group 1 (Woodward Area)

The Group 1 stability study was conducted by SPP Staff. The addition of the GEN-2010-028 wind farm caused overloads on Northwest-Tatonga 345kV line and caused oscillations on higher queued wind farm projects near Tatonga. The addition of a double circuit transmission line from Tatonga – Woodring was needed to obtain a stable beginning operating point for the analysis. With the power factor requirements and all network upgrades in service, the interconnection request in Group 1 will meet FERC Order #661A low voltage ride through (LVRT) requirements and the transmission system will remain stable.

Power Factor Requirements:

Request	Size (MW)	Generator Model	Point of Interconnection	Final PF Requirement at POI	
				Lagging (supplying)	Leading (absorbing)
GEN-2010-028	335	Vestas V90 1.8MW	Tatonga 345kV	95%	95%

Cluster Group 2 (Hitchland Area)

There was no stability analysis conducted in the Hitchland area due to no requests in the area.

Cluster Group 3 (Spearville Area)

The Group 3 stability study was conducted by SPP Staff. With the power factor requirements and all network upgrades in service, all interconnection request in Group 3 will meet FERC Order #661A low voltage ride through (LVRT) requirements and the transmission system will remain stable..

Power Factor Requirements:

Request	Size (MW)	Generator Model	Point of Interconnection	Final PF Requirement at POI	
				Lagging (supplying)	Leading (absorbing)
GEN-2010-029	450	Vestas V90 1.8MW	Spearville 345kV	95%	95%

Cluster Group 4 (Mingo Area)
There was no stability analysis conducted in the Mingo area due to no requests in the area.

Cluster Group 5 (Amarillo Area)
There was no stability analysis conducted in the Amarillo area due to no requests in the area.

Cluster Group 6 (South Panhandle Area)
The Group 6 stability analysis was conducted by SPP Staff. With all previously assigned network upgrades in service, the transmission system will remain stable for the addition of the Group 6 interconnection request.

Power Factor Requirements:

Request	Size (MW)	Generator Model	Point of Interconnection	Final PF Requirement at POI	
				Lagging (supplying)	Leading (absorbing)
GEN-2010-020	20	Solar	Roswell 69kV	95%	95%
GEN-2010-021	20	Solar	Atoka 69kV	95%	95%

Cluster Group 7 (Southwest Oklahoma Area)
There was no stability analysis conducted in the Southwest Oklahoma area due to no requests in the area.

Cluster Group 8 (South Central Kansas Area)
The Group 8 stability analysis was conducted by SPP Staff. With all previously assigned network upgrades in service, the transmission system will remain stable for the addition of the Group 8 interconnection request.

Request	Size (MW)	Generator Model	Point of Interconnection	Final PF Requirement at POI	
				Lagging (supplying)	Leading (absorbing)
GEN-2010-055	4.5	GENROU	Wekiwa 138kV	95%	95%

Cluster Group 9 (Northeast Nebraska Area)
There was no stability analysis conducted in the Northeast Nebraska area due to no requests in the area.

Cluster Group 10 (North Nebraska Area)
There was no stability analysis conducted in the North Nebraska area due to no requests in the area.

Cluster Group 11 (North Kansas Area)
There was no stability analysis conducted in the North Kansas area due to no requests in the area.

Cluster Group 12 (Northwest Arkansas Area)

There was no stability analysis conducted in the Northwest Arkansas area due to no requests in the area.

Cluster Group 13 (Northwest Missouri Area)

There was no stability analysis conducted in the Northwest Missouri area due to no requests in the area.

Cluster Group 14 (South Central Oklahoma)

There was no stability analysis conducted in the South Central Oklahoma area due to no requests in the area.

Cluster Group 15 (Southwest Nebraska Area)

There was no stability analysis conducted in the Southwest Nebraska area due to no requests in the area.

Conclusion

The minimum cost of interconnecting all of the interconnection requests included in the Impact Study is estimated at $150,500,000 for the Allocated Network Upgrades and Transmission Owner Interconnection Facilities are listed in Appendix E and F. These costs do not include the cost of upgrades of other transmission facilities listed in Appendix I which are Network Constraints.

These interconnection costs do not include any cost of Network Upgrades determined to be required by short circuit analysis. These studies will be performed if the Interconnection Customer executes the appropriate Interconnection 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 Appendices E, F, and other upgrades associated with Network Constraints do not include all costs associated with the deliverability of the energy to final customers. These costs are determined by separate studies if the Customer submits a Transmission Service Request (TSR) through SPP's Open Access Same Time Information System (OASIS) as required by Attachment Z1 of the SPP Open Access Transmission Tariff (OATT).

Appendix

A: Generation Interconnection Requests Considered for Impact Study

Request	Amount	Service	Area	Requested Point of Interconnection	Proposed Point of Interconnection	Requested In-Service Date	EARLIEST IN SERVICE DATE AVAILABLE**
GEN-2010-020	20	ER	SPS	ROSWELL 69kV	ROSWELL 69kV	03/01/2011	12/31/2014
GEN-2010-021	20	ER	SPS	ATOKA 69kV	ATOKA 69kV	03/01/2011	12/31/2014
GEN-2010-028	335	ER/NR	OKGE	TAP NORTHWEST – TATONGA 345kV	TATONGA 345kV	12/13/2013	12/31/2014
GEN-2010-029	450	ER/NR	SUNC	SPEARVILLE 345kV	SPEARVILLE 345kV	12/31/2013	12/31/2014
GEN-2010-055	4.5	ER	SUNC	WEKIWA 138kV	WEKIWA 138kV	12/31/2011	PER FACILITY STUDY
GROUPED TOTAL	**829.5**						

***** 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	Tap 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-2002-006	150	SPS	Texas County 115kV	IA Executed/On Schedule 12/31/2010
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	200	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 2010
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 Suspension
GEN-2005-013	201	WERE	Tap Latham - Neosho	On Schedule for 2012
GEN-2005-015	150	SPS	Tuco - Oklaunion 345kV	On Suspension
GEN-2005-017	340	SPS	Tap *Hitchland - Potter County 345kV	On Suspension
GEN-2005-021	85.5	SPS	Kirby 115kV	On Suspension
GEN-2006-002	101	AEPW	Grapevine - Elk City 230kV	On-Line
GEN-2006-006	205.5	SUNC	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	18.9	SPS	DWS Frisco Tap	IA Executed/On Schedule 12/31/2011
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	19.8	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 2010
GEN-2006-037N1	75	NPPD	Broken Bow 115kV	IA Pending
GEN-2006-038N019	80	NPPD	Petersburg 115kV	5/1/2011

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2006-038	750	WFEC	Hugo 345kV	On Suspension
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 12/2011
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 Schedule for 2011
GEN-2006-047	240	SPS	Tap and Tie both Potter County - Plant X 230kV and Bushland - Deaf Smith 230kV	On Schedule for 2013
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-2007-011N06	75	NPPD	Tap Neligh – Petersburg 115kV	IA Pending
GEN-2007-011N08	81	NPPD	Bloomfield 115kV	On-Line
GEN-2007-011N09	75	NPPD	Bloomfield 115kV	IA Pending
GEN-2007-013	99	SUNC	Selkirk 115kV	On Suspension
GEN-2007-015	135	WERE	Tap Humboldt – Kelly 161kV	On Suspension
GEN-2007-017	100.5	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 Suspension
GEN-2007-032	150	WFEC	Tap Clinton Junction – Clinton 138kV	IA Pending
GEN-2007-038	200	SUNC	Spearville 345kV	IA Pending
GEN-2007-040	200.1	SUNC	Tap Holcomb – Spearville 345kV	IA Pending
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	199.5	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
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	34.5	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	IA Pending)
GEN-2008-018	405	SPS	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 – Tolk 345kV	Under Study (DISIS-2010-001)
GEN-2008-023	150	AEPW	Hobart Junction 138kV	On Schedule for 2012
GEN-2008-025	101.2	SUNC	Ruleton 115kV	IA Pending

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2008-029	250.5	OKGE	Woodward EHV 138kV	IA Pending
GEN-2008-037	101	WFEC	Tap Washita – Blue Canyon 138kV	Under Study (DISIS-2010-001)
GEN-2008-038	150	AEPW	Tap Shidler – West Pawhuska 138kV	Under Study (DISIS-2009-001)
GEN-2008-044	197.8	OKGE	Tatonga 345kV	Under Study (DISIS-2010-001)
GEN-2008-046	200	OKGE	Sunnyside 345kV	Under Study (DISIS-2010-001)
GEN-2008-047	300	SPS	Tap Hitchland - Woodward 345kV	Under Study (DISIS-2010-001)
GEN-2008-051	322	SPS	Potter 345kV	IA Pending
GEN-2008-071	76.8	OKGE	Newkirk 138kV	Under Study (DISIS-2010-001)
GEN-2008-079	100.5	MKEC	Tap Judson Large – Cudahy 115kV	IA Pending
GEN-2008-086N02	200	NPPD	Tap Ft. Randall – Columbus 230kV	IA Pending
GEN-2008-088	50.6	SPS	Vega 69kV	Under Study (DISIS-2010-001)
GEN-2008-092	201	MIDW	Knoll 115kV	Under Study (DISIS-2009-001)
GEN-2008-098	100.8	WERE	Tap Wolf Creek – LaCygne 345kV	Under Study (DISIS-2010-001)
GEN-2008-110	299.2	SPS	Hitchland 345kV	Under Study (DISIS-2010-001)
GEN-2008-119O	60	OPPD	Tap Humboldt – Kelly 161kV	On-Line
GEN-2008-123N	89.7	NPPD	Tap Guide - Pauline 115kV	Under Study (DISIS-2010-001)
GEN-2008-124	200.1	SUNC	Spearville 230kV	IA Pending
GEN-2008-127	200.1	WERE	Tap Sooner – Rose Hill 345kV	IA Pending
GEN-2008-129	80	MIPU	Pleasant Hill 161kV	On-Line
GEN-2009-008	199.5	SUNC	South Hays 230kV	Under Study (DISIS-2010-001)
GEN-2009-011	50	MKEC	Tap Plainville – Phillipsburg 115kV	IA Pending
GEN-2009-016	141	AEPW	Falcon Road 138kV	IA Pending
GEN-2009-017**	60	SPS	Tap Pembrook – Stiles 138kV	Under Study (DISIS-2009-001)
GEN-2009-020	48.6	MIDW	Tap Bazine – Nekoma 69kV	Under Study (DISIS-2010-001)
GEN-2009-025	60	OKGE	Tap Deer Creek – Sinclair 69kV	IA Pending
GEN-2009-030	100.8	WFEC	Weatherford 138kV	Under Study (DISIS-2010-001)
GEN-2009-032S	6.4	OKGE	Foster 138kV	Under Study (DISIS-2010-001)
GEN-2009-040	73.8	WERE	Tap Smittyville - Knob Hill 115kV	Under Study (DISIS-2010-001)
GEN-2009-059	100.5	MKEC	Tap GEN-2008-079 - Cudahy 115kV	Under Study (DISIS-2010-001)
GEN-2009-060	84	WFEC	Gotebo 69kV	Under Study (DISIS-2010-001)
GEN-2009-062	115	SUNC	Hugoton 115kV	Under Study (DISIS-2010-001)
GEN-2010-001	300	OKGE	Tap Hitchland – Woodward 345kV	Under Study (DISIS-2010-002)
GEN-2009-067S	20	SPS	7 Rivers 69kV	Under Study (DISIS-2010-001)
GEN-2010-003	100.8	WERE	GEN-2008-098 345kV	Under Study (DISIS-2010-001)
GEN-2010-005	300	WERE	GEN-2007-025 345kV	Under Study (DISIS-2010-001)
GEN-2010-006	205	SPS	Jones 230kV	Under Study (DISIS-2010-001)
GEN-2010-007	73.8	SPS	Tap Pringle - Riverview 115kV	Under Study (DISIS-2010-001)
GEN-2010-008	64.4	WFEC	Fargo 69kV	Under Study (DISIS-2010-001)

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2010-009	165.6	SUNC	Gray County 345kV	Under Study (DISIS-2010-001)
GEN-2010-010	100.5	NPPD	Emerick 69kV	Under Study (DISIS-2010-001)
GEN-2010-011	29.7	OKGE	GEN-2008-044 345kV	Under Study (DISIS-2010-001)
GEN-2010-012	65	WFEC	Brantley 138kV	Under Study (DISIS-2010-002)
GEN-2010-013	50.4	WERE	GEN-2005-013 345kV	Under Study (DISIS-2010-001)
GEN-2010-014	360	SPS	Hitchland 345kV	Under Study (DISIS-2010-001)
GEN-2010-015	200.1	SUNC	Spearville 345kV	Under Study (DISIS-2010-001)
GEN-2010-016	199.8	SUNC	Tap Spearville - Knoll 345kV	Under Study (DISIS-2010-001)
GEN-2010-027	900	SUNC	Comanche 345kV	Under Study (DISIS-2010-002)
GEN-2010-036	4.6	WERE	6th Street 115kV	Under Study (DISIS-2010-002)
GEN-2010-038	74.9	NPPD	Broken Bow 115kV	Under Study (DISIS-2010-002)
GEN-2010-040	300	OKGE	Cimarron 345kV	Under Study (DISIS-2010-002)
GEN-2010-041	10.5	OPPD	S1399 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)
GEN-2010-049	49.6	MKEC	Pratt 115kV	Under Study (DISIS-2010-002)
GEN-2010-050	150.4	MIPU	Tap Centerville – Marmaton 161kV	Under Study (DISIS-2010-002)
GEN-2010-051	200	NPPD	Tap Twin Church – Hoskins 230kV	Under Study (DISIS-2010-002)
GEN-2010-052	301.3	SPS	Finney 345kV	Under Study (DISIS-2010-002)
GEN-2010-053	199.8	SUNC	Comanche 345kV	Under Study (DISIS-2010-002)
Broken Bow	8.3	NPPD	Genoa 115kV	On-Line
Ord	10.8	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
Broken Bow	80	NPPD	Broken Bow 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-2010-002	201	AECI	Lathrop 161kV	AECI queue Affected Study
ASGI-2010-003	300	AECI	Maryville 161kV	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
ASGI-2010-006	150	AECI	Tap Fairfax – Fairfax Tap 138kV	AECI queue Affected Study
ASGI-2010-007	150	AECI	Tap Fairfax – Fairfax Tap 138kV	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

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
ASGI-2010-011	48	SPS	Texas County 69kV	AECI queue Affected Study
ASGI-2010-020	50	SPS	Tap (LE) Tatum – (LE) Crossroads 69kV	Under Study (DISIS-2010-002)
ASGI-2010-021	36.6	SPS	Tap (LE) Saunders Tap – (LE) Anderson 69kV	Under Study (DISIS-2010-002)
Llanoest	80	SPS	Llano Wind Farm Tap 115kV	On-Line
			Dumas_19ST 115kV	On-Line
			Etter 115kV	On-Line
			Sherman 115kV	On-Line
			Spearman 115kV	On-Line
SPSDISTR	90	SPS	Texas County 115kV	On-Line
			Washita 138kV (GEN-2003-004)	On-Line
			Washita 138kV (GEN-2004-023)	On-Line
BLUCAN2	153	WFEC	Washita 138kV (GEN-2005-003)	On-Line
Montezuma	110	MKEC	Haggard 115kV	On-Line
GROUPED TOTAL	**29,934.5**			

** Interconnection on Caprock Electric tested for impacts on SPP

***** Planned Facility

^ Proposed Facility

C: Study Groupings

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	GEN-2001-014	96	WFEC	Fort Supply 138kV
	GEN-2001-037	100	OKGE	Windfarm Switching 138kV
	GEN-2002-005	120	WFEC	Red Hills Tap 138kV
	GEN-2005-005	18	OKGE	Windfarm Tap 138kV
	GEN-2005-008	120	OKGE	Woodward 138kV
	GEN-2006-024S	19.8	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
PRIOR QUEUED SUBTOTAL		**3,664.2**		
Cluster	**Request**	**Amount**	**Area**	**Proposed Point of Interconnection**
Woodward	GEN-2010-028	335	OKGE	Tatonga 345kV
WOODWARD SUBTOTAL		**335**		
AREA SUBTOTAL		**3,999.2**		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	SPS Distribution	90	SPS	Various
	ASGI-2010-011	48	SPS	Texas County 69kV
	GEN-2002-006	150	SPS	Texas County 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-2006-020S	18.9	SPS	DWS Frisco Tap
	GEN-2006-044	370	SPS	*Hitchland 345kV
	GEN-2006-049	400	SPS	*Tap Hitchland - Finney 345kV
	GEN-2007-046	199.5	SPS	Tap & Tie Texas County – Hitchland & DWS Frisco Tap – Hitchland 115kV
	GEN-2007-057	34.5	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	SPS	GEN-2008-047 345kV
	GEN-2010-007	73.8	SPS	Tap Pringle – Riverview 115kV
	GEN-2010-014	360	SPS	Hitchland 345kV
PRIOR QUEUED SUBTOTAL		**3,661.9**		
HITCHLAND SUBTOTAL		**3,661.9**		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	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	205.5	SUNC	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	200.1	SUNC	Tap Holcomb – Spearville 345kV
	GEN-2008-018	405	SPS	Finney 345kV
	GEN-2008-079	100.5	MKEC	Tap Judson Large – Cudahy 115kV
	GEN-2008-124	200.1	SUNC	Spearville 230kV
	GEN-2009-059	100.5	MKEC	Tap GEN-2008-079 – Cudahy 115kV
	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-2010-027	900	SUNC	Comanche 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
PRIOR QUEUED SUBTOTAL		**4,761.2**		
Cluster	**Request**	**Amount**	**Area**	**Proposed Point of Interconnection**
Spearville	GEN-2010-029	450	SUNC	Spearville 345kV
SPEARVILLE SUBTOTAL		**450**		
AREA SUBTOTAL		**5,211.2**		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	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
PRIOR QUEUED SUBTOTAL		**924.2**		
MINGO/NW KANSAS SUBTOTAL		**924.2**		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	Llano Estacado	80	SPS	Llano Estacado Tap 115kV
	GEN-2002-022	240	SPS	Bushland 230kV
	GEN-2005-021	85.5	SPS	Kirby 115kV
	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
PRIOR QUEUED SUBTOTAL		**2,218.1**		
AMARILLO SUBTOTAL		**2,218.1**		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	ASGI-2010-010	42	SPS	Lovington 115kV
	GEN-2001-033	180	SPS	San Juan Mesa Tap 230kV
	GEN-2001-036	80	SPS	Caprock Tap 115kV
	GEN-2005-015	150	SPS	Tap Tuco - Oklaunion 345kV
	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 – Tolk 345kV
	GEN-2009-017	60	SPS	Tap Pembrook – Stiles 138kV
	GEN-2009-067S	20	SPS	7 Rivers 69kV
	GEN-2010-006	205	SPS	Jones 230kV
	ASGI-2010-020	50	SPS	Tap (LE) Tatum – (LE) Crossroads 69kV
	ASGI-2010-021	36.6	SPS	Tap (LE) Saunders Tap – (LE) Anderson 69kV
	GEN-2010-046	56	SPS	Tuco 230kV
PRIOR QUEUED SUBTOTAL		**2,369.6**		
Cluster	**Request**	**Amount**	**Area**	**Proposed Point of Interconnection**
S Panhandle	GEN-2010-020	20	SPS	Roswell 69kV
	GEN-2010-021	20	SPS	Atoka 69kV
SOUTH PANHANDLE/NM SUBTOTAL		**40**		
AREA SUBTOTAL		**2,409.6**		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	GEN-2001-026	74	WFEC	Washita 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	101	WFEC	Tap Washita – Blue Canyon 138kV
	GEN-2009-016	141	AEPW	Falcon Road 138kV
	GEN-2009-030	100.8	WFEC	Weatherford 138kV
	GEN-2009-060	84	WFEC	Gotebo 69kV
	GEN-2010-012	65	WFEC	Brantley 138kV
PRIOR QUEUED SUBTOTAL		**2,040.8**		
SW OKLAHOMA SUBTOTAL		**2,040.8**		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	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-2008-038	150	AEPW	Tap Shidler – West Pawhuska 138kV
	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-2010-013	50.4	WERE	GEN-2005-013 345kV
PRIOR QUEUED SUBTOTAL		**3,551.9**		
Cluster	**Request**	**Amount**	**Area**	**Proposed Point of Interconnection**
North Oklahoma	GEN-2010-055	4.5	AEPW	Wekiwa 138kV
NORTH OKLAHOMA SUBTOTAL		**4.5**		
AREA SUBTOTAL		**3,556.4**		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	Genoa	4	NPPD	Genoa 115kV
	GEN-2006-020N	42	NPPD	Bloomfield 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-2007-011N06	75	NPPD	Tap Neligh – Petersburg 115kV
	GEN-2007-011N08	81	NPPD	Bloomfield 115kV
	GEN-2007-011N09	75	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
PRIOR QUEUED SUBTOTAL		**998.5**		
NE NEBRASKA SUBTOTAL		**998.5**		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	Broken Bow	8.3	NPPD	Genoa 115kV
	Ord	10.8	NPPD	Bloomfield 115kV
	Stuart	2.1	NPPD	Petersburg 115kV
	Ainsworth	75	NPPD	Ainsworth Wind Tap 115kV
	Rosebud Wind Project	30	NPPD	St. Francis 115kV
	Broken Bow	80	NPPD	Broken Bow 115kV
	GEN-2006-037N1	75	NPPD	Broken Bow 115kV
	GEN-2010-038	74.9	NPPD	Broken Bow 115kV
PRIOR QUEUED SUBTOTAL		**356.1**		
NORTH NEBRASKA SUBTOTAL		**356.1**		

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	199.5	SUNC	South Hays 230kV
	GEN-2009-011	50	MKEC	Tap Plainville – Phillipsburg 115kV
	GEN-2009-020	48.6	MIDW	Tap Bazine – Nekoma 69kV
	GEN-2009-040	73.8	WERE	Tap Smittyville – Knob Hill 115kV
	GEN-2010-048	70	MIDW	Tap Beach Station – Redline 115kV
PRIOR QUEUED SUBTOTAL		**1,367.9**		
NORTH KANSAS SUBTOTAL		**1,367.9**		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	ASGI-2010-001	400	AECI	Tap Cooper – Fairport 345kV
	ASGI-2010-002	201	AECI	Lathrop 161kV
	ASGI-2010-003	300	AECI	Maryville 161kV
	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	100.5	MIPU	Tap Maryville – Clarinda 161kV & Tie to Midway 161kV
	GEN-2007-053	110	MIPU	Tap Maryville – Clarinda 161kV & Tie to Midway 161kV
	GEN-2008-119O	60	OPPD	Tap Humboldt – Kelly 161kV
	GEN-2008-129	80	MIPU	Pleasant Hill 161kV
	GEN-2010-036	4.6	WERE	6th Street 115kV
	GEN-2010-041	10.5	OPPD	S 1399 161kV
	GEN-2010-047	72	NPPD	Tap Beatrice – Harbine 115kV
	GEN-2010-050	150.4	MIPU	Tap Centerville – Marmaton 161kV
PRIOR QUEUED SUBTOTAL		**2,674**		
NORTHWEST MISSOURI SUBTOTAL		**2,674**		

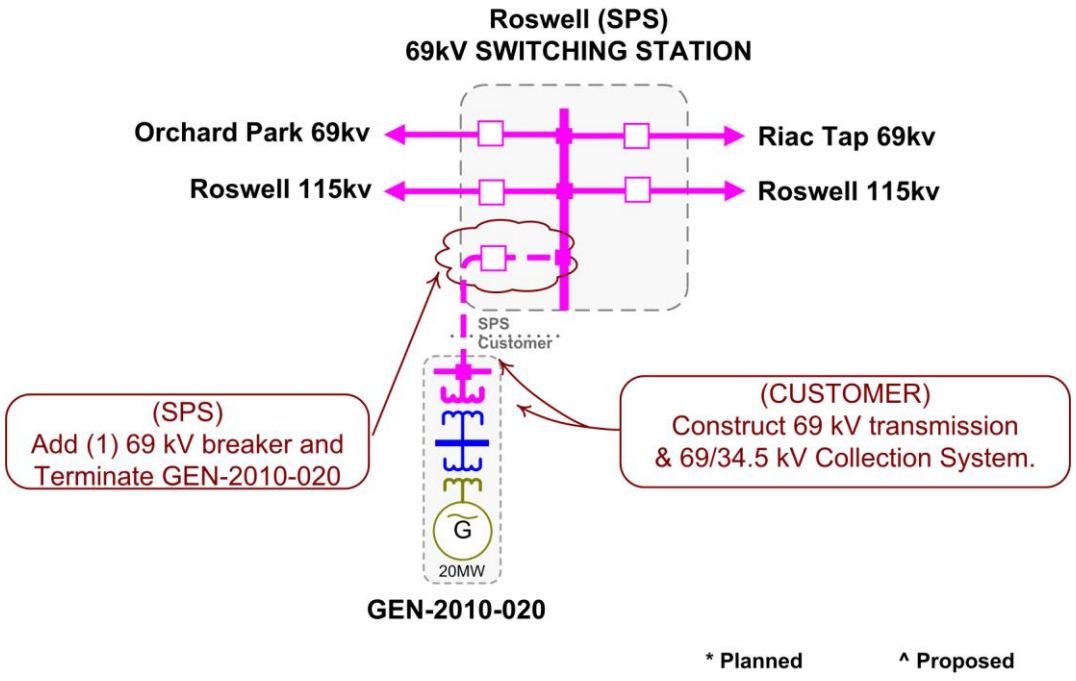
Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	GEN-2006-038	750	WFEC	Hugo 345kV
	GEN-2008-046	200	OKGE	Sunnyside 345kV
	GEN-2009-032S	6.4	OKGE	Foster 138kV
	GEN-2010-040	300	OKGE	Cimarron 345kV
PRIOR QUEUED SUBTOTAL		**1,256.4**		
SOUTH CENTRAL OKLAHOMA SUBTOTAL		**1,256.4**		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	GEN-2008-123N	89.7	NPPD	Tap Guide – Pauline 115kV
PRIOR QUEUED SUBTOTAL		**89.7**		
SOUTHWEST NEBRASKA		**89.7**		
***CLUSTERED TOTAL (w/o PRIOR QUEUED)**		**829.5**		
***CLUSTERED TOTAL (w/PRIOR QUEUED)**		**30,764**		

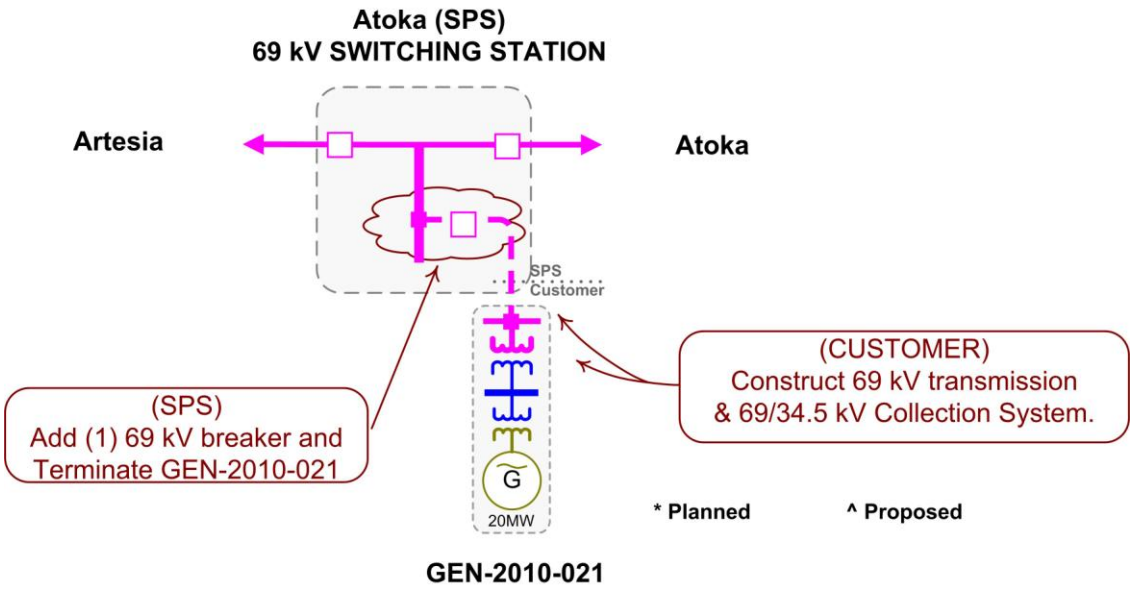
* Planned Facility
^ Proposed Facility
** Alternate requests - counted as one request for study purpose
*** Electrically Remote Interconnection Requests

D: Proposed Point of Interconnection One line Diagrams

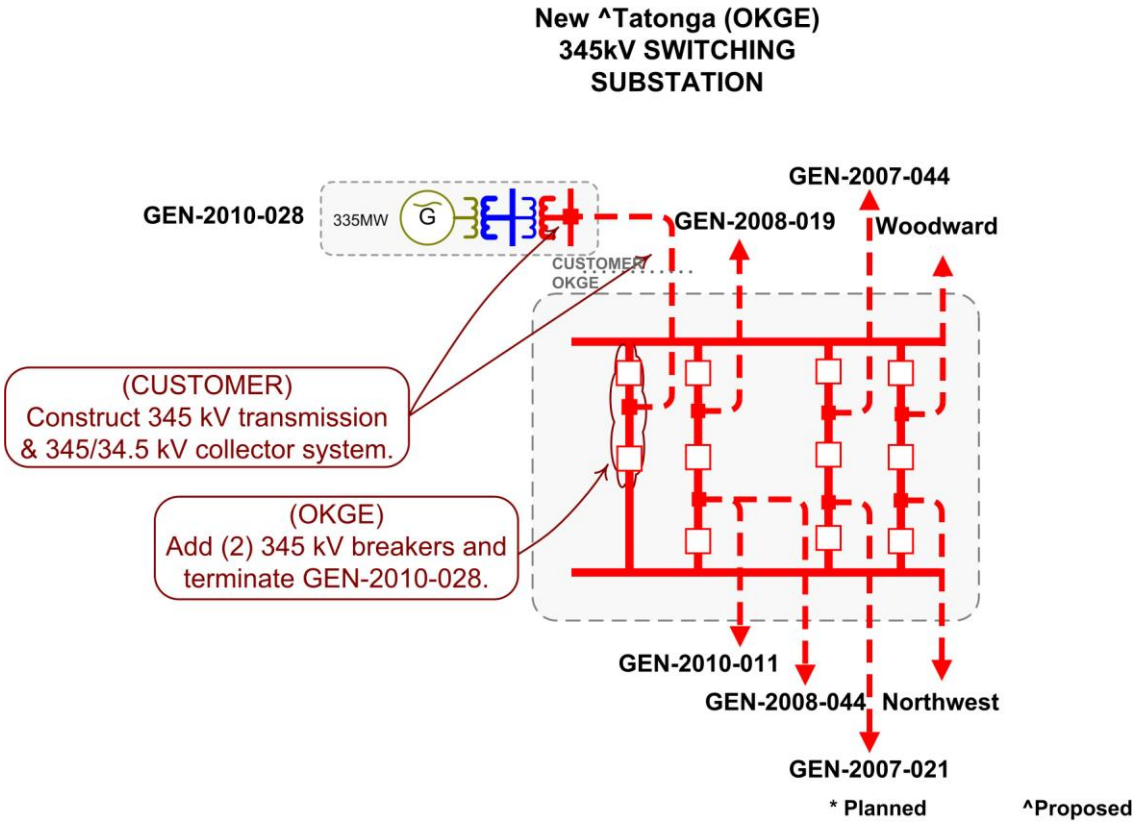
GEN-2010-020



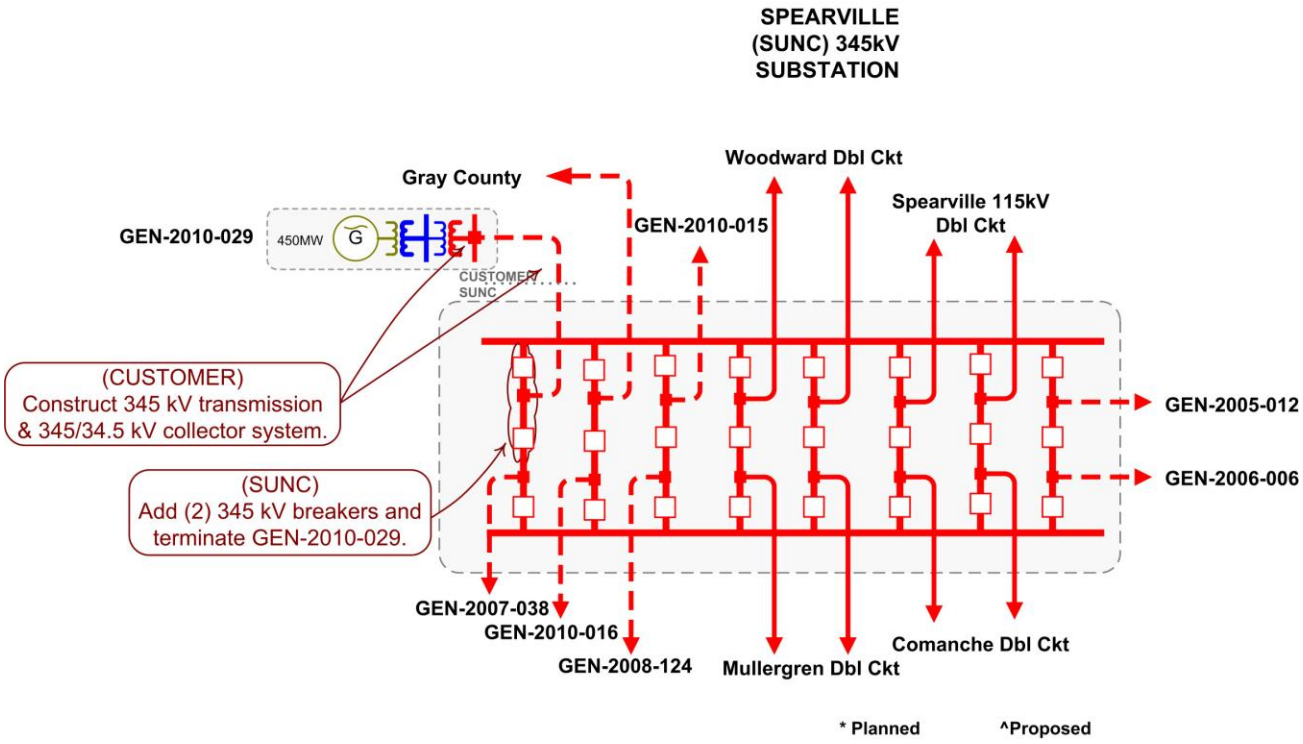
GEN-2010-021

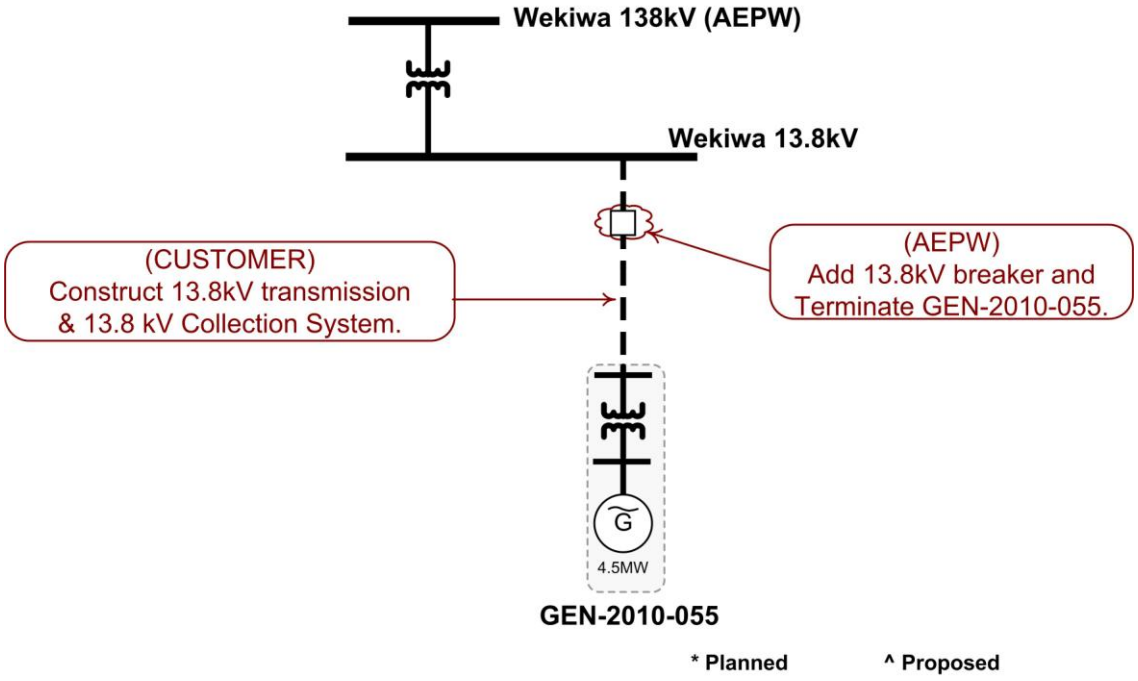


GEN-2010-028



GEN-2010-029




Wekiwa 138kV (AEPW)
Wekiwa 13.8kV
(CUSTOMER)
Construct 13.8kV transmission
& 13.8 kV Collection System.
(AEPW)
Add 13.8kV breaker and
Terminate GEN-2010-055.
G
4.5MW
GEN-2010-055
* Planned
^ Proposed

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

Appendix E. - Cost Allocation Per Request

(Including Previously Allocated Network Upgrades*)

Interconnection Request	Upgrade Type	Allocated Costs	E + C Costs
GEN-2010-020			
GEN-2010-020 Interconnection Costs See Oneline Diagram	Current Study Allocation	$1,500,000.00	$1,500,000.00
Border - Tuco Interchange 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV (Total Project E&C Cost Shown)	Previously Allocated		$148,727,500.00
Tuco Interchange 345/230/13.2KV Autotransformer CKT 2 Balanced Portfolio: Tuco 345/230 kV Transformer CKT 2 (Total Project E&C Cost Shown)	Previously Allocated		$11,250,000.00
Border - Woodward 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV	Previously Allocated		
Beaver Co. - Comanche 345KV CKT 1 Build 345kV between Beaver County - Comanche	Previously Allocation		$90,000,000.00
Beaver Co. - Hitchland 345KV DBL CKT Priority Project: Hitchland - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		$247,005,793.00
Hitchland - Moore County 230KV CKT 1 Per STEP 2007: Multi - Hitchland - Texas Co. 230 kV and 115 kV	Previously Allocated		$101,205,000.00
Hitchland Interchange 345/230KV Transformer CKT 2 Priority Project: Hitchland - Woodward Dbl 345kV CKT	Previously Allocated		
Medicine Lodge - Wichita 345KV DBL CKT Priority Project: Spearville - Comanche - Med Lodge - Wichita Dbl 345kV CKT	Previously Allocated		
Medicine Lodge - Woodward 345KV DBL CKT Priority Project: Med Lodge - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		$194,972,759.00
Finney Switching Station - Holcomb 345KV CKT 2 Per GEN-2006-044 Facility Study	Previously Allocated		$6,299,839.00
Beaver Co. - Woodward 345KV DBL CKT Priority Project: Hitchland - Woodward Dbl 345kV CKT	Previously Allocated		
Spearville - GEN-2010-016 Tap 345KV CKT 1 Balanced Portfolio: Spearville - PostRock - Axtell 345kV CKT	Previously Allocated		
Sunnyside - Hugo 345KV CKT 1 Per 2006-AG3-AFS11	Previously Allocated		$120,000,000.00
PostRock - GEN-2010-016 Tap 345KV CKT 1 Balanced Portfolio: Spearville - PostRock - Axtell 345kV CKT	Previously Allocated		
Cleveland - Sooner 345KV CKT 1 Balanced Portfolio: Cleveland - Sooner 345kV CKT (Total Project E&C Cost Shown).	Previously Allocated		$17,000,000.00
Hugo - Valliant 345KV CKT 1 Per 2006-AG3-AFS11	Previously Allocated		$18,500,000.00
Hitchland 230/115KV Autotransformer CKT 1 Per DISIS-2010-01 Restudy	Previously Allocated		$3,000,000.00
Axtell - PostRock 345KV CKT 1 Balanced Portfolio: Spearville - PostRock - Axtell 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		$112,700,000.00

* Current Study Requests' Costs of Previously Allocated Network Upgrades will be determined by a restudy, if neccesary.

Interconnection Request	Upgrade Type	Allocated Costs	E + C Costs
GEN-2010-020			
Clinton Junction - Elk City 138KV CKT 1 Rebuild approximately 24 miles of 138kV between Clinton Junction and Elk City	Previously Allocation		$16,800,000.00
Northwest Texarkana - Valliant 345KV CKT 1 Priority Project: Valliant - NW Texarkana 345kV CKT (Total Project E&C Cost Shown).	Previously Allocated		$131,451,250.00
	Current Study Total	**$1,500,000.00**	
GEN-2010-021			
GEN-2010-021 Interconnection Costs See Oneline Diagram	Current Study Allocation	$1,500,000.00	$1,500,000.00
Border - Tuco Interchange 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV (Total Project E&C Cost Shown)	Previously Allocated		$148,727,500.00
Tuco Interchange 345/230/13.2KV Autotransformer CKT 2 Balanced Portfolio: Tuco 345/230 kV Transformer CKT 2 (Total Project E&C Cost Shown)	Previously Allocated		$11,250,000.00
Border - Woodward 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV	Previously Allocated		
Beaver Co. - Comanche 345KV CKT 1 Build 345kV between Beaver County - Comanche	Previously Allocation		$90,000,000.00
Beaver Co. - Hitchland 345KV DBL CKT Priority Project: Hitchland - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		$247,005,793.00
Hitchland - Moore County 230KV CKT 1 Per STEP 2007: Multi - Hitchland - Texas Co. 230 kV and 115 kV	Previously Allocated		$101,205,000.00
Hitchland Interchange 345/230KV Transformer CKT 2 Priority Project: Hitchland - Woodward Dbl 345kV CKT	Previously Allocated		
Medicine Lodge - Wichita 345KV DBL CKT Priority Project: Spearville - Comanche - Med Lodge - Wichita Dbl 345kV CKT	Previously Allocated		
Medicine Lodge - Woodward 345KV DBL CKT Priority Project: Med Lodge - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		$194,972,759.00
Finney Switching Station - Holcomb 345KV CKT 2 Per GEN-2006-044 Facility Study	Previously Allocated		$6,299,839.00
Beaver Co. - Woodward 345KV DBL CKT Priority Project: Hitchland - Woodward Dbl 345kV CKT	Previously Allocated		
Spearville - GEN-2010-016 Tap 345KV CKT 1 Balanced Portfolio: Spearville - PostRock - Axtell 345kV CKT	Previously Allocated		
Sunnyside - Hugo 345KV CKT 1 Per 2006-AG3-AFS11	Previously Allocated		$120,000,000.00
PostRock - GEN-2010-016 Tap 345KV CKT 1 Balanced Portfolio: Spearville - PostRock - Axtell 345kV CKT	Previously Allocated		
Cleveland - Sooner 345KV CKT 1 Balanced Portfolio: Cleveland - Sooner 345kV CKT (Total Project E&C Cost Shown).	Previously Allocated		$17,000,000.00
Hugo - Valliant 345KV CKT 1 Per 2006-AG3-AFS11	Previously Allocated		$18,500,000.00
Hitchland 230/115KV Autotransformer CKT 1 Per DISIS-2010-01 Restudy	Previously Allocated		$3,000,000.00

* Current Study Requests' Costs of Previously Allocated Network Upgrades will be determined by a restudy, if neccesary.

Interconnection Request	Upgrade Type	Allocated Costs	E + C Costs
GEN-2010-021			
Axtell - PostRock 345KV CKT 1 Balanced Portfolio: Spearville - PostRock - Axtell 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		$112,700,000.00
Northwest Texarkana - Valliant 345KV CKT 1 Priority Project: Valliant - NW Texarkana 345kV CKT (Total Project E&C Cost Shown).	Previously Allocated		$131,451,250.00
Clinton Junction - Elk City 138KV CKT 1 Rebuild approximately 24 miles of 138kV between Clinton Junction and Elk City	Previously Allocation		$16,800,000.00
	Current Study Total	**$1,500,000.00**	
GEN-2010-028			
GEN-2010-028 Interconnection Costs See Oneline Diagram	Current Study Allocation	$4,000,000.00	$4,000,000.00
Tatonga - Woodring 345KV DBL CKT Build approximately 43 miles of double 345kV Tatonga - Woodring	Current Study Allocation	$137,000,000.00	$137,000,000.00
Beaver Co. - Woodward 345KV DBL CKT Priority Project: Hitchland - Woodward Dbl 345kV CKT	Previously Allocated		
Border - Woodward 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV	Previously Allocated		
Medicine Lodge - Woodward 345KV DBL CKT Priority Project: Med Lodge - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		$194,972,759.00
Beaver Co. - Comanche 345KV CKT 1 Build 345kV between Beaver County - Comanche	Previously Allocation		$90,000,000.00
Cleveland - Sooner 345KV CKT 1 Balanced Portfolio: Cleveland - Sooner 345kV CKT (Total Project E&C Cost Shown).	Previously Allocated		$17,000,000.00
Medicine Lodge - Wichita 345KV DBL CKT Priority Project: Spearville - Comanche - Med Lodge - Wichita Dbl 345kV CKT	Previously Allocated		
Spearville - Comanche 345KV DBL CKT Priority Project: Spearville - Comanche - Med Lodge - Wichita Dbl 345kV CKT	Previously Allocated		
Beaver Co. - Hitchland 345KV DBL CKT Priority Project: Hitchland - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		$247,005,793.00
Border - Tuco Interchange 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV (Total Project E&C Cost Shown)	Previously Allocated		$148,727,500.00
Spearville - GEN-2010-016 Tap 345KV CKT 1 Balanced Portfolio: Spearville - PostRock - Axtell 345kV CKT	Previously Allocated		
PostRock - GEN-2010-016 Tap 345KV CKT 1 Balanced Portfolio: Spearville - PostRock - Axtell 345kV CKT	Previously Allocated		
Axtell - PostRock 345KV CKT 1 Balanced Portfolio: Spearville - PostRock - Axtell 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		$112,700,000.00
Northwest Texarkana - Valliant 345KV CKT 1 Priority Project: Valliant - NW Texarkana 345kV CKT (Total Project E&C Cost Shown).	Previously Allocated		$131,451,250.00
Sunnyside - Hugo 345KV CKT 1 Per 2006-AG3-AFS11	Previously Allocated		$120,000,000.00

* Current Study Requests' Costs of Previously Allocated Network Upgrades will be determined by a restudy, if neccesary.

Interconnection Request	Upgrade Type	Allocated Costs	E + C Costs
GEN-2010-028			
Northwest 345/138/13.8KV Autotransformer CKT 1 NRIS only required upgrade: Per 2009-AG2-AFS6	Previously Allocated		$15,000,000.00
Cleo Corner - Meno Tap 138KV CKT1 NRIS only required upgrade: Rebuild arroximately 16 miles 138kV between Cleo Corner - Meno Tap	Previously Allocation		$11,200,000.00
Glass Mountain - Mooreland 138 KV CKT 1 NRIS only required upgrade: Rebuild arroximately 24 miles 138kV between Glass Mountain - Mooreland	Previously Allocation		$16,800,000.00
Meno Tap - Cleo Corner - Glass Mountain 138 KV CKT 1 NRIS only required upgrade: Rebuild arroximately 42 miles 138kV between Meno Tap - Cleo Corner - Glass Mountain	Previously Allocation		$29,400,000.00
Dover Southwest- Okeene 138 KV CKT 1 NRIS only required upgrade: Rebuild arroximately 27 miles 138kV between Dover Southwest - Okeene	Previously Allocation		$10,800,000.00
	Current Study Total	**$141,000,000.00**	
GEN-2010-029			
GEN-2010-029 Interconnection Costs See Oneline Diagram	Current Study Allocation	$6,000,000.00	$6,000,000.00
Spearville - Comanche 345KV DBL CKT Priority Project: Spearville - Comanche - Med Lodge - Wichita Dbl 345kV CKT	Previously Allocated		
Beaver Co. - Comanche 345KV CKT 1 Build 345kV between Beaver County - Comanche	Previously Allocation		$90,000,000.00
Spearville - GEN-2010-016 Tap 345KV CKT 1 Balanced Portfolio: Spearville - PostRock - Axtell 345kV CKT	Previously Allocated		
PostRock - GEN-2010-016 Tap 345KV CKT 1 Balanced Portfolio: Spearville - PostRock - Axtell 345kV CKT	Previously Allocated		
Comanche - Medicine Lodge 345KV Dbl CKT Priority Project: Spearville - Comanche - Med Lodge - Wichita Dbl 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		$356,300,000.00
Spearville - Mulgren 345kV Dbl CKT Build approximately 74 miles of double 345kV Spearville - Mulgren	Previously Allocation		$124,264,150.94
Mulgren - Circle 345kV Dbl CKT Build approximately 79 miles of double 345kV Mulgren - Circle	Previously Allocation		$132,660,377.36
Circle - Reno 345kV Dbl CKT Build approximately 6 miles of double 345kV Circle - Reno	Previously Allocation		$10,075,471.70
Axtell - PostRock 345KV CKT 1 Balanced Portfolio: Spearville - PostRock - Axtell 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		$112,700,000.00
Medicine Lodge - Wichita 345KV DBL CKT Priority Project: Spearville - Comanche - Med Lodge - Wichita Dbl 345kV CKT	Previously Allocated		
Rose Hill - GEN-2008-127 Tap 345KV CKT 1 Per 2007-AG1-AFS-12	Previously Allocated		
Sooner - GEN-2008-127 Tap 345KV CKT1 Per 2007-AG1-AFS-12	Previously Allocated		
Border - Tuco Interchange 345KV CKT 1 Balanced Portfolio: Tuco - Woodward 345kV (Total Project E&C Cost Shown)	Previously Allocated		$148,727,500.00

* Current Study Requests' Costs of Previously Allocated Network Upgrades will be determined by a restudy, if neccesary.

Interconnection Request	Upgrade Type	Allocated Costs	E + C Costs
GEN-2010-029			
Medicine Lodge - Woodward 345KV DBL CKT Priority Project: Med Lodge - Woodward Dbl 345kV CKT (Total Project E&C Cost Shown)	Previously Allocated		$194,972,759.00
Cleveland - Sooner 345KV CKT 1 Balanced Portfolio: Cleveland - Sooner 345kV CKT (Total Project E&C Cost Shown).	Previously Allocated		$17,000,000.00
Beaver Co. - Woodward 345KV DBL CKT Priority Project: Hitchland - Woodward Dbl 345kV CKT	Previously Allocated		
Knoll - Post Rock 230KV CKT 1 Balanced Portfolio: Spearville - PostRock - Axtell 345kV CKT	Previously Allocated		
Hitchland Interchange 345/230KV Transformer CKT 2 Priority Project: Hitchland - Woodward Dbl 345kV CKT	Previously Allocated		
Hitchland - Moore County 230KV CKT 1 Per STEP 2007: Multi - Hitchland - Texas Co. 230 kV and 115 kV	Previously Allocated		$101,205,000.00
	Current Study Total	**$6,000,000.00**	
GEN-2010-055			
GEN-2010-055 Interconnection Costs See Oneline Diagram	Current Study Allocation	$500,000.00	$500,000.00
Muskogee - Seminole 345KV CKT 1 Balanced Portfolio: Seminole – Muskogee 345 kV CKT (Total Project E&C Cost Shown).	Previously Allocated		$131,000,000.00
Tuco Interchange 345/230/13.2KV Autotransformer CKT 2 Balanced Portfolio: Tuco 345/230 kV Transformer CKT 2 (Total Project E&C Cost Shown)	Previously Allocated		$11,250,000.00
	Current Study Total	**$500,000.00**	

* Current Study Requests' Costs of Previously Allocated Network Upgrades will be determined by a restudy, if neccesary.

F: Cost Allocation per Proposed Study Network Upgrade

Appendix F. - Cost Allocation Per Upgrade Facility

Upgrade Facility		Allocated Costs	E + C Costs
GEN-2010-020 Interconnection Costs			**$1,500,000.00**
See Oneline Diagram			
GEN-2010-020		$1,500,000.00	
	Total	**$1,500,000.00**	
GEN-2010-021 Interconnection Costs			**$1,500,000.00**
See Oneline Diagram			
GEN-2010-021		$1,500,000.00	
	Total	**$1,500,000.00**	
GEN-2010-028 Interconnection Costs			**$4,000,000.00**
See Oneline Diagram			
GEN-2010-028		$4,000,000.00	
	Total	**$4,000,000.00**	
GEN-2010-029 Interconnection Costs			**$6,000,000.00**
See Oneline Diagram			
GEN-2010-029		$6,000,000.00	
	Total	**$6,000,000.00**	
GEN-2010-055 Interconnection Costs			**$500,000.00**
See Oneline Diagram			
GEN-2010-055		$500,000.00	
	Total	**$500,000.00**	
Tatonga - Woodring 345KV DBL CKT			**$137,000,000.00**
Build approximately 43 miles of double 345kV Tatonga - Woodring			
GEN-2010-028		$137,000,000.00	
	Total	**$137,000,000.00**	
	Current Study Upgrades Total		**$150,500,000.00**

G: Powerflow Analysis (Constraints for Mitigation)

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43233	109.0486	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	108.2841	GEN336821 1-GRAND GULF UNIT
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	107.8405	GEN336153 1-WATERFORD UNIT#3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	107.4319	GEN337911 1-ARKANSAS NUCLEAR ONE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	106.9966	GEN335831 1-RIVERBEND UNIT#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43572	106.7387	EL RENO - ROMAN NOSE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	106.4783	GEN337910 1-ARKANSAS NUCLEAR ONE UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4459	106.231	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4459	106.231	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43344	106.219	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43972	105.7936	MED-LDG5 345.00 - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43972	105.7936	MED-LDG5 345.00 - WICHITA 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	105.7642	GEN337652 1-WHITE BLUFF UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	105.7024	GEN337653 1-WHITE BLUFF UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	105.6471	GEN501801 1-DOLET HILLS UNIT1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	105.589	GEN336821 1-GRAND GULF UNIT
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	105.5478	GEN338146 1-INDEPENDENCE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44092	105.5185	BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	105.4815	GEN338143 1-INDEPENDENCE UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	105.3155	GEN336251 1-NINEMILE POINT UNIT#4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	105.1714	GEN337041 1-GERALD ANDRUS
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	105.136	GEN336153 1-WATERFORD UNIT#3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.9956	GEN509403 1-PIRKEY GENERATION
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.872	GEN501813 1-RODEMACHER UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.8286	GEN514806 1-SOONER UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.8088	GEN338189 1-LS POWER OSCEOLA UNIT G1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.7719	GEN336831 1-BAXTER WILSON SES
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.7609	GEN515226 1-MUSKOGEE 6G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	104.7177	GEN337911 1-ARKANSAS NUCLEAR ONE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.5347	GEN514805 1-SOONER UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.4535	GEN501812 1-RODEMACHER UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.4057	GEN335206 1-NELSON UNIT 6
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43146	104.3727	G08-13T 345.00 - WOODRING 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.3516	GEN515223 1-MUSKOGEE 4G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44211	104.3467	BEAVERCO 345.00 - COMANCH5 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.3264	GEN509406 1-WELSH #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.3263	GEN509404 1-WELSH #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.3263	GEN509405 1-WELSH #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.437	104.3225	DEWEY - SOUTHARD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.3089	GEN515225 1-MUSKOGEE 5G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	104.2835	GEN335831 1-RIVERBEND UNIT#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.2317	GEN334440 1-SABINE UNIT 4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43675	104.2056	CLEO CORNER - MEN TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43675	104.1867	IMO TAP - MEN TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.1592	GEN520947 1-HUGO1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43637	104.1474	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.1166	GEN335204 1-NELSON UNIT 4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43637	104.0852	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.052	GEN336801 1-BAXTER WILSON UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.0378	GEN509394 1-FLINT CREEK
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.437	104.0204	ROMAN NOSE - SOUTHARD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43233	103.9836	G05-15T 345.00 - OKLAUNION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43684	103.9104	EL RENO - ROMAN NOSE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.8649	GEN334441 1-SABINE UNIT 5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.8632	GEN511841 1-NORTHEASTERN STATION #4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.8382	GEN511840 1-NORTHEASTERN STATION #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.8348	GEN512689 1-GRDA1 GSU1 22
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.8295	GEN511839 1-NORTHEASTERN STATION #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	103.7516	GEN337910 1-ARKANSAS NUCLEAR ONE UNIT #1

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.7041	GEN512688 2-GRDA1 GSU2 22
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.6789	GEN300006 1-NEW MADRID UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.6698	GEN300007 1-NEW MADRID UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43178	103.6335	G08-13T 345.00 - SUMNERCO 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43592	103.6151	CEDARDALE - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43592	103.5873	CEDARDALE - OKEENE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43701	103.5346	MOORELAND - NINMILE 4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43744	103.5326	BENTON - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43701	103.5287	MOREWOOD SW - NINMILE 4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.4586	GEN515042 1-SEMINOLE 3G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44705	103.335	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44705	103.335	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43261	103.3087	G05-15T 345.00 - TUCO INTERCHANGE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4305	103.2592	CIMARRON - WOODRING 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44299	103.2353	BORDER 7345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.2224	GEN515041 1-SEMINOLE 2G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43335	103.2039	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43335	103.2032	ELK CITY 230KV - SWEETWT6 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.2014	GEN509409 1-WILKES #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.1465	GEN336170 1-GULF OXY U4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43576	103.1226	DOVER SW - OKEENE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.1183	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.1028	GEN514910 2-REDBUD GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.1028	GEN514911 2-REDBUD GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43386	103.0958	LACYGNE - NEOSHO 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	103.0346	GEN337652 1-WHITE BLUFF UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	103.0195	GEN337653 1-WHITE BLUFF UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43453	102.9863	CLINTON JUNCTION - ELK CITY 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.9541	GEN514998 1-MCCLAIN UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.9541	GEN514999 1-MCCLAIN UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44085	102.9512	MED-LDG5 345.00 - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44085	102.9512	MED-LDG5 345.00 - WICHITA 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.9097	GEN514899 1-REDBUD1S
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.9097	GEN514900 1-REDBUD2S
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.9067	GEN501801 1-DOLET HILLS UNIT1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.8929	GEN334070 1-LEWIS CREEK 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43644	102.8853	G10-16T 345.00 - POSTROCK7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.8726	GEN515040 1-SEMINOLE 1G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.8713	GEN511843 1-RIVERSIDE STATION #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.8223	GEN338146 1-INDEPENDENCE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.7554	GEN338143 1-INDEPENDENCE UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43507	102.6877	WRTOD400
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44205	102.6876	BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43652	102.6742	G10-16T 345.00 - SPEARVILLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43564	102.6473	ELK CITY - RHWIND4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43505	102.6334	HOYT - JEFFERY ENERGY CENTER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43637	102.6123	MINGO - SETAB 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43372	102.6037	SPP-SWPS-03
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.582	GEN336251 1-NINEMILE POINT UNIT#4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43374	102.5693	ARKANSAS NUCLEAR ONE - FT SMITH 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.534	GEN542955 1-LACYGNE UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43789	102.5277	FINNEY SWITCHING STATION - STEVENSCO 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43562	102.5225	G05-16T 345.00 - NEOSHO 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43647	102.5205	AXTELL - POSTROCK7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.5153	GEN337428 1-PERYVILLE UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.5153	GEN337430 1-PERYVILLE UNIT #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43477	102.5133	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.512	GEN509391 G1-ARSENAL HILL GENS #2 (STALL)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.512	GEN509392 G2-ARSENAL HILL GENS #3 (STALL)

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.5055	GEN505432 1-SIKESTON
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.5024	GEN509393 S1-ARSENAL HILL GENS #4 (STALL)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4895	GEN337432 1-PERYVILLE UNIT #5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4892	GEN337429 1-PERYVILLE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.486	GEN334030 1-FRONTIER UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43477	102.4742	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43519	102.4718	SPP-MKEC-08
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43663	102.4697	MINGO - RED WILLOW 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4621	GEN542956 2-LACYGNE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43374	102.4432	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4431	GEN300031 1-CHOUTEAU CTG 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4431	GEN300032 1-CHOUTEAU CTG 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.4378	GEN337041 1-GERALD ANDRUS
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4311	GEN335076 1-DYNEGY UNIT2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4296	GEN514905 1-REDBUD3S
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.427	GEN336167 1-GULF OXY U1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.427	GEN336168 1-GULF OXY U2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.427	GEN336169 1-GULF OXY U3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43573	102.4267	MOREWOOD SW - RHWIND4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43411	102.4265	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43566	102.4167	G05-13T 345.00 - G05-16T 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4078	GEN337421 1-OUCHITA CTG1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4078	GEN337423 1-OUCHITA CTG2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4078	GEN337425 1-OUCHITA CTG3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3979	GEN300003 1-THOMAS HILL UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43494	102.3957	GRAND ISLAND - SWEETWATER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3944	GEN337125 6-LS POWER BATESVILLE
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3934	GEN334031 1-FRONTIER UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3933	GEN335075 1-DYNEGY#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43566	102.3926	BENTON - ROSE HILL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3872	GEN515266 1-AES 1G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3872	GEN515267 1-AES 2G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3855	GEN337006 1-DUKE MCADAMS G1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3855	GEN337007 1-DUKE MCADAMS G2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3844	GEN335203 1-NELSON UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43505	102.3839	KNOBHILL - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.42354	102.3771	SOONER - SPRING CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43505	102.375	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.42354	102.3748	NORTHWEST - SPRING CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3679	GEN337008 1-DUKE MCADAMS S1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43519	102.3554	SPP-WERE-34
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43519	102.3543	SPP-MKEC-05
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43491	102.339	CIRCLE 7 345.00 - MULGREN7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43491	102.339	CIRCLE 7 345.00 - MULGREN7 345.00 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3354	GEN334392 1-EXXON MOBIL IPP 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3335	GEN514912 2-REDBUD GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.317	GEN506752 1-LEBROCK GAS 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4349	102.2991	MULGREN7 345.00 - SPEARVILLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4349	102.2991	MULGREN7 345.00 - SPEARVILLE 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2935	GEN511837 1-NORTHEASTERN STATION # 1-1A
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2935	GEN511838 1-NORTHEASTERN STATION # 1-1B
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43519	102.2766	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43547	102.2762	DOVER SW - HENESSEY 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2756	GEN520811 1-ANADRK4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2684	GEN338500 1-MCCLELLAN UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.2559	GEN509403 1-PIRKEY GENERATION
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2555	GEN549890 1-SOUTHWEST 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2546	GEN560323 1-G10-40 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43673	102.245	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43574	102.2422	G05-13T 345.00 - LATHAMS7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43553	102.239	OGE3TERM1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2346	GEN337954 1-LYNCH UNIT #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43992	102.2319	BEAVERCO 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43992	102.2319	BEAVERCO 345.00 - WWRDEHV7 345.00 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2303	GEN515000 1-MCCLAIN UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2262	GEN300016 1-1G1GPDEL 18.000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2262	GEN300017 1-1G2GPDEL 18.000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43509	102.2244	HOYT - STRANGER CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2129	GEN511836 1-NORTHEASTERN STATION #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43374	102.2111	STLN-DEMARC6230.00 - SWEETWT6 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43374	102.2111	STATELINE INTERCHANGE - STLN-DEMARC6230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43374	102.2111	SPP-SWPS-02
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43547	102.2068	HENESSEY - WAUKOMIS 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1966	GEN599891 1-OKLAUN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1943	GEN542962 2-IATAN UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43547	102.176	WAUKOMIS - WAUKOMIS TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1742	GEN547649 1-ASBURY UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43432	102.1665	GRAY CO 345.00 - SPEARVILLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1506	GEN511953 G-COGENTRIX GAS # 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.15	GEN511954 S-COGENTRIX STEAM # 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1425	GEN335201 1-NELSON UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43241	102.1392	SUMNERCO 345.00 - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4355	102.1322	MED-LDG5 345.00 345/138KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1319	GEN335202 1-NELSON UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43505	102.1316	AXTELL - PAULINE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.1298	GEN501813 1-RODEMACHER UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1269	GEN338513 1-BAILEY UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.119	GEN542951 5-HAWTHORN UNIT #5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1185	GEN511938 1-OEC STEAM # 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1175	GEN511851 1-COMANCHE #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43505	102.1172	ANDERSONCO 345.00 - LACYGNE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1141	GEN334374 1-COTTONWOOD/INTERGEN UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43169	102.1134	G08-127T 345.00 - SOONER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43387	102.1097	RENO COUNTY - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1048	GEN335612 1-WILLOW GLENN UNIT#2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43613	102.1032	HOLCOMB - SETAB 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1018	GEN520812 1-ANADRK5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1018	GEN520813 1-ANADRK6
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0998	GEN338510 1-1S1KNWRI
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.093	GEN337422 1-OUCHITA STG1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.093	GEN337424 1-OUCHITA STG2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.093	GEN337426 1-OUCHITA STG3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0875	GEN503900 1-FITZHUGH CT1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0869	GEN549893 2-SOUTHWEST 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43447	102.086	NORTHEAST STATION - ONETA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43466	102.085	G07-48T 230.00 - SWISHER COUNTY INTERCHANGE 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.079	GEN514806 1-SOONER UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.0774	GEN338189 1-LS POWER OSCEOLA UNIT G1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0738	GEN335611 1-WILLOW GLENN UNIT#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43495	102.0731	MOORE - PAULINE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0719	GEN506749 1-EASTMAN GENERATION A
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0712	GEN335545 1-DOW AEP UNIT5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43507	102.0654	ANDERSONCO 345.00 - WOLF CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43527	102.065	LAWTON EASTSIDE - SUNNYSIDE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0623	GEN542957 1-IATAN UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0534	GEN300002 1-THOMAS HILL UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4345	102.0477	WRTOD1104
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0466	GEN335137 C4-PPG

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0456	GEN547656 1-STATE LINE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43498	102.0335	KNOBHILL - SALINE 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.0333	GEN336831 1-BAXTER WILSON SES
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0243	GEN337124 5-LS POWER BATESVILLE
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43461	102.0161	8DANIEL 500.00 - MCKNIGHT 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.0119	GEN515226 1-MUSKOGEE 6G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43498	102.0113	HELENAT2 69.000 - SALINE 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43459	102.0059	FIELD NORTH - LKFLDXL3 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43462	102.0046	CIMARRON - EL RENO 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43451	101.9937	MARSHALL - WOODRING 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43451	101.9855	COTTONWOOD CREEK - MARSHALL 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9854	GEN501910 1-ACADIA UNIT ST1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9845	GEN334232 1-PELCNRD U1 13.800
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9845	GEN334233 1-PELCNRD U2 13.800
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43462	101.9816	OGE3TERM2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9792	GEN335546 3-DOW COGEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43461	101.977	MORRISON - STILLWATER 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43423	101.9756	WEATHERFORD JCT. - WEATHERFORD SOUTHEAST 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9726	GEN334467 1-DUPONT UNIT#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9718	GEN515443 1-MNCOWND1 34.500
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43485	101.9709	OKEENE - WATONGA SW 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43514	101.9698	FPL SWITCH - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9692	GEN334298 1-CYPR U1 13.800
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9692	GEN334299 1-CYPR U2 13.800
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9677	GEN500915 3-WESTERN KRAFT
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9636	GEN511853 1-COMANCHE #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43492	101.9624	MULLERGREN - SPEARVILLE 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9582	GEN511852 1-COMANCHE #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43461	101.9549	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9539	GEN336176 1-UNION CARBIDE COGEN GT1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9539	GEN336177 1-UNION CARBIDE COGEN GT2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9531	GEN334335 1-TOLEDO BEND
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43498	101.9468	GOLTRY - HELENAT2 69.000 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43438	101.9454	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4348	101.9448	DEAF SMITH COUNTY INTERCHANGE - S-RANDLCO 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43494	101.9441	PUTNAM - TALOGA 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43524	101.9436	SWISSVALE - WEST GARDNER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43589	101.9434	IODINE - WWRDEHV4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43452	101.9429	KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43587	101.9424	LATHAMS7 345.00 - ROSE HILL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43441	101.9367	GRAY CO 345.00 - HOLCOMB 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4347	101.9366	CLINTON - G07-32T 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43452	101.9323	MCCLELLAN SUB - MCLEAN RURAL SUB 115KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9313	GEN640009 1-COOPER NUCLEAR STATION
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43498	101.9307	GOLTRY - IMO 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43461	101.9296	BROOKLINE - MORGAN 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43494	101.9268	HAMON BUTLER - PUTNAM 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43494	101.9263	ARAPAHO - HAMON BUTLER 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43494	101.9252	ARAPAHO - INDUSTRIAL PARK 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43442	101.9239	DOLET HILLS - SOUTHWEST SHREVEPORT 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4347	101.9213	CLINTON - WEATHERFORD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9195	GEN300001 1-THOMAS HILL UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9095	GEN560169 1-G08-13 0.5750
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43686	101.9082	G05-17T 345.00 - POTTER COUNTY INTERCHANGE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9077	GEN549899 5-JAMES RIVER 5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43447	101.9073	SUNNYSIDE (SUNNYSD3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9059	GEN335644 1-EXXON UNIT5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43494	101.8997	CORDELL - INDUSTRIAL PARK 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43463	101.8937	LAKEOVER - MCADAMS 500KV CKT 1

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43589	101.889	DEWEY - IODINE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.8884	GEN506753 1-LEBROCK GAS 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43452	101.8876	MCLEAN RURAL SUB - SHAMROCK 115KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43452	101.8871	SHAMROCK (SHAMRCK1) 115/69/14.4KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.8866	GEN505616 1-BROKEN BOW
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.8866	GEN505618 2-BROKEN BOW
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43452	101.8843	SPP-SWPS-T54
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43457	101.884	MCELROY - STILLWATER 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.8811	GEN560118 1-G08-46 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.8793	GEN501911 1-ACADIA UNIT CT1A
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43463	101.8784	CIRCLE - MULLERGREN 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43374	101.8778	SPP-SWPS-02A
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43463	101.877	NUNDRWD - WAYSIDE 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43452	101.8754	EL PASO - FARBER 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43457	101.8752	CLINTON - MONTROSE 161KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43475	101.8734	CANTON - TALOGA 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43464	101.8724	MCADAMS - WOLF CREEK 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43438	101.8709	WEATHERFORD SOUTHEAST - WEATHERFORD TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43474	101.8646	AMARILLO SOUTH INTERCHANGE - G07-48T 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43473	101.8601	ELDORADO EHV 500/345KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.8583	GEN334458 1-CONOCO UNIT#3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43423	101.8578	HINTON - WEATHERFORD JCT. 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43462	101.8573	GERALD GENTLEMAN STATION - SWEETWATER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43426	101.8562	NORTHEAST STATION - TULSA NORTH 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43473	101.8558	ELDORADO EHV - LONGWOOD 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.8542	GEN334282 1-SAM RAYBURN 4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43475	101.8521	CANTON - OKEENE 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43558	101.8495	EMPORIA ENERGY CENTER - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43423	101.8495	CAN_GAS4 138.00 - HINTON 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43457	101.8494	KINZE - MCELROY 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43472	101.8451	GRAND ISLAND - MCCOOL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.8422	GEN506750 1-EASTMAN GENERATION B
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.841	GEN334393 1-EXXON MOBIL IPP 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43516	101.84	EMPORIA ENERGY CENTER - SWISSVALE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43457	101.8399	CARNEGIE - HOBART JUNCTION 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.7867	GEN514805 1-SOONER UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.7067	GEN501812 1-RODEMACHER UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.659	GEN335206 1-NELSON UNIT 6
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43256	101.6023	G08-13T 345.00 - WOODRING 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.5987	GEN515223 1-MUSKOGEE 4G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.5773	GEN509406 1-WELSH #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.5772	GEN509404 1-WELSH #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.5772	GEN509405 1-WELSH #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.562	BASE CASE
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.5552	GEN515225 1-MUSKOGEE 5G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43812	101.5094	DEWEY - SOUTHARD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44325	101.4906	BEAVERCO 345.00 - COMANCH5 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.4824	GEN334440 1-SABINE UNIT 4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.4072	GEN520947 1-HUGO1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43787	101.3903	CLEO CORNER - MEN TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43787	101.3715	IMO TAP - MEN TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.3667	GEN335204 1-NELSON UNIT 4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43749	101.3373	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43229	101.3045	GRACMNT7 345.00 - LAWTON EASTSIDE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.3043	GEN336801 1-BAXTER WILSON UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43416	101.2897	BROOKLINE - SUB 383 - MONETT 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.2894	GEN509394 1-FLINT CREEK
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43416	101.2893	AI12
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43416	101.2878	FLINT CREEK - SUB 383 - MONETT 345KV CKT 1

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2809	BAXTER WILSON SES - RAY BRASWELL SES 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.276	GEN560585 1-G06-44-2 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43749	101.2738	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2672	GEN560505 1-G02-006 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43441	101.2645	SPP-WERE-41B
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43441	101.2644	NEWKIRK4 - PECKHMT4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2629	GEN527882 1-CUNNINGHAM GEN #2 20 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43441	101.2617	CRESWELL - PECKHMT4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2547	GEN560356 1-G10-53 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2413	GEN560522 1-G05-12 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43457	101.2402	BAXTER WILSON SES - PERRYVILLE 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43406	101.2391	CLEVELAND - SOONER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43458	101.232	DOLET HILLS 345/230KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2255	GEN560170 1-G08-16 34.500
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43424	101.2165	OGE3TERM14
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.213	GEN539677 3-A. M. MULLERGREN GENERATOR
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2122	GEN560317 1-G10-27-1 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2122	GEN560318 1-G10-27-2 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2122	GEN560319 1-G10-27-3 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2122	GEN560320 1-G10-27-4 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2114	GEN524285 1-WILDORADO WIND GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43812	101.2082	ROMAN NOSE - SOUTHARD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.203	GEN560595 1-G06-47 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2024	GEN560592 1-G06-45 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43441	101.1998	SPP-WERE-07B
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1967	GEN560173 1-G08-17 0.5750
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43496	101.1942	BENTON - WOLF CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43453	101.191	ARKANSAS NUCLEAR ONE - PLEASANT HILL 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1861	GEN539767 1-GRAY COUNTY WIND FARM
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43344	101.178	G05-15T 345.00 - OKLAUNION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1756	GEN560286 1-G10-01-1WTG 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1756	GEN560287 1-G10-01-2WTG 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1654	GEN560586 1-G06-44-3 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43458	101.162	CLARKSVILLE - MUSKOGEE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1616	GEN560371 1-G07-46 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1594	GEN560257 1-G10-14-2 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1571	GEN560256 1-G10-14-1 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43447	101.1461	LACYGNE - STILWELL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.141	GEN560353 1-G10-52 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1408	GEN560105 1-G08-22 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43457	101.1242	8BHAM STEEL 500.00 - WEST MEMPHIS 500 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43449	101.1193	LACYGNE - WEST GARDNER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.1121	GEN334441 1-SABINE UNIT 5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43432	101.1121	FLINT CREEK - GRDA1 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.1113	GEN511841 1-NORTHEASTERN STATION #4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43457	101.1085	AMRN_OUTS5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43525	101.1052	WWRDEHV7 345.00 (WWDEHV-T2) 345/138/13.8KV TRANSFORMER CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.0861	GEN511840 1-NORTHEASTERN STATION #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4326	101.0798	PITTSBURG - SEMINOLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.0763	GEN511839 1-NORTHEASTERN STATION #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.0759	GEN512689 1-GRDA1 GSU1 22
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43042	101.0726	GRACMNT7 345.00 - MINCO 7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.0359	GEN523103 1-NOBLE_WND 3115.00
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43339	101.0356	PITTSBURG - VALLIANT 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43525	101.0325	WWRDEHV7 345.00 (WWDEHV) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43458	101.0309	DELL 500 - INDEPENDENCE 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43312	101.0267	HORSESHOE LAKE - SEMINOLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43312	101.0258	ARCADIA - HORSESHOE LAKE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.0028	GEN560359 1-G08-51 0.6900

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.9996	GEN560279 1-G08-18 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.9776	GEN560166 1-G07-48 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.9746	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.9612	GEN560570 1-G06-39 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.9442	GEN512688 2-GRDA1 GSU2 22
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43427	100.9361	CHAMBER SPRINGS - CLARKSVILLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.9334	GEN300006 1-NEW MADRID UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.9243	GEN300007 1-NEW MADRID UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43457	100.9194	KEO EHV - WEST MEMPHIS 500 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.9123	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.9121	GEN560190 1-G10-08 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43307	100.9068	CIMARRON - DRAPER LAKE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.8875	GEN523462 1-BLACKHAWK GEN #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.8874	GEN523461 1-BLACKHAWK GEN #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.8863	GEN560121 1-G08-47 0.5750
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.8709	GEN560598 1-G06-49 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43288	100.8639	G08-13T 345.00 - SUMNERCO 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.8509	GEN520997 1-MORLND2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43374	100.8434	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.8353	GEN560133 1-G08-110 0.5750
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43704	100.8135	CEDARDALE - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43374	100.8078	DELAWARE - NORTHEAST STATION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43704	100.7859	CEDARDALE - OKEENE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.7699	GEN527165 1-Mustang Gen #5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.769	GEN527161 1-MUSTANG GEN #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.769	GEN527162 1-MUSTANG GEN #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.7687	GEN527164 1-MUSTANG GEN #4 22 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.7586	GEN539670 4-JUDSON LARGE GENERATOR
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.7542	GEN527902 1-HOBBS PLANT #2 (CT)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.7541	GEN527901 1-HOBBS PLANT #1 (CT)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43813	100.7271	MOORELAND - NINMILE 4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.7265	GEN527163 1-MUSTANG GEN #3 22 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43856	100.7261	BENTON - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43813	100.7214	MOREWOOD SW - NINMILE 4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.6931	GEN515042 1-SEMINOLE 3G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43366	100.6422	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.6393	GEN560155 1-G10-11 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.6335	GEN515389 1-TLGAWND1 34.500
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.6249	GEN520922 1-SLEEPING 138.00
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.5905	GEN515790 1-FPLWND2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43059	100.5179	REDBUD - RIVERSIDE STATION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43372	100.5053	G05-15T 345.00 - TUCO INTERCHANGE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4316	100.5044	CIMARRON - WOODRING 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.4546	GEN515041 1-SEMINOLE 2G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.4402	GEN509409 1-WILKES #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.95801	100.4372	TATONGA7 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.4245	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.4225	GEN527903 1-HOBBS PLANT #3 (ST)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43446	100.4176	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43446	100.4169	ELK CITY 230KV - SWEETWT6 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4394	100.4013	MOORELAND 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44413	100.3941	BORDER 7345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.3866	GEN336170 1-GULF OXY U4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4394	100.3821	MOORELAND 345.00 (MRLNDAUTO) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.3771	GEN515397 1-OUSPRT 1 34.500
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.42543	100.3476	ARCADIA - NORTHWEST 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.3327	GEN514910 2-REDBUD GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.3327	GEN514911 2-REDBUD GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43688	100.3252	DOVER SW - OKEENE 138KV CKT 1

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43497	100.319	LACYGNE - NEOSHO 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43565	100.1953	CLINTON JUNCTION - ELK CITY 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.1924	GEN515364 1-CENT 11 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.1843	GEN514998 1-MCCLAIN UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.1843	GEN514999 1-MCCLAIN UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.1384	GEN514899 1-REDBUD1S
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.1384	GEN514900 1-REDBUD2S
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.1276	GEN334070 1-LEWIS CREEK 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.1051	GEN511843 1-RIVERSIDE STATION #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43756	100.079	G10-16T 345.00 - POSTROCK7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.0597	GEN515040 1-SEMINOLE 1G
16SP	G10_28	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.06353	115.9937	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	ROMAN NOSE - SOUTHARD 138KV CKT 1	133	153	0.03623	113.8762	NORTHWEST - TATONGA7 345.00 345KV CKT 1
16SP	G10_28	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.06353	112.4788	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39279	111.3409	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
11SP	G10_28	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.06455	110.2	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	110.1567	GEN336821 1-GRAND GULF UNIT
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	109.719	GEN336153 1-WATERFORD UNIT#3
11G	G10_28	FROM->TO	CLEO CORNER - MEN TAP 138KV CKT 1	191	191	0.03239	109.3512	NORTHWEST - TATONGA7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	109.3232	GEN337911 1-ARKANSAS NUCLEAR ONE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	108.8889	GEN335831 1-RIVERBEND UNIT#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38514	108.7786	EL RENO - ROMAN NOSE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	108.3817	GEN337910 1-ARKANSAS NUCLEAR ONE UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39346	108.1383	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39346	108.1383	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3912	107.7688	MED-LDG5 345.00 - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3912	107.7688	MED-LDG5 345.00 - WICHITA 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	107.6702	GEN337652 1-WHITE BLUFF UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	107.6185	GEN337653 1-WHITE BLUFF UNIT #2
11SP	G10_28	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.06455	107.6	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	107.5644	GEN501801 1-DOLET HILLS UNIT1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	107.4521	GEN338146 1-INDEPENDENCE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38957	107.4215	BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	107.3856	GEN338143 1-INDEPENDENCE UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	107.2254	GEN336251 1-NINEMILE POINT UNIT#4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	107.0796	GEN337041 1-GERALD ANDRUS
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.967	GEN509403 1-PIRKEY GENERATION
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.7899	GEN501813 1-RODEMACHER UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.7176	GEN338189 1-LS POWER OSCEOLA UNIT G1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.6868	GEN336831 1-BAXTER WILSON SES
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38941	106.6428	G08-13T 345.00 - WOODRING 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.5004	GEN514806 1-SOONER UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.432	GEN515226 1-MUSKOGEE 6G
16SP	G10_28	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.06157	106.3805	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.375	GEN501812 1-RODEMACHER UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3908	106.3552	DEWEY - SOUTHARD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.3272	GEN335206 1-NELSON UNIT 6
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.2935	GEN509406 1-WELSH #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.2934	GEN509405 1-WELSH #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.2933	GEN509404 1-WELSH #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3915	106.2588	BEAVERCO 345.00 - COMANCH5 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39279	106.2578	G05-15T 345.00 - OKLAUNION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.224	GEN514805 1-SOONER UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38946	106.2214	CLEO CORNER - MEN TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38946	106.2024	IMO TAP - MEN TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.1555	GEN334440 1-SABINE UNIT 4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38909	106.1503	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.1376	GEN520947 1-HUGO1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38909	106.0865	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.0581	GEN515223 1-MUSKOGEE 4G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3908	106.0526	ROMAN NOSE - SOUTHARD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.0409	GEN335204 1-NELSON UNIT 4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.019	GEN515225 1-MUSKOGEE 5G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.0037	GEN509394 1-FLINT CREEK
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.9743	GEN336801 1-BAXTER WILSON UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39081	105.9005	G08-13T 345.00 - SUMNERCO 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.8287	GEN511841 1-NORTHEASTERN STATION #4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.8036	GEN511840 1-NORTHEASTERN STATION #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.7944	GEN511839 1-NORTHEASTERN STATION #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.7928	GEN334441 1-SABINE UNIT 5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.7858	GEN512689 1-GRDA1 GSU1 22
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.6548	GEN512688 2-GRDA1 GSU2 22
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38871	105.6062	CEDARDALE - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.5994	GEN300006 1-NEW MADRID UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.5902	GEN300007 1-NEW MADRID UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39279	105.5803	G05-15T 345.00 - TUCO INTERCHANGE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38871	105.5786	CEDARDALE - OKEENE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39032	105.5533	BENTON - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38837	105.5038	MOORELAND - NINMILE 4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38837	105.4979	MOREWOOD SW - NINMILE 4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38544	105.3059	CIMARRON - WOODRING 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.2461	GEN515042 1-SEMINOLE 3G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38825	105.2304	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38825	105.2296	ELK CITY 230KV - SWEETWT6 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.1611	GEN509409 1-WILKES #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38807	105.1361	LACYGNE - NEOSHO 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39013	105.111	BORDER 7345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38845	105.1096	DOVER SW - OKEENE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.0789	GEN336170 1-GULF OXY U4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.03	GEN515041 1-SEMINOLE 2G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38834	104.9951	CLINTON JUNCTION - ELK CITY 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.9867	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.9221	GEN514910 2-REDBUD GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.9221	GEN514911 2-REDBUD GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.8323	GEN511843 1-RIVERSIDE STATION #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.8303	GEN334070 1-LEWIS CREEK 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.8245	GEN515040 1-SEMINOLE 1G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38814	104.8075	G10-16T 345.00 - POSTROCK7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.7863	GEN514998 1-MCCLAIN UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.7863	GEN514999 1-MCCLAIN UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.7452	GEN514899 1-REDBUD1S
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.7452	GEN514900 1-REDBUD2S
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3876	104.6508	WRTOD400
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38817	104.6188	ARKANSAS NUCLEAR ONE - FT SMITH 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38829	104.6167	SPP-SWPS-03
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38784	104.6082	ELK CITY - RHWIND4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38759	104.5963	HOYT - JEFFERY ENERGY CENTER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38814	104.5952	G10-16T 345.00 - SPEARVILLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38821	104.5273	MINGO - SETAB 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38787	104.4856	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38805	104.4747	G05-16T 345.00 - NEOSHO 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4671	GEN509391 G1-ARSENAL HILL GENS #2 (STALL)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4671	GEN509392 G2-ARSENAL HILL GENS #3 (STALL)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38825	104.4667	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4574	GEN509393 S1-ARSENAL HILL GENS #4 (STALL)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4549	GEN337428 1-PERYVILLE UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4549	GEN337430 1-PERYVILLE UNIT #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4502	GEN542955 1-LACYGNE UNIT #1

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38787	104.4465	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3891	104.4461	FINNEY SWITCHING STATION - STEVENSCO 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4407	GEN505432 1-SIKESTON
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3881	104.4358	AXTELL - POSTROCK7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38787	104.4324	SPP-MKEC-08
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4293	GEN337429 1-PERYVILLE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4293	GEN337432 1-PERYVILLE UNIT #5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4275	GEN334030 1-FRONTIER UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38792	104.4241	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3892	104.4187	BENTON - ROSE HILL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39081	104.3999	SUMNERCO 345.00 - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38784	104.3868	MOREWOOD SW - RHWIND4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3864	GEN300031 1-CHOUTEAU CTG 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3864	GEN300032 1-CHOUTEAU CTG 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3805	GEN542956 2-LACYGNE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39046	104.3777	G08-127T 345.00 - SOONER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38837	104.3741	MINGO - RED WILLOW 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3716	GEN335076 1-DYNEGY UNIT2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38779	104.3701	KNOBHILL - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38805	104.3674	G05-13T 345.00 - G05-16T 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3673	GEN336167 1-GULF OXY U1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3673	GEN336168 1-GULF OXY U2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3673	GEN336169 1-GULF OXY U3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.37891	104.3644	SOONER - SPRING CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.37891	104.3623	NORTHWEST - SPRING CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38779	104.3611	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3485	GEN337421 1-OUCHITA CTG1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3485	GEN337423 1-OUCHITA CTG2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3485	GEN337425 1-OUCHITA CTG3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38755	104.3413	GRAND ISLAND - SWEETWATER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3357	GEN334031 1-FRONTIER UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3342	GEN335075 1-DYNEGY#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3341	GEN337125 6-LS POWER BATESVILLE
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3269	GEN300003 1-THOMAS HILL UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3255	GEN335203 1-NELSON UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3252	GEN337006 1-DUKE MCADAMS G1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3252	GEN337007 1-DUKE MCADAMS G2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38787	104.3152	SPP-WERE-34
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38787	104.3141	SPP-MKEC-05
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3078	GEN337008 1-DUKE MCADAMS S1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3055	GEN514905 1-REDBUD3S
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3877	104.295	CIRCLE 7 345.00 - MULGREN7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3877	104.295	CIRCLE 7 345.00 - MULGREN7 345.00 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2772	GEN334392 1-EXXON MOBIL IPP 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2714	GEN506752 1-LEBROCK GAS 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2633	GEN515266 1-AES 1G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2633	GEN515267 1-AES 2G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38769	104.2546	MULGREN7 345.00 - SPEARVILLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38769	104.2546	MULGREN7 345.00 - SPEARVILLE 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38811	104.2503	DOVER SW - HENESSEY 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2477	GEN511837 1-NORTHEASTERN STATION # 1-1A
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2477	GEN511838 1-NORTHEASTERN STATION # 1-1B
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38787	104.2362	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38825	104.2349	STLN-DEMARC6230.00 - SWEETWT6 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38825	104.2349	STATELINE INTERCHANGE - STLN-DEMARC6230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38825	104.2349	SPP-SWPS-02
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2275	GEN520811 1-ANADRK4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2176	GEN514912 2-REDBUD GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38817	104.2152	OGE3TERM1

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2105	GEN338500 1-MCCLELLAN UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.205	GEN549890 1-SOUTHWEST 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2029	GEN560323 1-G10-40 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38805	104.1934	G05-13T 345.00 - LATHAMS7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3876	104.185	HOYT - STRANGER CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38811	104.1808	HENESSEY - WAUKOMIS 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.177	GEN337954 1-LYNCH UNIT #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.1674	GEN300016 1-1G1GPDEL 18.000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.1674	GEN300017 1-1G2GPDEL 18.000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38781	104.1667	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.1665	GEN511836 1-NORTHEASTERN STATION #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38811	104.1498	WAUKOMIS - WAUKOMIS TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3893	104.138	BEAVERCO 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3893	104.138	BEAVERCO 345.00 - WWRDEHV7 345.00 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.13	GEN547649 1-ASBURY UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38747	104.1285	GRAY CO 345.00 - SPEARVILLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.1251	GEN599891 1-OKLAUN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.1234	GEN515000 1-MCCLAIN UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38774	104.1194	RENO COUNTY - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.105	GEN511953 G-COGENTRIX GAS # 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.1045	GEN511954 S-COGENTRIX STEAM # 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.1022	GEN542962 2-IATAN UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0861	GEN335201 1-NELSON UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38757	104.0793	AXTELL - PAULINE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38783	104.0792	MED-LDG5 345.00 345/138KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38778	104.0756	NORTHEAST STATION - ONETA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0754	GEN335202 1-NELSON UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0724	GEN511938 1-OEC STEAM # 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0709	GEN511851 1-COMANCHE #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0694	GEN338513 1-BAILEY UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0579	GEN334374 1-COTTONWOOD/INTERGEN UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0575	GEN520812 1-ANADRK5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0574	GEN520813 1-ANADRK6
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38743	104.0522	ANDERSONCO 345.00 - LACYGNE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0483	GEN335612 1-WILLOW GLENN UNIT#2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0434	GEN338510 1-1S1KNWRI
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0425	GEN542951 5-HAWTHORN UNIT #5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0396	GEN503900 1-FITZHUGH CT1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38806	104.0381	WRTOD1104
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38741	104.0375	G07-48T 230.00 - SWISHER COUNTY INTERCHANGE 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0367	GEN337422 1-OUCHITA STG1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0367	GEN337424 1-OUCHITA STG2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0367	GEN337426 1-OUCHITA STG3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0304	GEN549893 2-SOUTHWEST 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38799	104.0243	LAWTON EASTSIDE - SUNNYSIDE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0242	GEN506749 1-EASTMAN GENERATION A
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38799	104.0237	HOLCOMB - SETAB 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38756	104.0232	MOORE - PAULINE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0176	GEN335611 1-WILLOW GLENN UNIT#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.015	GEN335545 1-DOW AEP UNIT5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38743	104.0033	ANDERSONCO 345.00 - WOLF CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0014	GEN547656 1-STATE LINE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38772	103.9988	KNOBHILL - SALINE 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9911	GEN300002 1-THOMAS HILL UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9911	GEN335137 C4-PPG
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39046	103.9849	G08-127T 345.00 - ROSE HILL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38772	103.9765	HELENAT2 69.000 - SALINE 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9763	GEN542957 1-IATAN UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9732	8DANIEL 500.00 - MCKNIGHT 500KV CKT 1

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3872	103.9685	CIMARRON - EL RENO 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9681	GEN337124 5-LS POWER BATESVILLE
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38737	103.9636	FIELD NORTH - LKFLDXL3 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.9627	MARSHALL - WOODRING 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.9561	COTTONWOOD CREEK - MARSHALL 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38763	103.9511	WEATHERFORD JCT. - WEATHERFORD SOUTHEAST 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38756	103.9322	OKEENE - WATONGA SW 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9303	GEN501910 1-ACADIA UNIT ST1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9295	GEN334232 1-PELCNRD U1 13.800
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9295	GEN334233 1-PELCNRD U2 13.800
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38683	103.9273	FPL SWITCH - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38722	103.9262	OGE3TERM2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3872	103.9255	MORRISON - STILLWATER 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.924	GEN335546 3-DOW COGEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9201	GEN515443 1-MNCOWND1 34.500
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9176	GEN334467 1-DUPONT UNIT#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38928	103.9165	IODINE - WWRDEHV4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9161	GEN511853 1-COMANCHE #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38772	103.9147	GOLTRY - HELENAT2 69.000 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9141	GEN334298 1-CYPR U1 13.800
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9141	GEN334299 1-CYPR U2 13.800
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9129	GEN500915 3-WESTERN KRAFT
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38751	103.9128	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.9115	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38751	103.9107	MULLERGREN - SPEARVILLE 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9104	GEN511852 1-COMANCHE #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3875	103.907	KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38772	103.9057	SWISSVALE - WEST GARDNER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.9017	PUTNAM - TALOGA 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8989	GEN336176 1-UNION CARBIDE COGEN GT1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8989	GEN336177 1-UNION CARBIDE COGEN GT2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38772	103.8987	GOLTRY - IMO 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38747	103.8986	GRAY CO 345.00 - HOLCOMB 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8984	GEN334335 1-TOLEDO BEND
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38805	103.8979	LATHAMS7 345.00 - ROSE HILL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38764	103.8972	CLINTON - G07-32T 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3875	103.8953	MCCLELLAN SUB - MCLEAN RURAL SUB 115KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38751	103.8946	BROOKLINE - MORGAN 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38738	103.8916	DEAF SMITH COUNTY INTERCHANGE - S-RANDLCO 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38825	103.8873	SPP-SWPS-02A
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.8844	HAMON BUTLER - PUTNAM 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.8839	ARAPAHO - HAMON BUTLER 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.8828	ARAPAHO - INDUSTRIAL PARK 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38764	103.8818	CLINTON - WEATHERFORD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8808	DOLET HILLS - SOUTHWEST SHREVEPORT 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3874	103.8699	SUNNYSIDE (SUNNYSD3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38928	103.8637	DEWEY - IODINE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8601	GEN300001 1-THOMAS HILL UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.8572	CORDELL - INDUSTRIAL PARK 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8566	GEN549899 5-JAMES RIVER 5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.856	GEN560169 1-G08-13 0.5750
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3877	103.8517	EL PASO - FARBER 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8514	GEN335644 1-EXXON UNIT5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3875	103.8506	MCLEAN RURAL SUB - SHAMROCK 115KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3875	103.85	SHAMROCK (SHAMRCK1) 115/69/14.4KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38737	103.8485	LAKEOVER - MCADAMS 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3875	103.8475	SPP-SWPS-T54
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38751	103.8465	WEATHERFORD SOUTHEAST - WEATHERFORD TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8437	GEN640009 1-COOPER NUCLEAR STATION

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8397	GEN506753 1-LEBROCK GAS 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38763	103.8371	HINTON - WEATHERFORD JCT. 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.8356	CIRCLE - MULLERGREN 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3874	103.8354	CLINTON - MONTROSE 161KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8354	GEN505616 1-BROKEN BOW
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8354	GEN505618 2-BROKEN BOW
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3872	103.8334	MCELROY - STILLWATER 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38741	103.832	CANTON - TALOGA 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38739	103.8318	NUNDRWD - WAYSIDE 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38781	103.8305	G05-17T 345.00 - POTTER COUNTY INTERCHANGE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38763	103.8286	CAN_GAS4 138.00 - HINTON 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8286	GEN560118 1-G08-46 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38737	103.8279	NORTHEAST STATION - TULSA NORTH 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38739	103.8272	MCADAMS - WOLF CREEK 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8252	GEN501911 1-ACADIA UNIT CT1A
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38741	103.8176	AMARILLO SOUTH INTERCHANGE - G07-48T 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38738	103.8117	GERALD GENTLEMAN STATION - SWEETWATER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38741	103.8097	CANTON - OKEENE 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38733	103.8092	ELDORADO EHV 500/345KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38765	103.8062	CARNEGIE - HOBART JUNCTION 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38733	103.8051	ELDORADO EHV - LONGWOOD 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8046	GEN334458 1-CONOCO UNIT#3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8007	GEN334282 1-SAM RAYBURN 4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38743	103.7969	GRAND ISLAND - MCCOOL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38763	103.794	CAN_GAS4 138.00 - JENSEN ROAD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.7932	GEN506750 1-EASTMAN GENERATION B
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38739	103.7922	CRAIG - STRANGER CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38751	103.7913	CALUMET - WATONGA SW 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38751	103.7866	CLINTON JUNCTION - CLINTON NATURAL GAS TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38755	103.7811	EMPORIA ENERGY CENTER - SWISSVALE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.5113	BASE CASE
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.238	GEN526331 1-JONES GEN #1 22 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.238	GEN526332 1-JONES GEN #2 21 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38736	103.2341	BAXTER WILSON SES - RAY BRASWELL SES 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.2229	GEN560585 1-G06-44-2 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.2131	GEN560505 1-G02-006 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38713	103.2062	CLEVELAND - SOONER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.2058	GEN527882 1-CUNNINGHAM GEN #2 20 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.2005	GEN560356 1-G10-53 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38738	103.1969	BAXTER WILSON SES - PERRYVILLE 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38806	103.1929	SPP-WERE-07B
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1862	GEN560522 1-G05-12 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1855	DOLET HILLS 345/230KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1705	GEN560170 1-G08-16 34.500
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38702	103.1686	OGE3TERM14
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1576	GEN560317 1-G10-27-1 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1576	GEN560318 1-G10-27-2 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1576	GEN560319 1-G10-27-3 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1576	GEN560320 1-G10-27-4 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1566	GEN524285 1-WILDORADO WIND GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38742	103.1504	ARKANSAS NUCLEAR ONE - PLEASANT HILL 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1503	GEN539677 3-A. M. MULLERGREN GENERATOR
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1481	GEN560595 1-G06-47 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1475	GEN560592 1-G06-45 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38781	103.144	CLARKSVILLE - MUSKOGEE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.1414	BENTON - WOLF CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.138	GEN560173 1-G08-17 0.5750
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3868	103.1338	GRACMNT7 345.00 - MINCO 7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1296	GEN539767 1-GRAY COUNTY WIND FARM

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1222	GEN560286 1-G10-01-1WTG 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1222	GEN560287 1-G10-01-2WTG 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1114	GEN560586 1-G06-44-3 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38737	103.1069	LACYGNE - STILWELL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1067	GEN560371 1-G07-46 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1055	GEN560257 1-G10-14-2 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1033	GEN560256 1-G10-14-1 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38714	103.101	PITTSBURG - SEMINOLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.0858	GEN560105 1-G08-22 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38741	103.0833	LACYGNE - WEST GARDNER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.0824	GEN560353 1-G10-52 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38739	103.0787	FLINT CREEK - GRDA1 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38744	103.0784	8BHAM STEEL 500.00 - WEST MEMPHIS 500 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38744	103.0678	AMRN_OUTS5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38873	103.0664	WWRDEHV7 345.00 (WWDEHV-T2) 345/138/13.8KV TRANSFORMER CKT 2
16SP	G10_28	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.06157	103.0476	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38747	103.0471	PITTSBURG - VALLIANT 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3864	102.9976	HORSESHOE LAKE - SEMINOLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3864	102.9971	ARCADIA - HORSESHOE LAKE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38873	102.9945	WWRDEHV7 345.00 (WWDEHV) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38742	102.9883	DELL 500 - INDEPENDENCE 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.9807	GEN523103 1-NOBLE_WND 3115.00
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.9463	GEN560359 1-G08-51 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.9419	GEN560279 1-G08-18 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.9196	GEN560166 1-G07-48 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38764	102.9195	CHAMBER SPRINGS - CLARKSVILLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.9037	GEN560570 1-G06-39 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.8968	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38745	102.8791	KEO EHV - WEST MEMPHIS 500 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38868	102.8715	DELAWARE - NORTHEAST STATION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.8562	GEN560190 1-G10-08 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38578	102.8393	CIMARRON - DRAPER LAKE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.8306	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.8282	GEN560121 1-G08-47 0.5750
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.8212	GEN523462 1-BLACKHAWK GEN #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.8211	GEN523461 1-BLACKHAWK GEN #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.8134	GEN560598 1-G06-49 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38654	102.7916	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.7807	GEN520997 1-MORLND2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.7806	GEN560133 1-G08-110 0.5750
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.7017	GEN527165 1-Mustang Gen #5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.701	GEN527161 1-MUSTANG GEN #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.701	GEN527162 1-MUSTANG GEN #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.7006	GEN527164 1-MUSTANG GEN #4 22 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.686	GEN527901 1-HOBBS PLANT #1 (CT)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.686	GEN527902 1-HOBBS PLANT #2 (CT)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.6856	GEN539670 4-JUDSON LARGE GENERATOR
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.6574	GEN527163 1-MUSTANG GEN #3 22 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38647	102.5881	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.5857	GEN560155 1-G10-11 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.5732	GEN515389 1-TLGAWND1 34.500
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.5664	GEN520922 1-SLEEPING 138.00
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38545	102.5392	REDBUD - RIVERSIDE STATION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.5381	GEN515790 1-FPLWND2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39258	102.4131	MOORELAND 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39258	102.3944	MOORELAND 345.00 (MRLNDAUTO) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.3472	GEN527903 1-HOBBS PLANT #3 (ST)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.3179	GEN515397 1-OUSPRT 1 34.500
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.162	GEN515364 1-CENT 11 0.6000

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.37718	102.1305	ARCADIA - NORTHWEST 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.6832	GEN515393 1-OGEWND2G
11WP	G10_28	TO->FROM	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	124	124	0.04281	101.6275	NORTHWEST - TATONGA7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.4911	GEN560180 1-G07-51 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.4426	GEN523971 1-HARRINGTON GEN #1 24 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.4369	GEN523973 1-HARRINGTON GEN #3 24 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.4365	GEN523972 1-HARRINGTON GEN #2 24 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.1971	GEN531447 1-HOLCOMB GENERATOR
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.1316	GEN560223 1-G07-62-3 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.1172	GEN560224 1-G07-62-4 0.6900
11SP	G10_28	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.06256	101.1	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.0347	GEN560221 1-G07-62-1 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.0347	GEN560222 1-G07-62-2 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	100.8601	GEN525561 1-TOLK GEN #1 24 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	100.579	GEN525562 1-TOLK GEN #2 24 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	100.5247	GEN560429 1-G08-29 0.6400
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.81427	100.3556	TATONGA7 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	100.2516	GEN560225 1-G10-43 18.000
16WP	G10_29	FROM->TO	CUDAHY - KISMET 3 115.00 115KV CKT 1	120.7	129.5	0.06091	100.8772	HOLCOMB (HOLCOMB) 345/115/13.8KV TRANSFORMER CKT 1

H: Powerflow Analysis (Constraints with greater than 3% TDF)

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_20	FROM->TO	DEAF SMITH COUNTY INTERCHANGE - S-RANDLCO 230.00 230KV CKT 1	318	350	0.21409	106.8	TOLK STATION EAST 230/24.0KV TRANSFORMER CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.11721	106.219	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	105.589	GEN336821 1-GRAND GULF UNIT
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	105.136	GEN336153 1-WATERFORD UNIT#3
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	104.7177	GEN337911 1-ARKANSAS NUCLEAR ONE UNIT #2
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	104.2835	GEN335831 1-RIVERBEND UNIT#1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06104	103.9104	EL RENO - ROMAN NOSE 138KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	103.7516	GEN337910 1-ARKANSAS NUCLEAR ONE UNIT #1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06731	103.335	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06731	103.335	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 2
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	103.0346	GEN337652 1-WHITE BLUFF UNIT #1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	103.0195	GEN337653 1-WHITE BLUFF UNIT #2
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06547	102.9512	MED-LDG5 345.00 - WICHITA 345KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06547	102.9512	MED-LDG5 345.00 - WICHITA 345KV CKT 2
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	102.9067	GEN501801 1-DOLET HILLS UNIT1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	102.8223	GEN338146 1-INDEPENDENCE UNIT #2
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	102.7554	GEN338143 1-INDEPENDENCE UNIT #1
11SP	G10_20	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	239	239	0.06624	102.7036	LAMB COUNTY INTERCHANGE 230/115KV TRANSFORMER CKT 1
11SP	G10_20	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	239	239	0.06624	102.7036	LAMB COUNTY INTERCHANGE 230/115KV TRANSFORMER CKT 1
11SP	G10_20	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	239	239	0.06624	102.7031	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
11SP	G10_20	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	239	239	0.06624	102.7031	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
11SP	G10_20	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	239	239	0.06624	102.7028	SPP-SWPS-K37
11SP	G10_20	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	239	239	0.06624	102.7028	SPP-SWPS-K37
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	102.582	GEN336251 1-NINEMILE POINT UNIT#4
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	102.4378	GEN337041 1-GERALD ANDRUS
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	102.2559	GEN509403 1-PIRKEY GENERATION
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	102.1298	GEN501813 1-RODEMACHER UNIT 3
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	102.079	GEN514806 1-SOONER UNIT 2
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	102.0774	GEN338189 1-LS POWER OSCEOLA UNIT G1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	102.0333	GEN336831 1-BAXTER WILSON SES
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	102.0119	GEN515226 1-MUSKOGEE 6G
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.7867	GEN514805 1-SOONER UNIT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.7067	GEN501812 1-RODEMACHER UNIT 2
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.659	GEN335206 1-NELSON UNIT 6
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05961	101.6023	G08-13T 345.00 - WOODRING 345KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.5987	GEN515223 1-MUSKOGEE 4G
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.5773	GEN509406 1-WELSH #3
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.5772	GEN509404 1-WELSH #1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.5772	GEN509405 1-WELSH #2
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.5552	GEN515225 1-MUSKOGEE 5G
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06232	101.5094	DEWEY - SOUTHARD 138KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.07245	101.4906	BEAVERCO 345.00 - COMANCH5 345.00 345KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.4824	GEN334440 1-SABINE UNIT 4
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.4072	GEN520947 1-HUGO1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06224	101.3903	CLEO CORNER - MEN TAP 138KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06224	101.3715	IMO TAP - MEN TAP 138KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.3667	GEN335204 1-NELSON UNIT 4
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06179	101.3373	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.3043	GEN336801 1-BAXTER WILSON UNIT #1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.2894	GEN509394 1-FLINT CREEK
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06179	101.2738	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06232	101.2082	ROMAN NOSE - SOUTHARD 138KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.11721	101.178	G05-15T 345.00 - OKLAUNION 345KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.1121	GEN334441 1-SABINE UNIT 5
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.1113	GEN511841 1-NORTHEASTERN STATION #4
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.0861	GEN511840 1-NORTHEASTERN STATION #3
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.0763	GEN511839 1-NORTHEASTERN STATION #2
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	101.0759	GEN512689 1-GRDA1 GSU1 22
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	100.9442	GEN512688 2-GRDA1 GSU2 22
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	100.9334	GEN300006 1-NEW MADRID UNIT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	100.9243	GEN300007 1-NEW MADRID UNIT 2
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05993	100.8639	G08-13T 345.00 - SUMNERCO 345.00 345KV CKT 1

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06118	100.8135	CEDARDALE - MOORELAND 138KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06118	100.7859	CEDARDALE - OKEENE 138KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05703	100.7271	MOORELAND - NINMILE 4 138.00 138KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06368	100.7261	BENTON - WICHITA 345KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05703	100.7214	MOREWOOD SW - NINMILE 4 138.00 138KV CKT 1
11G	G10_20	FROM->TO	DEAF SMITH COUNTY INTERCHANGE - S-RANDLCO 230.00 230KV CKT 1	318	350	0.21346	100.7	TOLK STATION EAST 230/24.0KV TRANSFORMER CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	100.6931	GEN515042 1-SEMINOLE 3G
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.11749	100.5053	G05-15T 345.00 - TUCO INTERCHANGE 345KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05702	100.5044	CIMARRON - WOODRING 345KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	100.4546	GEN515041 1-SEMINOLE 2G
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	100.4402	GEN509409 1-WILKES #3
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	100.4245	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06864	100.4176	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06864	100.4169	ELK CITY 230KV - SWEETWT6 230.00 230KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.04156	100.3941	BORDER 7345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	100.3866	GEN336170 1-GULF OXY U4
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	100.3327	GEN514910 2-REDBUD GEN
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	100.3327	GEN514911 2-REDBUD GEN
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06117	100.3252	DOVER SW - OKEENE 138KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05936	100.319	LACYGNE - NEOSHO 345KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06426	100.1953	CLINTON JUNCTION - ELK CITY 138KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	100.1843	GEN514998 1-MCCLAIN UNIT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	100.1843	GEN514999 1-MCCLAIN UNIT 2
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	100.1384	GEN514899 1-REDBUD1S
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	100.1384	GEN514900 1-REDBUD2S
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	100.1276	GEN334070 1-LEWIS CREEK 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	100.1051	GEN511843 1-RIVERSIDE STATION #2
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06204	100.079	G10-16T 345.00 - POSTROCK7 345.00 345KV CKT 1
11G	G10_20	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05976	100.0597	GEN515040 1-SEMINOLE 1G
11G	G10_21	FROM->TO	DEAF SMITH COUNTY INTERCHANGE - S-RANDLCO 230.00 230KV CKT 1	318	350	0.20606	106.8	TOLK STATION EAST 230/24.0KV TRANSFORMER CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.11748	106.219	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	105.589	GEN336821 1-GRAND GULF UNIT
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	105.136	GEN336153 1-WATERFORD UNIT#3
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	104.7177	GEN337911 1-ARKANSAS NUCLEAR ONE UNIT #2
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	104.2835	GEN335831 1-RIVERBEND UNIT#1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06055	103.9104	EL RENO - ROMAN NOSE 138KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	103.7516	GEN337910 1-ARKANSAS NUCLEAR ONE UNIT #1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06684	103.335	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06684	103.335	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 2
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	103.0346	GEN337652 1-WHITE BLUFF UNIT #1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	103.0195	GEN337653 1-WHITE BLUFF UNIT #2
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06497	102.9512	MED-LDG5 345.00 - WICHITA 345KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06497	102.9512	MED-LDG5 345.00 - WICHITA 345KV CKT 2
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	102.9067	GEN501801 1-DOLET HILLS UNIT1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	102.8223	GEN338146 1-INDEPENDENCE UNIT #2
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	102.7554	GEN338143 1-INDEPENDENCE UNIT #1
11SP	G10_21	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	239	239	0.05854	102.7036	LAMB COUNTY INTERCHANGE 230/115KV TRANSFORMER CKT 1
11SP	G10_21	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	239	239	0.05854	102.7036	LAMB COUNTY INTERCHANGE 230/115KV TRANSFORMER CKT 1
11SP	G10_21	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	239	239	0.05854	102.7031	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
11SP	G10_21	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	239	239	0.05854	102.7031	LAMB COUNTY INTERCHANGE - TOLK STATION WEST 230KV CKT 1
11SP	G10_21	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	239	239	0.05854	102.7028	SPP-SWPS-K37
11SP	G10_21	FROM->TO	PLANT X STATION (WH ALM20171) 230/115/13.2KV TRANSFORMER CKT 1	239	239	0.05854	102.7028	SPP-SWPS-K37
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	102.582	GEN336251 1-NINEMILE POINT UNIT#4
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	102.4378	GEN337041 1-GERALD ANDRUS
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	102.2559	GEN509403 1-PIRKEY GENERATION
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	102.1298	GEN501813 1-RODEMACHER UNIT 3
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	102.079	GEN514806 1-SOONER UNIT 2
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	102.0774	GEN338189 1-LS POWER OSCEOLA UNIT G1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	102.0333	GEN336831 1-BAXTER WILSON SES
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	102.0119	GEN515226 1-MUSKOGEE 6G
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.7867	GEN514805 1-SOONER UNIT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.7067	GEN501812 1-RODEMACHER UNIT 2

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.659	GEN335206 1-NELSON UNIT 6
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.0591	101.6023	G08-13T 345.00 - WOODRING 345KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.5987	GEN515223 1-MUSKOGEE 4G
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.5773	GEN509406 1-WELSH #3
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.5772	GEN509404 1-WELSH #1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.5772	GEN509405 1-WELSH #2
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.5552	GEN515225 1-MUSKOGEE 5G
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06183	101.5094	DEWEY - SOUTHARD 138KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.07192	101.4906	BEAVERCO 345.00 - COMANCH5 345.00 345KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.4824	GEN334440 1-SABINE UNIT 4
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.4072	GEN520947 1-HUGO1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06175	101.3903	CLEO CORNER - MEN TAP 138KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06175	101.3715	IMO TAP - MEN TAP 138KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.3667	GEN335204 1-NELSON UNIT 4
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.0613	101.3373	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.3043	GEN336801 1-BAXTER WILSON UNIT #1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.2894	GEN509394 1-FLINT CREEK
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.0613	101.2738	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06183	101.2082	ROMAN NOSE - SOUTHARD 138KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.11748	101.178	G05-15T 345.00 - OKLAUNION 345KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.1121	GEN334441 1-SABINE UNIT 5
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.1113	GEN511841 1-NORTHEASTERN STATION #4
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.0861	GEN511840 1-NORTHEASTERN STATION #3
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.0763	GEN511839 1-NORTHEASTERN STATION #2
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	101.0759	GEN512689 1-GRDA1 GSU1 22
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	100.9442	GEN512688 2-GRDA1 GSU2 22
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	100.9334	GEN300006 1-NEW MADRID UNIT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	100.9243	GEN300007 1-NEW MADRID UNIT 2
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05942	100.8639	G08-13T 345.00 - SUMNERCO 345.00 345KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06069	100.8135	CEDARDALE - MOORELAND 138KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06069	100.7859	CEDARDALE - OKEENE 138KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05659	100.7271	MOORELAND - NINMILE 4 138.00 138KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06319	100.7261	BENTON - WICHITA 345KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05659	100.7214	MOREWOOD SW - NINMILE 4 138.00 138KV CKT 1
11G	G10_21	FROM->TO	DEAF SMITH COUNTY INTERCHANGE - S-RANDLCO 230.00 230KV CKT 1	318	350	0.20543	100.7	TOLK STATION EAST 230/24.0KV TRANSFORMER CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	100.6931	GEN515042 1-SEMINOLE 3G
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.11775	100.5053	G05-15T 345.00 - TUCO INTERCHANGE 345KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05652	100.5044	CIMARRON - WOODRING 345KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	100.4546	GEN515041 1-SEMINOLE 2G
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	100.4402	GEN509409 1-WILKES #3
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	100.4245	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06804	100.4176	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06804	100.4169	ELK CITY 230KV - SWEETWT6 230.00 230KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.04099	100.3941	BORDER 7345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	100.3866	GEN336170 1-GULF OXY U4
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	100.3327	GEN514910 2-REDBUD GEN
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	100.3327	GEN514911 2-REDBUD GEN
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06069	100.3252	DOVER SW - OKEENE 138KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05888	100.319	LACYGNE - NEOSHO 345KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06372	100.1953	CLINTON JUNCTION - ELK CITY 138KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	100.1843	GEN514998 1-MCCLAIN UNIT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	100.1843	GEN514999 1-MCCLAIN UNIT 2
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	100.1384	GEN514899 1-REDBUD1S
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	100.1384	GEN514900 1-REDBUD2S
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	100.1276	GEN334070 1-LEWIS CREEK 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	100.1051	GEN511843 1-RIVERSIDE STATION #2
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06157	100.079	G10-16T 345.00 - POSTROCK7 345.00 345KV CKT 1
11G	G10_21	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05928	100.0597	GEN515040 1-SEMINOLE 1G
11G	G10_28	TO->FROM	EL RENO - ROMAN NOSE 138KV CKT 1	133	153	0.03067	186.4138	NORTHWEST - TATONGA7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	EL RENO - ROMAN NOSE 138KV CKT 1	133	153	0.03076	184.7072	NORTHWEST - TATONGA7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	124	124	0.03097	163.5639	NORTHWEST - TATONGA7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	124	124	0.03106	161.4567	NORTHWEST - TATONGA7 345.00 345KV CKT 1

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1	133	153	0.03097	129.9116	NORTHWEST - TATONGA7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1	133	153	0.03106	128.2097	NORTHWEST - TATONGA7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	124	124	0.03299	122.596	NORTHWEST - TATONGA7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	ROMAN NOSE - SOUTHARD 138KV CKT 1	133	153	0.03623	113.8762	NORTHWEST - TATONGA7 345.00 345KV CKT 1
16SP	G10_28	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.06353	112.4788	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	EL RENO - ROMAN NOSE 138KV CKT 1	133	153	0.03496	111.9761	NORTHWEST - TATONGA7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39279	111.3409	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
11G	G10_28	TO->FROM	ROMAN NOSE - SOUTHARD 138KV CKT 1	133	153	0.03531	111.3404	NORTHWEST - TATONGA7 345.00 345KV CKT 1
11SP	G10_28	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.06455	110.2	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	110.1567	GEN336821 1-GRAND GULF UNIT
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	109.719	GEN336153 1-WATERFORD UNIT#3
16SP	G10_28	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.05002	109.6742	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	ROMAN NOSE - SOUTHARD 138KV CKT 1	133	153	0.0354	109.6617	NORTHWEST - TATONGA7 345.00 345KV CKT 1
16SP	G10_28	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.05003	109.5874	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	FROM->TO	CLEO CORNER - MEN TAP 138KV CKT 1	191	191	0.03239	109.3512	NORTHWEST - TATONGA7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	109.3232	GEN337911 1-ARKANSAS NUCLEAR ONE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43233	109.0486	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	108.8889	GEN335831 1-RIVERBEND UNIT#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38514	108.7786	EL RENO - ROMAN NOSE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	108.3817	GEN337910 1-ARKANSAS NUCLEAR ONE UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	108.2841	GEN336821 1-GRAND GULF UNIT
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39346	108.1383	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39346	108.1383	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	107.8405	GEN336153 1-WATERFORD UNIT#3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3912	107.7688	MED-LDG5 345.00 - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3912	107.7688	MED-LDG5 345.00 - WICHITA 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	107.6702	GEN337652 1-WHITE BLUFF UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	107.6185	GEN337653 1-WHITE BLUFF UNIT #2
11SP	G10_28	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.06455	107.6	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	107.5644	GEN501801 1-DOLET HILLS UNIT1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	107.4521	GEN338146 1-INDEPENDENCE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	107.4319	GEN337911 1-ARKANSAS NUCLEAR ONE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38957	107.4215	BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	107.3856	GEN338143 1-INDEPENDENCE UNIT #1
11G	G10_28	FROM->TO	CLEO CORNER - MEN TAP 138KV CKT 1	191	191	0.0353	107.2484	NORTHWEST - TATONGA7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	107.2254	GEN336251 1-NINEMILE POINT UNIT#4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	107.0796	GEN337041 1-GERALD ANDRUS
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	106.9966	GEN335831 1-RIVERBEND UNIT#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.967	GEN509403 1-PIRKEY GENERATION
16SP	G10_28	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.05002	106.8015	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.7899	GEN501813 1-RODEMACHER UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43572	106.7387	EL RENO - ROMAN NOSE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.7176	GEN338189 1-LS POWER OSCEOLA UNIT G1
16SP	G10_28	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.05003	106.7156	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.6868	GEN336831 1-BAXTER WILSON SES
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38941	106.6428	G08-13T 345.00 - WOODRING 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.5004	GEN514806 1-SOONER UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	106.4783	GEN337910 1-ARKANSAS NUCLEAR ONE UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.432	GEN515226 1-MUSKOGEE 6G
16SP	G10_28	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.06157	106.3805	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.375	GEN501812 1-RODEMACHER UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3908	106.3552	DEWEY - SOUTHARD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.3272	GEN335206 1-NELSON UNIT 6
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.2935	GEN509406 1-WELSH #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.2934	GEN509405 1-WELSH #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.2933	GEN509404 1-WELSH #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3915	106.2588	BEAVERCO 345.00 - COMANCH5 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39279	106.2578	G05-15T 345.00 - OKLAUNION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4459	106.231	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4459	106.231	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.224	GEN514805 1-SOONER UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38946	106.2214	CLEO CORNER - MEN TAP 138KV CKT 1

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43344	106.219	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38946	106.2024	IMO TAP - MEN TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.1555	GEN334440 1-SABINE UNIT 4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38909	106.1503	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.1376	GEN520947 1-HUGO1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38909	106.0865	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.0581	GEN515223 1-MUSKOGEE 4G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3908	106.0526	ROMAN NOSE - SOUTHARD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.0409	GEN335204 1-NELSON UNIT 4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.019	GEN515225 1-MUSKOGEE 5G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	106.0037	GEN509394 1-FLINT CREEK
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.9743	GEN336801 1-BAXTER WILSON UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39081	105.9005	G08-13T 345.00 - SUMNERCO 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.8287	GEN511841 1-NORTHEASTERN STATION #4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.8036	GEN511840 1-NORTHEASTERN STATION #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.7944	GEN511839 1-NORTHEASTERN STATION #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43972	105.7936	MED-LDG5 345.00 - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43972	105.7936	MED-LDG5 345.00 - WICHITA 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.7928	GEN334441 1-SABINE UNIT 5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.7858	GEN512689 1-GRDA1 GSU1 22
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	105.7642	GEN337652 1-WHITE BLUFF UNIT #1
11G	G10_28	FROM->TO	CLEO CORNER - MEN TAP 138KV CKT 1	191	191	0.0354	105.7232	NORTHWEST - TATONGA7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	105.7024	GEN337653 1-WHITE BLUFF UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.6548	GEN512688 2-GRDA1 GSU2 22
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	105.6471	GEN501801 1-DOLET HILLS UNIT1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38871	105.6062	CEDARDALE - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.5994	GEN300006 1-NEW MADRID UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.5902	GEN300007 1-NEW MADRID UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	105.589	GEN336821 1-GRAND GULF UNIT
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39279	105.5803	G05-15T 345.00 - TUCO INTERCHANGE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38871	105.5786	CEDARDALE - OKEENE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39032	105.5533	BENTON - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	105.5478	GEN338146 1-INDEPENDENCE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44092	105.5185	BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38837	105.5038	MOORELAND - NINMILE 4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38837	105.4979	MOREWOOD SW - NINMILE 4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	105.4815	GEN338143 1-INDEPENDENCE UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	105.3155	GEN336251 1-NINEMILE POINT UNIT#4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38544	105.3059	CIMARRON - WOODRING 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.2461	GEN515042 1-SEMINOLE 3G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38825	105.2304	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38825	105.2296	ELK CITY 230KV - SWEETWT6 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	105.1714	GEN337041 1-GERALD ANDRUS
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.1611	GEN509409 1-WILKES #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38807	105.1361	LACYGNE - NEOSHO 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	105.136	GEN336153 1-WATERFORD UNIT#3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39013	105.111	BORDER 7345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38845	105.1096	DOVER SW - OKEENE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.0789	GEN336170 1-GULF OXY U4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	105.03	GEN515041 1-SEMINOLE 2G
11SP	G10_28	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.05011	105	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.9956	GEN509403 1-PIRKEY GENERATION
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38834	104.9951	CLINTON JUNCTION - ELK CITY 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.9867	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.9221	GEN514910 2-REDBUD GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.9221	GEN514911 2-REDBUD GEN
11SP	G10_28	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.05013	104.9	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.872	GEN501813 1-RODEMACHER UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.8323	GEN511843 1-RIVERSIDE STATION #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.8303	GEN334070 1-LEWIS CREEK 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.8286	GEN514806 1-SOONER UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.8245	GEN515040 1-SEMINOLE 1G

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.8088	GEN338189 1-LS POWER OSCEOLA UNIT G1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38814	104.8075	G10-16T 345.00 - POSTROCK7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.7863	GEN514998 1-MCCLAIN UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.7863	GEN514999 1-MCCLAIN UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.7719	GEN336831 1-BAXTER WILSON SES
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.7609	GEN515226 1-MUSKOGEE 6G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.7452	GEN514899 1-REDBUD1S
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.7452	GEN514900 1-REDBUD2S
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	104.7177	GEN337911 1-ARKANSAS NUCLEAR ONE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3876	104.6508	WRTOD400
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38817	104.6188	ARKANSAS NUCLEAR ONE - FT SMITH 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38829	104.6167	SPP-SWPS-03
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38784	104.6082	ELK CITY - RHWIND4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38759	104.5963	HOYT - JEFFERY ENERGY CENTER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38814	104.5952	G10-16T 345.00 - SPEARVILLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.5347	GEN514805 1-SOONER UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38821	104.5273	MINGO - SETAB 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38787	104.4873	FLATRDG3 - HARPER 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38787	104.4856	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38805	104.4747	G05-16T 345.00 - NEOSHO 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4671	GEN509391 G1-ARSENAL HILL GENS #2 (STALL)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4671	GEN509392 G2-ARSENAL HILL GENS #3 (STALL)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38825	104.4667	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4574	GEN509393 S1-ARSENAL HILL GENS #4 (STALL)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4549	GEN337428 1-PERYVILLE UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4549	GEN337430 1-PERYVILLE UNIT #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.4535	GEN501812 1-RODEMACHER UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4502	GEN542955 1-LACYGNE UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38787	104.4465	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3891	104.4461	FINNEY SWITCHING STATION - STEVENSCO 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4407	GEN505432 1-SIKESTON
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3881	104.4358	AXTELL - POSTROCK7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38787	104.4324	SPP-MKEC-08
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4293	GEN337429 1-PERYVILLE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4293	GEN337432 1-PERYVILLE UNIT #5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.4275	GEN334030 1-FRONTIER UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38792	104.4241	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3892	104.4187	BENTON - ROSE HILL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.4057	GEN335206 1-NELSON UNIT 6
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39081	104.3999	SUMNERCO 345.00 - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38784	104.3868	MOREWOOD SW - RHWIND4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3864	GEN300031 1-CHOUTEAU CTG 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3864	GEN300032 1-CHOUTEAU CTG 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38787	104.3851	HARPER - MILAN TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3805	GEN542956 2-LACYGNE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39046	104.3777	G08-127T 345.00 - SOONER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38837	104.3741	MINGO - RED WILLOW 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43146	104.3727	G08-13T 345.00 - WOODRING 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3716	GEN335076 1-DYNEGY UNIT2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38779	104.3701	KNOBHILL - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38805	104.3674	G05-13T 345.00 - G05-16T 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3673	GEN336167 1-GULF OXY U1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3673	GEN336168 1-GULF OXY U2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3673	GEN336169 1-GULF OXY U3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.37891	104.3644	SOONER - SPRING CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.37891	104.3623	NORTHWEST - SPRING CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38779	104.3611	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.3516	GEN515223 1-MUSKOGEE 4G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3485	GEN337421 1-OUCHITA CTG1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3485	GEN337423 1-OUCHITA CTG2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3485	GEN337425 1-OUCHITA CTG3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44211	104.3467	BEAVERCO 345.00 - COMANCH5 345.00 345KV CKT 1

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38755	104.3413	GRAND ISLAND - SWEETWATER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3357	GEN334031 1-FRONTIER UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3342	GEN335075 1-DYNEGY#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3341	GEN337125 6-LS POWER BATESVILLE
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3269	GEN300003 1-THOMAS HILL UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.3264	GEN509406 1-WELSH #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.3263	GEN509404 1-WELSH #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.3263	GEN509405 1-WELSH #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3255	GEN335203 1-NELSON UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3252	GEN337006 1-DUKE MCADAMS G1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3252	GEN337007 1-DUKE MCADAMS G2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.437	104.3225	DEWEY - SOUTHARD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38787	104.3152	SPP-WERE-34
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38787	104.3141	SPP-MKEC-05
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.3089	GEN515225 1-MUSKOGEE 5G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3078	GEN337008 1-DUKE MCADAMS S1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.3055	GEN514905 1-REDBUD3S
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3877	104.295	CIRCLE 7 345.00 - MULGREN7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3877	104.295	CIRCLE 7 345.00 - MULGREN7 345.00 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38787	104.2874	CLEARWATER - MILAN TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	104.2835	GEN335831 1-RIVERBEND UNIT#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2772	GEN334392 1-EXXON MOBIL IPP 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2714	GEN506752 1-LEBROCK GAS 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2633	GEN515266 1-AES 1G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2633	GEN515267 1-AES 2G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38769	104.2546	MULGREN7 345.00 - SPEARVILLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38769	104.2546	MULGREN7 345.00 - SPEARVILLE 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38811	104.2503	DOVER SW - HENESSEY 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2477	GEN511837 1-NORTHEASTERN STATION # 1-1A
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2477	GEN511838 1-NORTHEASTERN STATION # 1-1B
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38787	104.2362	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38825	104.2349	STLN-DEMARC6230.00 - SWEETWT6 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38825	104.2349	STATELINE INTERCHANGE - STLN-DEMARC6230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38825	104.2349	SPP-SWPS-02
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.2317	GEN334440 1-SABINE UNIT 4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2275	GEN520811 1-ANADRK4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2176	GEN514912 2-REDBUD GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38817	104.2152	OGE3TERM1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38787	104.2112	FLATRDG3 - MEDICINE LODGE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2105	GEN338500 1-MCCLELLAN UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43675	104.2056	CLEO CORNER - MEN TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.205	GEN549890 1-SOUTHWEST 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.2029	GEN560323 1-G10-40 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38805	104.1934	G05-13T 345.00 - LATHAMS7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43675	104.1867	IMO TAP - MEN TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3876	104.185	HOYT - STRANGER CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38811	104.1808	HENESSEY - WAUKOMIS 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.177	GEN337954 1-LYNCH UNIT #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.1674	GEN300016 1-1G1GPDEL 18.000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.1674	GEN300017 1-1G2GPDEL 18.000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38781	104.1667	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.1665	GEN511836 1-NORTHEASTERN STATION #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.1592	GEN520947 1-HUGO1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38811	104.1498	WAUKOMIS - WAUKOMIS TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43637	104.1474	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0309	104.1418	MOORELAND 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38741	104.1394	EVANS ENERGY CENTER NORTH - EVANS ENERGY CENTER SOUTH 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3893	104.138	BEAVERCO 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3893	104.138	BEAVERCO 345.00 - WWRDEHV7 345.00 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.13	GEN547649 1-ASBURY UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38747	104.1285	GRAY CO 345.00 - SPEARVILLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.1251	GEN599891 1-OKLAUN

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.1234	GEN515000 1-MCCLAIN UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38774	104.1194	RENO COUNTY - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.1166	GEN335204 1-NELSON UNIT 4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.105	GEN511953 G-COGENTRIX GAS # 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.1045	GEN511954 S-COGENTRIX STEAM # 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.1022	GEN542962 2-IATAN UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0861	GEN335201 1-NELSON UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43637	104.0852	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38757	104.0793	AXTELL - PAULINE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38783	104.0792	MED-LDG5 345.00 345/138KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38778	104.0756	NORTHEAST STATION - ONETA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0754	GEN335202 1-NELSON UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0724	GEN511938 1-OEC STEAM # 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0709	GEN511851 1-COMANCHE #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0694	GEN338513 1-BAILEY UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0579	GEN334374 1-COTTONWOOD/INTERGEN UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0575	GEN520812 1-ANADRK5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0574	GEN520813 1-ANADRK6
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38743	104.0522	ANDERSONCO 345.00 - LACYGNE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.052	GEN336801 1-BAXTER WILSON UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0483	GEN335612 1-WILLOW GLENN UNIT#2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0434	GEN338510 1-1S1KNWRI
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0425	GEN542951 5-HAWTHORN UNIT #5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0396	GEN503900 1-FITZHUGH CT1
11G	G10_28	TO->FROM	FPL SWITCH - WOODWARD 138KV CKT 1	133	153	0.0309	104.0383	MOORELAND 345.00 (MRLNDAUTO) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38806	104.0381	WRTOD1104
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	104.0378	GEN509394 1-FLINT CREEK
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38741	104.0375	G07-48T 230.00 - SWISHER COUNTY INTERCHANGE 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0367	GEN337422 1-OUCHITA STG1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0367	GEN337424 1-OUCHITA STG2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0367	GEN337426 1-OUCHITA STG3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0304	GEN549893 2-SOUTHWEST 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38799	104.0243	LAWTON EASTSIDE - SUNNYSIDE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0242	GEN506749 1-EASTMAN GENERATION A
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38799	104.0237	HOLCOMB - SETAB 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38756	104.0232	MOORE - PAULINE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.437	104.0204	ROMAN NOSE - SOUTHARD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0176	GEN335611 1-WILLOW GLENN UNIT#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.015	GEN335545 1-DOW AEP UNIT5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38743	104.0033	ANDERSONCO 345.00 - WOLF CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	104.0014	GEN547656 1-STATE LINE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38772	103.9988	KNOBHILL - SALINE 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9911	GEN300002 1-THOMAS HILL UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9911	GEN335137 C4-PPG
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39046	103.9849	G08-127T 345.00 - ROSE HILL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43233	103.9836	G05-15T 345.00 - OKLAUNION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38772	103.9765	HELENAT2 69.000 - SALINE 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9763	GEN542957 1-IATAN UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9732	8DANIEL 500.00 - MCKNIGHT 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3872	103.9685	CIMARRON - EL RENO 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9681	GEN337124 5-LS POWER BATESVILLE
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38737	103.9636	FIELD NORTH - LKFLDXL3 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.9627	MARSHALL - WOODRING 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.9561	COTTONWOOD CREEK - MARSHALL 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38763	103.9511	WEATHERFORD JCT. - WEATHERFORD SOUTHEAST 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38756	103.9322	OKEENE - WATONGA SW 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9303	GEN501910 1-ACADIA UNIT ST1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9295	GEN334232 1-PELCNRD U1 13.800
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9295	GEN334233 1-PELCNRD U2 13.800
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38683	103.9273	FPL SWITCH - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38722	103.9262	OGE3TERM2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3872	103.9255	MORRISON - STILLWATER 138KV CKT 1

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.924	GEN335546 3-DOW COGEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9201	GEN515443 1-MNCOWND1 34.500
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9176	GEN334467 1-DUPONT UNIT#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38928	103.9165	IODINE - WWRDEHV4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9161	GEN511853 1-COMANCHE #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38772	103.9147	GOLTRY - HELENAT2 69.000 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9141	GEN334298 1-CYPR U1 13.800
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9141	GEN334299 1-CYPR U2 13.800
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9129	GEN500915 3-WESTERN KRAFT
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38751	103.9128	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.9115	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38751	103.9107	MULLERGREN - SPEARVILLE 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43684	103.9104	EL RENO - ROMAN NOSE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.9104	GEN511852 1-COMANCHE #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3875	103.907	KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38772	103.9057	SWISSVALE - WEST GARDNER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.9017	PUTNAM - TALOGA 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8989	GEN336176 1-UNION CARBIDE COGEN GT1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8989	GEN336177 1-UNION CARBIDE COGEN GT2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38772	103.8987	GOLTRY - IMO 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38747	103.8986	GRAY CO 345.00 - HOLCOMB 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8984	GEN334335 1-TOLEDO BEND
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38805	103.8979	LATHAMS7 345.00 - ROSE HILL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38764	103.8972	CLINTON - G07-32T 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3875	103.8953	MCCLELLAN SUB - MCLEAN RURAL SUB 115KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38751	103.8946	BROOKLINE - MORGAN 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38738	103.8916	DEAF SMITH COUNTY INTERCHANGE - S-RANDLCO 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38825	103.8873	SPP-SWPS-02A
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.8844	HAMON BUTLER - PUTNAM 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.8839	ARAPAHO - HAMON BUTLER 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.8828	ARAPAHO - INDUSTRIAL PARK 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38764	103.8818	CLINTON - WEATHERFORD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8808	DOLET HILLS - SOUTHWEST SHREVEPORT 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3874	103.8699	SUNNYSIDE (SUNNYSD3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.8649	GEN334441 1-SABINE UNIT 5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38928	103.8637	DEWEY - IODINE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.8632	GEN511841 1-NORTHEASTERN STATION #4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8601	GEN300001 1-THOMAS HILL UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.8572	CORDELL - INDUSTRIAL PARK 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8566	GEN549899 5-JAMES RIVER 5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.856	GEN560169 1-G08-13 0.5750
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3877	103.8517	EL PASO - FARBER 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8514	GEN335644 1-EXXON UNIT5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3875	103.8506	MCLEAN RURAL SUB - SHAMROCK 115KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3875	103.85	SHAMROCK (SHAMRCK1) 115/69/14.4KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38737	103.8485	LAKEOVER - MCADAMS 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3875	103.8475	SPP-SWPS-T54
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38751	103.8465	WEATHERFORD SOUTHEAST - WEATHERFORD TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8437	GEN640009 1-COOPER NUCLEAR STATION
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8397	GEN506753 1-LEBROCK GAS 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.8382	GEN511840 1-NORTHEASTERN STATION #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38763	103.8371	HINTON - WEATHERFORD JCT. 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.8356	CIRCLE - MULLERGREN 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3874	103.8354	CLINTON - MONTROSE 161KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8354	GEN505616 1-BROKEN BOW
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8354	GEN505618 2-BROKEN BOW
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.8348	GEN512689 1-GRDA1 GSU1 22
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3872	103.8334	MCELROY - STILLWATER 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38741	103.832	CANTON - TALOGA 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38739	103.8318	NUNDRWD - WAYSIDE 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38781	103.8305	G05-17T 345.00 - POTTER COUNTY INTERCHANGE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.8295	GEN511839 1-NORTHEASTERN STATION #2

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38763	103.8286	CAN_GAS4 138.00 - HINTON 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8286	GEN560118 1-G08-46 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38737	103.8279	NORTHEAST STATION - TULSA NORTH 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38739	103.8272	MCADAMS - WOLF CREEK 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8252	GEN501911 1-ACADIA UNIT CT1A
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38741	103.8176	AMARILLO SOUTH INTERCHANGE - G07-48T 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38738	103.8117	GERALD GENTLEMAN STATION - SWEETWATER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38741	103.8097	CANTON - OKEENE 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38733	103.8092	ELDORADO EHV 500/345KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38765	103.8062	CARNEGIE - HOBART JUNCTION 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38733	103.8051	ELDORADO EHV - LONGWOOD 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8046	GEN334458 1-CONOCO UNIT#3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.8007	GEN334282 1-SAM RAYBURN 4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38743	103.7969	GRAND ISLAND - MCCOOL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38763	103.794	CAN_GAS4 138.00 - JENSEN ROAD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.7932	GEN506750 1-EASTMAN GENERATION B
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38739	103.7922	CRAIG - STRANGER CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38751	103.7913	CALUMET - WATONGA SW 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38751	103.7866	CLINTON JUNCTION - CLINTON NATURAL GAS TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38755	103.7811	EMPORIA ENERGY CENTER - SWISSVALE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	103.7516	GEN337910 1-ARKANSAS NUCLEAR ONE UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.7041	GEN512688 2-GRDA1 GSU2 22
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.6789	GEN300006 1-NEW MADRID UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.6698	GEN300007 1-NEW MADRID UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43178	103.6335	G08-13T 345.00 - SUMNERCO 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43592	103.6151	CEDARDALE - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43592	103.5873	CEDARDALE - OKEENE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43701	103.5346	MOORELAND - NINMILE 4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43744	103.5326	BENTON - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43701	103.5287	MOREWOOD SW - NINMILE 4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.5113	BASE CASE
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.4586	GEN515042 1-SEMINOLE 3G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44705	103.335	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44705	103.335	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43261	103.3087	G05-15T 345.00 - TUCO INTERCHANGE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4305	103.2592	CIMARRON - WOODRING 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.238	GEN526331 1-JONES GEN #1 22 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.238	GEN526332 1-JONES GEN #2 21 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44299	103.2353	BORDER 7345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38736	103.2341	BAXTER WILSON SES - RAY BRASWELL SES 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.2229	GEN560585 1-G06-44-2 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.2224	GEN515041 1-SEMINOLE 2G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.2131	GEN560505 1-G02-006 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38713	103.2062	CLEVELAND - SOONER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.2058	GEN527882 1-CUNNINGHAM GEN #2 20 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43335	103.2039	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43335	103.2032	ELK CITY 230KV - SWEETWT6 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.2014	GEN509409 1-WILKES #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.2005	GEN560356 1-G10-53 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38738	103.1969	BAXTER WILSON SES - PERRYVILLE 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38806	103.1929	SPP-WERE-07B
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1862	GEN560522 1-G05-12 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1855	DOLET HILLS 345/230KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1705	GEN560170 1-G08-16 34.500
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38702	103.1686	OGE3TERM14
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1576	GEN560317 1-G10-27-1 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1576	GEN560318 1-G10-27-2 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1576	GEN560319 1-G10-27-3 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1576	GEN560320 1-G10-27-4 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1566	GEN524285 1-WILDORADO WIND GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38742	103.1504	ARKANSAS NUCLEAR ONE - PLEASANT HILL 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1503	GEN539677 3-A. M. MULLERGREN GENERATOR

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1481	GEN560595 1-G06-47 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1475	GEN560592 1-G06-45 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.1465	GEN336170 1-GULF OXY U4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38781	103.144	CLARKSVILLE - MUSKOGEE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38746	103.1414	BENTON - WOLF CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.138	GEN560173 1-G08-17 0.5750
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3868	103.1338	GRACMNT7 345.00 - MINCO 7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1296	GEN539767 1-GRAY COUNTY WIND FARM
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43576	103.1226	DOVER SW - OKEENE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1222	GEN560286 1-G10-01-1WTG 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1222	GEN560287 1-G10-01-2WTG 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.1183	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1114	GEN560586 1-G06-44-3 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38737	103.1069	LACYGNE - STILWELL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1067	GEN560371 1-G07-46 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1055	GEN560257 1-G10-14-2 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.1033	GEN560256 1-G10-14-1 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.1028	GEN514910 2-REDBUD GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	103.1028	GEN514911 2-REDBUD GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38714	103.101	PITTSBURG - SEMINOLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43386	103.0958	LACYGNE - NEOSHO 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.0858	GEN560105 1-G08-22 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38741	103.0833	LACYGNE - WEST GARDNER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.0824	GEN560353 1-G10-52 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38739	103.0787	FLINT CREEK - GRDA1 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38744	103.0784	8BHAM STEEL 500.00 - WEST MEMPHIS 500 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38744	103.0678	AMRN_OUTS5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38873	103.0664	WWRDEHV7 345.00 (WWDEHV-T2) 345/138/13.8KV TRANSFORMER CKT 2
16SP	G10_28	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.06157	103.0476	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38747	103.0471	PITTSBURG - VALLIANT 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	103.0367	5NORANDA 161.00 - NEW MADRID 161KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	103.0346	GEN337652 1-WHITE BLUFF UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	103.0195	GEN337653 1-WHITE BLUFF UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3864	102.9976	HORSESHOE LAKE - SEMINOLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.3864	102.9971	ARCADIA - HORSESHOE LAKE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38873	102.9945	WWRDEHV7 345.00 (WWDEHV) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38742	102.9883	DELL 500 - INDEPENDENCE 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43453	102.9863	CLINTON JUNCTION - ELK CITY 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.9807	GEN523103 1-NOBLE_WND 3115.00
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.9541	GEN514998 1-MCCLAIN UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.9541	GEN514999 1-MCCLAIN UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44085	102.9512	MED-LDG5 345.00 - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44085	102.9512	MED-LDG5 345.00 - WICHITA 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.9463	GEN560359 1-G08-51 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.9419	GEN560279 1-G08-18 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.9196	GEN560166 1-G07-48 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38764	102.9195	CHAMBER SPRINGS - CLARKSVILLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.9097	GEN514899 1-REDBUD1S
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.9097	GEN514900 1-REDBUD2S
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.9067	GEN501801 1-DOLET HILLS UNIT1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.9037	GEN560570 1-G06-39 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.8968	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.8929	GEN334070 1-LEWIS CREEK 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43644	102.8853	G10-16T 345.00 - POSTROCK7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38745	102.8791	KEO EHV - WEST MEMPHIS 500 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.8726	GEN515040 1-SEMINOLE 1G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38868	102.8715	DELAWARE - NORTHEAST STATION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.8713	GEN511843 1-RIVERSIDE STATION #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.8562	GEN560190 1-G10-08 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38578	102.8393	CIMARRON - DRAPER LAKE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.8306	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.8282	GEN560121 1-G08-47 0.5750

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.8223	GEN338146 1-INDEPENDENCE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.8212	GEN523462 1-BLACKHAWK GEN #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.8211	GEN523461 1-BLACKHAWK GEN #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.8134	GEN560598 1-G06-49 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38654	102.7916	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.7807	GEN520997 1-MORLND2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.7806	GEN560133 1-G08-110 0.5750
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.7554	GEN338143 1-INDEPENDENCE UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.7017	GEN527165 1-Mustang Gen #5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.701	GEN527161 1-MUSTANG GEN #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.701	GEN527162 1-MUSTANG GEN #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.7006	GEN527164 1-MUSTANG GEN #4 22 KV
11SP	G10_28	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.05011	102.7	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43507	102.6877	WRTOD400
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44205	102.6876	BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.686	GEN527901 1-HOBBS PLANT #1 (CT)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.686	GEN527902 1-HOBBS PLANT #2 (CT)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.6856	GEN539670 4-JUDSON LARGE GENERATOR
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43652	102.6742	G10-16T 345.00 - SPEARVILLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.6574	GEN527163 1-MUSTANG GEN #3 22 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43564	102.6473	ELK CITY - RHWIND4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43505	102.6334	HOYT - JEFFERY ENERGY CENTER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43637	102.6123	MINGO - SETAB 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43372	102.6037	SPP-SWPS-03
11SP	G10_28	FROM->TO	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.05013	102.6	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38647	102.5881	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.5857	GEN560155 1-G10-11 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.582	GEN336251 1-NINEMILE POINT UNIT#4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.5732	GEN515389 1-TLGAWND1 34.500
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43374	102.5693	ARKANSAS NUCLEAR ONE - FT SMITH 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.5664	GEN520922 1-SLEEPING 138.00
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38545	102.5392	REDBUD - RIVERSIDE STATION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.5381	GEN515790 1-FPLWND2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.534	GEN542955 1-LACYGNE UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43789	102.5277	FINNEY SWITCHING STATION - STEVENSCO 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43519	102.5269	FLATRDG3 - HARPER 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43562	102.5225	G05-16T 345.00 - NEOSHO 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43647	102.5205	AXTELL - POSTROCK7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.5153	GEN337428 1-PERYVILLE UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.5153	GEN337430 1-PERYVILLE UNIT #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43477	102.5133	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.512	GEN509391 G1-ARSENAL HILL GENS #2 (STALL)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.512	GEN509392 G2-ARSENAL HILL GENS #3 (STALL)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.5055	GEN505432 1-SIKESTON
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.5024	GEN509393 S1-ARSENAL HILL GENS #4 (STALL)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4895	GEN337432 1-PERYVILLE UNIT #5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4892	GEN337429 1-PERYVILLE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.486	GEN334030 1-FRONTIER UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43477	102.4742	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43519	102.4718	SPP-MKEC-08
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43663	102.4697	MINGO - RED WILLOW 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4621	GEN542956 2-LACYGNE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43374	102.4432	GRAPEVINE INTERCHANGE - STATELINE INTERCHANGE 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4431	GEN300031 1-CHOUTEAU CTG 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4431	GEN300032 1-CHOUTEAU CTG 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.4378	GEN337041 1-GERALD ANDRUS
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4311	GEN335076 1-DYNEGY UNIT2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4296	GEN514905 1-REDBUD3S
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.427	GEN336167 1-GULF OXY U1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.427	GEN336168 1-GULF OXY U2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.427	GEN336169 1-GULF OXY U3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43573	102.4267	MOREWOOD SW - RHWIND4 138.00 138KV CKT 1

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43411	102.4265	GRAPEVINE INTERCHANGE - NICHOLS STATION 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43519	102.4247	HARPER - MILAN TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43566	102.4167	G05-13T 345.00 - G05-16T 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39258	102.4131	MOORELAND 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4078	GEN337421 1-OUCHITA CTG1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4078	GEN337423 1-OUCHITA CTG2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.4078	GEN337425 1-OUCHITA CTG3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3979	GEN300003 1-THOMAS HILL UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43494	102.3957	GRAND ISLAND - SWEETWATER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3944	GEN337125 6-LS POWER BATESVILLE
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.39258	102.3944	MOORELAND 345.00 (MRLNDAUTO) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3934	GEN334031 1-FRONTIER UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3933	GEN335075 1-DYNEGY#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43566	102.3926	BENTON - ROSE HILL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3872	GEN515266 1-AES 1G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3872	GEN515267 1-AES 2G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3855	GEN337006 1-DUKE MCADAMS G1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3855	GEN337007 1-DUKE MCADAMS G2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3844	GEN335203 1-NELSON UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43505	102.3839	KNOBHILL - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.42354	102.3771	SOONER - SPRING CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43505	102.375	KNOBHILL (KNOBHIL4) 138/69/13.2KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.42354	102.3748	NORTHWEST - SPRING CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3679	GEN337008 1-DUKE MCADAMS S1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43519	102.3554	SPP-WERE-34
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43519	102.3543	SPP-MKEC-05
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.3472	GEN527903 1-HOBBS PLANT #3 (ST)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43491	102.339	CIRCLE 7 345.00 - MULGREN7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43491	102.339	CIRCLE 7 345.00 - MULGREN7 345.00 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3354	GEN334392 1-EXXON MOBIL IPP 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.3335	GEN514912 2-REDBUD GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43519	102.3277	CLEARWATER - MILAN TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.3179	GEN515397 1-OUSPRT 1 34.500
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.317	GEN506752 1-LEBROCK GAS 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4349	102.2991	MULGREN7 345.00 - SPEARVILLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4349	102.2991	MULGREN7 345.00 - SPEARVILLE 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2935	GEN511837 1-NORTHEASTERN STATION # 1-1A
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2935	GEN511838 1-NORTHEASTERN STATION # 1-1B
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43519	102.2766	CLEARWATER - GILL ENERGY CENTER WEST 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43547	102.2762	DOVER SW - HENESSEY 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2756	GEN520811 1-ANADRK4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2684	GEN338500 1-MCCLELLAN UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.2559	GEN509403 1-PIRKEY GENERATION
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2555	GEN549890 1-SOUTHWEST 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2546	GEN560323 1-G10-40 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43529	102.2464	FLATRDG3 - MEDICINE LODGE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43673	102.245	POTTER COUNTY INTERCHANGE (WAUK 90343-A) 345/230/13.2KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43574	102.2422	G05-13T 345.00 - LATHAMS7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43553	102.239	OGE3TERM1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2346	GEN337954 1-LYNCH UNIT #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43992	102.2319	BEAVERCO 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43992	102.2319	BEAVERCO 345.00 - WWRDEHV7 345.00 345KV CKT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2303	GEN515000 1-MCCLAIN UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2262	GEN300016 1-1G1GPDEL 18.000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2262	GEN300017 1-1G2GPDEL 18.000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43509	102.2244	HOYT - STRANGER CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.2129	GEN511836 1-NORTHEASTERN STATION #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43374	102.2111	STLN-DEMARC6230.00 - SWEETWT6 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43374	102.2111	STATELINE INTERCHANGE - STLN-DEMARC6230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43374	102.2111	SPP-SWPS-02
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43547	102.2068	HENESSEY - WAUKOMIS 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1966	GEN599891 1-OKLAUN

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1943	GEN542962 2-IATAN UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43462	102.1815	EVANS ENERGY CENTER NORTH - EVANS ENERGY CENTER SOUTH 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43547	102.176	WAUKOMIS - WAUKOMIS TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1742	GEN547649 1-ASBURY UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43432	102.1665	GRAY CO 345.00 - SPEARVILLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	102.162	GEN515364 1-CENT 11 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1506	GEN511953 G-COGENTRIX GAS # 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.15	GEN511954 S-COGENTRIX STEAM # 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1425	GEN335201 1-NELSON UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43241	102.1392	SUMNERCO 345.00 - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4355	102.1322	MED-LDG5 345.00 345/138KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1319	GEN335202 1-NELSON UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43505	102.1316	AXTELL - PAULINE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.37718	102.1305	ARCADIA - NORTHWEST 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.1298	GEN501813 1-RODEMACHER UNIT 3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1269	GEN338513 1-BAILEY UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.119	GEN542951 5-HAWTHORN UNIT #5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1185	GEN511938 1-OEC STEAM # 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1175	GEN511851 1-COMANCHE #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43505	102.1172	ANDERSONCO 345.00 - LACYGNE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1141	GEN334374 1-COTTONWOOD/INTERGEN UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43169	102.1134	G08-127T 345.00 - SOONER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43387	102.1097	RENO COUNTY - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1048	GEN335612 1-WILLOW GLENN UNIT#2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43613	102.1032	HOLCOMB - SETAB 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1018	GEN520812 1-ANADRK5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.1018	GEN520813 1-ANADRK6
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0998	GEN338510 1-1S1KNWRI
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.093	GEN337422 1-OUCHITA STG1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.093	GEN337424 1-OUCHITA STG2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.093	GEN337426 1-OUCHITA STG3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0875	GEN503900 1-FITZHUGH CT1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0869	GEN549893 2-SOUTHWEST 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43447	102.086	NORTHEAST STATION - ONETA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43466	102.085	G07-48T 230.00 - SWISHER COUNTY INTERCHANGE 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.079	GEN514806 1-SOONER UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.0774	GEN338189 1-LS POWER OSCEOLA UNIT G1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0738	GEN335611 1-WILLOW GLENN UNIT#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43495	102.0731	MOORE - PAULINE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0719	GEN506749 1-EASTMAN GENERATION A
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0712	GEN335545 1-DOW AEP UNIT5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43507	102.0654	ANDERSONCO 345.00 - WOLF CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43527	102.065	LAWTON EASTSIDE - SUNNYSIDE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0623	GEN542957 1-IATAN UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0534	GEN300002 1-THOMAS HILL UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4345	102.0477	WRTOD1104
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0466	GEN335137 C4-PPG
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0456	GEN547656 1-STATE LINE UNIT #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43498	102.0335	KNOBHILL - SALINE 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.0333	GEN336831 1-BAXTER WILSON SES
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	102.0243	GEN337124 5-LS POWER BATESVILLE
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43461	102.0161	8DANIEL 500.00 - MCKNIGHT 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	102.0119	GEN515226 1-MUSKOGEE 6G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43498	102.0113	HELENAT2 69.000 - SALINE 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43459	102.0059	FIELD NORTH - LKFLDXL3 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43462	102.0046	CIMARRON - EL RENO 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43451	101.9937	MARSHALL - WOODRING 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43451	101.9855	COTTONWOOD CREEK - MARSHALL 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9854	GEN501910 1-ACADIA UNIT ST1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9845	GEN334232 1-PELCNRD U1 13.800
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9845	GEN334233 1-PELCNRD U2 13.800
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43462	101.9816	OGE3TERM2

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9792	GEN335546 3-DOW COGEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43461	101.977	MORRISON - STILLWATER 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43423	101.9756	WEATHERFORD JCT. - WEATHERFORD SOUTHEAST 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9726	GEN334467 1-DUPONT UNIT#1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9718	GEN515443 1-MNCOWND1 34.500
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43485	101.9709	OKEENE - WATONGA SW 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43514	101.9698	FPL SWITCH - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9692	GEN334298 1-CYPR U1 13.800
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9692	GEN334299 1-CYPR U2 13.800
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9677	GEN500915 3-WESTERN KRAFT
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9636	GEN511853 1-COMANCHE #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43492	101.9624	MULLERGREN - SPEARVILLE 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9582	GEN511852 1-COMANCHE #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43461	101.9549	SMOKYHL6 230.00 - SUMMIT 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9539	GEN336176 1-UNION CARBIDE COGEN GT1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9539	GEN336177 1-UNION CARBIDE COGEN GT2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9531	GEN334335 1-TOLEDO BEND
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43498	101.9468	GOLTRY - HELENAT2 69.000 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43438	101.9454	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4348	101.9448	DEAF SMITH COUNTY INTERCHANGE - S-RANDLCO 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43494	101.9441	PUTNAM - TALOGA 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43524	101.9436	SWISSVALE - WEST GARDNER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43589	101.9434	IODINE - WWRDEHV4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43452	101.9429	KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43587	101.9424	LATHAMS7 345.00 - ROSE HILL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43441	101.9367	GRAY CO 345.00 - HOLCOMB 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4347	101.9366	CLINTON - G07-32T 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43452	101.9323	MCCLELLAN SUB - MCLEAN RURAL SUB 115KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9313	GEN640009 1-COOPER NUCLEAR STATION
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43498	101.9307	GOLTRY - IMO 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43461	101.9296	BROOKLINE - MORGAN 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43494	101.9268	HAMON BUTLER - PUTNAM 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43494	101.9263	ARAPAHO - HAMON BUTLER 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43494	101.9252	ARAPAHO - INDUSTRIAL PARK 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43442	101.9239	DOLET HILLS - SOUTHWEST SHREVEPORT 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4347	101.9213	CLINTON - WEATHERFORD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9195	GEN300001 1-THOMAS HILL UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9095	GEN560169 1-G08-13 0.5750
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43686	101.9082	G05-17T 345.00 - POTTER COUNTY INTERCHANGE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9077	GEN549899 5-JAMES RIVER 5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43447	101.9073	SUNNYSIDE (SUNNYSD3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.9059	GEN335644 1-EXXON UNIT5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43494	101.8997	CORDELL - INDUSTRIAL PARK 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43463	101.8937	LAKEOVER - MCADAMS 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43589	101.889	DEWEY - IODINE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.8884	GEN506753 1-LEBROCK GAS 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43452	101.8876	MCLEAN RURAL SUB - SHAMROCK 115KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43452	101.8871	SHAMROCK (SHAMRCK1) 115/69/14.4KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.8866	GEN505616 1-BROKEN BOW
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.8866	GEN505618 2-BROKEN BOW
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43452	101.8843	SPP-SWPS-T54
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43457	101.884	MCELROY - STILLWATER 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.8811	GEN560118 1-G08-46 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.8793	GEN501911 1-ACADIA UNIT CT1A
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43463	101.8784	CIRCLE - MULLERGREN 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43374	101.8778	SPP-SWPS-02A
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43463	101.877	NUNDRWD - WAYSIDE 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43452	101.8754	EL PASO - FARBER 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43457	101.8752	CLINTON - MONTROSE 161KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43475	101.8734	CANTON - TALOGA 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43464	101.8724	MCADAMS - WOLF CREEK 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43438	101.8709	WEATHERFORD SOUTHEAST - WEATHERFORD TAP 138KV CKT 1

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43474	101.8646	AMARILLO SOUTH INTERCHANGE - G07-48T 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43473	101.8601	ELDORADO EHV 500/345KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.8583	GEN334458 1-CONOCO UNIT#3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43423	101.8578	HINTON - WEATHERFORD JCT. 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43462	101.8573	GERALD GENTLEMAN STATION - SWEETWATER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43426	101.8562	NORTHEAST STATION - TULSA NORTH 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43473	101.8558	ELDORADO EHV - LONGWOOD 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.8542	GEN334282 1-SAM RAYBURN 4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43475	101.8521	CANTON - OKEENE 69KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43558	101.8495	EMPORIA ENERGY CENTER - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43423	101.8495	CAN_GAS4 138.00 - HINTON 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43457	101.8494	KINZE - MCELROY 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43472	101.8451	GRAND ISLAND - MCCOOL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.8422	GEN506750 1-EASTMAN GENERATION B
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.841	GEN334393 1-EXXON MOBIL IPP 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43516	101.84	EMPORIA ENERGY CENTER - SWISSVALE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43457	101.8399	CARNEGIE - HOBART JUNCTION 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.7867	GEN514805 1-SOONER UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.7067	GEN501812 1-RODEMACHER UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.6832	GEN515393 1-OGEWND2G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.659	GEN335206 1-NELSON UNIT 6
11WP	G10_28	TO->FROM	GLASS MOUNTAIN - MOORELAND 138KV CKT 1	124	124	0.04281	101.6275	NORTHWEST - TATONGA7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43256	101.6023	G08-13T 345.00 - WOODRING 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.5987	GEN515223 1-MUSKOGEE 4G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.5773	GEN509406 1-WELSH #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.5772	GEN509404 1-WELSH #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.5772	GEN509405 1-WELSH #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.562	BASE CASE
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.5552	GEN515225 1-MUSKOGEE 5G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43812	101.5094	DEWEY - SOUTHARD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.4911	GEN560180 1-G07-51 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44325	101.4906	BEAVERCO 345.00 - COMANCH5 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.4824	GEN334440 1-SABINE UNIT 4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.4426	GEN523971 1-HARRINGTON GEN #1 24 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.4369	GEN523973 1-HARRINGTON GEN #3 24 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.4365	GEN523972 1-HARRINGTON GEN #2 24 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.4072	GEN520947 1-HUGO1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43787	101.3903	CLEO CORNER - MEN TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43787	101.3715	IMO TAP - MEN TAP 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.3667	GEN335204 1-NELSON UNIT 4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43749	101.3373	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43229	101.3045	GRACMNT7 345.00 - LAWTON EASTSIDE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.3043	GEN336801 1-BAXTER WILSON UNIT #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43416	101.2897	BROOKLINE - SUB 383 - MONETT 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.2894	GEN509394 1-FLINT CREEK
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43416	101.2893	AI12
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43416	101.2878	FLINT CREEK - SUB 383 - MONETT 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2809	BAXTER WILSON SES - RAY BRASWELL SES 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.276	GEN560585 1-G06-44-2 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43749	101.2738	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2672	GEN560505 1-G02-006 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43441	101.2645	SPP-WERE-41B
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43441	101.2644	NEWKIRK4 - PECKHMT4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2629	GEN527882 1-CUNNINGHAM GEN #2 20 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43441	101.2617	CRESWELL - PECKHMT4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2547	GEN560356 1-G10-53 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2413	GEN560522 1-G05-12 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43457	101.2402	BAXTER WILSON SES - PERRYVILLE 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43406	101.2391	CLEVELAND - SOONER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43458	101.232	DOLET HILLS 345/230KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2255	GEN560170 1-G08-16 34.500
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43424	101.2165	OGE3TERM14

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.213	GEN539677 3-A. M. MULLERGREN GENERATOR
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2122	GEN560317 1-G10-27-1 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2122	GEN560318 1-G10-27-2 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2122	GEN560319 1-G10-27-3 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2122	GEN560320 1-G10-27-4 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2114	GEN524285 1-WILDORADO WIND GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43812	101.2082	ROMAN NOSE - SOUTHARD 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.203	GEN560595 1-G06-47 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.2024	GEN560592 1-G06-45 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43441	101.1998	SPP-WERE-07B
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.1971	GEN531447 1-HOLCOMB GENERATOR
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1967	GEN560173 1-G08-17 0.5750
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43496	101.1942	BENTON - WOLF CREEK 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43453	101.191	ARKANSAS NUCLEAR ONE - PLEASANT HILL 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1861	GEN539767 1-GRAY COUNTY WIND FARM
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43344	101.178	G05-15T 345.00 - OKLAUNION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1756	GEN560286 1-G10-01-1WTG 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1756	GEN560287 1-G10-01-2WTG 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1654	GEN560586 1-G06-44-3 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43458	101.162	CLARKSVILLE - MUSKOGEE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1616	GEN560371 1-G07-46 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1594	GEN560257 1-G10-14-2 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1571	GEN560256 1-G10-14-1 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43447	101.1461	LACYGNE - STILWELL 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.141	GEN560353 1-G10-52 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.1408	GEN560105 1-G08-22 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.1316	GEN560223 1-G07-62-3 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43457	101.1242	8BHAM STEEL 500.00 - WEST MEMPHIS 500 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43449	101.1193	LACYGNE - WEST GARDNER 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.1172	GEN560224 1-G07-62-4 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.1121	GEN334441 1-SABINE UNIT 5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43432	101.1121	FLINT CREEK - GRDA1 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.1113	GEN511841 1-NORTHEASTERN STATION #4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43457	101.1085	AMRN_OUTS5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43525	101.1052	WWRDEHV7 345.00 (WWDEHV-T2) 345/138/13.8KV TRANSFORMER CKT 2
11SP	G10_28	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.06256	101.1	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.0861	GEN511840 1-NORTHEASTERN STATION #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.0849	5NORANDA 161.00 - NEW MADRID 161KV CKT 1
11G	G10_28	TO->FROM	ROMAN NOSE - SOUTHARD 138KV CKT 1	133	153	0.03612	101.0839	NORTHWEST - TATONGA7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4326	101.0798	PITTSBURG - SEMINOLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.0763	GEN511839 1-NORTHEASTERN STATION #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	101.0759	GEN512689 1-GRDA1 GSU1 22
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43042	101.0726	GRACMNT7 345.00 - MINCO 7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.0359	GEN523103 1-NOBLE_WND 3115.00
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43339	101.0356	PITTSBURG - VALLIANT 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.0347	GEN560221 1-G07-62-1 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	101.0347	GEN560222 1-G07-62-2 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43525	101.0325	WWRDEHV7 345.00 (WWDEHV) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43458	101.0309	DELL 500 - INDEPENDENCE 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43312	101.0267	HORSESHOE LAKE - SEMINOLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43312	101.0258	ARCADIA - HORSESHOE LAKE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	101.0028	GEN560359 1-G08-51 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.9996	GEN560279 1-G08-18 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.9776	GEN560166 1-G07-48 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.9746	GEN640011 2-GERALD GENTLEMAN STATION UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.9612	GEN560570 1-G06-39 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.9442	GEN512688 2-GRDA1 GSU2 22
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43427	100.9361	CHAMBER SPRINGS - CLARKSVILLE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.9334	GEN300006 1-NEW MADRID UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.9243	GEN300007 1-NEW MADRID UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43457	100.9194	KEO EHV - WEST MEMPHIS 500 500KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.9123	GEN640010 1-GERALD GENTLEMAN STATION UNIT 1

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.9121	GEN560190 1-G10-08 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43307	100.9068	CIMARRON - DRAPER LAKE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.8875	GEN523462 1-BLACKHAWK GEN #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.8874	GEN523461 1-BLACKHAWK GEN #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.8863	GEN560121 1-G08-47 0.5750
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.8709	GEN560598 1-G06-49 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43288	100.8639	G08-13T 345.00 - SUMNERCO 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	100.8601	GEN525561 1-TOLK GEN #1 24 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.8509	GEN520997 1-MORLND2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43374	100.8434	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.8353	GEN560133 1-G08-110 0.5750
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43704	100.8135	CEDARDALE - MOORELAND 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43374	100.8078	DELAWARE - NORTHEAST STATION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43704	100.7859	CEDARDALE - OKEENE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.7699	GEN527165 1-Mustang Gen #5
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.769	GEN527161 1-MUSTANG GEN #1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.769	GEN527162 1-MUSTANG GEN #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.7687	GEN527164 1-MUSTANG GEN #4 22 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.7586	GEN539670 4-JUDSON LARGE GENERATOR
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.7542	GEN527902 1-HOBBS PLANT #2 (CT)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.7541	GEN527901 1-HOBBS PLANT #1 (CT)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43813	100.7271	MOORELAND - NINMILE 4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.7265	GEN527163 1-MUSTANG GEN #3 22 KV
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43856	100.7261	BENTON - WICHITA 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43813	100.7214	MOREWOOD SW - NINMILE 4 138.00 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.6931	GEN515042 1-SEMINOLE 3G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43366	100.6422	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.6393	GEN560155 1-G10-11 0.6900
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.6335	GEN515389 1-TLGAWND1 34.500
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.6249	GEN520922 1-SLEEPING 138.00
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.5905	GEN515790 1-FPLWND2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	100.579	GEN525562 1-TOLK GEN #2 24 KV
16SP	G10_28	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.04847	100.5449	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	100.5247	GEN560429 1-G08-29 0.6400
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43059	100.5179	REDBUD - RIVERSIDE STATION 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43372	100.5053	G05-15T 345.00 - TUCO INTERCHANGE 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4316	100.5044	CIMARRON - WOODRING 345KV CKT 1
16SP	G10_28	FROM->TO	NORTHWEST (NORTWST3) 345/138/13.8KV TRANSFORMER CKT 1	493	493	0.04848	100.465	NORTHWEST (NORTWST2) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.4546	GEN515041 1-SEMINOLE 2G
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.4402	GEN509409 1-WILKES #3
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.95801	100.4372	TATONGA7 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.4245	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.4225	GEN527903 1-HOBBS PLANT #3 (ST)
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43446	100.4176	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43446	100.4169	ELK CITY 230KV - SWEETWT6 230.00 230KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4394	100.4013	MOORELAND 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.44413	100.3941	BORDER 7345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.3866	GEN336170 1-GULF OXY U4
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4394	100.3821	MOORELAND 345.00 (MRLNDAUTO) 345/138/13.8KV TRANSFORMER CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.3771	GEN515397 1-OUSPRT 1 34.500
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.81427	100.3556	TATONGA7 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.42543	100.3476	ARCADIA - NORTHWEST 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.3327	GEN514910 2-REDBUD GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.3327	GEN514911 2-REDBUD GEN
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43688	100.3252	DOVER SW - OKEENE 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43497	100.319	LACYGNE - NEOSHO 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.38735	100.2516	GEN560225 1-G10-43 18.000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43565	100.1953	CLINTON JUNCTION - ELK CITY 138KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.4346	100.1924	GEN515364 1-CENT 11 0.6000
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.1843	GEN514998 1-MCCLAIN UNIT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.1843	GEN514999 1-MCCLAIN UNIT 2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.1384	GEN514899 1-REDBUD1S

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.1384	GEN514900 1-REDBUD2S
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.1276	GEN334070 1-LEWIS CREEK 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.1051	GEN511843 1-RIVERSIDE STATION #2
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43756	100.079	G10-16T 345.00 - POSTROCK7 345.00 345KV CKT 1
11G	G10_28	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.43571	100.0597	GEN515040 1-SEMINOLE 1G
11G	G10_29	FROM->TO	WICHITA (WICHT12X) 345/138/13.8KV TRANSFORMER CKT 1	400	440	0.03656	106.3978	BENTON - WICHITA 345KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05908	106.219	LAWTON EASTSIDE - OKLAUNION 345KV CKT 1
11G	G10_29	FROM->TO	WICHITA (WICHT12X) 345/138/13.8KV TRANSFORMER CKT 1	400	440	0.03656	105.7008	BENTON - WICHITA 345KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	105.589	GEN336821 1-GRAND GULF UNIT
11G	G10_29	FROM->TO	WICHITA (WICHT12X) 345/138/13.8KV TRANSFORMER CKT 1	400	440	0.03671	105.5298	BENTON - WICHITA 345KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	105.136	GEN336153 1-WATERFORD UNIT#3
11G	G10_29	FROM->TO	WICHITA (WICHT12X) 345/138/13.8KV TRANSFORMER CKT 1	400	440	0.03671	104.7501	BENTON - WICHITA 345KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	104.7177	GEN337911 1-ARKANSAS NUCLEAR ONE UNIT #2
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	104.2835	GEN335831 1-RIVERBEND UNIT#1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05871	103.9104	EL RENO - ROMAN NOSE 138KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	103.7516	GEN337910 1-ARKANSAS NUCLEAR ONE UNIT #1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.04909	103.335	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.04909	103.335	MED-LDG5 345.00 - WWRDEHV7 345.00 345KV CKT 2
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	103.0346	GEN337652 1-WHITE BLUFF UNIT #1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	103.0195	GEN337653 1-WHITE BLUFF UNIT #2
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06357	102.9512	MED-LDG5 345.00 - WICHITA 345KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06357	102.9512	MED-LDG5 345.00 - WICHITA 345KV CKT 2
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	102.9067	GEN501801 1-DOLET HILLS UNIT1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	102.8223	GEN338146 1-INDEPENDENCE UNIT #2
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	102.7554	GEN338143 1-INDEPENDENCE UNIT #1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.0639	102.6876	BORDER 7345.00 - TUCO INTERCHANGE 345KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	102.582	GEN336251 1-NINEMILE POINT UNIT#4
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	102.4378	GEN337041 1-GERALD ANDRUS
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	102.2559	GEN509403 1-PIRKEY GENERATION
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	102.1298	GEN501813 1-RODEMACHER UNIT 3
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	102.079	GEN514806 1-SOONER UNIT 2
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	102.0774	GEN338189 1-LS POWER OSCEOLA UNIT G1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	102.0333	GEN336831 1-BAXTER WILSON SES
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	102.0119	GEN515226 1-MUSKOGEE 6G
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.7867	GEN514805 1-SOONER UNIT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.7067	GEN501812 1-RODEMACHER UNIT 2
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.659	GEN335206 1-NELSON UNIT 6
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.0676	101.6023	G08-13T 345.00 - WOODRING 345KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.5987	GEN515223 1-MUSKOGEE 4G
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.5773	GEN509406 1-WELSH #3
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.5772	GEN509404 1-WELSH #1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.5772	GEN509405 1-WELSH #2
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.5552	GEN515225 1-MUSKOGEE 5G
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05999	101.5094	DEWEY - SOUTHARD 138KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.0387	101.4906	BEAVERCO 345.00 - COMANCH5 345.00 345KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.4824	GEN334440 1-SABINE UNIT 4
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.4072	GEN520947 1-HUGO1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05858	101.3903	CLEO CORNER - MEN TAP 138KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05858	101.3715	IMO TAP - MEN TAP 138KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.3667	GEN335204 1-NELSON UNIT 4
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05836	101.3373	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.3043	GEN336801 1-BAXTER WILSON UNIT #1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.2894	GEN509394 1-FLINT CREEK
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05836	101.2738	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05999	101.2082	ROMAN NOSE - SOUTHARD 138KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05908	101.178	G05-15T 345.00 - OKLAUNION 345KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.1121	GEN334441 1-SABINE UNIT 5
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.1113	GEN511841 1-NORTHEASTERN STATION #4
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.0861	GEN511840 1-NORTHEASTERN STATION #3
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.0763	GEN511839 1-NORTHEASTERN STATION #2
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	101.0759	GEN512689 1-GRDA1 GSU1 22
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	100.9442	GEN512688 2-GRDA1 GSU2 22

SEASON	SOURCE	DIRECTION	MONTCOMMONNAME	RATEA	RATEB	TDF	TC%LOADING	CONTNAME
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	100.9334	GEN300006 1-NEW MADRID UNIT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	100.9243	GEN300007 1-NEW MADRID UNIT 2
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06791	100.8639	G08-13T 345.00 - SUMNERCO 345.00 345KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05823	100.8135	CEDARDALE - MOORELAND 138KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05823	100.7859	CEDARDALE - OKEENE 138KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.0591	100.7271	MOORELAND - NINMILE 4 138.00 138KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.0653	100.7261	BENTON - WICHITA 345KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.0591	100.7214	MOREWOOD SW - NINMILE 4 138.00 138KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	100.6931	GEN515042 1-SEMINOLE 3G
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05936	100.5053	G05-15T 345.00 - TUCO INTERCHANGE 345KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06187	100.5044	CIMARRON - WOODRING 345KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	100.4546	GEN515041 1-SEMINOLE 2G
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	100.4402	GEN509409 1-WILKES #3
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	100.4245	GEN532751 1-WOLF CREEK GENERATING STATION UNIT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05738	100.4176	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05738	100.4169	ELK CITY 230KV - SWEETWT6 230.00 230KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05825	100.3941	BORDER 7345.00 - WWRDEHV7 345.00 345KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	100.3866	GEN336170 1-GULF OXY U4
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	100.3327	GEN514910 2-REDBUD GEN
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	100.3327	GEN514911 2-REDBUD GEN
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05798	100.3252	DOVER SW - OKEENE 138KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05819	100.319	LACYGNE - NEOSHO 345KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05789	100.1953	CLINTON JUNCTION - ELK CITY 138KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	100.1843	GEN514998 1-MCCLAIN UNIT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	100.1843	GEN514999 1-MCCLAIN UNIT 2
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	100.1384	GEN514899 1-REDBUD1S
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	100.1384	GEN514900 1-REDBUD2S
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	100.1276	GEN334070 1-LEWIS CREEK 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	100.1051	GEN511843 1-RIVERSIDE STATION #2
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.06402	100.079	G10-16T 345.00 - POSTROCK7 345.00 345KV CKT 1
11G	G10_29	TO->FROM	NORTHWEST - TATONGA7 345.00 345KV CKT 1	1195	1195	0.05723	100.0597	GEN515040 1-SEMINOLE 1G

I: Stability Study For All Groups

SPP Southwest Power Pool

Preliminary Interconnection System Impact Study

PISIS-2010-002

SPP Generation Interconnection Studies

(PISIS-2010-002)

February 2011

Executive Summary

A transient stability study has been performed by Southwest Power Pool (SPP) to evaluate the interconnection request in the Preliminary Impact Study Interconnection Study (PISIS-2010-002).

The PISIS-2010-002 study has five (5) Interconnection Requests in four geographic groups within the SPP footprint. The interconnection requests include GEN-2010-020, GEN-2010-021, GEN-2010-028, GEN-2010-029, and GEN-2010-055. The interconnection requests in PISIS-2010-002 total 829.5MW.

The results of a stability analysis determined that for the addition of the PISIS-2010-002 interconnection requests, the transmission system was found to remain stable for both summer and winter peak conditions with all required network upgrades in service. Additionally, the projects that were wind farms were found to stay connected during the contingencies that were studied, meeting the Low Voltage Ride Through (LVRT) requirements of FERC Order #661A.

The power factor analysis indicated that all PISIS-2010-002 interconnection requests will be required to maintain 95% lagging (producing vars) and 95% leading (absorbing vars) power factor at the point of interconnection.

Should any previously queued projects that were included in this study withdraw from the queue, then this System Impact Study may have to be revised to determine the impacts of this Interconnection Customer's project on transmission facilities.

1.0 Introduction

A transient stability study has been performed by Southwest Power Pool (SPP) to evaluate the interconnection request in the Preliminary Impact Study Interconnection Study (PISIS-2010-002).

The PISIS-2010-002 study has five (5) Interconnection Requests in four geographic groups within the SPP footprint. The interconnection requests include GEN-2010-020, GEN-2010-021, GEN-2010-028, GEN-2010-029, and GEN-2010-055. The interconnection requests in PISIS-2010-002 total 829.5MW.

Two seasonal base cases were used in the study to analyze the stability impacts of the proposed generation facility. A 2011 summer peak case and a 2011 winter peak case which were both modified to include the prior queued projects shown in Table 1.

2.0 Purpose

The purpose of this Preliminary Impact Study Interconnection Study (PISIS) is to evaluate the impact of the proposed interconnection on the reliability of the Transmission System. Table 1 below lists the requests that were analyzed in this study.

Request	Amount	Area	Generator Model	Proposed Point of Interconnection	SPP Geographic Group
GEN-2010-020	20	SPS	STCNPG (usrmdl)	ROSWELL 69kV	South Panhandle/New Mexico (Group 6)
GEN-2010-021	20	SPS	STCNPG (usrmdl)	ATOKA 69kV	South Panhandle/New Mexico (Group 6)
GEN-2010-028	335	OKGE	Vestas V90 1.8MW	TATONGA 345kV	Woodward (Group 1)
GEN-2010-029	450	SUNC	Vestas V90 1.8MW	SPEARVILLE 345kV	Spearville (Group 3)
GEN-2010-055	4.5	SUNC	GENROU	WEKIWA 138kV	N Oklahoma/S Kansas (Group 8)

Table 1: PISIS-2010-002 Interconnection Request Table

Should any previously queued projects that were included in this study withdraw (listed in Appendix B of the main report), then this System Impact Study may require a re-study of this request at the expense of the customer.

3.0 Facilities

3.1 Generating Facility

GEN-2010-020

The generating facility was studied with the assumption that it would be using solar inverters. Figure 1 below shows a simplified one-line of the customer's facility.

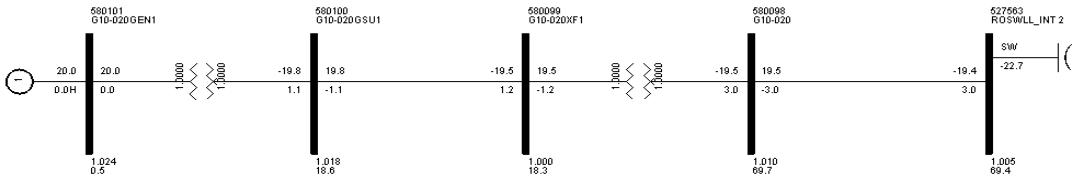


Figure 1: GEN-2010-020 One-line Diagram

GEN-2010-021

The generating facility was studied with the assumption that it would be using solar inverters. Figure 2 below shows a simplified one-line of the customer's facility.

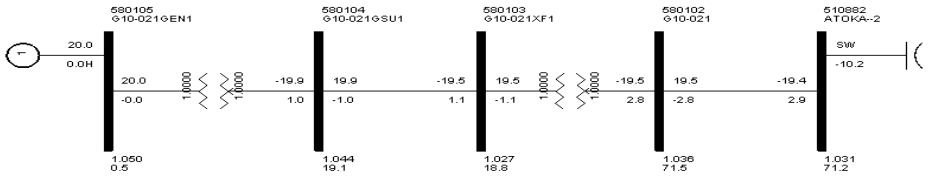


Figure 2: GEN-2010-021 One-line Diagram

GEN-2010-028

The generating facility was studied with the assumption that it would be using the Vestas V90 1.8MW wind turbines. The nameplate rating of each turbine is 1.8MW (1800kW) with a machine base of 1800kVA. Each wind turbine has a 34.5kV/0.69kV 1850kVA transformer. The Customer's interconnection facilities will include two (2) 345/34.5kV 120/155/200MVA transformers. Figure 3 below shows a simplified one-line of the customer's facility.

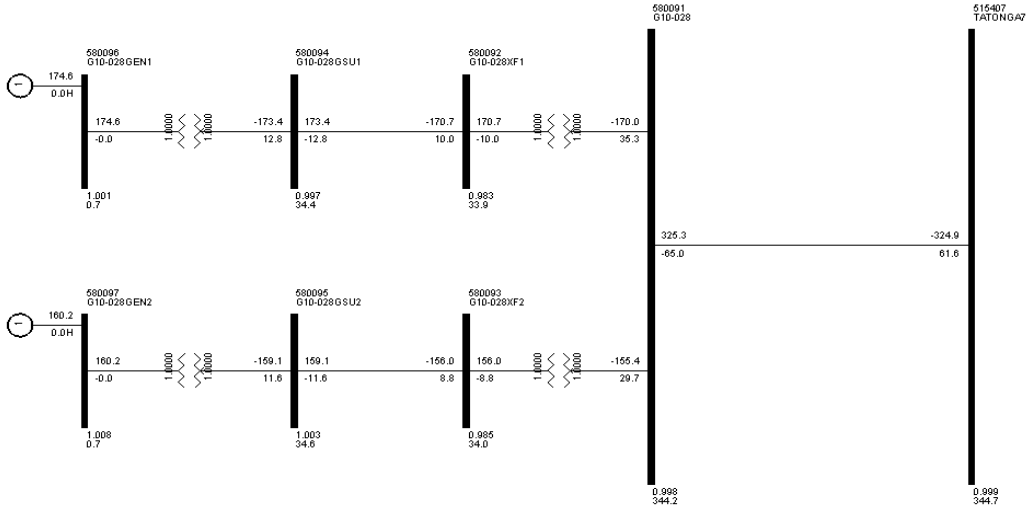


Figure 3: GEN-2010-028 One-line Diagram

GEN-2010-029

The generating facility was studied with the assumption that it would be using the Vestas V90 1.8MW wind turbines. The nameplate rating of each turbine is 1.8MW (1800kW) with a machine base of 1800kVA. Each wind turbine has a 34.5kV/0.69kV 1850kVA transformer. The Customer's interconnection facilities will include three (3) 345/34.5kV 100/130/166MVA transformers. Figure 4 below shows a simplified one-line of the customer's facility.

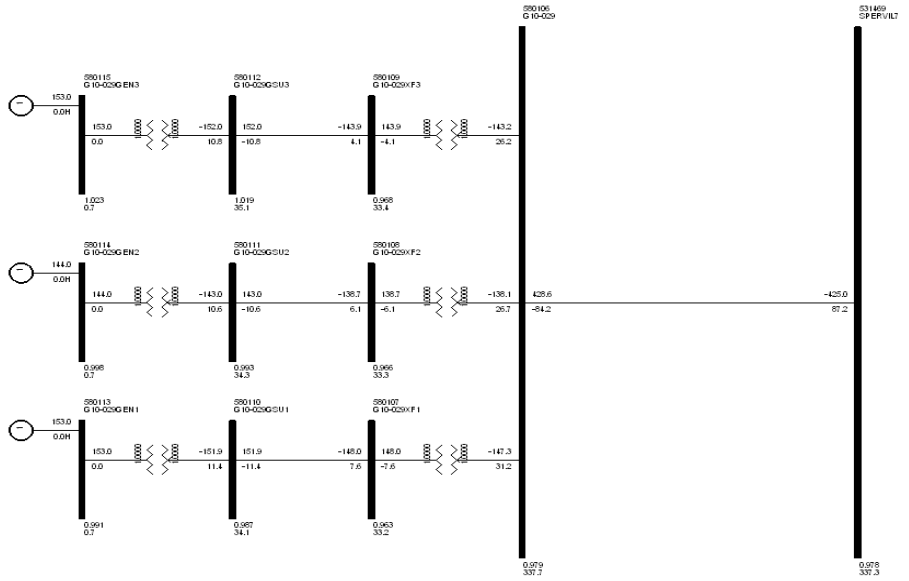


Figure 4: GEN-2010-029 One-line Diagram

GEN-2010-055

The generating facility was studied with the assumption that it would be using the GENROU generator model. The generating facility will have three gas generators with a nameplate rating for each generator of 1.6MW (1600kW) and a machine base of 1.777MVA (1777kVA). All three generators will be connected to a 4.16/13.8kV 4.0/5.32MVA transformer which is connected to the POI. Figure 5 below shows a simplified one-line of the customer's facility.

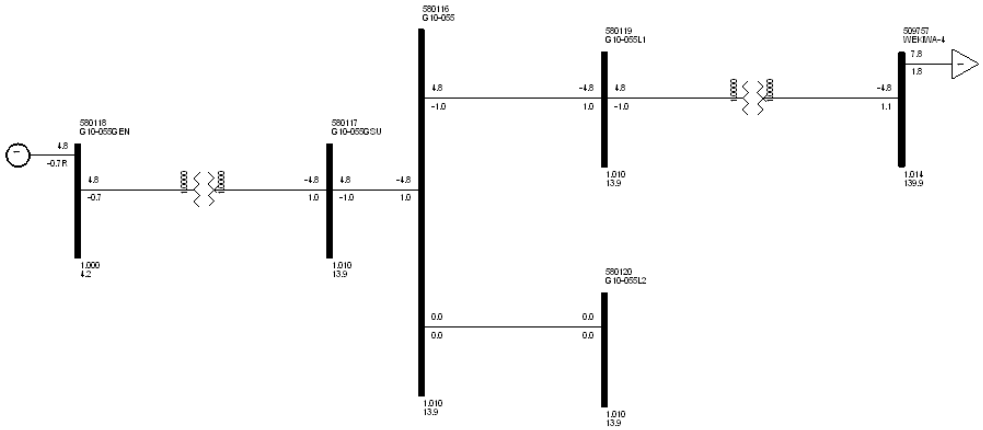


Figure 5: GEN-2010-055 One-line Diagram

3.2 Interconnection Facilities

GEN-2010-020

The point of interconnection (POI) will be at the SPS Roswell 69kV Interchange. Figure 6 shows a one-line of the proposed POI. Interconnection facilities will include a 69kV single bus configuration.

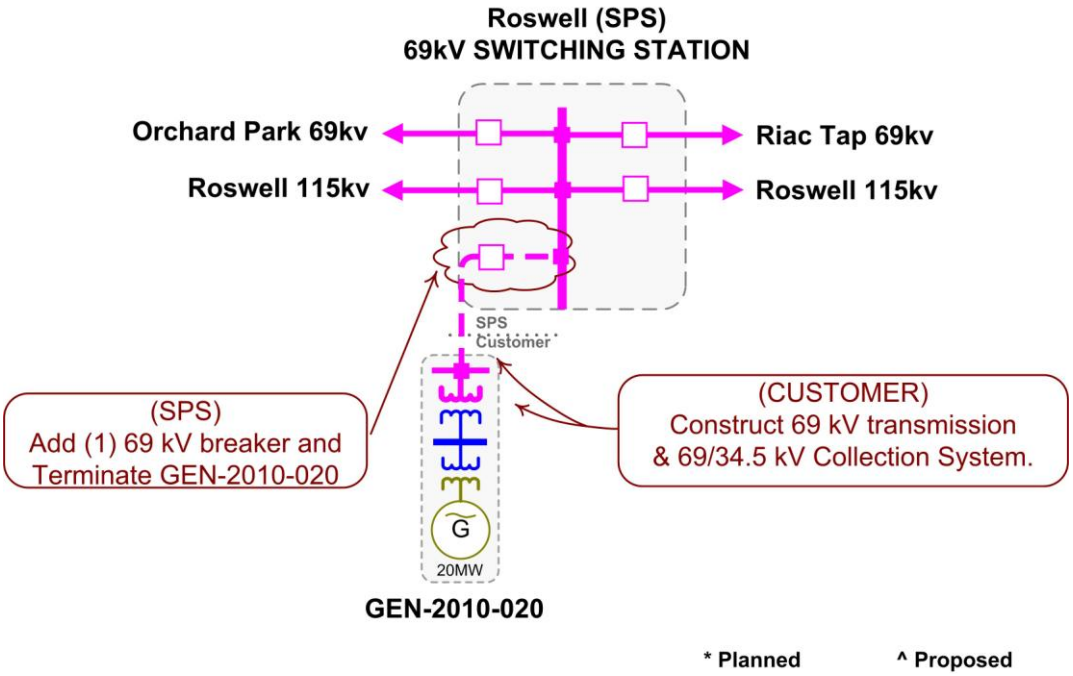


Figure 6: GEN-2010-020 Facility and Proposed Interconnection Configuration

GEN-2010-021

The point of interconnection (POI) will be at the SPS Atoka 69kV Interchange. Figure 7 shows a one-line of the proposed POI. Interconnection facilities will include a 69kV single bus configuration.

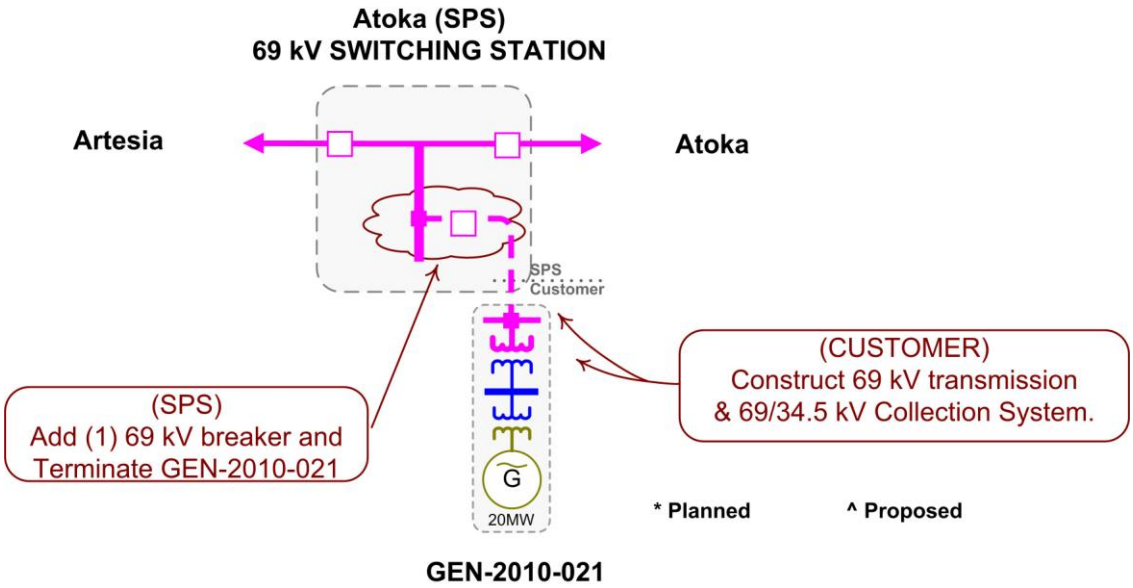


Figure 7: GEN-2010-021 Facility and Proposed Interconnection Configuration

GEN-2010-028

The point of interconnection (POI) will be at the proposed OKGE Tatonga 345kV Interchange. Figure 8 shows a one-line of the proposed POI. Interconnection facilities will include a 345kV breaker-and-a-half configuration.

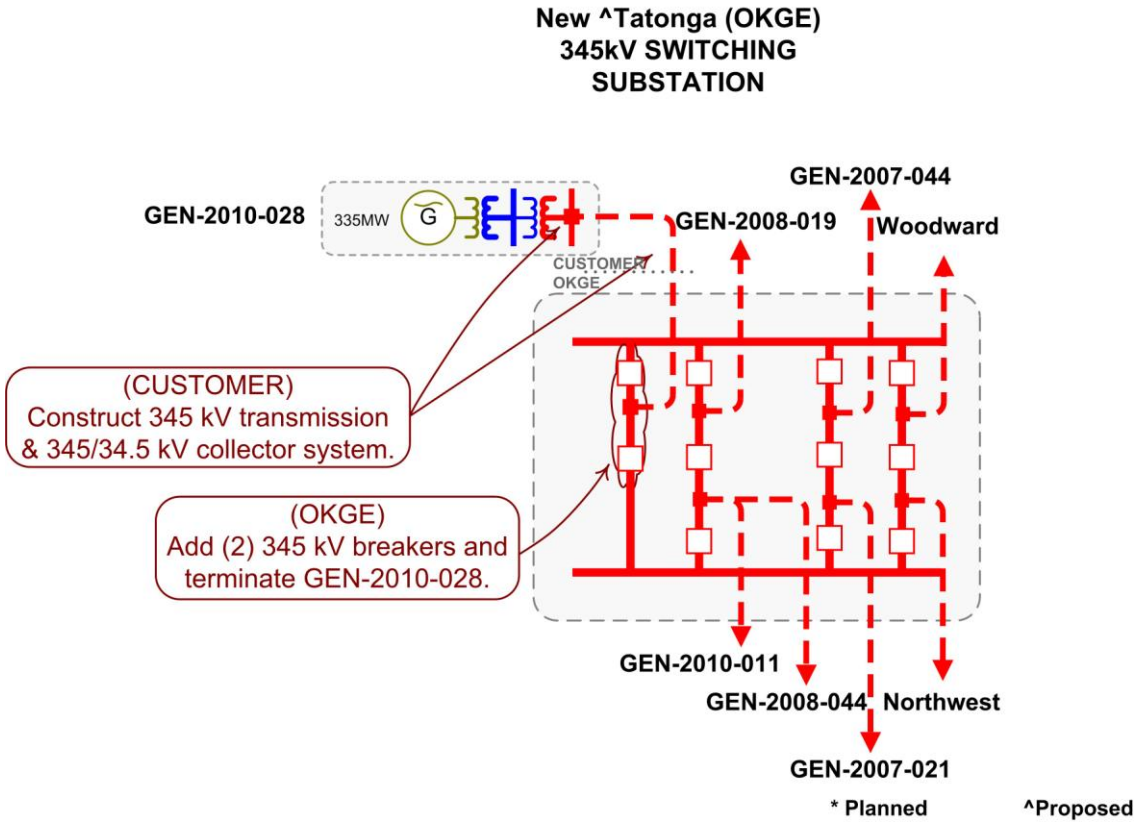


Figure 8: GEN-2010-028 Facility and Proposed Interconnection Configuration

GEN-2010-029

The point of interconnection (POI) will be at the SUNC Spearville 345kV Interchange. Figure 9 shows a one-line of the proposed POI. Interconnection facilities will include a 345kV breaker-and-a-half configuration.

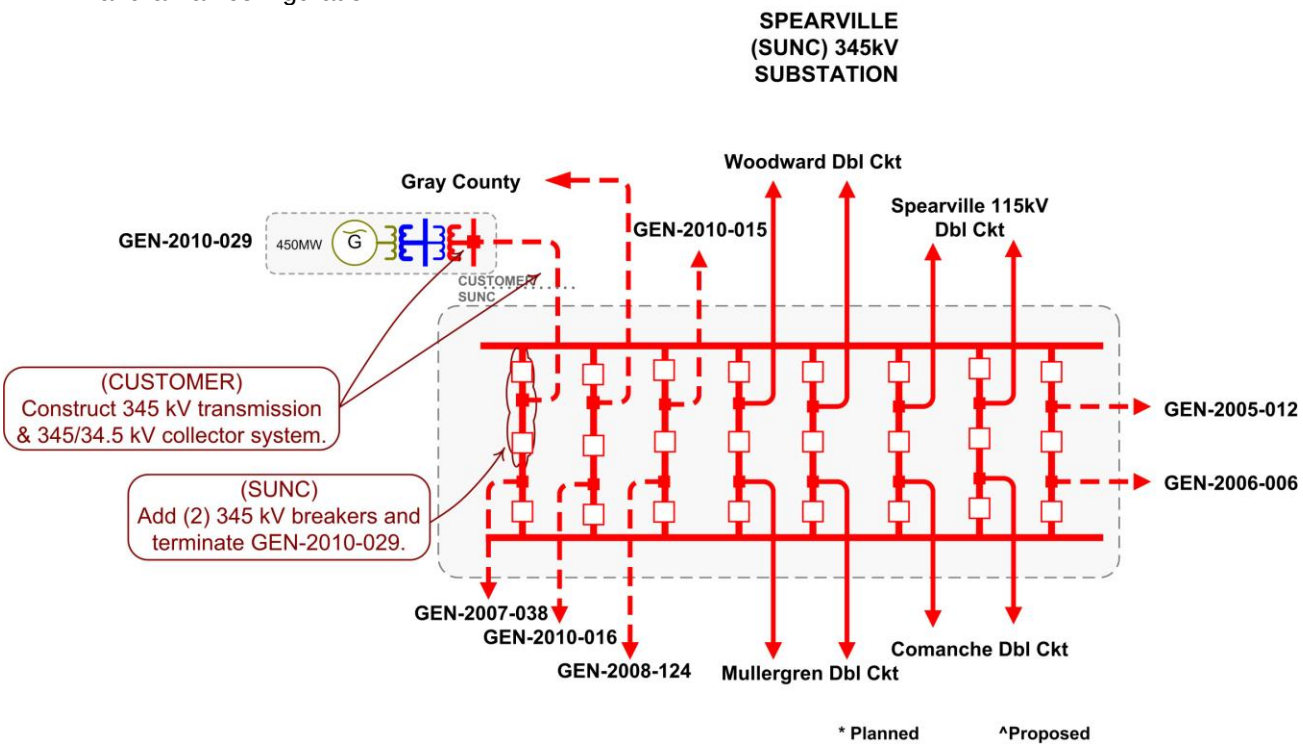


Figure 9: GEN-2010-029 Facility and Proposed Interconnection Configuration

GEN-2010-055

The point of interconnection (POI) will be at the AEPW Wekiwa 138kV Interchange. Figure 10 shows a one-line of the proposed POI. Interconnection facilities will include a 138kV single bus configuration.

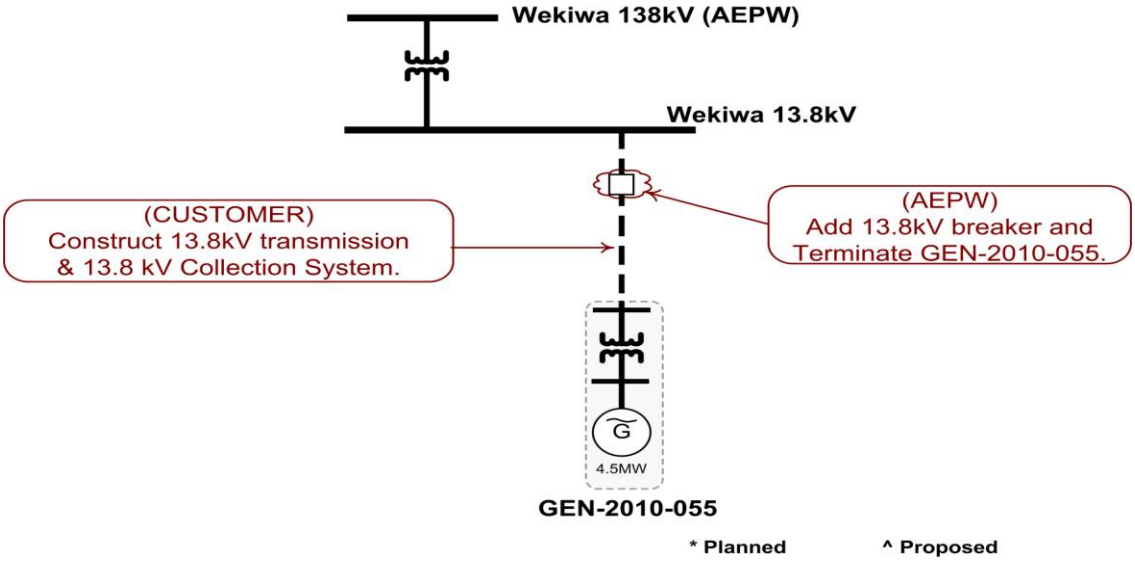


Figure 10: GEN-2010-055 Facility and Proposed Interconnection Configuration

4.0 Stability Study Criteria

FERC Order 661A Low Voltage Ride-Through Provisions (LVRT), which went into effect January 1, 2006, requires that wind generating plants remain in-service during 3-phase faults at the point of interconnection. This order may require a Static VAr Compensator (SVC) or STATCOM device be specified at the Customer facility to keep the wind generator on-line for the fault. Dynamic Stability studies performed as part of the System Impact 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).

5.0 Stability Study Analysis

Four groups of contingencies totaling 239 (two hundred thirty nine) contingencies were considered for the transient stability simulations. These contingencies included three phase faults and single phase line faults at locations defined by SPP. Single-phase line faults were simulated by applying a fault impedance to the positive sequence network at the fault location to represent the effect of the negative and zero sequence networks on the positive sequence network. The fault impedance was computed to give a positive sequence voltage at the specified fault location of approximately 60% of pre-fault voltage. This method is in agreement with SPP current practice.

The faults that were defined and simulated are listed in Table 2 below. The faults were simulated on a summer peak and a winter peak model.

Cont. No.	Cont. Name	Description
1	FLT01-3PH	3 phase fault on one of the Woodward (515375) to Tatonga (515407) 345kV lines, near Woodward. a. Apply fault at the Woodward 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
2	FLT02-1PH	*Single phase fault and sequence like previous*
3	FLT03-3PH	3 phase fault on one of the Woodward (515375) to Hitchland (523097) 345kV lines ckt 1&2, near Woodward. a. Apply fault at the Woodward 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
4	FLT04-1PH	*Single phase fault and sequence like previous*
5	FLT05-3PH	3 phase fault on one of the Woodward (515375) to Medicine Lodge (765342) 345kV line ckt 1&2, near Woodward. a. Apply fault at the Woodward 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
6	FLT06-1PH	*Single phase fault and sequence like previous*
7	FLT07-3PH	3 phase fault on the Woodward 345kV (515375) to 138kV (515376) transformer, near the 345 kV bus. a. Apply fault at the Woodward 345kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
8	FLT08-3PH	3 phase fault on the Northwest (514880) to Tatonga (515407) 345kV line, near Tatonga. a. Apply fault at the Tatonga 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
9	FLT09-1PH	*Single phase fault and sequence like previous*
10	FLT10-3PH	3 phase fault on the Northwest (514880) to Spring Creek (514881) 345kV line, near Northwest. a. Apply fault at the Northwest 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
11	FLT11-1PH	*Single phase fault and sequence like previous*
12	FLT12-3PH	3 phase fault on the Northwest (514880) to Cimarron (514901) 345kV line, near Northwest. a. Apply fault at the Northwest 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
13	FLT13-1PH	*Single phase fault and sequence like previous*
14	FLT14-3PH	3 phase fault on Northwest 345kV (514880) to 138kV (514879) transformer T2, near the 345 kV bus. a. Apply fault at the Northwest 345kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.

Cont. No.	Cont. Name	Description
15	FLT15-3PH	3 phase fault on the Northwest (514880) to Arcadia (514908) 345kV line, near Arcadia. a. Apply fault at the Arcadia 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
16	FLT16-1PH	*Single phase fault and sequence like previous*
17	FLT17-3PH	3 phase fault on the Woodward EHV (515376) to Iodine (514796) 138kV line, near Woodward EHV. a. Apply fault at the Woodward EHV 138kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
18	FLT18-1PH	*Single phase fault and sequence like previous*
19	FLT19-3PH	3 phase fault on the Mooreland (520999) to GEN-2001-037 (515785) 138kV line, near Mooreland. a. Apply fault at the Mooreland 138kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
20	FLT20-1PH	*Single phase fault and sequence like previous*
21	FLT21-3PH	3 phase fault on the Mooreland (520999) to Glass Mountain (514788) 138kV line, near Mooreland. a. Apply fault at the Mooreland 138kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
22	FLT22-1PH	*Single phase fault and sequence like previous*
23	FLT23-3PH	3 phase fault on the Mooreland (520999) to Windfarm (515785) 138kV line, near Mooreland. a. Apply fault at the Mooreland 138kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
24	FLT24-1PH	*Single phase fault and sequence like previous*
25	FLT25-3PH	3 phase fault on the Taloga (521065) to Dewey (514787) 138kV line, near Taloga. a. Apply fault at the Taloga 138kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
26	FLT26-1PH	*Single phase fault and sequence like previous*
27	FLT27-3PH	3 phase fault on the Dewey (514787) to Southard (514822) 138kV line, near Dewey. a. Apply fault at the Dewey 138kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
28	FLT28-1PH	*Single phase fault and sequence like previous*

Cont. No.	Cont. Name	Description
29	FLT29-3PH	3 phase fault on the Woodward (515375) to Border (525835) 345kV line, near Woodward. a. Apply fault at the Woodward 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
30	FLT30-1PH	*Single phase fault and sequence like previous*
31	FLT31-3PH	3 phase fault on the Hitchland (523097) 345kV to Hitchland (523095) 230kV transformer, 230 kV bus. a. Apply fault at the Hitchland 230kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
32	FLT32-3PH	3 phase fault on the Fargo Jct (5211196) to Ft. Supply (520919) 69kV line, near Fargo Jct. a. Apply fault at the Fargo Jct 69kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
33	FLT33-1PH	*Single phase fault and sequence like previous*
34	FLT34-3PH	3 phase fault on the Mooreland (520999) to Knob Hill (514795) 138kV line, near Knob Hill. a. Apply fault at the Knob Hill 138kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
35	FLT35-1PH	*Single phase fault and sequence like previous*
36	FLT36-3PH	3 phase fault on the Mooreland (520999) to Cedardale (520848) 138kV line, near Cedardale. a. Apply fault at Cedardale 138kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
37	FLT37-1PH	*Single phase fault and sequence like previous*
38	FLT38-3PH	3 phase fault on the Mooreland (520999) to Iodine (520957) 138kV line, near Iodine. a. Apply fault at Iodine 138kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
39	FLT39-1PH	*Single phase fault and sequence like previous*
40	FLT40-3PH	3 phase fault on the Mooreland (520999) to Taloga (521065) 138kV line, near Taloga. a. Apply fault at Taloga 138kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
41	FLT41-1PH	*Single phase fault and sequence like previous*
42	FLT42-3PH	3 phase fault on one of the Ft. Supply (520919) 69kV to Ft. Supply (520920) 138kV transformer, 138kV bus. a. Apply fault at the Ft. Supply 138kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
43	FLT43-3PH	*Single phase fault and sequence like previous*

Cont. No.	Cont. Name	Description
44	FLT44-3PH	3 phase fault on the Mooreland (520999) to Ninmile (521128) 138kV line, near Ninmile. a. Apply fault at Ninmile 138kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
45	FLT45-1PH	*Single phase fault and sequence like previous*
46	FLT46-3PH	3 phase fault on one of the Medicine Lodge (765342) to Wichita (532796) 345kV line ckt 1&2, near Medicine Lodge. a. Apply fault at the Medicine Lodge 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
47	FLT47-1PH	*Single phase fault and sequence like previous*
48	FLT48-3PH	3 phase fault on one of the Woodring (514715) to Tatonga (515407) 345kV line ckt 1&2, near Tatonga. a. Apply fault at the Tatonga 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
49	FLT49-1PH	*Single phase fault and sequence like previous*

Table 2: Contingency List for Group 1

Cont. No.	Cont. Name	Description
1	FLT01-3PH	3 phase fault on the Finney (523853) to GEN-2003-013 (560029) 345kV line, near Finney. a. Apply fault at the Finney 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
2	FLT02-1PH	Single phase fault on the line in previous a. Apply single phase fault. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
3	FLT03-3PH	3 phase fault on one of the Finney (523853) to Holcomb (531449) 345kV lines, near Finney. a. Apply fault at the Finney 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
4	FLT04-1PH	Single phase fault on the line in previous a. Apply single phase fault. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
5	FLT05-3PH	3 phase fault on the Holcomb (531449) to Setab (531465) 345kV line, near Holcomb. a. Apply fault at the Holcomb 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
6	FLT06-1PH	Single phase fault on the line in previous a. Apply single phase fault. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
7	FLT07-3PH	3 phase fault on the Holcomb (531449) to GEN-2007-040 (531000) 345kV line, near GEN-2007-040. a. Apply fault at the GEN-2007-040 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line.

Cont. No.	Cont. Name	Description
8	FLT08-1PH	Single phase fault on the line in previous a. Apply single phase fault. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
9	FLT09-3PH	3 phase fault on the Holcomb 345kV (531449) to 115kV (531448) transformer, near the 345 kV bus. a. Apply fault at the Holcomb 345kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
10	FLT10-3PH	3 phase fault on the Finney (523853) to Lamar (599950) 345kV line, near Finney. a. Apply fault at Finney (599950) 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
11	FLT11-1PH	*Single phase fault and sequence like previous*
12	FLT12-3PH	3 phase fault on the Spearville (531469) to GEN-2007-040 (531000) 345kV line, near GEN-2007-040. a. Apply fault at the GEN-2007-040 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
13	FLT13-1PH	*Single phase fault and sequence like previous*
14	FLT14-3PH	3 phase fault on one of the Spearville (531469) to Comanche (765341) 345kV line ckt 1&2, near Spearville. a. Apply fault at the Spearville 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
15	FLT15-1PH	Single phase fault on the line in previous a. Apply single phase fault. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
16	FLT16-3PH	3 phase fault on the Spearville 345kV (531469) to 230kV (539695) transformer, near the 345 kV bus. a. Apply fault at the Spearville 345kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
17	FLT17-3PH	3 phase fault on the Spearville 230kV (539695) to 115kV (539694) transformer , near the 230 kV bus. a. Apply fault at the Spearville 230kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
18	FLT18-3PH	3 phase fault on the Spearville 345kV (531469) to 115kV (539694) transformer, near the 345 kV bus. a. Apply fault at the Spearville 345kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
19	FLT19-3PH	3 phase fault on the Spearville (539695) to Mullergren (539679) 230kV line, near Spearville. a. Apply fault at the Spearville 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
20	FLT20-1PH	*Single phase fault and sequence like previous*

Cont. No.	Cont. Name	Description
21	FLT21-3PH	3 phase fault on the Mullergren (539679) to South Hays (530582) 230kV line, near Mullergren. a. Apply fault at the Mullergren 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
22	FLT22-1PH	*Single phase fault and sequence like previous*
23	FLT23-3PH	3 phase fault on the Mullergren (539679) to Circle (532871) 230kV line, near Mullergren. a. Apply fault at the Mullergren 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
24	FLT24-1PH	*Single phase fault and sequence like previous*
25	FLT25-3PH	3 phase fault on the Comanche (765341) to Medicine Lodge (765342) 345kV line ckt1&2, near Comanche. a. Apply fault at the Comanche 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
26	FLT26-1PH	*Single phase fault and sequence like previous*
27	FLT27-3PH	3 phase fault on the GEN-2003-013 (560029) to Hitchland (523097) 345kV line, near GEN-2003-013. a. Apply fault at the GEN-2003-013 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. *c. Wait 20 cycles, and then re-close the line in (b) back into the fault.* *d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.*
28	FLT28-1PH	Single phase fault on the line in previous a. Apply single phase fault. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
29	FLT29-3PH	3 phase fault on the Beaver Co (580500) to Woodward (515375) 345kV line ckt 1&2, near Woodward. a. Apply fault at the Woodward 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. *c. Wait 20 cycles, and then re-close the line in (b) back into the fault.* *d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault*
30	FLT30-1PH	Single phase fault on the line in previous a. Apply single phase fault. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
31	FLT31-3PH	3 phase fault on the Knoll (530558) to Post Rock (530584) 230kV line, near Knoll. a. Apply fault at the Knoll 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
32	FLT32-1PH	*Single phase fault and sequence like previous*
33	FLT33-3PH	3 phase fault on the Post Rock (530583) to Axtell (640065) 345kV line, near Post Rock. a. Apply fault at the Post Rock 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
34	FLT34-1PH	*Single phase fault and sequence like previous*

Cont. No.	Cont. Name	Description
35	FLT35-3PH	3 phase fault on the Post Rock 345kV (530583) to 230kV (530558) transformer, near the 345 kV bus. a. Apply fault at the Post Rock 345kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
36	FLT36-3PH	3 phase fault on the GEN-2001-039A (579025) to Fort Dodge (539671) 115kV line, near GEN-2001-039A. a. Apply fault at the GEN-2001-039A 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
37	FLT37-1PH	*Single phase fault and sequence like previous*
38	FLT38-3PH	3 phase fault on the GEN-2010-016 (576704) to Spearville (531469) 345kV line, near GEN-2010-016. a. Apply fault at GEN-2010-016 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
39	FLT39-1PH	Single phase fault on the line in previous a. Apply single phase fault. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
40	FLT40-3PH	3 phase fault on the GEN-2009-059 (560280) to Cudahy (539659) 115kV line, near GEN-2009-059. a. Apply fault at the GEN-2009-059 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
41	FLT41-1PH	*Single phase fault and sequence like previous*
42	FLT42-3PH	3 phase fault on the Kismet (539646) to CMRIVTP (539652) 115kV line, near Kismet. a. Apply fault at the Kismet 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
43	FLT43-1PH	*Single phase fault and sequence like previous*
44	FLT44-3PH	3 phase fault on the CMRIVTP (539652) to E-Liber (539672) 115kV line, near Kismet. a. Apply fault at the CMRIVTP115kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
45	FLT45-1PH	*Single phase fault and sequence like previous*
46	FLT46-3PH	3 phase fault on the Hugoton (531481) to GrantTP (531483)115kV line, near Hugoton. a. Apply fault at the Hugoton 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
47	FLT47-1PH	*Single phase fault and sequence like previous*
48	FLT48-3PH	3 phase fault on the Pratt (539687) to Ninnescah (539648) 115kV line, near Pratt. a. Apply fault at the Pratt 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
49	FLT49-1PH	*Single phase fault and sequence like previous*

Cont. No.	Cont. Name	Description
50	FLT50-3PH	3 phase fault on the Pratt (539687) to Sawyer (539649) 115kV line, near Pratt. a. Apply fault at the Pratt 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
51	FLT51-1PH	*Single phase fault and sequence like previous*
52	FLT52-3PH	3 phase fault on the Medicine Lodge (539673) to Sun City (539697) 115kV line, near Medicine Lodge. a. Apply fault at the Medicine Lodge 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
53	FLT53-1PH	*Single phase fault and sequence like previous*
54	FLT54-3PH	3 phase fault on the Spearville (531469) to Mullergren (100321) 345kV line ckt1&2, near Spearville. a. Apply fault at the Spearville 345kV bus . b. Clear fault after 5 cycles by tripping the faulted line. *c. Wait 20 cycles, and then re-close the line in (b) back into the fault.* *d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault*
55	FLT55-1PH	Single phase fault on the line in previous a. Apply single phase fault. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
56	FLT56-3PH	3 phase fault on the Mullergren (100321) to Circle (100322) 345kV line ckt1&2, near Mullergren. a. Apply fault at the Mullergren 345kV bus . b. Clear fault after 5 cycles by tripping the faulted line. *c. Wait 20 cycles, and then re-close the line in (b) back into the fault.* *d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault*
57	FLT57-1PH	Single phase fault on the line in previous a. Apply single phase fault. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
58	FLT58-3PH	3 phase fault on the Circle (100322) to Reno (532771) 345kV line ckt1&2, near Circle. a. Apply fault at the Circle 345kV bus . b. Clear fault after 5 cycles by tripping the faulted line. *c. Wait 20 cycles, and then re-close the line in (b) back into the fault.* *d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault*
59	FLT59-1PH	Single phase fault on the line in previous a. Apply single phase fault. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.

Table 3: Contingency List for Group 3

Cont. No.	Cont. Name	Description
1	FLT01-3PH	3 phase fault on the Eddy Co. 230kV (527800) to 345kV (527802) transformer, near the 230kV bus. a. Apply fault at the Eddy Co. 230kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
2	FLT02-3PH	3 phase fault on the Eddy Co (527802) to GEN-2008-022 (577104) 345kV line, near GEN-2008-022. a. Apply fault at the GEN-2008-022 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
3	FLT03-1PH	*Single phase fault and sequence like previous*
4	FLT04-3PH	3 phase fault on the Tolk (525549) to GEN-2008-022 (577104) 345kV line, near GEN-2008-022. a. Apply fault at the GEN-2008-022 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
5	FLT05-1PH	*Single phase fault and sequence like previous*
6	FLT06-3PH	3 phase fault on the Tolk 230kV (525543) to 345kV (525549) transformer, near the 230kV bus. a. Apply fault at the Tolk 230kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
7	FLT07-3PH	3 phase fault on the Tolk E (525524) to Tuco (525830) 230kV line, near Tolk E. a. Apply fault at the Tolk E 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
8	FLT08-1PH	*Single phase fault and sequence like previous*
9	FLT09-3PH	3 phase fault on the Grassland (526676) to Lynn Co. (526656) 115kV line, near Grassland. a. Apply fault at the Grassland 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
10	FLT10-1PH	*Single phase fault and sequence like previous*
11	FLT11-3PH	3 phase fault on the Grassland 230kV (526677) to 115kV (526676) transformer, near the 230kV bus. a. Apply fault at the Grassland 230kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
12	FLT12-3PH	3 phase fault on the Grassland (526677) to Borden (526830) 230kV line, near Grassland. a. Apply fault at the Grassland 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
13	FLT13-1PH	*Single phase fault and sequence like previous*
14	FLT14-3PH	3 phase fault on the Grassland (526677) to Jones (526338) 230kV line, near Grassland. a. Apply fault at the Grassland 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
15	FLT15-1PH	*Single phase fault and sequence like previous*

Cont. No.	Cont. Name	Description
16	FLT16-3PH	3 phase fault on the Jones (526338) to Lubbock E (526299) 230kV line, near Jones Bus2. a. Apply fault at the Jones 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
17	FLT17-1PH	*Single phase fault and sequence like previous*
18	FLT18-3PH	3 phase fault on the Jones (526337) to Tuco (525830) 230kV line, near Jones Bus1. a. Apply fault at the Jones 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
19	FLT19-1PH	*Single phase fault and sequence like previous*
20	FLT20-3PH	3 phase fault on the Tuco (525830) to Swisher (525213) 230kV line, near Tuco. a. Apply fault at the Tuco 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
21	FLT21-1PH	*Single phase fault and sequence like previous*
22	FLT22-3PH	3 phase fault on the Tuco 230kV (525830) to 345kV (525832) transformer, near the 230kV bus. a. Apply fault at the Tuco 230kV bus. b. Clear fault after 5 cycles by tripping the faulted transformer.
23	FLT23-3PH	3 phase fault on the GEN-2005-015 (560813) to Tuco (525832) 345kV line, near GEN-2005-015. a. Apply fault at the GEN-2005-015 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
24	FLT24-1PH	*Single phase fault and sequence like previous*
25	FLT25-3PH	3 phase fault on the GEN-2005-015 (560813) to Oklaunion (511456) 345kV line, near GEN-2005-015. a. Apply fault at the GEN-2005-015 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
26	FLT26-1PH	*Single phase fault and sequence like previous*
27	FLT27-3PH	3 phase fault on the Tuco (525832) to Border (525835) 345kV line, near Tuco. a. Apply fault at the Tuco 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
28	FLT28-1PH	*Single phase fault and sequence like previous*

Cont. No.	Cont. Name	Description
29	FLT29-3PH	3 phase fault on the Roosevelt S (524911) to Tolk (525554) 230kV line, near Roosevelt S. a. Apply fault at the Roosevelt S 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
30	FLT30-1PH	*Single phase fault and sequence like previous*
31	FLT31-3PH	3 phase fault on the San Juan (524885) to Oasis (524875) 230kV line, near Oasis. a. Apply fault at the Oasis 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
32	FLT32-1PH	*Single phase fault and sequence like previous*
33	FLT33-3PH	3 phase fault on the Potter (523961) to GEN-2005-017 (579118) 345kV line, near Potter a. Apply fault at the Potter 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
34	FLT34-1PH	*Single phase fault and sequence like previous*
35	FLT35-3PH	3 phase fault on the Tolk East (525524) to Plant X (525481) 230kV line, near Tolk East. a. Apply fault at the Tolk East 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
36	FLT36-1PH	*Single phase fault and sequence like previous*
37	FLT37-3PH	3 phase fault on the Plant X (525481) to Deafsmith (524623) 230kV line, near Deafsmith. a. Apply fault at the Deafsmith 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
38	FLT38-1PH	*Single phase fault and sequence like previous*
39	FLT39-3PH	3 phase fault on the Plant X (525481) to Sundown (526435) 230kV line, near Sundown. a. Apply fault at the Sundown 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
40	FLT40-1PH	*Single phase fault and sequence like previous*
41	FLT41-3PH	3 phase fault on the Plant X (525481) to G06-39T (56009) 230kV line, near G06-39T. a. Apply fault at the G06-39T 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
42	FLT42-1PH	*Single phase fault and sequence like previous*
43	FLT43-3PH	3 phase fault on the Tolk West (525531) to Lamb County (525637) 230kV line, near Lamb County. a. Apply fault at the Lamb County 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
44	FLT44-1PH	*Single phase fault and sequence like previous*

Cont. No.	Cont. Name	Description
45	FLT45-3PH	3 phase fault on the Tolk West (525531) to Yoakum (526935) 230kV line, near Yoakum. a. Apply fault at the Yoakum 230kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
46	FLT46-1PH	*Single phase fault and sequence like previous*
47	FLT47-3PH	3 phase fault on the Roswell (527563) to Riac Tap (527528) 69kV line, near Roswell a. Apply fault at the Roswell 69kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
48	FLT48-1PH	*Single phase fault and sequence like previous*
49	FLT49-3PH	3 phase fault on the Roswell (527563) to SW_4702 (527575) 69kV line, near Roswell a. Apply fault at the Roswell 69kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
50	FLT50-1PH	*Single phase fault and sequence like previous*
51	FLT51-3PH	3 phase fault on the Roswell 69/115 kV (527563/527564), near the 69kV bus a. Apply fault at the Roswell 69kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
52	FLT52-3PH	3 phase fault on the Roswell 69/115 kV (527563/527564), near the 115kV bus a. Apply fault at the Roswell 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
53	FLT53-3PH	3 phase fault on the Roswell (527564) to Brasher (527534) 115kV line, near Roswell a. Apply fault at the Roswell 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
54	FLT54-1PH	*Single phase fault and sequence like previous*
55	FLT55-3PH	3 phase fault on the Roswell (527564) to Samson (527546) 115kV line, near Roswell a. Apply fault at the Roswell 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
56	FLT56-1PH	*Single phase fault and sequence like previous*
57	FLT57-3PH	3 phase fault on the Roswell (527564) to Tweddy (527597) 115kV line, near Roswell a. Apply fault at the Roswell 115kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
58	FLT58-1PH	*Single phase fault and sequence like previous*
59	FLT59-3PH	3 phase fault on the Atoka (510882) to Atoka P2 (510879) 69kV line, near Atoka a. Apply fault at the Atoka 69kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
60	FLT60-1PH	*Single phase fault and sequence like previous*
61	FLT61-3PH	3 phase fault on the Atoka (510882) to Lane (510891) 69kV line, near Atoka a. Apply fault at the Atoka 69kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
62	FLT62-1PH	*Single phase fault and sequence like previous*
63	FLT63-3PH	3 phase fault on the Atoka 69/138/13.8kV transformer (510882/510887/510860), near 69kV bus a. Apply fault at the Atoka 69kV bus. b. Clear fault after 5 cycles by tripping the faulted line.
64	FLT64-3PH	3 phase fault on the Atoka 69/138/13.8kV transformer (510882/510887/510860), near 138kV bus a. Apply fault at the Atoka 138kV bus. b. Clear fault after 5 cycles by tripping the faulted line.

Table 4: Contingency List for Group 6

Cont. No.	Cont. Name	Description
1	FLT01-3PH	3 phase fault on the Wolf Creek (532797) – Benton (532791) 345kV line near Wolf Creek. a. Apply fault at the Wolf Creek 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line and remove the fault..
2	FLT02-1PH	Single-phase fault on the Wolf Creek (532797) – Benton (532791) 345kV line near Wolf Creek. a. Apply fault at the Wolf Creek 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line. c. Wait 300 cycles and reclose Benton 345 kV end back into the fault. d. Leave fault on for 3.6 cycles, then trip the line and remove the fault.
3	FLT03-3PH	3 phase fault on the Wolf Creek (532797) – Rose Hill (532794) 345kV line near Wolf Creek. a. Apply fault at the Wolf Creek 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line and remove the fault.
4	FLT04-1PH	Single-phase fault on the Wolf Creek (532797) – Rose Hill (532794) 345kV line near Wolf Creek. a. Apply fault at the Wolf Creek 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line. c. Wait 300 cycles and reclose Rose Hill 345 kV end back into the fault. d. Leave fault on for 3.6 cycles, then trip the line and remove the fault.
5	FLT05-3PH	3 phase fault on the Wolf Creek (532797) – GEN-2008-098 (572098) 345kV line near GEN-2008-098. a. Apply fault at the GEN-2008-098 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line and remove the fault.
6	FLT06-1PH	Single phase fault on the Wolf Creek (532797) – GEN-2008-098 (572098) 345kV line near GEN-2008-098. a. Apply fault at the GEN-2008-098 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line and remove the fault.
7	FLT07-3PH	3 phase fault on the Stilwell (542968) – LaCygne (542981) 345kV line near Stilwell. a. Apply fault at the Stilwell 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line. c. Wait 1200 cycles, and then re-close the Stilwell end of the line back into the fault. d. Leave fault on for 3.6 cycles, then trip the line and remove fault.
8	FLT08-1PH	*Single phase fault and sequence like previous*
9	FLT09-3PH	3 phase fault on the Neosho (532793) – LaCygne (542981) 345kV line near Neosho. a. Apply fault at the Neosho 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line and remove the fault..
10	FLT10-1PH	Single-phase fault on the Neosho (532793) – LaCygne (542981) 345kV line near Neosho. a. Apply fault at the Neosho 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line. c. Wait 300 cycles, and then re-close Neosho 345 kV end back into the fault.. d. Leave the fault on for 3.6 cycles, then trip the line and remove the fault.
11	FLT11-3PH	3 phase fault on the West Gardner (542965) – LaCygne (542981) 345kV line near LaCygne. a. Apply fault at the LaCygne 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line. c. Wait 1200 cycles, and then re-close the West Gardner end of the line back into the fault. d. Leave fault on for 3.6 cycles, then trip the line in (b) and remove fault.
12	FLT12-1PH	*Single phase fault and sequence like previous*

Cont. No.	Cont. Name	Description
13	FLT13-3PH	3 phase fault on the GEN-2008-098 (572090) to LaCygne (542981) 345kV line, near GEN-2008-098. a. Apply fault at the GEN-2008-098 345kV bus. b. Clear fault after 3 cycles by tripping the faulted line.
14	FLT14-1PH	Single phase fault on the GEN-2008-098 (572090) to LaCygne (542981) (542573039) 345kV line, near GEN-2008-098. a. Apply fault at the GEN-2008-098 345kV bus. b. Clear fault after 3 cycles by tripping the faulted line.
15	FLT15-3PH	3 phase fault on the Rose Hill (532794) to GEN-2008-127 (573039) 345kV line, near Rose Hill. a. Apply fault at the Rose Hill 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line.
16	FLT16-1PH	Single-phase fault on the Rose Hill (532794) to GEN-2008-127 (573039) 345kV line, near GEN-Rose Hill. a. Apply fault at the Rose Hill 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line. c. Wait 300 cycles, and then re-close the Rose Hill end of the line in (b) back into the fault. d. Leave fault on for 3.6 cycles, then trip the line in (b) and remove fault.
17	FLT17-3PH	3 phase fault on the Sooner (514803) to Woodring (514715) 345kV line, near Woodring. a. Apply fault at the Woodring 345kV bus. b. Clear fault after 3 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 3 cycles, then trip the line in (b) and remove fault.
18	FLT18-1PH	*Single phase fault and sequence like previous*
19	FLT19-3PH	3 phase fault on the Sooner (514803) to Cleveland (512694) 345kV line, near Cleveland. a. Apply fault at the Cleveland 345kV bus. b. Clear fault after 3 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 3 cycles, then trip the line in (b) and remove fault.
20	FLT20-1PH	*Single phase fault and sequence like previous*
21	FLT21-3PH	3 phase fault on the Rose Hill (532794) to Latham (532800) 345kV line, near Rose Hill. a. Apply fault at the Rose Hill 345V bus. b. Clear fault after 4 cycles by tripping the faulted line and remove the fault.
22	FLT22-1PH	Single-phase fault on the Rose Hill (532794) to Latham (532800) 345kV line, near Rose Hill. a. Apply fault at the Rose Hill 345V bus. b. Clear fault after 4 cycles by tripping the faulted line. c. Wait 30 cycles, and then re-close the Rose Hill end of the line in (b) back into the fault. d. Leave fault on for 4 cycles, then trip the line in (b) and remove fault.
23	FLT23-3PH	3 phase fault on the Emporia (532768) – Swissvale (532774) 345kV line near Swissvale. a. Apply fault at the Swissvale 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line and remove the fault.

Cont. No.	Cont. Name	Description
24	FLT24-1PH	Single phase fault on the Emporia (532768) – Swissvale (532774) 345kV line near Swissvale. a. Apply fault at the Swissvale 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line and remove the fault. c. Wait 300 cycles and reclose d. Clear fault after 3.6 cycles
25	FLT25-3PH	3 phase fault on the Emporia (532768) – Lang (532769) 345kV line near Emporia. a. Apply fault at the Emporia 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line and remove the fault.
26	FLT26-1PH	Single phase fault the Emporia (532768) – Lang (532769) 345kV line near Emporia. a. Apply fault at Emporia 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line and remove the fault. c. Wait 300 cycles and reclose d. Clear fault after 3.6 cycles
27	FLT27-3PH	3 phase fault on the Swissvale (532774) – West Gardner (542965) 345kV line near Swissvale. a. Apply fault at the Swissvale 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line and remove the fault.
28	FLT28-1PH	Single phase fault on the Swissvale (532774) – West Gardner (542965) 345kV line near Swissvale. a. Apply fault at the Swissvale 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line and remove the fault.
29	FLT29-3PH	3 phase fault on the Northeastern (510406) to Delaware (510380) 345kV line, near Delaware. a. Apply fault at the Delaware 345kV bus. b. Clear fault after 5 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 5 cycles, then trip the line in (b) and remove fault.
30	FLT30-1PH	*Single phase fault and sequence like previous*
31	FLT31-3PH	3 phase fault on the Emporia (532768) – Morris County (532770) 345kV line near Emporia. a. Apply fault at the Emporia 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line and remove the fault.
32	FLT32-1PH	Single phase fault on the Emporia (532768) – Morris County (532770) 345kV line near Emporia. a. Apply fault at the Emporia 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line and remove the fault. c. Wait 300 cycles and reclose d. Clear fault after 3.6 cycles
33	FLT33-3PH	3 phase fault on the Emporia (532768) – Wichita (532796) 345kV line near Emporia. a. Apply fault at the Emporia 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line and remove the fault.
34	FLT34-1PH	Single phase fault on the Emporia (532768) – Wichita (532796) 345kV line near Emporia. a. Apply fault at the Emporia 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted line and remove the fault. c. Wait 300 cycles and reclose d. Clear fault after 3.6 cycles

Cont. No.	Cont. Name	Description
35	FLT35-3PH	3 phase fault on the Woodring (514715) to GEN-2010-002 (578549) 345kV line, near GEN-2010-002. a. Apply fault at the GEN-2010-002 345kV bus. b. Clear fault after 3 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 3 cycles, then trip the line in (b) and remove fault.
36	FLT36-1PH	*Single phase fault and sequence like previous*
37	FLT37-3PH	3 phase fault on the GEN-2008-013 (210130) to GEN-2007-025 (532781) 345kV line, near GEN-2007-025. a. Apply fault at the GEN-2007-025 345kV bus. b. Clear fault after 3 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 3 cycles, then trip the line in (b) and remove fault.
38	FLT38-1PH	*Single phase fault and sequence like previous*
39	FLT39-3PH	3 phase fault on the Latham (532800) to GEN-2005-013 (574000) 345kV line, near Latham. a. Apply fault at the Latham 345kV bus. b. Clear fault after 3 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 3 cycles, then trip the line in (b) and remove fault.
40	FLT40-1PH	*Single phase fault and sequence like previous*
41	FLT41-3PH	3 phase fault on the GEN-2005-016 (579102) to Neosho (532793) 345kV line, near Neosho. a. Apply fault at the Neosho 345kV bus. b. Clear fault after 3 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 3 cycles, then trip the line in (b) and remove fault.
42	FLT42-1PH	*Single phase fault and sequence like previous*
43	FLT43-3PH	3 phase fault on the Cimarron (514901) to Woodring 345kV line, near Woodring. a. Apply fault at the GEN-2010-002 345kV bus. b. Clear fault after 3 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 3 cycles, then trip the line in (b) and remove fault.
44	FLT44-1PH	*Single phase fault and sequence like previous*
45	FLT45-3PH	3 phase fault on the Cimarron (514901) to Draper (514934) 345kV line, near Cimarron. a. Apply fault at the Cimarron 345kV bus. b. Clear fault after 3 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 3 cycles, then trip the line in (b) and remove fault.
46	FLT46-1PH	*Single phase fault and sequence like previous*
47	FLT47-3PH	3 phase fault on the Cimarron (514901) to Northwest (514880) 345kV line, near Cimarron. a. Apply fault at the Cimarron 345kV bus. b. Clear fault after 3 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 3 cycles, then trip the line in (b) and remove fault.
48	FLT48-1PH	*Single phase fault and sequence like previous*
49	FLT49-3PH	3 phase fault on the Cimarron (514901) to GEN-2007-043 (210431) 345kV line, near Cimarron. a. Apply fault at the Cimarron 345kV bus. b. Clear fault after 3 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 3 cycles, then trip the line in (b) and remove fault.

Cont. No.	Cont. Name	Description
50	FLT50-1PH	*Single phase fault and sequence like previous*
51	FLT51-3PH	3 phase fault on the Cimarron 138/345 kV autotransformer near the 345 kV bus (514901). a. Apply fault at the 345kV bus side. b. Clear fault after 5 cycles by tripping the faulted line.
52	FLT52-3PH	3 phase fault on the Woodring 138/345 kV autotransformer near the 345 kV bus (514715). a. Apply fault at the 345kV bus side. b. Clear fault after 5 cycles by tripping the faulted line.
53	FLT53-3PH	3 phase fault on the Sooner 138/345 kV autotransformer near the 345 kV bus (514803). a. Apply fault at the 345kV bus side. b. Clear fault after 5 cycles by tripping the faulted line.
54	FLT54-3PH	3 phase fault on the Wekiwa 138/345 kV autotransformer near the 345 kV bus (509755). a. Apply fault at the 345kV bus side. b. Clear fault after 5 cycles by tripping the faulted line.
55	FLT55-3PH	3 phase fault on the Wekiwa (509757) to Silver City (300140) 138kV line, near Wekiwa. a. Apply fault at the Wekiwa 138kV bus. b. Clear fault after 3 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 3 cycles, then trip the line in (b) and remove fault.
56	FLT56-1PH	*Single phase fault and sequence like previous*
57	FLT57-3PH	3 phase fault on the Wekiwa (509757) to Keystone (505610) 138kV line, near Wekiwa. a. Apply fault at the Wekiwa 138kV bus. b. Clear fault after 3 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 3 cycles, then trip the line in (b) and remove fault.
58	FLT58-1PH	*Single phase fault and sequence like previous*
59	FLT59-3PH	3 phase fault on the Wekiwa (509757) to Sheffd (509812) 138kV line, near Wekiwa. a. Apply fault at the Wekiwa 138kV bus. b. Clear fault after 3 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 3 cycles, then trip the line in (b) and remove fault.
60	FLT60-1PH	*Single phase fault and sequence like previous*
61	FLT61-3PH	3 phase fault on the Wekiwa (509757) to Wed-Tap (509823) 138kV line, near Wekiwa. a. Apply fault at the Wekiwa 138kV bus. b. Clear fault after 3 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 3 cycles, then trip the line in (b) and remove fault.
62	FLT62-1PH	*Single phase fault and sequence like previous*
63	FLT63-3PH	3 phase fault on the Wekiwa (509757) to P&P Wtp (509851) 138kV line, near Wekiwa. a. Apply fault at the Wekiwa 138kV bus. b. Clear fault after 3 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 3 cycles, then trip the line in (b) and remove fault.
64	FLT64-1PH	*Single phase fault and sequence like previous*
65	FLT65-3PH	3 phase fault on the Wichita (532796) to GEN-2007-025 (532781) 345kV line, near GEN-2007-025. a. Apply fault at the GEN-2007-025 345kV bus. b. Clear fault after 3 cycles by tripping the faulted line. c. Wait 20 cycles, and then re-close the line in (b) back into the fault. d. Leave fault on for 3 cycles, then trip the line in (b) and remove fault.

Cont. No.	Cont. Name	Description
66	FLT66-1PH	*Single phase fault and sequence like previous*
67	FLT67-3PH	3 phase fault on the Swissvale (532774) – 345/230kV autotransformer. a. Apply fault at the Swissvale 345kV bus. b. Clear fault after 3.6 cycles by tripping the faulted transformer.

Table 5: Contingency List for Group 8

6.0 Simulation Results

6.1 Group 1 – GEN-2010-028

All faults were run for both summer and winter cases, no tripping occurred in this study.

Table 6 summarizes the results for all faults. Complete sets of plots for summer and winter cases are available on request.

With the addition of the new request, 335MW at Tatonga substation 345KV, a stable operating point could not be obtained to build the base case. Acceptable initial conditions could not be obtained due to the amount of power flowing from Woodward to Northwest 345kV line. The results showed a significant voltage drop at Tatonga 345Kv substation, causing instability of prior-queued projects GEN-2008-019, GEN-2007-006 and GEN-2001-014. The solution adopted is the addition of a double 345kV circuit from Tatonga to Woodring and two STATCOM, 6MVAr each, at GEN-2008-019 at the 34.5kV buses. This set of upgrades help to make the system stable under the contingencies showed in Table 6 and this performance is considered acceptable.

Based on the dynamic results, with all network upgrades in service, GEN-2010-028 did not cause any stability problems and remained stable for all faults studied, with the addition the proposed upgrades.

Cont. No.	Cont. Name	Description	Summer	Winter
1	FLT01-3PH	3 phase fault on one of the Woodward (515375) to Tatonga (515407) 345kV lines, near Woodward.	OK	OK
2	FLT02-1PH	*Single phase fault and sequence like previous*	OK	OK
3	FLT03-3PH	3 phase fault on one of the Woodward (515375) to Hitchland (523097) 345kV lines, near Woodward.	OK	OK
4	FLT04-1PH	*Single phase fault and sequence like previous*	OK	OK
5	FLT05-3PH	3 phase fault on one of the Woodward (515375) to Medicine Lodge (765342) 345kV line, near Woodward.	OK	OK
6	FLT06-1PH	*Single phase fault and sequence like previous*	OK	OK
7	FLT07-3PH	3 phase fault on the Woodward 345kV (515375) to 138kV (515376) transformer, near the 345 kV bus.	OK	OK
8	FLT08-3PH	3 phase fault on the Northwest (514880) to Tatonga (515407) 345kV line, near Tatonga.	OK	OK
9	FLT09-1PH	*Single phase fault and sequence like previous*	OK	OK
10	FLT10-3PH	3 phase fault on the Northwest (514880) to Spring Creek (514881) 345kV line, near Northwest.	OK	OK
11	FLT11-1PH	*Single phase fault and sequence like previous*	OK	OK
12	FLT12-3PH	3 phase fault on the Northwest (514880) to Cimarron (514901) 345kV line, near Northwest.	OK	OK
13	FLT13-1PH	*Single phase fault and sequence like previous*	OK	OK
14	FLT14-3PH	3 phase fault on Northwest 345kV (514880) to 138kV (514879) transformer T2, near the 345 kV bus.	OK	OK
15	FLT15-3PH	3 phase fault on the Northwest (514880) to Arcadia (514908) 345kV line, near Arcadia.	OK	OK
16	FLT16-1PH	*Single phase fault and sequence like previous*	OK	OK
17	FLT17-3PH	3 phase fault on the Woodward EHV (515376) to Iodine (514796) 138kV line, near Woodward EHV.	OK	OK
18	FLT18-1PH	*Single phase fault and sequence like previous*	OK	OK
19	FLT19-3PH	3 phase fault on the Mooreland (520999) to GEN-2001-037 (515785) 138kV line, near Mooreland.	OK	OK
20	FLT20-1PH	*Single phase fault and sequence like previous*	OK	OK
21	FLT21-3PH	3 phase fault on the Mooreland (520999) to Glass Mountain (514788) 138kV line, near Mooreland.	OK	OK
22	FLT22-1PH	*Single phase fault and sequence like previous*	OK	OK
23	FLT23-3PH	3 phase fault on the Mooreland (520999) to Windfarm (515785) 138kV line, near Mooreland.	OK	OK
24	FLT24-1PH	*Single phase fault and sequence like previous*	OK	OK
25	FLT25-3PH	3 phase fault on the Taloga (521065) to Dewey (514787) 138kV line, near Taloga.	OK	OK
26	FLT26-1PH	*Single phase fault and sequence like previous*	OK	OK
27	FLT27-3PH	3 phase fault on the Dewey (514787) to Southard (514822) 138kV line, near Dewey.	OK	OK
28	FLT28-1PH	*Single phase fault and sequence like previous*	OK	OK
29	FLT29-3PH	3 phase fault on the Woodward (515375) to Border (525835) 345kV	OK	OK

Cont. No.	Cont. Name	Description	Summer	Winter
		line, near Woodward.		
30	FLT30-1PH	*Single phase fault and sequence like previous*	OK	OK
31	FLT31-3PH	3 phase fault on the Hitchland (523097) 345kV to Hitchland (523095) 230kV transformer, 230 kV bus.	OK	OK
32	FLT32-3PH	3 phase fault on the Fargo Jct (5211196) to Ft. Supply (520919) 69kV line, near Fargo Jct.	OK	OK
33	FLT33-1PH	*Single phase fault and sequence like previous*	OK	OK
34	FLT34-3PH	3 phase fault on the Mooreland (520999) to Knob Hill (514795) 138kV line, near Knob Hill.	OK	OK
35	FLT35-1PH	*Single phase fault and sequence like previous*	OK	OK
36	FLT36-3PH	3 phase fault on the Mooreland (520999) to Cedardale (520848) 138kV line, near Cedardale.	OK	OK
37	FLT37-1PH	*Single phase fault and sequence like previous*	OK	OK
38	FLT38-3PH	3 phase fault on the Mooreland (520999) to Iodine (520957) 138kV line, near Iodine.	OK	OK
39	FLT39-1PH	*Single phase fault and sequence like previous*	OK	OK
40	FLT40-3PH	3 phase fault on the Mooreland (520999) to Taloga (521065) 138kV line, near Taloga.	OK	OK
41	FLT41-1PH	*Single phase fault and sequence like previous*	OK	OK
42	FLT42-3PH	3 phase fault on one of the Ft. Supply (520919) 69kV to Ft. Supply (520920) 230kV transformer, 230 kV bus.	OK	OK
43	FLT43-3PH	*Single phase fault and sequence like previous*	OK	OK
44	FLT44-3PH	3 phase fault on the Mooreland (520999) to Ninmile (521128) 138kV line, near Ninmile.	OK	OK
45	FLT45-1PH	*Single phase fault and sequence like previous*	OK	OK
46	FLT46-3PH	3 phase fault on one of the Medicine Lodge (765342) to Wichita (765342) 345kV line, near Medicine Lodge.	OK	OK
47	FLT47-1PH	*Single phase fault and sequence like previous*	OK	OK
48	FLT48-3PH	3 phase fault on one of the Woodring (514715) to Tatonga (515407) 345kV lines, near Tatonga.	OK	OK
49	FLT49-1PH	*Single phase fault and sequence like previous*	OK	OK

Table 6: Contingency List Simulation Results for Group 1

6.2 Group 3 – GEN-2010-029

All faults were run for both summer and winter cases, no tripping occurred in this study.

Table 7 summarizes the results for all faults. Complete sets of plots for summer and winter cases are available on request.

Based on the dynamic results, GEN-2010-029 did not cause any stability problems and remained stable for all faults studied with the addition of the 450MW at Spearville substation 345KV.

Cont. No.	Cont. Name	Description	Summer	Winter
1	FLT01-3PH	3 phase fault on the Finney (523853) to GEN-2003-013 (560029) 345kV line, near Finney.	OK	OK
2	FLT02-1PH	Single phase fault on the line in previous	OK	OK
3	FLT03-3PH	3 phase fault on one of the Finney (523853) to Holcomb (531449) 345kV lines, near Finney.	OK	OK
4	FLT04-1PH	Single phase fault on the line in previous	OK	OK
5	FLT05-3PH	3 phase fault on the Holcomb (531449) to Setab (531465) 345kV line, near Holcomb.	OK	OK
6	FLT06-1PH	Single phase fault on the line in previous	OK	OK
7	FLT07-3PH	3 phase fault on the Holcomb (531449) to GEN-2007-040 (531000) 345kV line, near GEN-2007-040.	OK	OK
8	FLT08-1PH	Single phase fault on the line in previous	OK	OK
9	FLT09-3PH	3 phase fault on the Holcomb 345kV (531449) to 115kV (531448) transformer, near the 345 kV bus.	OK	OK
10	FLT10-3PH	3 phase fault on the Finney (523853) to Lamar (599950) 345kV line, near Finney.	OK	OK
11	FLT11-1PH	*Single phase fault and sequence like previous*	OK	OK
12	FLT12-3PH	3 phase fault on the Spearville (531469) to GEN-2007-040 (531000) 345kV line, near GEN-2007-040.	OK	OK
13	FLT13-1PH	*Single phase fault and sequence like previous*	OK	OK
14	FLT14-3PH	3 phase fault on one of the Spearville (531469) to Comanche (765341) 345kV lines, near Spearville..	OK	OK
15	FLT15-1PH	Single phase fault on the line in previous	OK	OK
16	FLT16-3PH	3 phase fault on the Spearville 345kV (531469) to 230kV (539695) transformer, near the 345 kV bus.	OK	OK
17	FLT17-3PH	3 phase fault on the Spearville 230kV (539695) to 115kV (539694) transformer , near the 230 kV bus.	OK	OK
18	FLT18-3PH	3 phase fault on the Spearville 345kV (531469) to 115kV (539694) transformer, near the 345 kV bus.	OK	OK
19	FLT19-3PH	3 phase fault on the Spearville (539695) to Mullergren (539679) 230kV line, near Spearville.	OK	OK
20	FLT20-1PH	*Single phase fault and sequence like previous*	OK	OK
21	FLT21-3PH	3 phase fault on the Mullergren (539679) to South Hays (530582) 230kV line, near Mullergren.	OK	OK
22	FLT22-1PH	*Single phase fault and sequence like previous*	OK	OK
23	FLT23-3PH	3 phase fault on the Mullergren (539679) to Circle (532871) 230kV line, near Mullergren.	OK	OK
24	FLT24-1PH	*Single phase fault and sequence like previous*	OK	OK
25	FLT25-3PH	3 phase fault on the Comanche (765341) to Medicine Lodge (765342) 345kV line Ckt1, near Comanche.	OK	OK
26	FLT26-1PH	*Single phase fault and sequence like previous*	OK	OK
27	FLT27-3PH	3 phase fault on the GEN-2003-013 (560029) to Hitchland (523097) 345kV line, near GEN-2003-013.	OK	OK
28	FLT28-1PH	Single phase fault on the line in previous	OK	OK
29	FLT29-3PH	3 phase fault on the Beaver Co (580500) to Woodward (515375) 345kV line, near Woodward.	OK	OK
30	FLT30-1PH	Single phase fault on the line in previous	OK	OK
31	FLT31-3PH	3 phase fault on the Knoll (530558) to Post Rock (530584) 230kV line, near Knoll.	OK	OK

Cont. No.	Cont. Name	Description	Summer	Winter
32	FLT32-1PH	*Single phase fault and sequence like previous*	OK	OK
33	FLT33-3PH	3 phase fault on the Post Rock (530583) to Axtell (640065) 345kV line, near Post Rock.	OK	OK
34	FLT34-1PH	*Single phase fault and sequence like previous*	OK	OK
35	FLT35-3PH	3 phase fault on the Post Rock 345kV (530583) to 230kV (530558) transformer, near the 345 kV bus.	OK	OK
36	FLT36-3PH	3 phase fault on the GEN-2001-039A (579025) to Fort Dodge (539671) 115kV line, near GEN-2001-039A.	OK	OK
37	FLT37-1PH	*Single phase fault and sequence like previous*	OK	OK
38	FLT38-3PH	3 phase fault on the GEN-2010-016 (576704) to Spearville (531469) 345kV line, near GEN-2010-016.	OK	OK
39	FLT39-1PH	Single phase fault on the line in previous	OK	OK
40	FLT40-3PH	3 phase fault on the GEN-2009-059 (560280) to Cudahy (539659) 115kV line, near GEN-2009-059.	OK	OK
41	FLT41-1PH	*Single phase fault and sequence like previous*	OK	OK
42	FLT42-3PH	3 phase fault on the Kismet (539646) to CMRIVTP (539652) 115kV line, near Kismet.	OK	OK
43	FLT43-1PH	*Single phase fault and sequence like previous*	OK	OK
44	FLT44-3PH	3 phase fault on the CMRIVTP (539652) to E-Liber (539672) 115kV line, near Kismet.	OK	OK
45	FLT45-1PH	*Single phase fault and sequence like previous*	OK	OK
46	FLT46-3PH	3 phase fault on the Hugoton (531481) to GrantTP (531483)115kV line, near Hugoton.	OK	OK
47	FLT47-1PH	*Single phase fault and sequence like previous*	OK	OK
48	FLT48-3PH	3 phase fault on the Pratt (539687) to Ninnescah (539648) 115kV line, near Pratt.	OK	OK
49	FLT49-1PH	*Single phase fault and sequence like previous*	OK	OK
50	FLT50-3PH	3 phase fault on the Pratt (539687) to Sawyer (539649) 115kV line, near Pratt.	OK	OK
51	FLT51-1PH	*Single phase fault and sequence like previous*	OK	OK
52	FLT52-3PH	3 phase fault on the Medicine Lodge (539673) to Sun City (539697) 115kV line, near Medicine Lodge.	OK	OK
53	FLT53-1PH	*Single phase fault and sequence like previous*	OK	OK
54	FLT54-3PH	3 phase fault on the Spearville (531469) to Mullergren (100321) 345kV lines, near Spearville.	OK	OK
55	FLT55-1PH	Single phase fault on the line in previous	OK	OK
56	FLT56-3PH	3 phase fault on the Mullergren (100321) to Circle (100322) 345kV line Ckt1, near Mullergren.	OK	OK
57	FLT57-1PH	Single phase fault on the line in previous	OK	OK
58	FLT58-3PH	3 phase fault on the Circle (100322) to Reno (532771) 345kV line Ckt1, near Circle.	OK	OK
59	FLT59-1PH	Single phase fault on the line in previous	OK	OK

Table 7: Contingency List Simulation Results for Group 3

6.3 Group 6 – GEN-2010-020 and GEN-2010-021

All faults were run for both summer and winter cases, no tripping occurred in this study.

Table 8 summarizes the results for all faults. Complete sets of plots for summer and winter cases are available on request.

All simulations showed stable responses except Faults 6 (winter case), 7 (summer and winter), 14 (summer and winter) and 15 (summer and winter). The stability problem occurred in the faults 6 and 7 are caused by prior queued projects GEN-2001-033 and GEN-2001-036, these wind plants are unstable due to low voltage (around 0.85pu for more than 0.5 seconds), replacing the model by a classical model the response for both contingencies are stable. For faults 14 and 15, the instability is caused by GEN-2009-017 (102.5MW), the output has to be reduced to avoid voltage sags in the Grassland substation area, GEN-2009-017 is currently under re-study to determine the maximum output possible to avoid instability.

Based on the dynamic results, GEN-2010-020 and GEN-2010-021 did not cause any stability problems and remained stable for all faults studied.

Cont. No.	Cont. Name	Description	Summer	Winter
1	FLT01-3PH	3 phase fault on the Eddy Co. 230kV (527800) to 345kV (527802) transformer, near the 230kV bus.	OK	OK
2	FLT02-3PH	3 phase fault on the Eddy Co (527802) to GEN-2008-022 (577104) 345kV line, near GEN-2008-022.	OK	OK
3	FLT03-1PH	*Single phase fault and sequence like previous*	OK	OK
4	FLT04-3PH	3 phase fault on the Tolk (525549) to GEN-2008-022 (577104) 345kV line, near GEN-2008-022.	OK	OK
5	FLT05-1PH	*Single phase fault and sequence like previous*	OK	OK
6	FLT06-3PH	3 phase fault on the Tolk 230kV (525543) to 345kV (525549) transformer, near the 230kV bus.	OK	UNSTABLE
7	FLT07-3PH	3 phase fault on the Tolk E (525524) to Tuco (525830) 230kV line, near Tolk E.	UNSTABLE	UNSTABLE
8	FLT08-1PH	*Single phase fault and sequence like previous*	OK	OK
9	FLT09-3PH	3 phase fault on the Grassland (526676) to Lynn Co. (526656) 115kV line, near Grassland.	OK	OK
10	FLT10-1PH	*Single phase fault and sequence like previous*	OK	OK
11	FLT11-3PH	3 phase fault on the Grassland 230kV (526677) to 115kV (526676) transformer, near the 230kV bus.	OK	OK
12	FLT12-3PH	3 phase fault on the Grassland (526677) to Borden (526830) 230kV line, near Grassland.	OK	OK
13	FLT13-1PH	*Single phase fault and sequence like previous*	OK	OK
14	FLT14-3PH	3 phase fault on the Grassland (526677) to Jones (526338) 230kV line, near Grassland.	UNSTABLE	UNSTABLE
15	FLT15-1PH	*Single phase fault and sequence like previous*	UNSTABLE	UNSTABLE
16	FLT16-3PH	3 phase fault on the Jones (526338) to Lubbock E (526299) 230kV line, near Jones Bus2.	OK	OK
17	FLT17-1PH	*Single phase fault and sequence like previous*	OK	OK
18	FLT18-3PH	3 phase fault on the Jones (526337) to Tuco (525830) 230kV line, near Jones Bus1.	OK	OK
19	FLT19-1PH	*Single phase fault and sequence like previous*	OK	OK
20	FLT20-3PH	3 phase fault on the Tuco (525830) to Swisher (525213) 230kV line, near Tuco.	OK	OK
21	FLT21-1PH	*Single phase fault and sequence like previous*	OK	OK
22	FLT22-3PH	3 phase fault on the Tuco 230kV (525830) to 345kV (525832) transformer, near the 230kV bus.	OK	OK

Cont. No.	Cont. Name	Description	Summer	Winter
23	FLT23-3PH	3 phase fault on the GEN-2005-015 (560813) to Tuco (525832) 345kV line, near GEN-2005-015.	OK	OK
24	FLT24-1PH	*Single phase fault and sequence like previous*	OK	OK
25	FLT25-3PH	3 phase fault on the GEN-2005-015 (560813) to Oklaunion (511456) 345kV line, near GEN-2005-015.	OK	OK
26	FLT26-1PH	*Single phase fault and sequence like previous*	OK	OK
27	FLT27-3PH	3 phase fault on the Tuco (525832) to Border (525835) 345kV line, near Tuco.	OK	OK
28	FLT28-1PH	*Single phase fault and sequence like previous*	OK	OK
29	FLT29-3PH	3 phase fault on the Roosevelt S (524911) to Tolk (525554) 230kV line, near Roosevelt S.	OK	OK
30	FLT30-1PH	*Single phase fault and sequence like previous*	OK	OK
31	FLT31-3PH	3 phase fault on the San Juan (524885) to Oasis (524875) 230kV line, near Oasis.	OK	OK
32	FLT32-1PH	*Single phase fault and sequence like previous*	OK	OK
33	FLT33-3PH	3 phase fault on the Potter (523961) to GEN-2005-017 (579118) 345kV line, near Potter	OK	OK
34	FLT34-1PH	*Single phase fault and sequence like previous*	OK	OK
35	FLT35-3PH	3 phase fault on the Tolk East (525524) to Plant X (525481) 230kV line, near Tolk East.	OK	OK
36	FLT36-1PH	*Single phase fault and sequence like previous*	OK	OK
37	FLT37-3PH	3 phase fault on the Plant X (525481) to Deafsmith (524623) 230kV line, near Deafsmith.	OK	OK
38	FLT38-1PH	*Single phase fault and sequence like previous*	OK	OK
39	FLT39-3PH	3 phase fault on the Plant X (525481) to Sundown (526435) 230kV line, near Sundown.	OK	OK
40	FLT40-1PH	*Single phase fault and sequence like previous*	OK	OK
41	FLT41-3PH	3 phase fault on the Plant X (525481) to G06-39T (56009) 230kV line, near G06-39T.	OK	OK
42	FLT42-1PH	*Single phase fault and sequence like previous*	OK	OK
43	FLT43-3PH	3 phase fault on the Tolk West (525531) to Lamb County (525637) 230kV line, near Lamb County.	OK	OK
44	FLT44-1PH	*Single phase fault and sequence like previous*	OK	OK
45	FLT45-3PH	3 phase fault on the Tolk West (525531) to Yoakum (526935) 230kV line, near Yoakum.	OK	OK
46	FLT46-1PH	*Single phase fault and sequence like previous*	OK	OK
47	FLT47-3PH	3 phase fault on the Roswell (527563) to Riac Tap (527528) 69kV line, near Roswell	OK	OK
48	FLT48-1PH	*Single phase fault and sequence like previous*	OK	OK
49	FLT49-3PH	3 phase fault on the Roswell (527563) to SW_4702 (527575) 69kV line, near Roswell	OK	OK
50	FLT50-1PH	*Single phase fault and sequence like previous*	OK	OK
51	FLT51-3PH	3 phase fault on the Roswell 69/115 kV (527563/527564), near the 69kV bus	OK	OK
52	FLT52-3PH	3 phase fault on the Roswell 69/115 kV (527563/527564), near the 115kV bus	OK	OK

Cont. No.	Cont. Name	Description	Summer	Winter
53	FLT53-3PH	3 phase fault on the Roswell (527564) to Brasher (527534) 115kV line, near Roswell	OK	OK
54	FLT54-1PH	*Single phase fault and sequence like previous*	OK	OK
55	FLT55-3PH	3 phase fault on the Roswell (527564) to Samson (527546) 115kV line, near Roswell	OK	OK
56	FLT56-1PH	*Single phase fault and sequence like previous*	OK	OK
57	FLT57-3PH	3 phase fault on the Roswell (527564) to Tweddy (527597) 115kV line, near Roswell	OK	OK
58	FLT58-1PH	*Single phase fault and sequence like previous*	OK	OK
59	FLT59-3PH	3 phase fault on the Atoka (510882) to Atoka P2 (510879) 69kV line, near Atoka	OK	OK
60	FLT60-1PH	*Single phase fault and sequence like previous*	OK	OK
61	FLT61-3PH	3 phase fault on the Atoka (510882) to Lane (510891) 69kV line, near Atoka	OK	OK
62	FLT62-1PH	*Single phase fault and sequence like previous*	OK	OK
63	FLT63-3PH	3 phase fault on the Atoka 69/138/13.8kV transformer (510882/510887/510860), near 69kV bus	OK	OK
64	FLT64-3PH	3 phase fault on the Atoka 69/138/13.8kV transformer (510882/510887/510860), near 138kV bus	OK	OK

Table 8: Contingency List Simulation Results for Group 6

6.4 Group 8 – GEN-2010-055

All faults were run for both summer and winter cases, no tripping occurred in this study.

Table 9 summarizes the results for all faults. Complete sets of plots for summer and winter cases are available on request.

Based on the dynamic results, GEN-2010-055 did not cause any stability problems and remained stable for all faults studied.

Cont. No.	Cont. Name	Description	Summer	Winter
1	FLT01-3PH	3 phase fault on the Wolf Creek (532797) – Benton (532791) 345kV line near Wolf Creek.	OK	OK
2	FLT02-1PH	Single-phase fault on the Wolf Creek (532797) – Benton (532791) 345kV line near Wolf Creek.	OK	OK
3	FLT03-3PH	3 phase fault on the Wolf Creek (532797) – Rose Hill (532794) 345kV line near Wolf Creek.	OK	OK
4	FLT04-1PH	Single-phase fault on the Wolf Creek (532797) – Rose Hill (532794) 345kV line near Wolf Creek.	OK	OK
5	FLT05-3PH	3 phase fault on the Wolf Creek (532797) – GEN-2008-098 (572098) 345kV line near GEN-2008-098.	OK	OK
6	FLT06-1PH	Single phase fault on the Wolf Creek (532797) – GEN-2008-098 (572098) 345kV line near GEN-2008-098.	OK	OK
7	FLT07-3PH	3 phase fault on the Stilwell (542968) – LaCygne (542981) 345kV line near Stilwell.	OK	OK

Cont. No.	Cont. Name	Description	Summer	Winter
8	FLT08-1PH	*Single phase fault and sequence like previous*	OK	OK
9	FLT09-3PH	3 phase fault on the Neosho (532793) – LaCygne (542981) 345kV line near Neosho.	OK	OK
10	FLT10-1PH	Single-phase fault on the Neosho (532793) – LaCygne (542981) 345kV line near Neosho.	OK	OK
11	FLT11-3PH	3 phase fault on the West Gardner (542965) – LaCygne (542981) 345kV line near LaCygne.	OK	OK
12	FLT12-1PH	*Single phase fault and sequence like previous*	OK	OK
13	FLT13-3PH	3 phase fault on the GEN-2008-098 (572090) to LaCygne (542981) 345kV line, near GEN-2008-098.	OK	OK
14	FLT14-1PH	Single phase fault on the GEN-2008-098 (572090) to LaCygne (542981) (542573039) 345kV line, near GEN-2008-098.	OK	OK
15	FLT15-3PH	3 phase fault on the Rose Hill (532794) to GEN-2008-127 (573039) 345kV line, near Rose Hill.	OK	OK
16	FLT16-1PH	Single-phase fault on the Rose Hill (532794) to GEN-2008-127 (573039) 345kV line, near GEN-Rose Hill.	OK	OK
17	FLT17-3PH	3 phase fault on the Sooner (514803) to Woodring (514715) 345kV line, near Woodring.	OK	OK
18	FLT18-1PH	*Single phase fault and sequence like previous*	OK	OK
19	FLT19-3PH	3 phase fault on the Sooner (514803) to Cleveland (512694) 345kV line, near Cleveland.	OK	OK
20	FLT20-1PH	*Single phase fault and sequence like previous*	OK	OK
21	FLT21-3PH	3 phase fault on the Rose Hill (532794) to Latham (532800) 345kV line, near Rose Hill.	OK	OK
22	FLT22-1PH	Single-phase fault on the Rose Hill (532794) to Latham (532800) 345kV line, near Rose Hill.	OK	OK
23	FLT23-3PH	3 phase fault on the Emporia (532768) – Swissvale (532774) 345kV line near Swissvale.	OK	OK
24	FLT24-1PH	Single phase fault on the Emporia (532768) – Swissvale (532774) 345kV line near Swissvale.	OK	OK
25	FLT25-3PH	3 phase fault on the Emporia (532768) – Lang (532769) 345kV line near Emporia.	OK	OK
26	FLT26-1PH	Single phase fault the Emporia (532768) – Lang (532769) 345kV line near Emporia.	OK	OK
27	FLT27-3PH	3 phase fault on the Swissvale (532774) – West Gardner (542965) 345kV line near Swissvale.	OK	OK
28	FLT28-1PH	Single phase fault on the Swissvale (532774) – West Gardner (542965) 345kV line near Swissvale.	OK	OK
29	FLT29-3PH	3 phase fault on the Northeastern (510406) to Delaware (510380) 345kV line, near Delaware.	OK	OK
30	FLT30-1PH	*Single phase fault and sequence like previous*	OK	OK
31	FLT31-3PH	3 phase fault on the Emporia (532768) – Morris County (532770) 345kV line near Emporia.	OK	OK
32	FLT32-1PH	Single phase fault on the Emporia (532768) – Morris County (532770) 345kV line near Emporia.	OK	OK
33	FLT33-3PH	3 phase fault on the Emporia (532768) – Wichita (532796) 345kV line near Emporia.	OK	OK
34	FLT34-1PH	Single phase fault on the Emporia (532768) – Wichita (532796) 345kV line near Emporia.	OK	OK

Cont. No.	Cont. Name	Description	Summer	Winter
35	FLT35-3PH	3 phase fault on the Woodring (514715) to GEN-2010-002 (578549) 345kV line, near GEN-2010-002.	OK	OK
36	FLT36-1PH	*Single phase fault and sequence like previous*	OK	OK
37	FLT37-3PH	3 phase fault on the GEN-2008-013 (210130) to GEN-2007-025 (532781) 345kV line, near GEN-2007-025.	OK	OK
38	FLT38-1PH	*Single phase fault and sequence like previous*	OK	OK
39	FLT39-3PH	3 phase fault on the Latham (532800) to GEN-2005-013 (574000) 345kV line, near Latham.	OK	OK
40	FLT40-1PH	*Single phase fault and sequence like previous*	OK	OK
41	FLT41-3PH	3 phase fault on the GEN-2005-016 (579102) to Neosho (532793) 345kV line, near Neosho.	OK	OK
42	FLT42-1PH	*Single phase fault and sequence like previous*	OK	OK
43	FLT43-3PH	3 phase fault on the Cimarron (514901) to Woodring 345kV line, near Woodring.	OK	OK
44	FLT44-1PH	*Single phase fault and sequence like previous*	OK	OK
45	FLT45-3PH	3 phase fault on the Cimarron (514901) to Draper (514934) 345kV line, near Cimarron.	OK	OK
46	FLT46-1PH	*Single phase fault and sequence like previous*	OK	OK
47	FLT47-3PH	3 phase fault on the Cimarron (514901) to Northwest (514880) 345kV line, near Cimarron.	OK	OK
48	FLT48-1PH	*Single phase fault and sequence like previous*	OK	OK
49	FLT49-3PH	3 phase fault on the Cimarron (514901) to GEN-2007-043 (210431) 345kV line, near Cimarron.	OK	OK
50	FLT50-1PH	*Single phase fault and sequence like previous*	OK	OK
51	FLT51-3PH	3 phase fault on the Cimarron 138/345 kV autotransformer near the 345 kV bus (514901).	OK	OK
52	FLT52-3PH	3 phase fault on the Woodring 138/345 kV autotransformer near the 345 kV bus (514715).	OK	OK
53	FLT53-3PH	3 phase fault on the Sooner 138/345 kV autotransformer near the 345 kV bus (514803).	OK	OK
54	FLT54-3PH	3 phase fault on the Wekiwa 138/345 kV autotransformer near the 345 kV bus (509755).	OK	OK
55	FLT55-3PH	3 phase fault on the Wekiwa 138/345 kV autotransformer near the 138 kV bus (509757).	OK	OK
56	FLT56-3PH	3 phase fault on the Wekiwa (509757) to Silver City (300140) 138kV line, near Wekiwa.	OK	OK
57	FLT57-1PH	*Single phase fault and sequence like previous*	OK	OK
58	FLT58-3PH	3 phase fault on the Wekiwa (509757) to Keystone (505610) 138kV line, near Wekiwa.	OK	OK
59	FLT59-1PH	*Single phase fault and sequence like previous*	OK	OK
60	FLT60-3PH	3 phase fault on the Wekiwa (509757) to Sheffd (509812) 138kV line, near Wekiwa.	OK	OK
61	FLT61-1PH	*Single phase fault and sequence like previous*	OK	OK
62	FLT62-3PH	3 phase fault on the Wekiwa (509757) to Wed-Tap (509823) 138kV line, near Wekiwa.	OK	OK
63	FLT63-1PH	*Single phase fault and sequence like previous*	OK	OK
64	FLT64-3PH	3 phase fault on the Wekiwa (509757) to P&P Wtp (509851) 138kV line, near Wekiwa.	OK	OK
65	FLT65-1PH	*Single phase fault and sequence like previous*	OK	OK
66	FLT66-3PH	3 phase fault on the Wichita (532796) to GEN-2007-025 (532781) 345kV line, near GEN-2007-025.	OK	OK
67	FLT67-1PH	*Single phase fault and sequence like previous*	OK	OK

Table 9: Contingency List Simulation Results for Group 8

7.0 Generator Performance

GROUP 1 – GEN-2010-028

The transmission system and the study generators were found to remain stable during the dynamic analysis.

Figure 11 shows the output power for GEN-2010-028, summer and winter cases, under contingencies FLT01-3PH, FLT05-3PH, FLT08-3PH, FLT46-3PH and FLT48-3PH. The contingencies showed have the biggest impact in the simulation results for GEN-2010-028. As shown, the output power oscillates following the faults and return to system stable levels within 5 seconds in both seasons. The equivalent model is represented by two equivalent generators.

Figure 12 shows the terminal voltage the generator will reach stability after 2 seconds under contingencies FLT01-3PH, FLT05-3PH, FLT08-3PH, FLT46-3PH and FLT48-3PH for summer and winter cases.

Figure 13 shows the speed deviation for both generators #1 and #2 summer and winter cases.

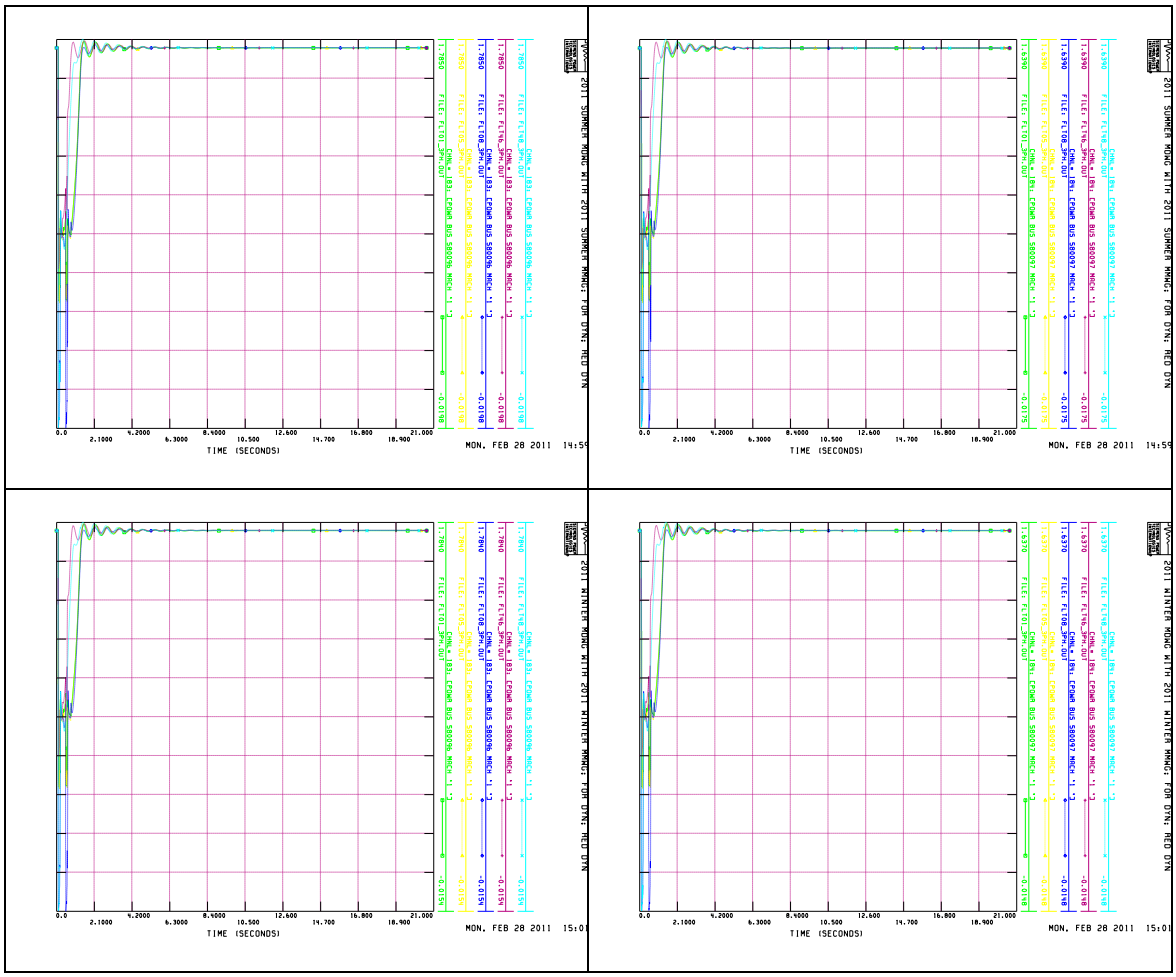


Figure 11: GEN-2010-028 output power for faults FLT01-3PH, FLT05-3PH, FLT08-3PH, FLT46-3PH and FLT48-3PH summer and winter cases, generator #1 and #2

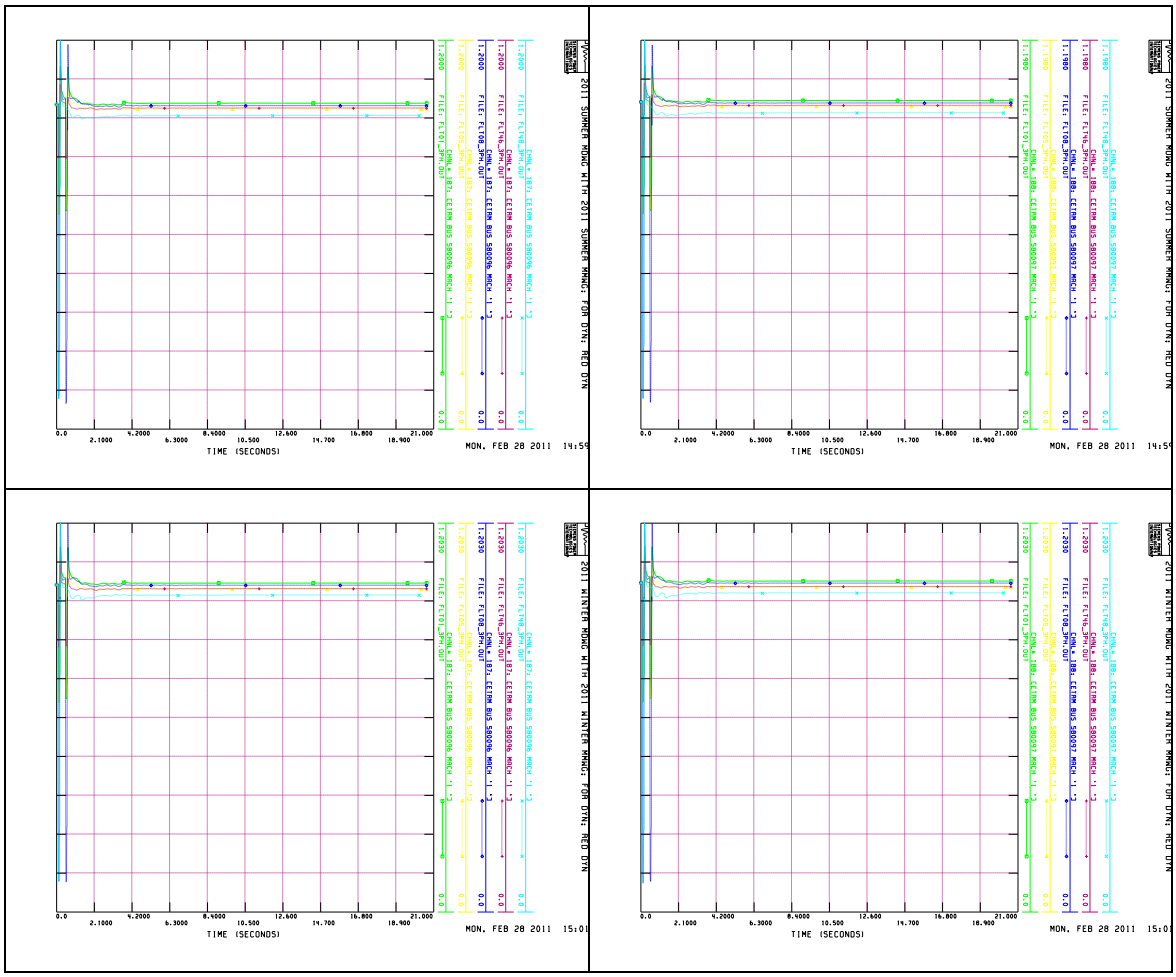
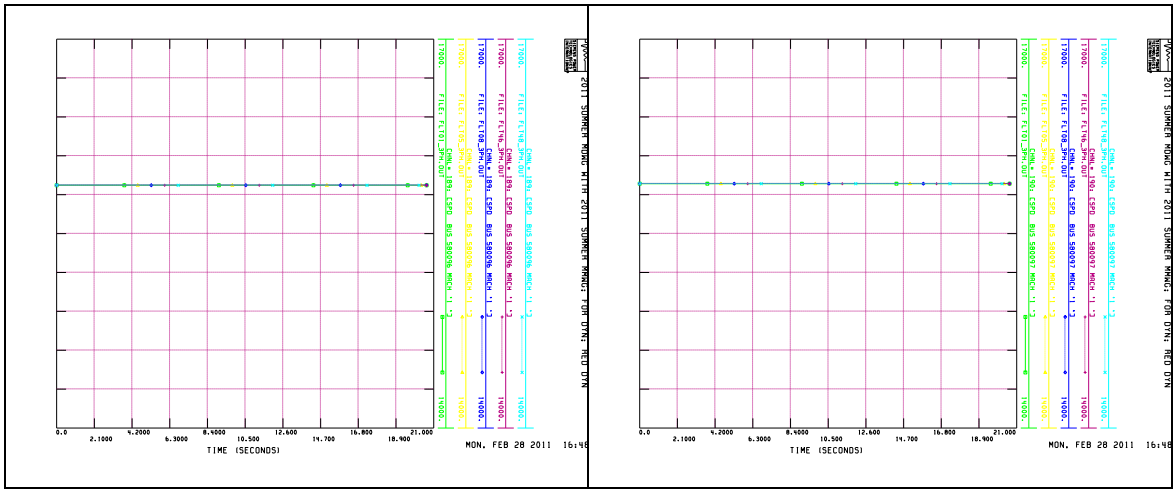


Figure 12: GEN-2010-028 terminal voltage for faults FLT01-3PH, FLT05-3PH, FLT08-3PH, FLT46-3PH and FLT48-3PH summer and winter cases, generator #1 and #2



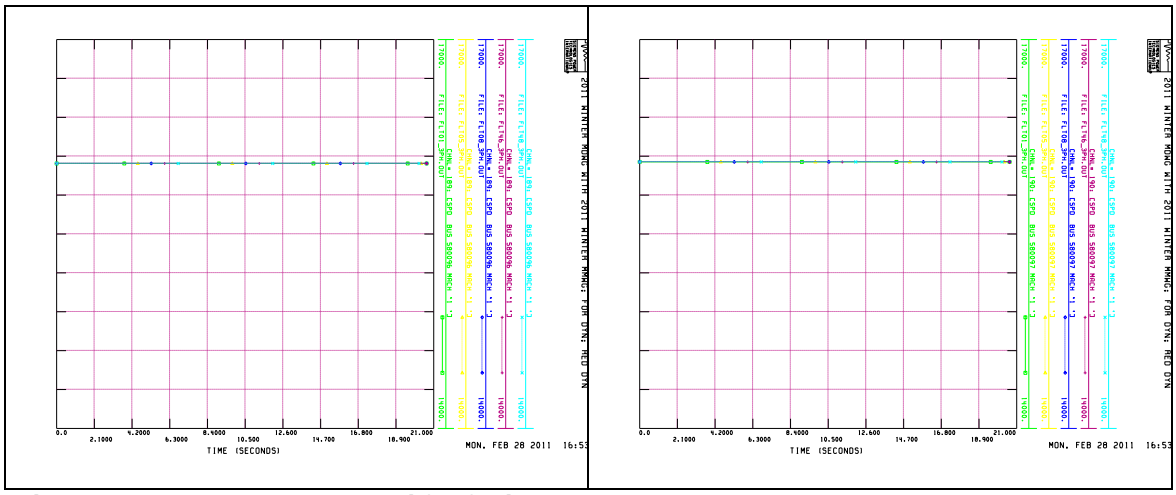


Figure 13: GEN-2010-028 speed for faults FLT01-3PH, FLT05-3PH, FLT08-3PH, FLT46-3PH and FLT48-3PH summer and winter cases, generator #1 and #2

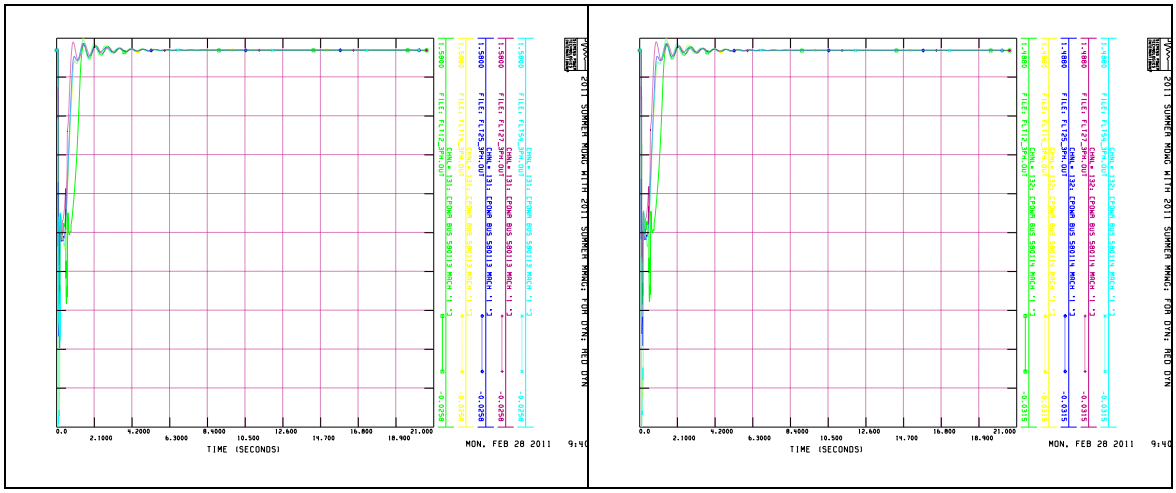
GROUP 3 – GEN-2010-029

The transmission system and the study generators were found to remain stable during the dynamic analysis.

Figure 14 shows the output power for GEN-2010-029, summer and winter cases, under contingencies FLT12-3PH, FLT14-3PH, FLT25-3PH, FLT27-3PH and FLT54-3PH. The contingencies shown have the biggest impact in the simulation results for GEN-2010-029. As shown, the output power oscillates following the faults and return to system stable levels within 5.5 seconds in both seasons. The equivalent model is represented by three equivalent generators.

Figure 15 shows the terminal voltage the generator will reach stability after 3 seconds under contingencies FLT12-3PH, FLT14-3PH, FLT25-3PH, FLT27-3PH and FLT54-3PH for summer and winter cases.

Figure 16 shows the speed deviation for both generators #1, #2 and #3 summer and winter cases.



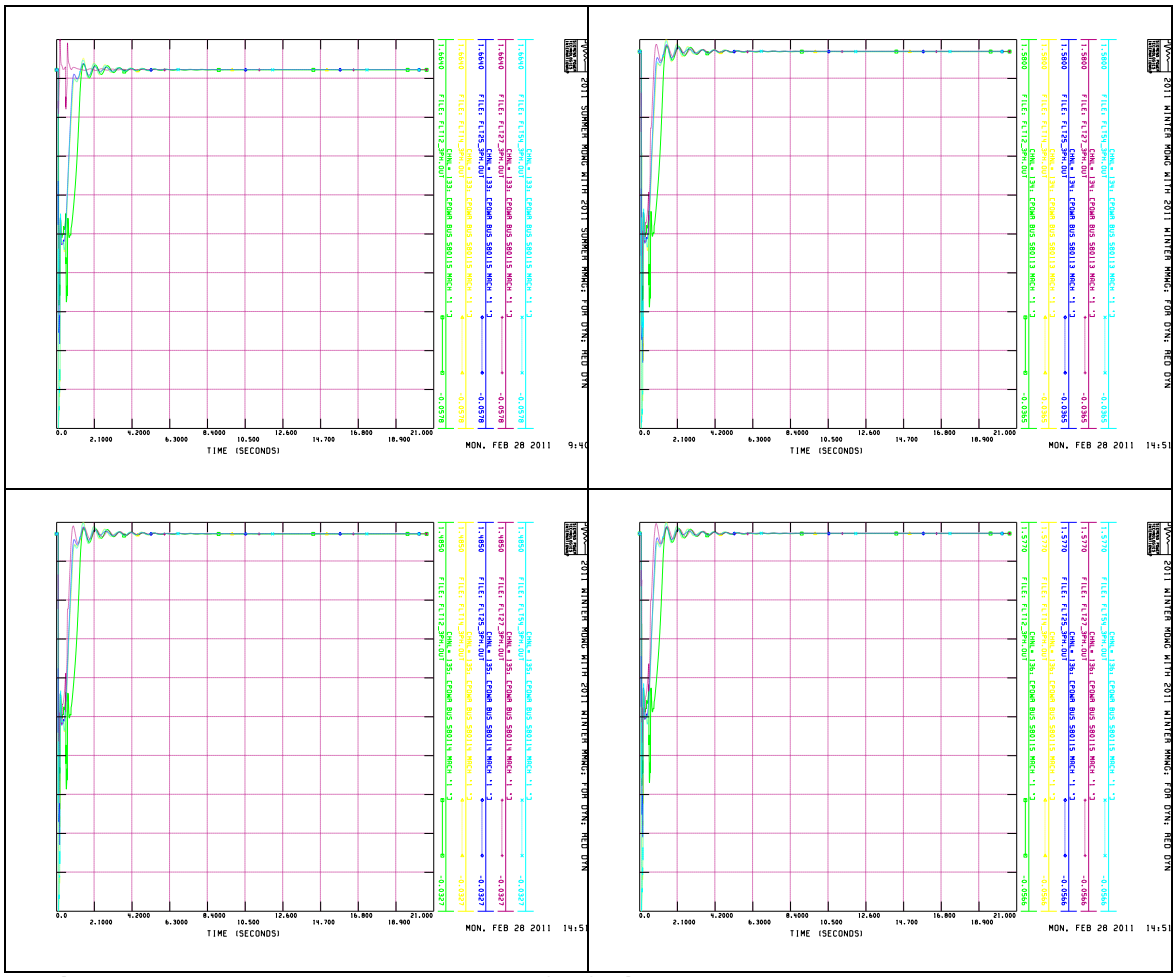
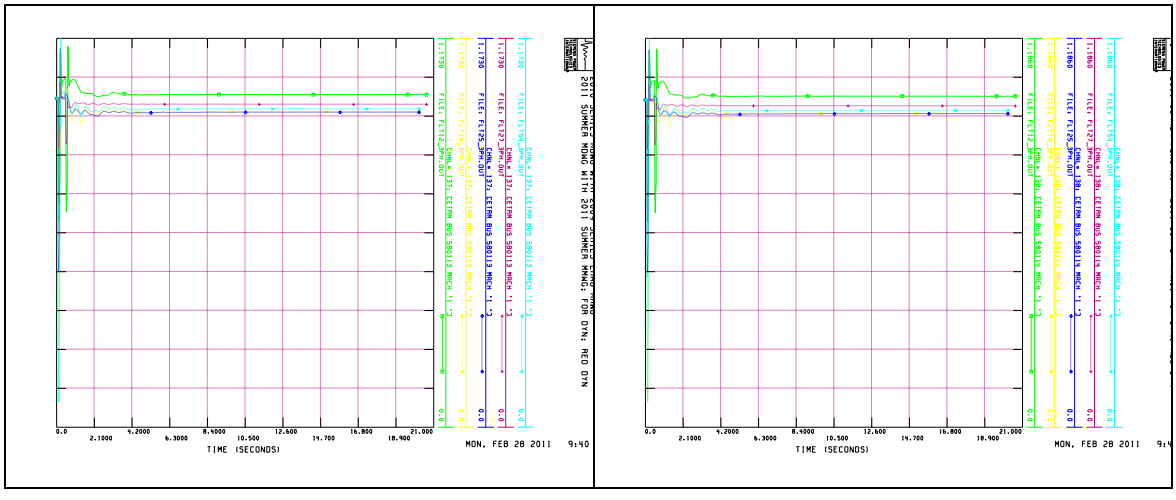


Figure 14: GEN-2010-029 output power for faults FLT12-3PH, FLT14-3PH, FLT25-3PH, FLT27-3PH and FLT54-3PH summer case, generator #1, #2 and #3



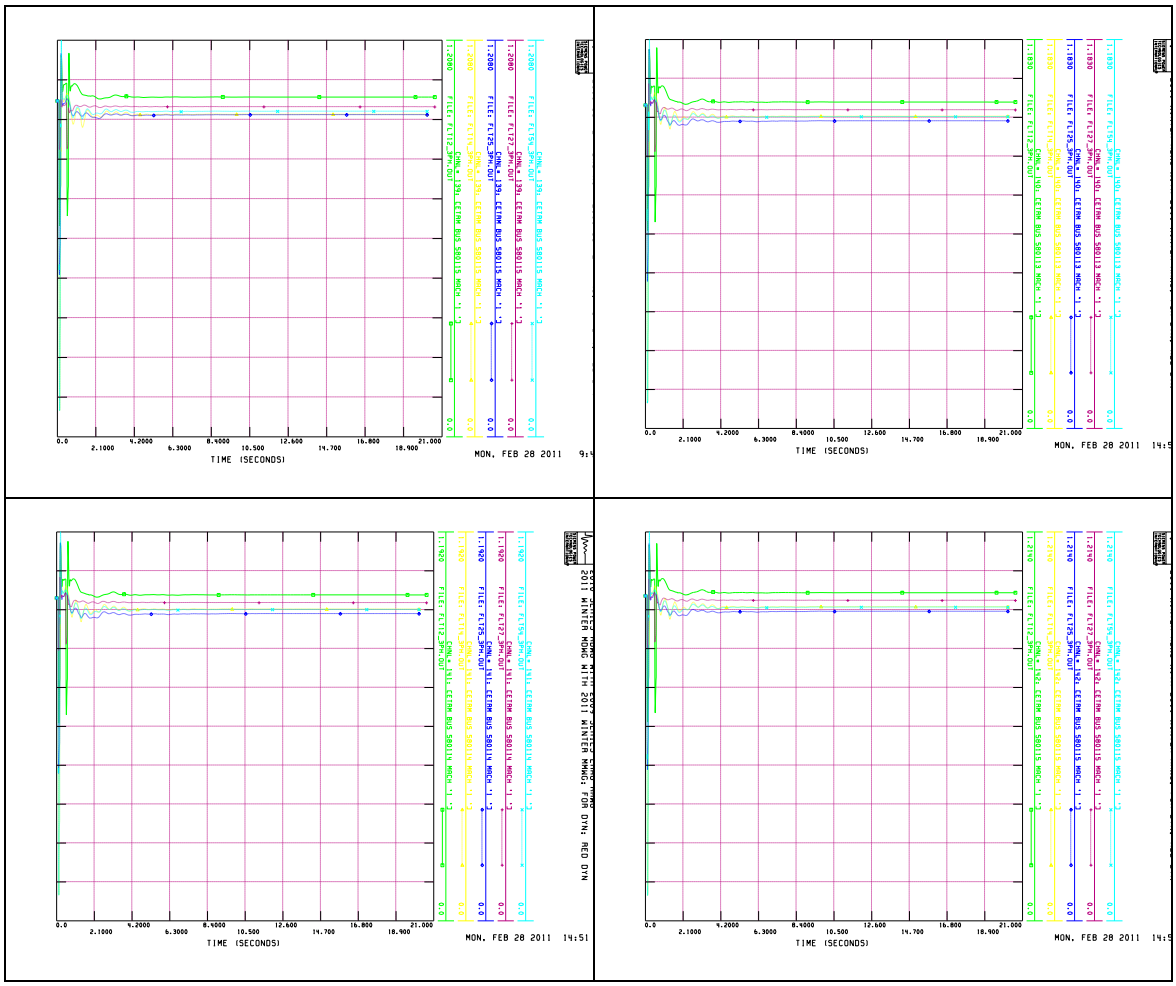
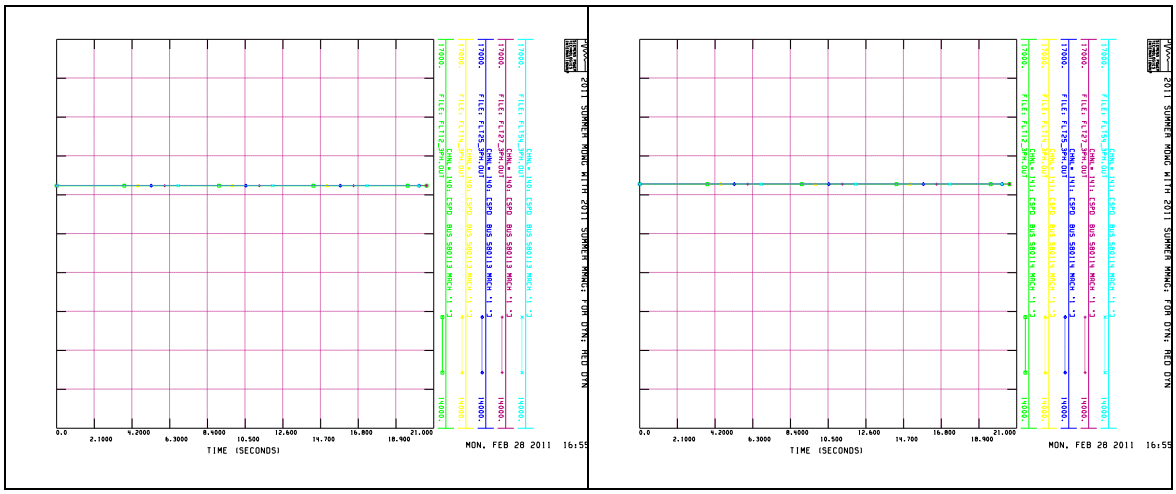


Figure 15: GEN-2010-029 terminal voltage for faults FLT12-3PH, FLT14-3PH, FLT25-3PH, FLT27-3PH and FLT54-3PH summer and winter cases, generator #1, #2 and #3



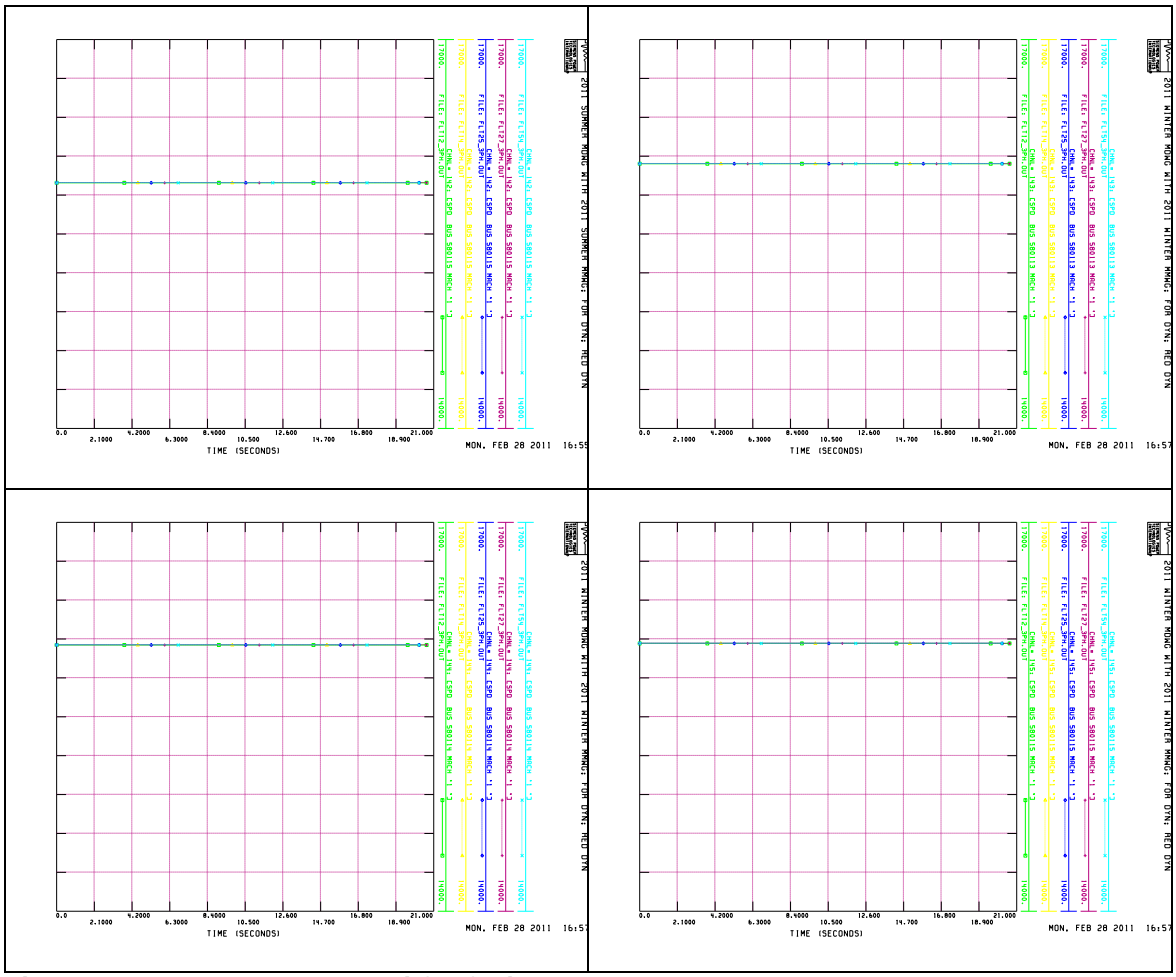


Figure 16: GEN-2010-029 speed for faults FLT12-3PH, FLT14-3PH, FLT25-3PH, FLT27-3PH and FLT54-3PH summer and winter cases, generator #1, #2 and #3

GROUP 6 – GEN-2010-020 and GEN-2010-021

The transmission system and the study generators were found to remain stable during the dynamic analysis.

Figure 17 shows the output power, terminal voltage and speed for GEN-2010-021, summer and winter cases, under contingencies FLT59-3PH, FLT61-3PH, FLT63-3PH and FLT64-3PH. The contingencies showed have the biggest impact in the simulation results for GEN-2010-021. As shown, the output power oscillates following the faults and return to system stable levels within 1.5 seconds in both seasons. The equivalent model is represented by one single generator.

Figure 18 shows the output power, terminal voltage and speed for GEN-2010-020, summer and winter cases, under contingencies FLT51-3PH, FLT52-3PH, FLT47-3PH and FLT49-3PH. The contingencies showed have the biggest impact in the simulation results for GEN-2010-020. As shown, the output power oscillates following the faults and return to system stable levels within 1.5 seconds in both seasons. The equivalent model is represented by one single generator.

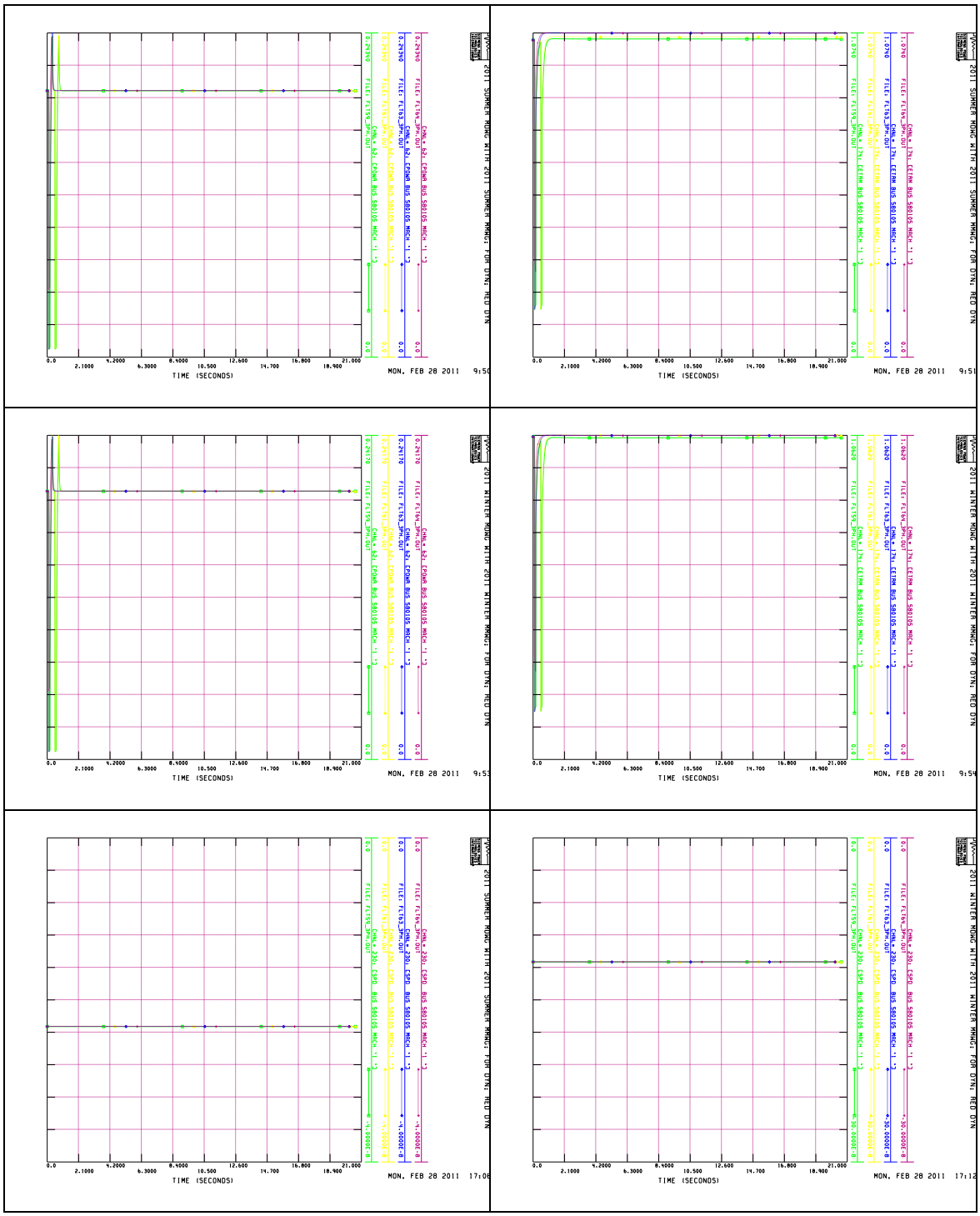


Figure 17: GEN-2010-021 output power, terminal voltage and speed for faults FLT59-3PH, FLT61-3PH, FLT63-3PH and FLT64-3PH summer and winter cases

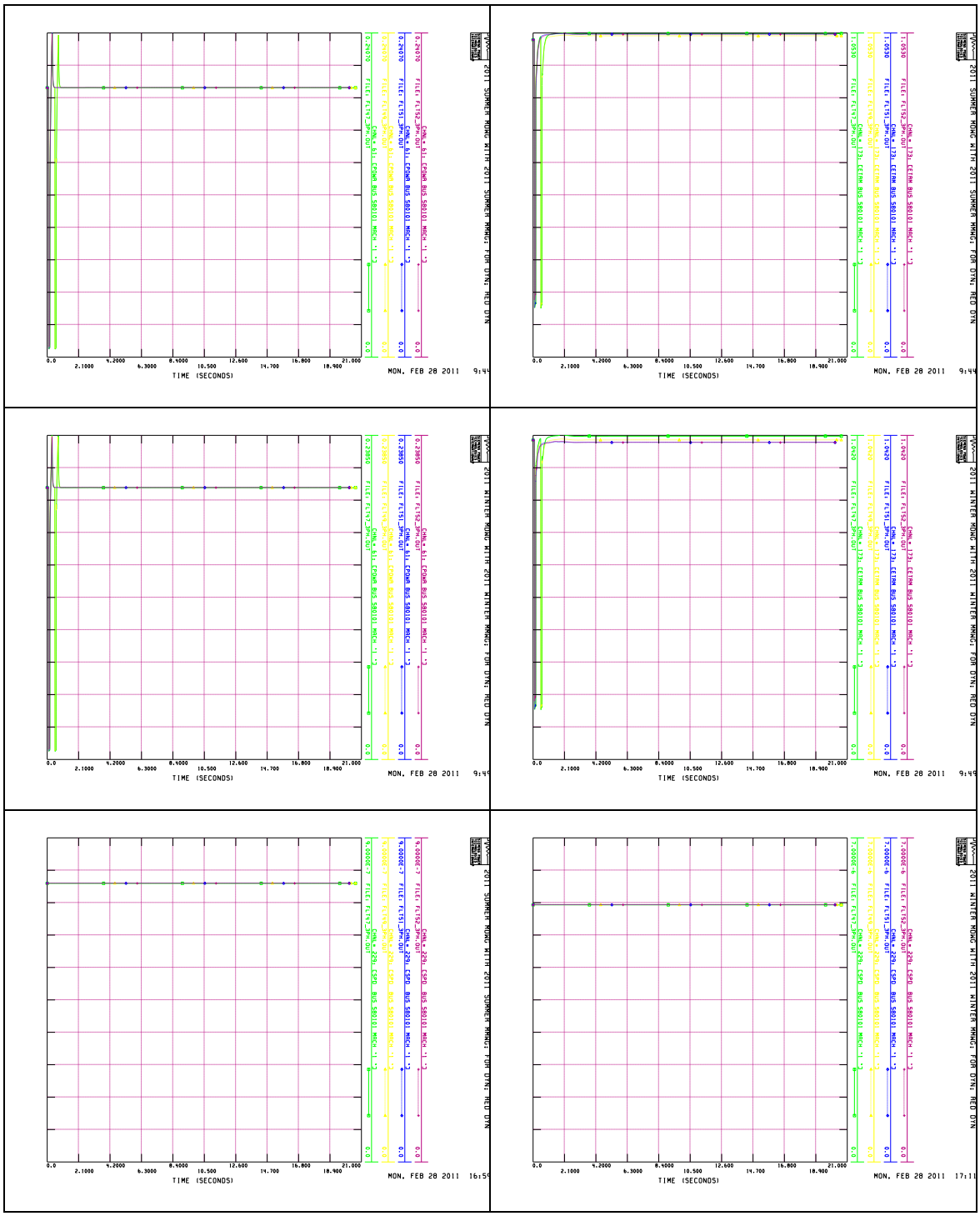
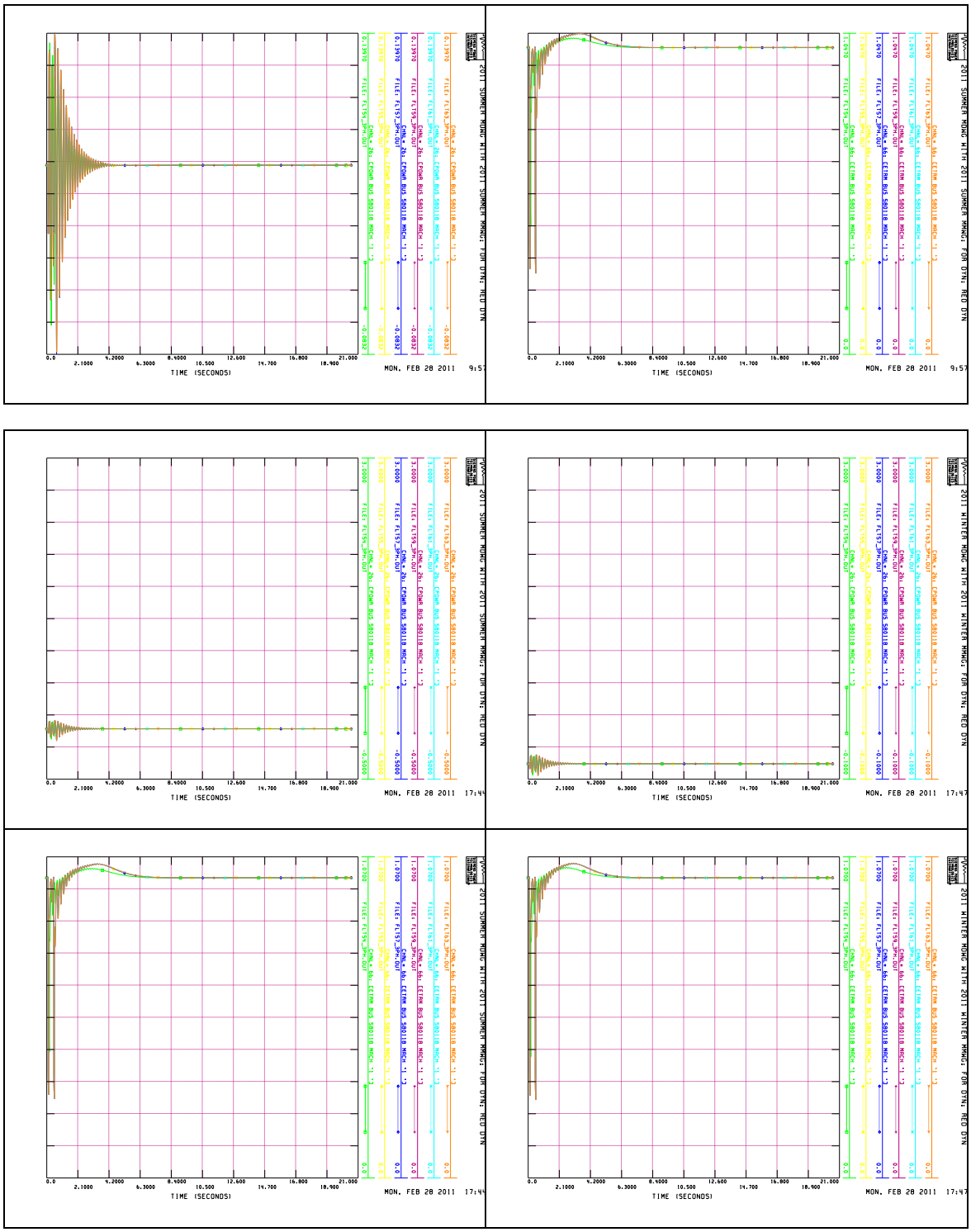


Figure 18: GEN-2010-020 output power, terminal voltage and speed output for faults FLT47-3PH, FLT51-3PH, FLT49-3PH and FLT52-3PH summer and winter cases

GROUP 8 – GEN-2010-055

The transmission system and the study generators were found to remain stable during the dynamic analysis.

Figure 19 shows the output power, terminal voltage and speed for GEN-2010-055, summer and winter cases, under contingencies FLT59-3PH, FLT61-3PH, FLT63-3PH and FLT64-3PH. The contingencies showed have the biggest impact in the simulation results for GEN-2010-055. As shown, the output power oscillates following the faults and return to system stable levels within 1.5 seconds in both seasons. The equivalent model is represented by one single generator.



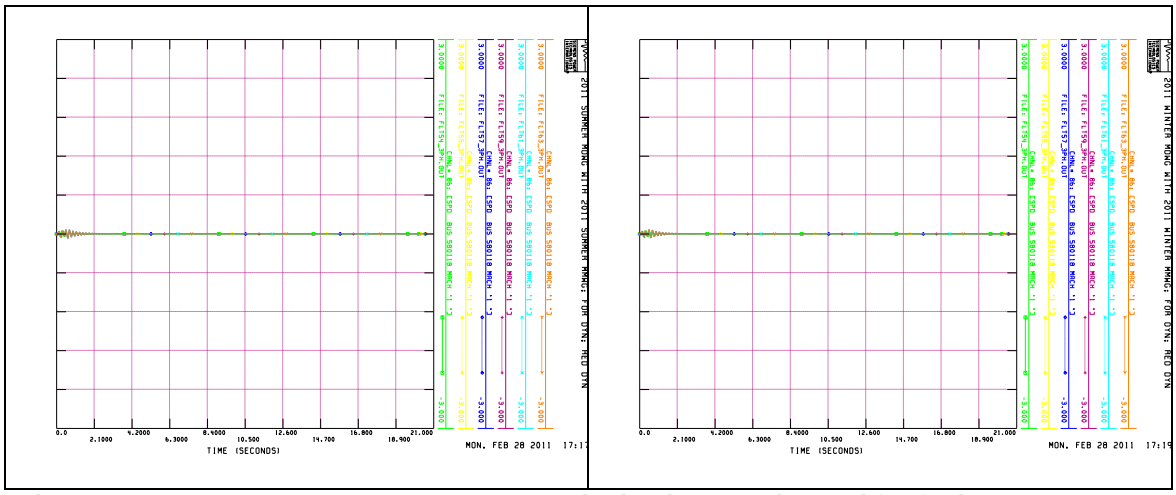


Figure 19: GEN-2010-055 power output, terminal voltage and speed for faults FLT54-3PH, FLT55-3PH, FLT57-3PH, FLT59-3PH, FLT61-3PH and FLT63-3PH summer and winter cases

8.0 Power Factor Analysis

All interconnection requests are required by the SPP tariff to maintain a 95% lagging (producing vars) and a 95% leading (absorbing vars) power factor at the point of interconnection. These requirements are below

REQUEST	Power Factor Requirement	
	Lead	Lag
GEN-2010-020	95%	95%
GEN-2010-021	95%	95%
GEN-2010-028	95%	95%
GEN-2010-029	95%	95%
GEN-2010-055	95%	95%

Table 10: Required Power Factor for Non-Wind Farms

A power factor analysis was performed for each wind farm request by modeling a VAR generator at the high voltage bus of each interconnection request. The VAR generator was set to hold a voltage schedule of 1.00 per unit at the point of interconnection for each request and all the contingencies listed in Table 11 for Group 1 and Table 12 for Group 3 were studied.

GEN-2010-028								
CONTINGENCY	**MW (S)**	**MVAR (S)**	**PF (S)**		**MW (W)**	**MVAR (W)**	**PF (W)**	
NO CONTINGENCY	-334.8	11.7	0.999	LEAD	-334.8	-3.5	1.000	LAG
WOODWARD (515375) - TATONGA (515407) 345KV CKT1	-334.8	22.9	0.998	LEAD	-334.8	9.7	1.000	LEAD
WOODWARD (515375) - GEN-2008-047 (580500) 345KV CKT1&2	-334.8	-1.8	1.000	LAG	-334.8	-16.8	0.999	LAG
WOODWARD (515375) - MEDICINE LODGE (765342) 345KV CKT1&2	-334.8	-32.6	0.995	LAG	-334.8	-51.4	0.988	LAG
WOODWARD TRANSFORMER 345/138 KV (515375 - 515376) CKT1	-334.8	13.7	0.999	LEAD	-334.8	-2.1	1.000	LAG
TATONGA (515407) - NORTHWEST (514880) 345KV CKT1	-334.8	4.0	1.000	LEAD	-334.8	-5.7	1.000	LAG
NORTHWEST (514880) - SPRING CREEK (514881) 345KV CKT1	-334.8	-5.9	1.000	LAG	-334.8	-13.4	0.999	LAG
NORTHWEST (514880) - CIMARRON (514901) 345KV CKT1	-334.8	12.5	0.999	LEAD	-334.8	-3.3	1.000	LAG
NORTHWEST TRANSFORMER 345/138 KV (514880 - 514879) CKT1	-334.8	13.2	0.999	LEAD	-334.8	-1.4	1.000	LAG
NORTHWEST (514880) - ARCADIA (514908) 345KV CKT1	-334.8	7.2	1.000	LEAD	-334.8	-7.8	1.000	LAG
WOODWARD EHV (515376) - IODINE (514796) 138KV CKT1	-334.8	11.3	0.999	LEAD	-334.8	-3.8	1.000	LAG
MORELAND (520999) - GEN-2001-037 (515785) 138KV CKT1	-334.8	10.5	1.000	LEAD	-334.8	-4.5	1.000	LAG
MORELAND (520999) - GLASS MOUNTAIN (514788) 138KV CKT1	-334.8	4.6	1.000	LEAD	-334.8	-9.6	1.000	LAG
MORELAND (520999)-WINDFARM (515785) 138KV CKT1	-334.8	10.5	1.000	LEAD	-334.8	-4.5	1.000	LAG
TALOGA (521065) - DEWEY (514787) 138KV CKT1	-334.8	11.9	0.999	LEAD	-334.8	-3.4	1.000	LAG
DEWEY (514787) - SOUTHARD (514822) 138KV CKT1	-334.8	4.8	1.000	LEAD	-334.8	-10.5	1.000	LAG
WOODWARD (515375) - BORDER (525835) 345KV CKT1	-334.8	6.7	1.000	LEAD	-334.8	-7.4	1.000	LAG
HITCHLAND TRANSFORMER 345/230 KV (523097 - 523095) CKT1	-334.8	10.4	1.000	LEAD	-334.8	-3.7	1.000	LAG
FARGO JCT (521196) - FT. SUPPLY (520919) 69KV CKT1	-334.8	11.7	0.999	LEAD	-334.8	-3.5	1.000	LAG
MORELAND (520999) - KNOW HILL (514795) 138KV CKT1	-334.8	8.2	1.000	LEAD	-334.8	-6.1	1.000	LAG
MORELAND (520999) - CEDARDALE (520848) 138KV CKT1	-334.8	4.4	1.000	LEAD	-334.8	-10.0	1.000	LAG
MORELAND (520999) - IODINE (520957) 138KV CKT1	-334.8	11.9	0.999	LEAD	-334.8	-3.3	1.000	LAG
MORELAND (520999) - TALOGA (521065) 138KV CKT1	-334.8	11.2	0.999	LEAD	-334.8	-4.1	1.000	LAG
FT. SUPPLY TRANSFORMER 138/69 KV (520920 - 520919) CKT1	-334.8	11.7	0.999	LEAD	-334.8	-3.5	1.000	LAG
MORELAND (520999) - NINEMILE (521128) 138KV CKT1	-334.8	5.1	1.000	LEAD	-334.8	-9.4	1.000	LAG
MEDICINE LODGE (765342) - WICHITA (532796) 345KV CKT1&2	-334.8	-19.3	0.998	LAG	-334.8	-38.5	0.993	LAG
WOODRING (514715) - TATONGA (515407) 345KV CKT1&2	-334.8	-57.6	0.986	LAG	-334.8	-70.7	0.978	LAG

(S) - Summer Case
(W) - Winter Case
Highest Leading Power Factor
Highest Lagging Power Factor

Table 11: Group 1 Power Factor Table

GEN-2010-029								
CONTINGENCY	**MW (S)**	**MVAR (S)**	**PF (S)**		**MW (W)**	**MVAR (W)**	**PF (W)**	
NO CONTINGENCY	-450.0	-70.0	0.988	LAG	-450.0	-82.5	0.984	LAG
FINNEY (523853) - GEN-2003-013 (560029) 345KV CKT 1	-450.0	-117.1	0.968	LAG	-450.0	-112.9	0.970	LAG
FINNEY (523853) - HOLCOMB (531449) 345KV CKT 1	-450.0	-70.0	0.988	LAG	-450.0	-82.5	0.984	LAG
HOLCOMB (531449) - SETAB (531465) 345KV CKT 1	-450.0	-111.5	0.971	LAG	-450.0	-121.7	0.965	LAG
HOLCOMB (531449) - GEN-2007-040 (531000) 345KV CKT 1	-450.0	-121.9	0.965	LAG	-450.0	-143.9	0.952	LAG
HOLCOMB TRANSFORMER 345/115KV (531449 - 531448) CKT 1	-450.0	-70.5	0.988	LAG	-450.0	-83.8	0.983	LAG
FINNEY (523853) - LAMAR (599950) 345KV CKT 1	-450.0	-70.0	0.988	LAG	-450.0	-82.5	0.984	LAG
GEN-2007-040 (531000) - SPEARVILLE (531469) 345KV CKT 1	-450.0	-19.7	0.999	LAG	-450.0	-33.9	0.997	LAG
SPEARVILLE (531469) - COMANCHE (765341) 345KV CKT 1&2	-450.0	-151.6	0.948	LAG	-450.0	-151.2	0.948	LAG
SPEARVILLE TRANSFORMER 345/230KV (531469 - 539695) CKT 1	-450.0	-68.9	0.988	LAG	-450.0	-79.6	0.985	LAG
SPEARVILLE TRANSFORMER 230/115KV (539695 - 539694) CKT 1	-450.0	-70.0	0.988	LAG	-450.0	-82.4	0.984	LAG
SPEARVILLE TRANSFORMER 345/115KV (531469 - 539694) CKT 3	-450.0	-68.1	0.989	LAG	-450.0	-79.7	0.985	LAG
SPEARVILLE (539695) - MULLERGREN (539679) 230KV CKT 1	-450.0	-97.8	0.977	LAG	-450.0	-109.9	0.971	LAG
MULLERGREN (539679) - SOUTH HAYS (530582) 230KV CKT 1	-450.0	-71.8	0.988	LAG	-450.0	-84.2	0.983	LAG
MULLERGREN (539679) - CIRCLE (532871) 230KV CKT 1	-450.0	-79.6	0.985	LAG	-450.0	-92.6	0.979	LAG
COMANCHE (765341) - MED LODGE (765342) 345KV CKT 1&2	-450.0	-216.3	0.901	LAG	-450.0	-223.3	0.896	LAG
GEN-2003-013 (560029) - HITCHLAND (523097) 345KV CKT 1	-450.0	-135.5	0.958	LAG	-450.0	-129.5	0.961	LAG
WOODWARD (515375) - BEAVER CO (580500) 345KV CKT 1&2	-450.0	-98.7	0.977	LAG	-450.0	-117.9	0.967	LAG
KNOLL (530558) - POST ROCK (530584) 230KV CKT 1	-450.0	-73.1	0.987	LAG	-450.0	-85.9	0.982	LAG
POST ROCK (530583) - AXTELL (640065) 345KV CKT 1	-450.0	-71.7	0.988	LAG	-450.0	-92.0	0.980	LAG
POST ROCK TRANSFORMER 345/230KV (530583 - 530584) CKT 1	-450.0	-70.8	0.988	LAG	-450.0	-82.8	0.983	LAG
GEN-2001-039A (579025) - FORT DODGE (539671) 115KV CKT 1	-450.0	-69.2	0.988	LAG	-450.0	-82.2	0.984	LAG
GEN-2010-016 (576704) - SPEARVILLE (531469) 345KV CKT 1	-450.0	-91.7	0.980	LAG	-450.0	-102.5	0.975	LAG
GEN-2009-059 (560280) - CUDAHY (539659) 115KV CKT 1	-450.0	-74.4	0.987	LAG	-450.0	-88.1	0.981	LAG
KISMET (539646) - CMRIVTP (539652) 115KV CKT 1	-450.0	-73.7	0.987	LAG	-450.0	-87.3	0.982	LAG
CMRIVTP (539652) - ELIBER (539672) 115KV CKT 1	-450.0	-70.0	0.988	LAG	-450.0	-82.6	0.984	LAG
HUGOTON (531481) - GRANTP (531483) 115KV CKT 1	-450.0	-70.8	0.988	LAG	-450.0	-83.4	0.983	LAG
PRATT (539687) - NINNESCAH (539648) 115KV CKT 1	-450.0	-80.0	0.985	LAG	-450.0	-91.7	0.980	LAG
PRATT (539687) - SAWYER (539649) 115KV CKT 1	-450.0	-70.2	0.988	LAG	-450.0	-82.9	0.983	LAG
MED LODGE (539673) - SUN CITY (539697) 115KV CKT 1	-450.0	-79.4	0.985	LAG	-450.0	-89.8	0.981	LAG
SPEARVILLE (531469) - MULLERGREN (100321) 345KV CKT 1&2	-450.0	-184.4	0.925	LAG	-450.0	-193.5	0.919	LAG
MULLERGREN (100321) - CIRCLE (100322) 345KV CKT 1&2	-450.0	-156.5	0.945	LAG	-450.0	-163.5	0.940	LAG
CIRCLE (100322) - RENO (532771) 345KV CKT 1&2	-450	-115.9	0.968	LAG	-450.0	-122.8	0.965	LAG

(S) - Summer Case
(W) - Winter Case
Highest Leading Power Factor is 1.00 (not shown in table)
Highest Lagging Power Factor

Table 12: Group 3 Power Factor Table

9.0 Conclusion

A transient stability analysis was performed to evaluate the PISIS-2010-002. The preliminary impact study includes Groups 1, 3, 6 and 8. The study was conducted for two different scenarios, summer peak and winter peak cases due to the interconnection of GEN-2010-028 (wind farm in group 1), GEN-2010-029 (wind farm in group 3), GEN-2010-020 (solar plant in group 6), GEN-2010-021 (solar plant in group 6) and GEN-2010-055 (gas plant in group 8). The analysis did not find any stability issues for the contingencies included in the study.

In Group 1 a double 345kV circuit from Tatonga to Woodring and two statcom devices at GEN-2008-019 (34.5kV terminals, 6 MVAr for each terminal) are needed to keep the system stable under the studied contingencies. The power factor range required is to maintain a 95% lagging (producing vars) and a 95% leading (absorbing vars) power factor at the point of interconnection.

With the assumptions described in this study, GEN-2010-028 and the Group 1 projects should be able to connect on the SPP transmission system without causing any stability issues.

In Group 3 GEN-2010-029 is stable under the studied contingencies. The power factor range required is to maintain a 95% lagging (producing vars) and a 95% leading (absorbing vars) power factor at the point of interconnection. The study not indicated any stability issues and the Group 3 projects were found to stay connected to the grid without causing any stability issues.

In Group 6 the study indicates that GEN-2010-020 and GEN2010-021 remained stable for all faults studied. GEN-2001-033 and GEN-2001-036 are unstable for FLT06-3PH winter case and FLT07-3PH winter and summer case for low generator bus voltage. The condition is pre-existing and is not caused by the addition of GEN-2010-020 and GEN-2010-021. For faults FLT14-3PH and FLT15-3PH, the instability is caused by GEN-2009-017 (102.5MW), the output has to be reduced to avoid voltage sags in the Grassland substation area, GEN-2009-017 is currently under re-study to determine the maximum output possible to avoid instability. With the assumptions described in this study, GEN-2010-020 and GEN-2010-021 should be able to connect on the SPP transmission system without causing any stability issues. All interconnection requests are required by the SPP tariff to maintain a 95% lagging (producing vars) and a 95% leading (absorbing vars) power factor at the point of interconnection.

In Group 8 GEN-2010-055 is stable under the studied contingencies. The study not indicated any stability issues and the Group 8 projects were found to stay connected to the grid without causing any stability issues. All interconnection requests are required by the SPP tariff to maintain a 95% lagging (producing vars) and a 95% leading (absorbing vars) power factor at the point of interconnection.

If any previously queued projects that were included in this study drop out, then this System Impact Study may have to be revised to determine the impacts of this Interconnection Customer's project on transmission facilities. Since this is also a preliminary System Impact Study, not all previously queued projects were assumed to be in service in this System Impact Study. If any of those projects are constructed, then this System Impact Study may have to be revised to determine the impacts of this Interconnection Customer's project on transmission facilities. In accordance with FERC and SPP procedures, the study cost for restudy shall be borne by the Interconnection Customer.