

Feasibility Cluster Study for Generation Interconnection Requests

Southwest Power Pool
Engineering Dept.
Tariff Studies – Generation Interconnection

(FCS-2010-001)
February 2010



Executive Summary

Generation Interconnection customers have requested a Feasibility Study under the Large Generation Interconnection Procedures (LGIP) in the Southwest Power Pool Open Access Transmission Tariff (OATT). The Interconnection Customers' requests have been clustered together for the following Feasibility Cluster Study. This Feasibility Cluster Study analyzes the interconnecting of multiple generation interconnection requests associated with new generation totaling approximately 4,190.5 MW of new generation which would be located within the transmission systems of American Electric Power West (AEPW), Midwest Energy Inc. (MIDW), Oklahoma Gas and Electric (OKGE), Southwestern Public Service (SPS), Sunflower Electric Power Corporation (SUNC), Westar Energy (WERE). The various generation interconnection requests have differing proposed in-service dates¹. The generation interconnection requests included in this Feasibility Cluster Study are listed in Appendix A by their queue number, amount, area, requested interconnection point, proposed interconnection point, and the requested in-service date.

Power flow analysis has indicated that for the powerflow cases studied, 4,190.5 MW of nameplate generation may be interconnected with transmission system reinforcements within the SPP transmission system. The need for reactive compensation in accordance with Order No. 661-A for wind farm interconnection requests will be evaluated in the Interconnection System Impact Study based on the wind turbine manufacturer and type requested by the Customer. Dynamic stability studies performed as part of the System Impact Cluster Study will provide additional guidance as to whether the required reactive compensation can be static or a portion must be dynamic (such as a SVC).

The total estimated minimum cost for interconnecting the studied generation interconnection request is \$476,000,000. These costs are shown in Appendix F and G. These costs do not include the Interconnection Customer Interconnection Facilities as defined by the SPP Open Access Transmission Tariff (OATT). This cost does not include the possible need for reactive compensation or additional network constraints in the SPP transmission system that were identified are shown in Appendix I.

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. 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 F and G 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.

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 may be approved by the SPP Board of Directors will receive notifications to construct. These projects will

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

then be considered construction pending projects and would not be assignable to the Feasibility Cluster Study Generation Interconnection Requests.

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Introduction

Generation Interconnection customers have requested a Feasibility Study under the Large Generation Interconnection Procedures (LGIP) in the Southwest Power Pool Open Access Transmission Tariff (OATT). The Interconnection Customers' requests have been clustered together for the following Feasibility Cluster Study. This Feasibility Cluster Study analyzes the interconnecting of multiple generation interconnection requests associated with new generation totaling approximately 4,190.5 MW of new generation which would be located within the transmission systems of American Electric Power West (AEPW), Midwest Energy Inc. (MIDW), Oklahoma Gas and Electric (OKGE), Southwestern Public Service (SPS), Sunflower Electric Power Corporation (SUNC), Westar Energy (WERE). The various generation interconnection requests have differing proposed in-service dates². The generation interconnection requests included in this Feasibility Cluster Study are listed in Appendix A by their queue number, amount, area, requested interconnection point, proposed interconnection point, and the requested in-service date.

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

Model Development

Interconnection Requests Included in the Cluster – SPP has included the interconnection requests listed in Appendix A to be analyzed in this cluster study. These interconnection requests represent requests with an executed Feasibility Study Agreement signed by 12/31/2009.

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

Previous Queued Projects – The previous queued projects included in this study are listed in Appendix B. In addition to the Base Case Upgrades, the previous queued projects were assumed to be in-service and added to the Base Case models. These projects were dispatched as Energy Resources with equal distribution across the SPP footprint.

Development of Base Cases – The 2009 series Transmission Service Request (TSR) Models 2010 spring and 2014 summer and winter scenario 0 peak cases were used for this study. After the 2010 spring and the 2014 summer and winter peak cases were developed, each of the control areas' resources were then redispached using current dispatch orders.

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.

Base Case Upgrades - The following facilities are part of the SPP Transmission Expansion Plan or the Balanced Portfolio. 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 FCS-2010-001 Customers have no potential cost for the below listed projects. However, the FCS-2010-001 Customers Generation Facilities in service dates may need to be delayed until the completion of the following upgrades. If for some reason, construction on these projects is discontinued, additional restudies will be needed to determine the interconnection needs of the FCS-2010-001 customers.

- Hitchland 345/230/115kV upgrades to be built by SPS for 2010/2011 in-service³.
- Hitchland – Pringle 230kV line
- Hitchland – Moore County 230kV line
- Hitchland – Ochiltree 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 for 2011 in-service
- Wichita – Reno County – Summit 345kV to be built by WERE for 2011 in-service⁴.
- Rose Hill – Sooner 345kV to be built by WERE/OKGE for 2010 in-service.
- Tuco – Woodward 345kV line approved by the SPP Board of Directors as part of the Balanced Portfolio and issued an NTC in June, 2009
- Spearville – Knoll- Axtell 345kV line approved by the SPP Board of Directors as part of the Balanced Portfolio and issued an NTC in June, 2009

Contingent Upgrades

The following facilities do not yet have approval. These facilities have been assigned to higher queued interconnection customers. These facilities have been included in the models for the FCS-2010-001 study and are assumed to be in service. The FCS-2010-001 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 LGIA or withdraw from the interconnection queue. The FCS-2010-001 Customer Generation Facilities in service dates may need to be delayed until the completion of the following upgrades.

- Finney – Holcomb 345kV ckt #2 line assigned to GEN-2006-044 interconnection customer. This customer is currently in suspension⁵.
- Hitchland – Woodward 345kV line assigned to GEN-2006-049 interconnection customer for in service date yet to be determined
- Stevens County – Gray County 345kV line assigned to 1st Cluster Interconnection Customers
- Central Plains – Setab 115kV transmission line assigned to GEN-2007-013 interconnection customer.
- Spearville – Comanche 345kV line assigned to 1st Cluster Interconnection Customers
- Comanche – Wichita 345kV line assigned to 1st Cluster Interconnection Customers
- Comanche – Woodward 345kV line assigned to 1st Cluster Interconnection Customers
- Conway – Wheeler County 345kV line assigned to 1st Cluster Interconnection Customers

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 Based on Facility Study Posting November 2008

- Wheeler County 345/230/13.2kV autotransformer assigned to 1st Cluster Interconnection Customers
- Wheeler County – Anadarko 345kV line assigned to 1st Cluster Interconnection Customers
- Conway 345/115kV autotransformer assigned to 1st Cluster Interconnection Customers
- Grassland 230/115kV autotransformer #2 assigned to 1st Cluster Interconnection Customers (100% to GEN-2008-016)
- Various other network upgrades as listed in Appendix F.

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

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

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

For each group, the various wind generating plants were modeled at 80% nameplate of maximum generation. The wind generating plants in the other areas were modeled at 20% nameplate of maximum generation. This process created ten 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. 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. Additionally, each wind interconnection request was studied as a stand alone project at 100% nameplate assuming no other projects in the cluster.

Peaking units were not dispatched in the 2010 spring model. To study peaking units' impacts, the 2014 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.

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.

Identification of Electrically Isolated Groups and Requests – From the FCITC analysis, it was determined that some of the regional groups had no common impacts with the other groups.

However, this determination may change as the Interconnection Customers depending upon the time at which the interconnection customers enter either the Preliminary Interconnection System Impact Study (PISIS) or the Definitive Interconnection System Impact Study (DISIS)

Determination of Cost Allocated Network Upgrades

Cost Allocated Network Upgrades of wind generation interconnection requests were determined using the 2010 spring model. Cost Allocated Network Upgrades of peaking units was determined using the 2014 summer peak model. Once a determination of the required Network Upgrades was made, a powerflow model of the 2010 spring case was developed with all cost allocated Network Upgrades in-service. A MUST FCITC analysis was performed to determine the Power Transfer Distribution Factors (PTDF), a distribution factor with no contingency that each generation interconnection request had on each new upgrade. The impact each generation interconnection request had on each upgrade project was weighted by the size of each request. Finally the costs due by each request for a particular project were then determined by allocating the portion of each request's impact over the impact of all affecting requests.

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

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

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

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

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

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

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

- Repeat previous for each responsible GI request for each Project

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

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

Interconnection Facilities

The requirement to interconnect the 4,190.5 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 G. Interconnection Facilities specific to each generation interconnection request are listed in Appendix F. Appendix G lists the costs by upgrade.

Other Network Constraints in the AEPW, MIDW, OKGE, SPS, SUNC, SWPA, MKEC, WERE, AND WFEC transmission systems that were identified are shown in Appendix I. 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. Figure 1 depicts the major transmission line Network Upgrades needed to support the interconnection of the generation amounts requested in this study.

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

Powerflow Analysis

A powerflow analysis was conducted for each Interconnection Customer’s facility using modified versions of the 2010 spring peak and the 2014 summer peak 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 2014 Summer Peak.

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, MIDW, OKGE, SPS, SUNC, SWPA, MKEC, WERE, AND WFEC transmission systems under steady state and contingency conditions in the peak seasons.

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

Woodward Area – The Woodward area contained approximately 500 MW of new interconnection requests. The 345kV line to Oklahoma City showed up as a constraint and the mitigation was a new 345kV line from Woodward to Woodring.

Hitchland Area – This study area contained 1,000 MW of interconnection requests. The major constraints was the previously assigned Hitchland-Woodward 345kV line and the Hitchland – Stevens County 345kV line. A new Hitchland-Woodward 345kV line was modeled to alleviate the constraints.

Spearville Area – This study area contained 812.5 MW of interconnection requests. The constraints were local in nature.

Mingo Area – This study area contained 295.5 MW of interconnection requests. No new constraints were found.

Amarillo Area – This study area contained 229.5 MW of interconnection requests. The constraints were mostly local in nature and due to the generation request size being too large for the existing local system.

New Mexico/West Texas Area – This study area contained 20 MW of interconnection requests. There were no new constraints found.

Southwestern Oklahoma – This study area contained 377 MW of interconnection requests. Prior studies have shown that the areas west of Elk City are fully subscribed due to higher queued interconnection requests. This study has also shown the same results. For the 150 MW GEN-2009-070 interconnection request to be accommodated, a new 345kV point of interconnection will be necessary on the previously allocated Wheeler – Anadarko 345kV transmission line. This line has been allocated to the 1st cluster and has not been approved. The 125MW GEN-2009-060 interconnection request will require the 138kV conversion of a great deal of the Western Farmers 69kV transmission system.

Conclusion

The minimum cost of interconnecting all of the interconnection requests included in the Feasibility Cluster Study is estimated at \$476,000,000 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 AC powerflow, short circuit or transient stability analysis. These studies will be performed if the Interconnection Customer executes the appropriate Interconnection System Impact Study Agreement and provides the required data along with demonstration of Site Control and the appropriate deposit. At the time of the System Impact Cluster Study, a better determination of the interconnection facilities may be available.

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

Appendix

A: Generation Interconnection Requests Considered for Feasibility Study

Request	Amount	Area	Requested Point of Interconnection	Proposed Point of Interconnection	Requested In-Service Date
GEN-2008-042	300	OKGE	Woodring 345kv	Woodring 345kv	12/1/2012
GEN-2008-043	150	SUNC	Woodring 345kv	Woodring 345kv	12/1/2011
GEN-2009-045	150	SWPS	Happy 115kV Substation	Happy 115kV Substation	12/31/2012
GEN-2009-047	200	AEPW	Tap Delaware - Neosho 345kV	Tap Delaware - Neosho 345kV	10/31/2012
GEN-2009-048	102	WERE	Tap Wolf Creek - LaCygne 345kV	Tap Wolf Creek - LaCygne 345kV	12/31/2013
GEN-2009-049	102	WERE	Tap Wolf Creek - LaCygne 345kV	Tap Wolf Creek - LaCygne 345kV	12/31/2014
GEN-2009-050	102	WERE	Tap Wolf Creek - LaCygne 345kV	Tap Wolf Creek - LaCygne 345kV	12/31/2015
GEN-2009-051	102	MIDW	Tap Knoll - Spearville 345kV	Tap Knoll - Spearville 345kV	12/31/2014
GEN-2009-052	102	MIDW	Tap Knoll - Spearville 345kV	Tap Knoll - Spearville 345kV	12/31/2015
GEN-2009-053	100	SUNC	Tap Cudahay - Judson Large 115kV	Tap Cudahay - Judson Large 115kV	12/31/2011
GEN-2009-055S	19.5	AEPW	Tap Clarendon - Hedley 69kV	Tap Clarendon - Hedley 69kV	12/1/2011
GEN-2009-056	102	SUNC	Spearville 345kV Substation	Spearville 345kV Substation	12/31/2012
GEN-2009-057	102	SUNC	Spearville 345kV Substation	Spearville 345kV Substation	12/31/2013
GEN-2009-058	102	SUNC	Spearville 345kV Substation	Spearville 345kV Substation	12/31/2014
GEN-2009-059	100.5	SUNC	Tap Judson Large - Liberal 115kV	Tap Judson Large - Liberal 115kV	12/31/2011
GEN-2009-060	125	WFEC	Gotebo 69kV	Gotebo 138kV	12/31/2011
GEN-2009-061	100.5	SUNC	Tap Pioneer - Pioneer Tap 115kV	Tap Pioneer - Pioneer Tap 115kV	10/1/2012
GEN-2009-062	95	SUNC	Pioneer 115kV	Pioneer 115kV	9/30/2012
GEN-2009-063	300	OKGE	Tatonga 345kV	Tatonga 345kV	11/1/2011
GEN-2009-064	102	SUNC	Spearville 345kV Substation	Spearville 345kV Substation	12/31/2015
GEN-2009-065	100	MIDW	Tap Mingo - Setab 345kV	Tap Mingo - Setab 345kV	1/1/2011
GEN-2009-066	102	AEPW	Tap Blue Canyon - Washita 138kV	Tap Blue Canyon - Washita 138kV	12/31/2012
GEN-2009-067S	20	SWPS	Seven Rivers 69kV	Seven Rivers 69kV	12/1/2010
GEN-2009-068	60	AEPW	Hedley 69kV	Hedley 69kV	3/31/2010
GEN-2009-070	150	AEPW	Erick 138kV	Erick 138kV	12/31/2011
GEN-2009-071	200	OKGE	Tatonga 345kV	Tatonga 345kV	12/31/2011
GEN-2009-072	1000	SWPS	Hitchland 345kV	Hitchland 345kV	1/1/2014
Grouped Total	4,190.5				

* Planned Facility

^ Proposed Facility

** Alternate requests - counted as one request for study purpose

*** Electrically Remote Interconnection Requests

****Portions of this request are alternates for other interconnection requests listed as prior queued generators

B: Prior Queued Interconnection Requests

Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2001-014	96	WFEC	Fort Supply 138kV	On-Line
GEN-2001-026	74	WFEC	Washita 138kV	On-Line
GEN-2001-033	180	SPS	San Juan Mesa Tap 230kV	On-Line
GEN-2001-036	80	SPS	Caprock Tap 115kV	On-Line
GEN-2001-037	100	OKGE	Windfarm Switching 138kV	On-Line
GEN-2001-039A	105	MKEC	Greensburg - Judson-Large 115kV	On Schedule for 2011
GEN-2001-039M	100	SUNC	Leoti - City Services 115kV	On-Line
GEN-2002-004	200	WERE	Latham 345kV	On-Line
GEN-2002-005	120	WFEC	Morewood - Elk City 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 100MW
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-2003-021N	75	NPPD	Ainsworth Wind Tap	On-Line
GEN-2003-022	120	AEPW	Washita 138kV	On-Line
GEN-2004-003	240	SPS	Conway 115kV	On Suspension
GEN-2004-005N	30	NPPD	St. Francis 115kV	IA Pending
GEN-2004-010	300	WERE	Latham 345kV	On Suspension
GEN-2004-014	155	MKEC	Spearville 230kV	On Schedule for 2011
GEN-2004-020	27	AEPW	Washita 138kV	On-Line
GEN-2005-005	18	OKGE	Windfarm Tap 138kV	pending
GEN-2005-008	120	OKGE	Woodward 138kV	On-Line
GEN-2005-010	160	SPS	Roosevelt County - Tolk West 230kV (Single Ckt Tap)	On Suspension
GEN-2005-012	250	SUNC	Spearville 345kV	IA Executed/On Schedule 10/1/2011
GEN-2005-013	201	WERE	Tap Latham - Neosho	On Schedule 2011
GEN-2005-015	150	SPS	Tuco - Oklaunion 345kV	On Suspension
GEN-2005-016	150	WFEC	Tap Latham - Neosho	On Schedule 2012
GEN-2005-017	340	SPS	*Hitchland - Potter County 345kV	On Suspension
GEN-2005-021	86	SPS	Kirby 115kV	On Suspension
GEN-2006-002	150	AEPW	Grapevine - Elk City 230kV	On Suspension
GEN-2006-006	206	MKEC	Spearville 230kV	Under Study (ICS-2008-001)
GEN-2006-014	300	MIPU	Tap Maryville - Clarinda 161kV	On Schedule 2011
GEN-2006-017	300	MIPU	Tap Maryville - Clarinda 161kV	On Suspension
GEN-2006-018	170	SPS	Tuco 230kV	IA Executed/On Schedule 6/1/2010
GEN-2006-020	18.9	SPS	DWS Frisco Tap	IA Executed/On Schedule 12/31/2010
GEN-2006-020N	42	NPPD	Bloomfield 115kV	1/1/2009
GEN-2006-021	101	WPEK	Flat Ridge Tap 138kV	On-Line
GEN-2006-022	150	WPEK	Ninnescah Tap 115kV	On Suspension
GEN-2006-024	20	WFEC	South Buffalo Tap 69kV	On-Line
GEN-2006-031	75	MIDW	Knoll 115kV	On-Line

Appendix B: Prior Queued Interconnection Requests



Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2006-032	200	MIDW	South Hays 230kV	On Schedule for 2012
GEN-2006-034	81	SUNC	Kanarado - Sharon Springs 115kV	On Suspension
GEN-2006-035	225	AEPW	Grapevine - Elk City 230kV	On Suspension
GEN-2006-038N005	80	NPPD	Broken Bow 115kV	IA Pending
GEN-2006-038N019	80	NPPD	Petersburg 115kV	IA Pending
GEN-2006-037N	100.5	NPPD	Valentine 115 kV	Under Study (DISIS-2009-001)
GEN-2006-037N1	75	NPPD	Broken Bow 115kV	Under Study (DISIS-2009-001)
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 Suspension
GEN-2006-043	99	AEPW	Grapevine - Elk City 230kV	On-Line
GEN-2006-044	370	SPS	*Hitchland 345kV	On Suspension
GEN-2006-044N	40.5	NPPD	Tap Neligh – Petersburg 115kV	Under Study (DISIS-2009-001)
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 2010
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	IA Pending
GEN-2007-002	160	SPS	Grapevine 115kV	On Suspension
GEN-2007-005	200	SPS	Pringle 115kV	Under Study (ICS-2008-001)
GEN-2007-006	160	OKGE	Roman Nose 138kV	On Suspension
GEN-2007-008	300	SPS	Grapevine EHV 230kV	Under Study (ICS-2008-001)
GEN-2007-011	135	SUNC	Syracuse 115kV	On Suspension
GEN-2007-011N06	75	NPPD	Tap Neligh – Petersburg 115kV	Under Study (DISIS-2009-001)
GEN-2007-011N08	81	NPPD	Bloomfield 115kV	On-Line
GEN-2007-011N09	75	NPPD	Bloomfield 115kV	Under Study (DISIS-2009-001)
GEN-2007-013	99	SUNC	Selkirk 115kV	IA Pending
GEN-2007-015	135	WERE	Tap Humboldt – Kelly 161kV	IA Pending
GEN-2007-017	101	MIPU	Tap Maryville – Clarinda 161kV	On Schedule 2010
GEN-2007-021	201	OKGE	*Tatonga 345kV	Under Study (ICS-2008-001)
GEN-2007-025	300	WERE	Tap Woodring – Wichita 345kV	Under Study (ICS-2008-001)
GEN-2007-032	150	WFEC	Tap Clinton Junction – Clinton 138kV	Under Study (ICS-2008-001)
GEN-2007-034	150	SPS	Tap Eddy – Tolk 345kV	Under Study (ICS-2008-001)
GEN-2007-038	200	SUNC	Spearville 345kV	Under Study (ICS-2008-001)
GEN-2007-040	200	SUNC	Tap Holcomb – Spearville 345kV	Under Study (DISIS-2009-001)
GEN-2007-043	300	AEPW	Tap Lawton Eastside – Cimarron 345kV	Under Study (ICS-2008-001)
GEN-2007-044	300	OKGE	*Tatonga 345kV	Under Study (ICS-2008-001)
GEN-2007-045	171	SPS	Conway 115kV	Under Study (ICS-2008-001)
GEN-2007-046	200	SPS	*Hitchland 115kV	Under Study (ICS-2008-001)
GEN-2007-048	400	SPS	Tap Amarillo South – Swisher 230kV	Under Study (ICS-2008-001)

Appendix B: Prior Queued Interconnection Requests



Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
GEN-2007-050	171	OKGE	*Woodward 138kV	Under Study (ICS-2008-001)
GEN-2007-051	200	WFEC	Mooreland 138kV	Under Study (ICS-2008-001)
GEN-2007-052	150	WFEC	Anadarko 138kV	Under Study (ICS-2008-001)
GEN-2007-053	110	MIPU	Tap Maryville – Clarinda 161kV	Under Study (ICS-2008-001)
GEN-2007-057	35	SPS	Moore County East 115kV	Under Study (ICS-2008-001)
GEN-2007-062**	765	OKGE	*Woodward 345kV	Under Study (ICS-2008-001)
GEN-2008-003	101	OKGE	*Woodward EHV 138kV	Under Study (ICS-2008-001)
GEN-2008-008	60	SPS	Graham 115kV	Under Study (ICS-2008-001)
GEN-2008-009	60	SPS	San Juan Mesa Tap 230kV	Under Study (ICS-2008-001)
GEN-2008-013	300	OKGE	Tap Woodring – Wichita 345kV	Under Study (ICS-2008-001)
GEN-2008-014	150	SPS	Tap Tuco – Oklaunion 345kV	Under Study (ICS-2008-001)
GEN-2008-016	248	SPS	Grassland 230kV	Under Study (ICS-2008-001)
GEN-2008-017	300	SUNC	Setab 345kV	Under Study (ICS-2008-001)
GEN-2008-018	405	SUNC	Finney 345kV	Under Study (ICS-2008-001)
GEN-2008-019**	300	OKGE	*Tatonga 345kV	Under Study (ICS-2008-001)
GEN-2008-021	42	WERE	Wolf Creek 345kV	Under Study (DISIS-2009-001)
GEN-2008-023	150	AEPW	Hobart Junction 138kV	Under Study (DISIS-2009-001)
GEN-2008-025	101.2	SUNC	Ruleton 115kV	Under Study (DISIS-2009-001)
GEN-2008-029	250.5	OKGE	Woodward EHV 138kV	Under Study (DISIS-2009-001)
GEN-2008-038	150	AEPW	Tap Shidler – West Pawhuska 138kV	Under Study (DISIS-2009-001)
GEN-2008-051	322	SPS	Potter 345kV	Under Study (DISIS-2009-001)
GEN-2008-079	100.5	MKEC	Tap Judson Large – Cudahy 115kV	Under Study (DISIS-2009-001)
GEN-2008-086N02	200	NPPD	Tap Ft. Randall – Columbus 230kV	Under Study (DISIS-2009-001)
GEN-2008-092	201	MIDW	Knoll 115kV	Under Study (DISIS-2009-001)
GEN-2008-119O	60	OPPD	Tap Humboldt – Kelly 161kV	IA Pending
GEN-2008-124	200.1	MKEK	Spearville 230kV	Under Study (DISIS-2009-001)
GEN-2008-127	200.1	WERE	Tap Sooner – Rose Hill 345kV	Under Study (DISIS-2009-001)
GEN-2008-129	80	MIPU	Pleasant Hill 161kV	Under Study (DISIS-2009-001)
GEN-2009-006	60	AEPW	SE Fayetteville 161kV	Under Study (DISIS-2009-001)
GEN-2009-011	50	SUNC	Tap Plainville – Phillipsburg 115kV	Under Study (DISIS-2009-001)
GEN-2009-016	140	MKEC	Falcon Road 138kV	Under Study (DISIS-2009-001)
GEN-2009-017	60	SPS	Tap Pembroke – Stiles 138kV	Under Study (DISIS-2009-001)
GEN-2009-025	60	OKGE	Kay Coop	Under Study (DISIS-2009-001)

Appendix B: Prior Queued Interconnection Requests



Request	Amount	Area	Requested/Proposed Point of Interconnection	Status or In-Service Date
Broken Bow	8.3	NPPD	Broken Bow 115kV	On-Line
Ord	13.9	NPPD	Ord 115kV	On-Line
Stuart	2.1	NPPD	Stuart 115kV	On-Line
Genoa	4	NPPD	Genoa 115kV	On-Line
AECI-1	400	AECI	Tap Cooper – Fairport 345kV	Under Study
AECI-2	99	AECI	Lathrop 161kV	Under Study
AECI-3	201	AECI	Osborn 161kV	Under Study
AECI-4	150	AECI	Fairfax 138kV	Under Study
AECI-5	100	AECI	Maryville 161kV	Under Study
AECI-6	200	AECI	Fairfax 138kV Tap Fairfax 138kV	Under Study
AECI-7	300	AECI	Maryville 161kV	Under Study
Llano Estacado	80	SPS	Llano Wind Farm Tap 115kV	On-Line
Distribution Wind	90	SPS	DUMAS_19ST 115kV	On-Line
			Etter 115kV	On-Line
			Sherman 115kV	On-Line
			Spearman 115kV	On-Line
			Texas County 115kV	On-Line
Blue Canyon II	153	WFEC	Washita 138kV (GEN-2003-004)	On-Line
			Washita 138kV (GEN-2004-023)	On-Line
			Washita 138kV (GEN-2005-003)	On-Line
Montezuma	110	MKEC	Haggard 115kV	On-Line
GROUPED TOTAL	21,434.6			

* Planned 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	Morewood - Elk City 138kV
	GEN-2005-005	18	OKGE	Windfarm Tap 138kV
	GEN-2005-008	120	OKGE	Woodward 138kV
	GEN-2006-024	20	WFEC	South Buffalo Tap 69kV
	GEN-2006-046	131	OKGE	Dewey 138kV
	GEN-2007-006	160	OKGE	Roman Nose 138kV
	GEN-2007-021	201	OKGE	*Tatonga 345kV
	GEN-2007-044	300	OKGE	*Tatonga 345kV
	GEN-2007-050	171	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 345kv	
PRIOR QUEUED SUBTOTAL		3,053.5		
Cluster	Request	Amount	Area	Proposed Point of Interconnection
Woodward	GEN-2009-063	300	OKGE	Tatonga 345kV
	GEN-2009-071	200	OKGE	Tatonga 345kV
WOODWARD Subtotal		500		
AREA SUBTOTAL		3,553.5		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	SPS Distribution	90	SPS	Various
	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	*Hitchland - Finney 345kV
	GEN-2003-020	160	SPS	Martin 115kV
	GEN-2005-017	340	SPS	*Hitchland - Potter County 345kV
	GEN-2006-020	18.9	SPS	DWS Frisco Tap
	GEN-2006-044	370	SPS	*Hitchland 345kV
	GEN-2006-049	400	SPS	*Hitchland - Finney 345kV
	GEN-2007-005	200	SPS	Pringle 115kV
	GEN-2007-046	200	SPS	*Hitchland 115kV
	GEN-2007-057	35	SPS	Moore County East 115kV
PRIOR QUEUED SUBTOTAL		2,481.9		
Cluster	Request	Amount	Area	Proposed Point of Interconnection
Hitchland	GEN-2009-072	1,000	SWPS	Hitchland 345kV
HITCHLAND SUBTOTAL		1,000		
AREA SUBTOTAL		3,481.9		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	Montezuma	110	MKEC	Haggard 115kV
	GEN-2001-039A	105	WPEK	Greensburg - Judson-Large 115kV
	GEN-2002-025A	150	WPEK	Spearville 230kV
	GEN-2004-014	155	MIDW	Spearville 230kV
	GEN-2005-012	250	WPEK	Spearville 345kV
	GEN-2006-006	206	MKEC	Spearville 230kV
	GEN-2006-021	101	WPEK	Flat Ridge Tap 138kV
	GEN-2006-022	150	WPEK	Ninnescah Tap 115kV
	GEN-2007-038	200	SUNC	Spearville 345kV
	GEN-2007-040	200	SUNC	Tap Holcomb – Spearville 345kV
	GEN-2008-018	405	SUNC	Finney 345kV
	GEN-2008-079	100.5	MKEC	Tap Judson Large – Cudahy 115kV
	GEN-2008-124	200.1	MKEC	Spearville 230kV
PRIOR QUEUED SUBTOTAL		2,332.6		
Cluster	Request	Amount	Area	Proposed Point of Interconnection
Spearville	GEN-2009-051	102	MIDW	Tap Knoll - Spearville 345kV
	GEN-2009-052	102	MIDW	Tap Knoll - Spearville 345kV
	GEN-2009-053	100	SUNC	Tap Cudahay - Judson Large 115kV
	GEN-2009-056	102	SUNC	Spearville 345kV Substation
	GEN-2009-057	102	SUNC	Spearville 345kV Substation
	GEN-2009-058	102	SUNC	Spearville 345kV Substation
	GEN-2009-059	100.5	SUNC	Tap Judson Large - Liberal 115kV
	GEN-2009-064	102	SUNC	Spearville 345kV Substation
SPEARVILLE SUBTOTAL		812.5		
AREA SUBTOTAL		2,945.1		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	GEN-2001-039M	100	SUNC	Leoti - City Services 115kV
	GEN-2006-034	81	SUNC	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		
Cluster	Request	Amount	Area	Proposed Point of Interconnection
Mingo	GEN-2009-061	100.5	SUNC	Tap Pioneer - Pioneer Tap 115kV
	GEN-2009-062	95	SUNC	Pioneer 115kV
	GEN-2009-065	100	MIDW	Tap Mingo - Setab 345kV
MINGO SUBTOTAL		295.5		
AREA SUBTOTAL		1,219.7		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	Lano Estacada	80	SPS	Lano Estacada 115kV
	GEN-2002-022	240	SPS	Bushland 230kV
	GEN-2004-003	240	SPS	Conway 115kV
	GEN-2005-021	86	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-2007-008	300	SPS	Grapevine 345kV
	GEN-2007-045	171	SPS	Grapevine 345kV
	GEN-2007-048	400	SPS	Amarillo South - Swisher County 230kV
GEN-2008-051	322	SPS	Potter	
PRIOR QUEUED SUBTOTAL		2,879		
Cluster	Request	Amount	Area	Proposed Point of Interconnection
Amarillo	GEN-2009-045	150	SWPS	Happy 115kV Substation
	GEN-2009-055S	19.5	AEPW	Tap Clarendon - Hedley 69kV
	GEN-2009-068	60	AEPW	Hedley 69kV
AMARILLO SUBTOTAL		229.5		
AREA SUBTOTAL		3,108.5		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	GEN-2001-033	180	SPS	San Juan Mesa Tap 230kV
	GEN-2001-036	80	SPS	Norton 115kV
	GEN-2005-010	160	SPS	Roosevelt County - Tolk West 230kV (Single Ckt Tap)
	GEN-2005-015	150	SPS	TUCO - Oklaunion 345kV
	GEN-2006-018	170	SPS	Tuco 230kV
	GEN-2007-034	150	SPS	Tolk - Eddy County 345kV
	GEN-2008-008	60	SPS	Graham 115kV
	GEN-2008-009	60	SPS	San Juan Mesa 230kV
	GEN-2008-014	150	SPS	TUCO - Oklaunion 345kV
	GEN-2008-016	248	SPS	Grassland 230kV
	GEN-2009-017	60	SPS	Pembrook – Stiles 138kV
PRIOR QUEUED SUBTOTAL		1,468		
Cluster	Request	Amount	Area	Proposed Point of Interconnection
S Pandle	GEN-2009-067S	20	SWPS	Seven Rivers 69kV
SOUTH PANHANDLE/NM AREA SUBTOTAL		20		
AREA SUBTOTAL		1,488		

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	150	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	Clinton Junction - Clinton 138kV
	GEN-2007-043	300	AEPW	Lawton Eastside - Cimarron 345kV
	GEN-2007-052	150	WFEC	Anadarko 138kV
	GEN-2008-023	150	AEPW	Hobart Junction 138kV
	GEN-2009-016	140.3	AEPW	Falcon Road 138kV
PRIOR QUEUED SUBTOTAL		1,838.3		
Cluster	Request	Amount	Area	Proposed Point of Interconnection
SW Oklahoma	GEN-2009-060	125	WFEC	Gotebo 138kV
	GEN-2009-066	102	AEPW	Tap Blue Canyon - Washita 138kV
	GEN-2009-070	150	AEPW	Erick 138kV
SW OKLAHOMA SUBTOTAL		377		
AREA SUBTOTAL		2,215.3		
Cluster	Request	Amount	Area	Proposed Point of Interconnection
South Oklahoma	GEN-2009-034	102	WFEC	Cimmaron - Lawton 345kV
	GEN-2009-035	102	WFEC	Cimmaron - Lawton 345kV
	GEN-2009-036	202	OKGE	Sunny Side - Lawton 345kV
	GEN-2009-037	202	OKGE	Sunny Side - Lawton 345kV
	GEN-2009-032S	5.3	OKGE	Foster substation 138kV
AREA SUBTOTAL		613.3		

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-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
PRIOR QUEUED SUBTOTAL		597.5		
NE NEBRASKA SUBTOTAL		597.5		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	Broken Bow	8.3	NPPD	Broken Bow 115kV
	Ord	13.9	NPPD	Bloomfield 115kV
	Stuart	2.1	NPPD	Petersburg 115kV
	GEN-2003-021N	75	NPPD	Ainsworth Wind Tap 115kV
	GEN-2004-005N	30	NPPD	St. Francis 115kV
	GEN-2006-037N	100.5	NPPD	Valentine 115kV
	GEN-2006-037N1	75	NPPD	Broken Bow 115kV
	GEN-2006-038N05	80	NPPD	Broken Bow 115kV
PRIOR QUEUED SUBTOTAL		384.8		
NORTH NEBRASKA AREA SUBTOTAL		384.8		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	GEN-2003-006A-E	100	EMDE	Elm Creek 230kV
	GEN-2003-006A-W	100	WERE	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-2009-011	50	MKEC	Tap Plainville – Phillipsburg 115kV
PRIOR QUEUED SUBTOTAL		976		
NORTH KANSAS SUBTOTAL		976		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	GEN-2009-006	60	AEPW	SE Fayetteville 161kV
PRIOR QUEUED SUBTOTAL		60		
NW ARKANSAS AREA SUBTOTAL		60		

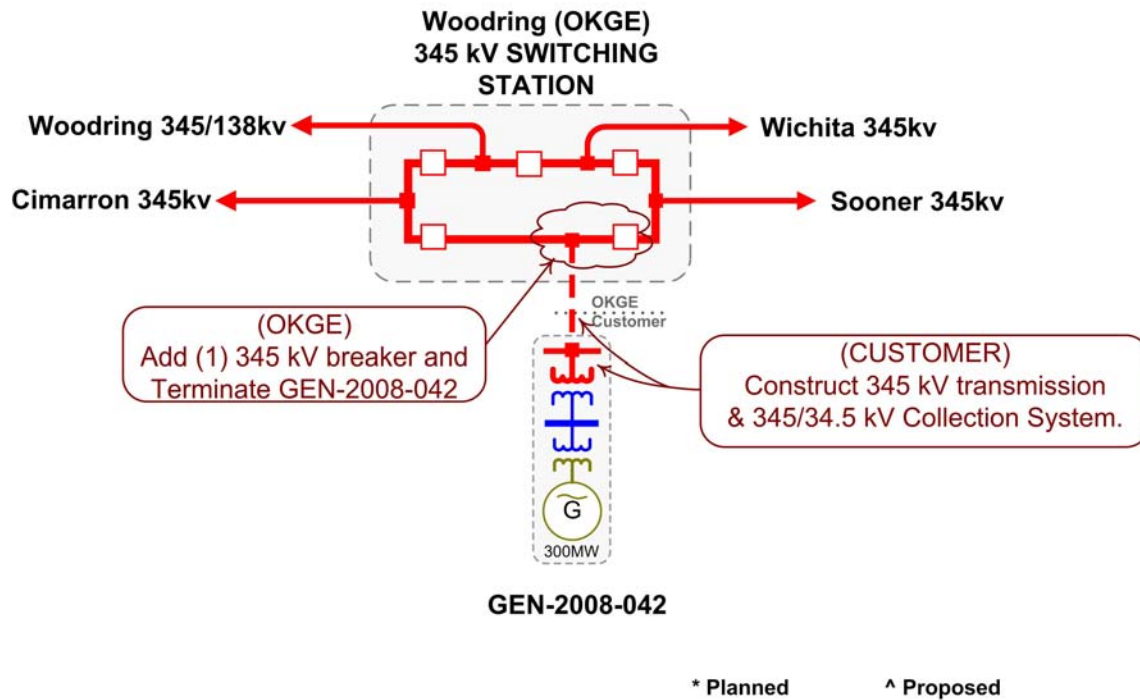
Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	AECI-1	400	AECI	Tap Cooper – Fairport 345kV
	AECI-2	99	AECI	Lathrop 161kV
	AECI-3	201	AECI	Osborn 161kV
	AECI-5	100	AECI	Maryville 161kV
	AECI-7	300	AECI	Maryville 161kV
	GEN-2006-014	300	MIPU	Tap Maryville – Clarinda 161kV
	GEN-2006-017	300	MIPU	Tap Maryville – Clarinda 161kV
	GEN-2007-015	135	WERE	Tap Humboldt – Kelly 161kV
	GEN-2007-017	101	MIPU	Tap Maryville – Clarinda 161kV
	GEN-2007-053	110	MIPU	Tap Maryville – Clarinda 161kV
	GEN-2008-1190	60	OPPD	Tap Humboldt – Kelly 161kV
GEN-2008-129	80	MIPU	Pleasant Hill 161kV	
PRIOR QUEUED SUBTOTAL		2,186		
NORTHWEST MISSOURI SUBTOTAL		2,186		

Cluster	Request	Amount	Area	Proposed Point of Interconnection
Prior Queued	AECI-4	150	AECI	Tap Fairfax – Fairfax Tap 138kV
	AECI-6	200	AECI	Tap Fairfax – Fairfax Tap 138kV
	GEN-2002-004	200	WERE	Latham 345kV
	GEN-2004-010	300	WERE	Latham 345kV
	GEN-2005-013	201	WERE	Tap Latham - Neosho
	GEN-2005-016	150	WFEC	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	WERE	Shidler – West Pawhuska 138kV
	GEN-2008-127	200.1	WERE	Sooner – Rose Hill 345kV
GEN-2009-025	60	OKGE	Kay Coop 69kV	
PRIOR QUEUED SUBTOTAL		2,253.1		
Cluster	Request	Amount	Area	Proposed Point of Interconnection
North Oklahoma	GEN-2008-042	300	OKGE	Woodring 345kv
	GEN-2008-043	150	SUNC	Woodring 345kv
	GEN-2009-047	200	AEPW	Tap Delaware - Neosho 345kV
	GEN-2009-048	102	WERE	Tap Wolf Creek - LaCygne 345kV
	GEN-2009-049	102	WERE	Tap Wolf Creek - LaCygne 345kV
	GEN-2009-050	102	WERE	Tap Wolf Creek - LaCygne 345kV
NORTH OKLAHOMA		956		
AREA SUBTOTAL		3,659.2		
***CLUSTERED TOTAL (w/o PRIOR QUEUED)		4,190.5		
***CLUSTERED TOTAL (w/PRIOR QUEUED)		25,625.1		

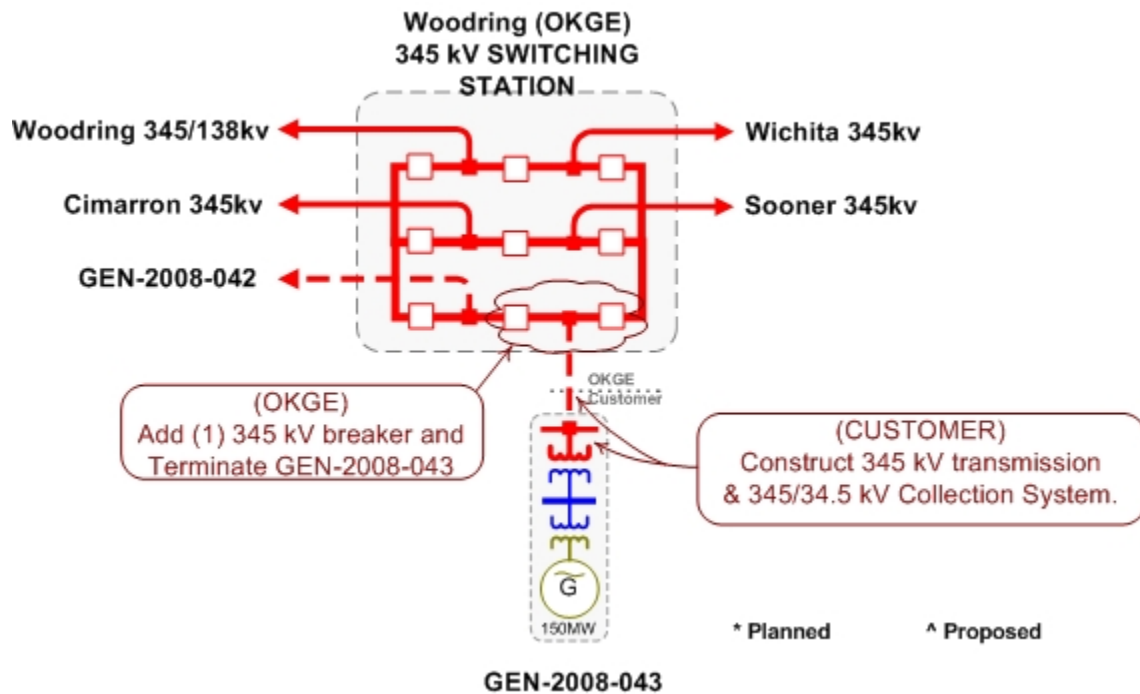
- * Planned Facility
- ^ Proposed Facility
- ** Alternate requests - counted as one request for study purpose
- *** Electrically Remote Interconnection Requests

D: Proposed Point of Interconnection One line Diagrams

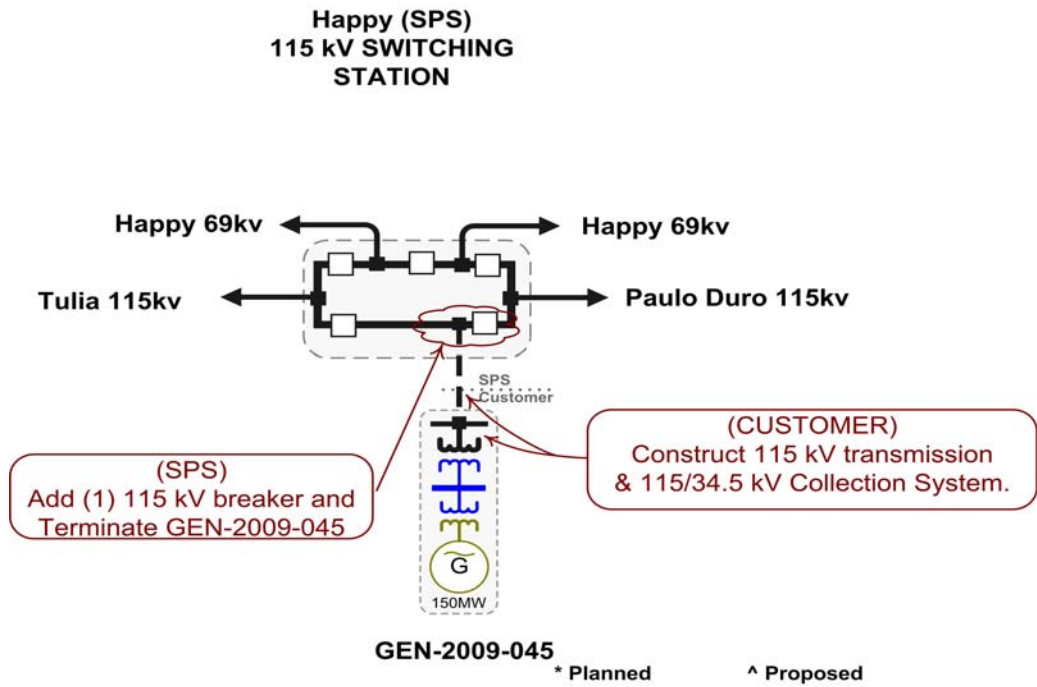
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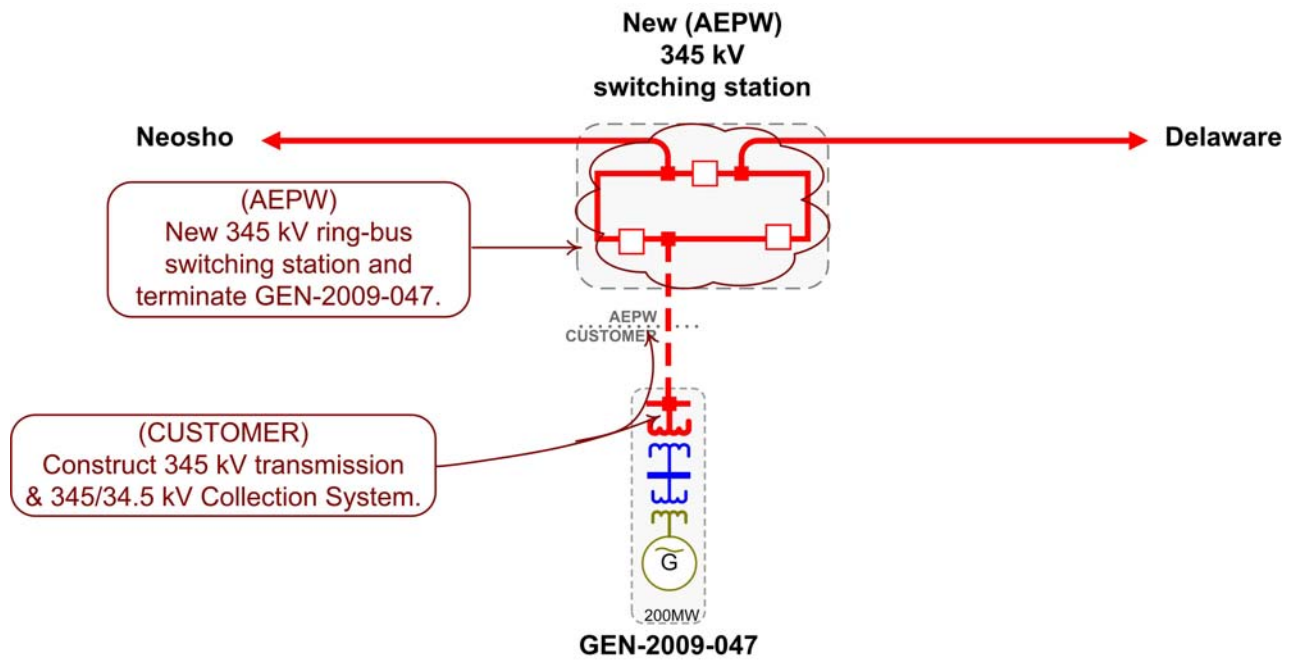
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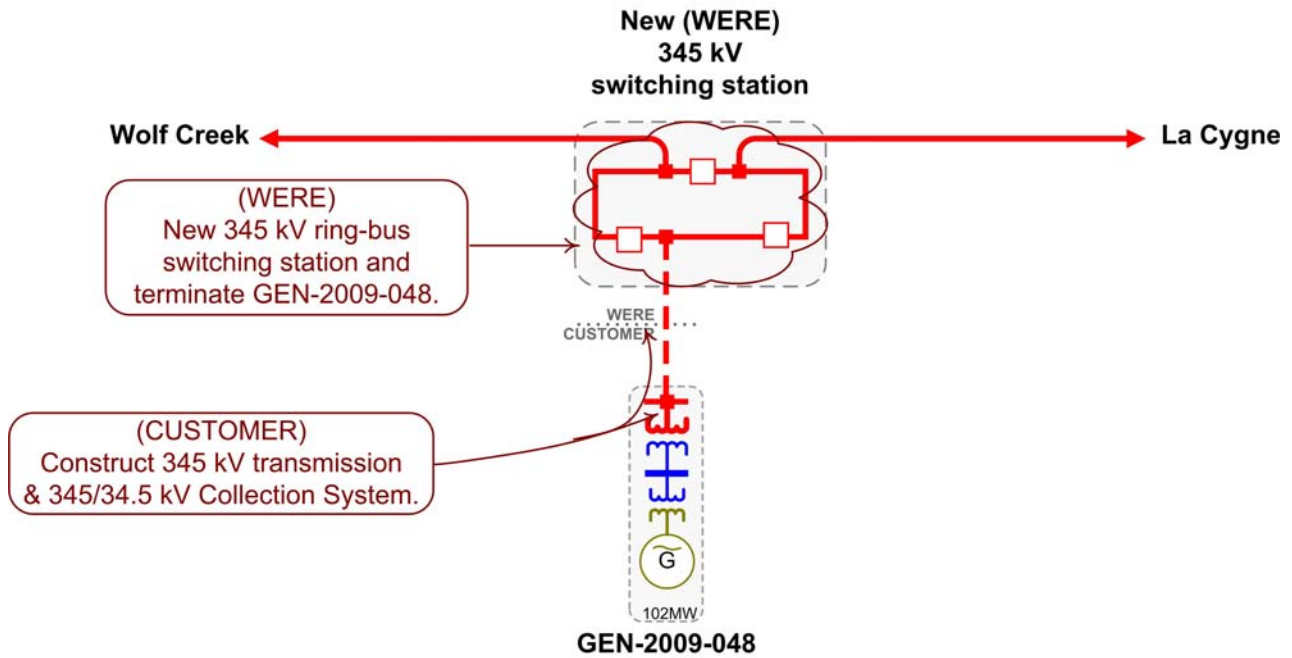
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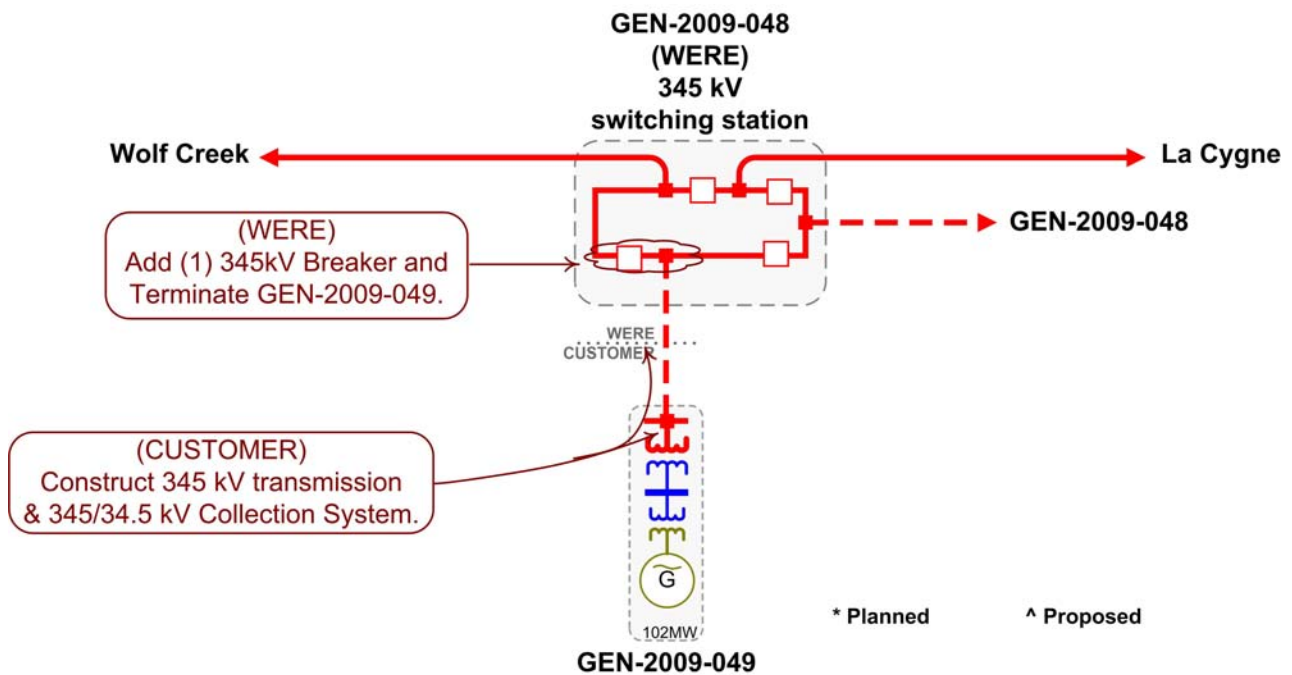
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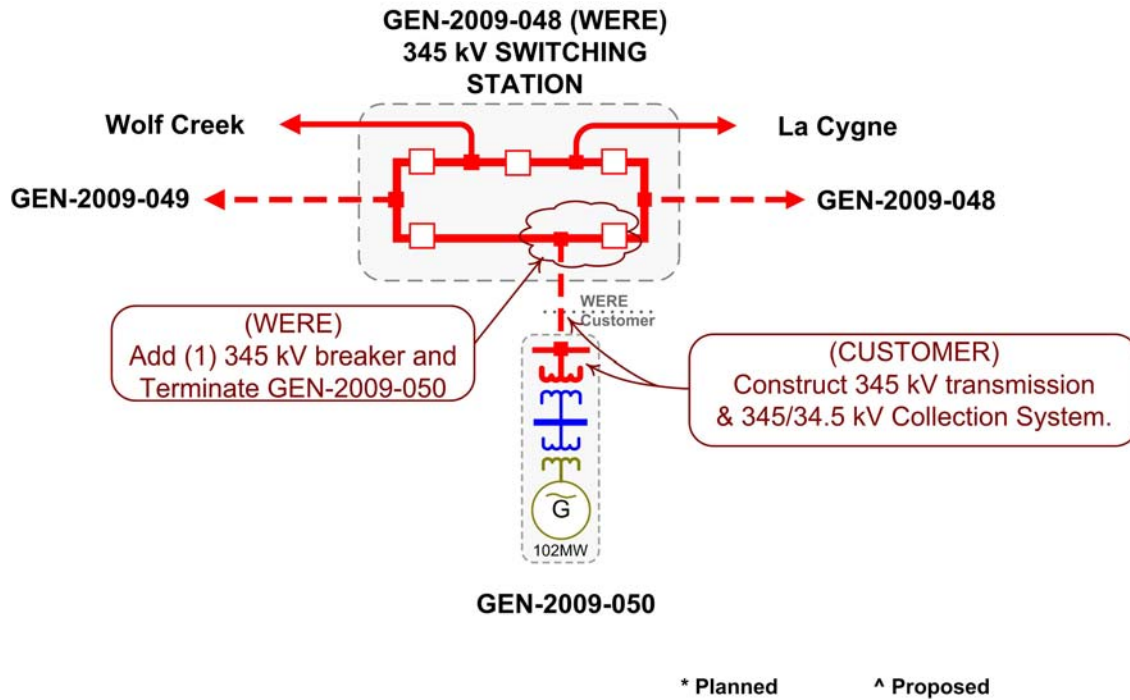
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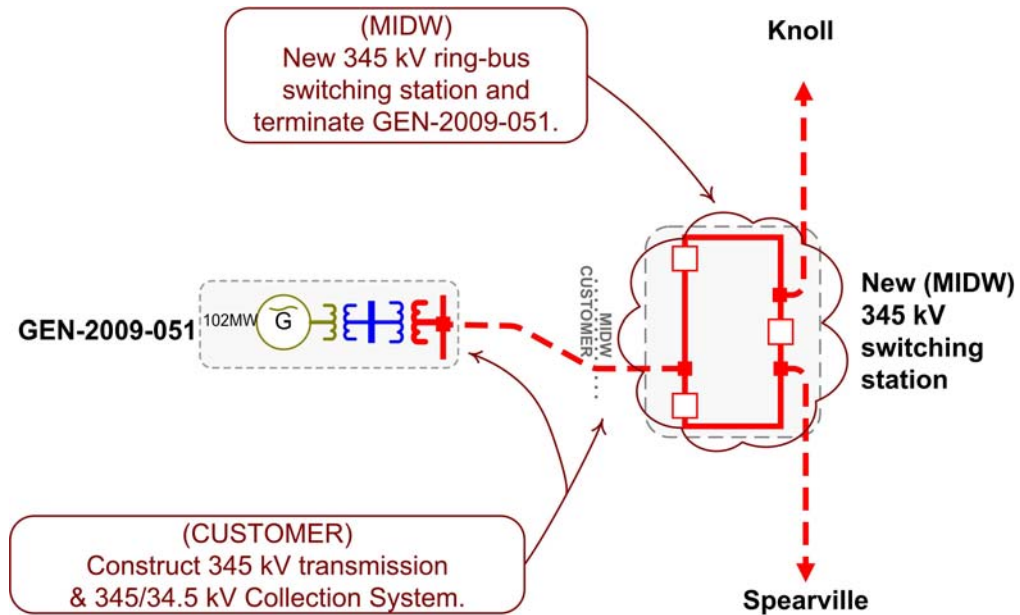
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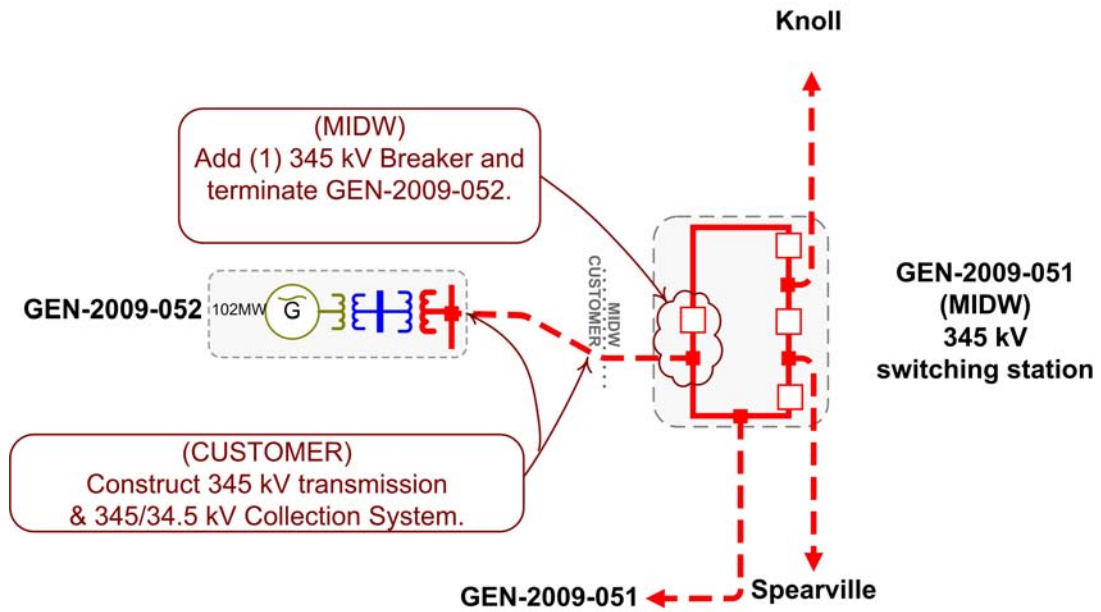
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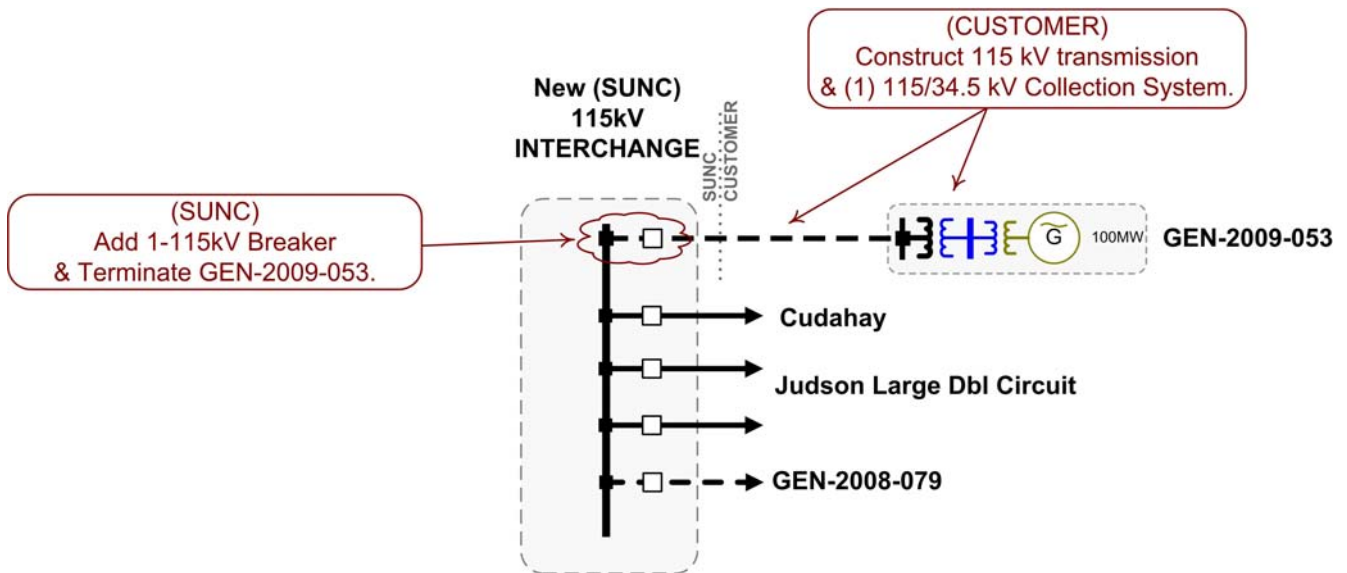
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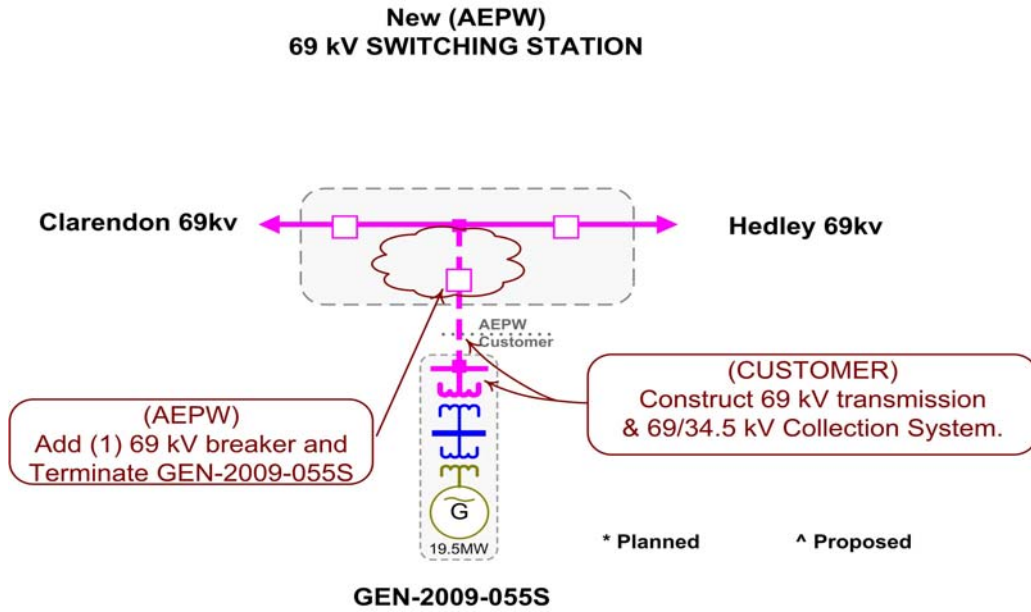
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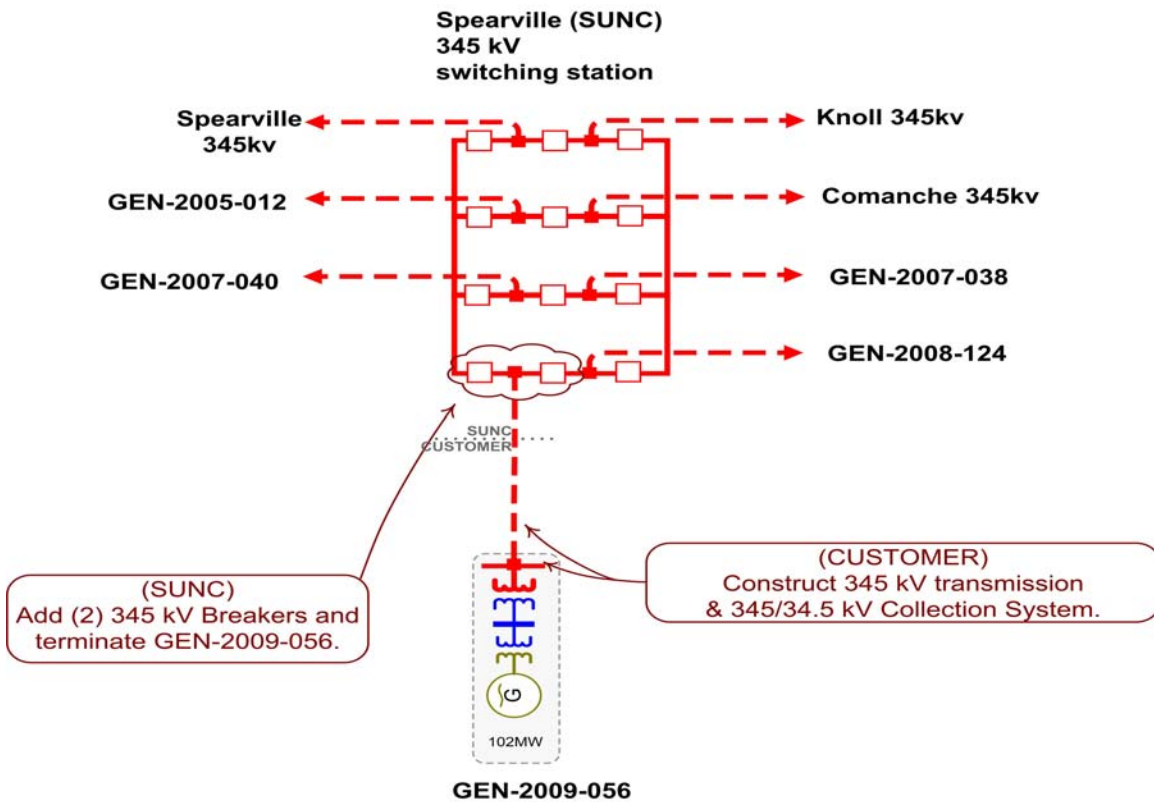
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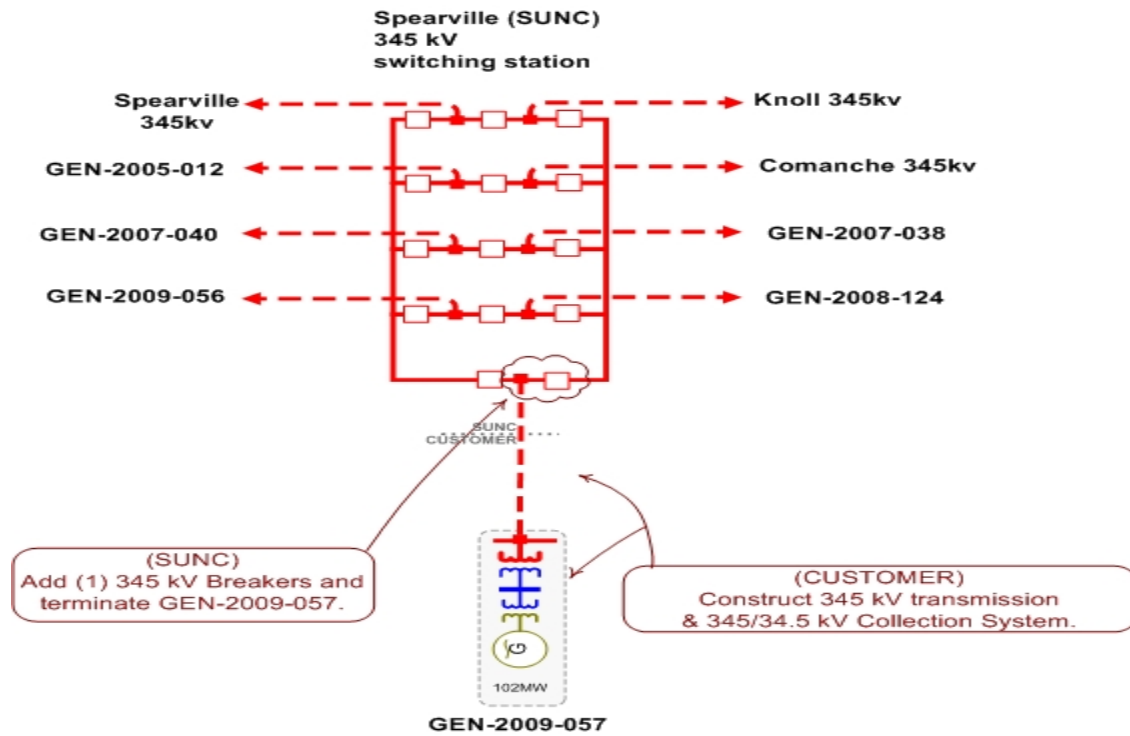
GEN-2009-055S



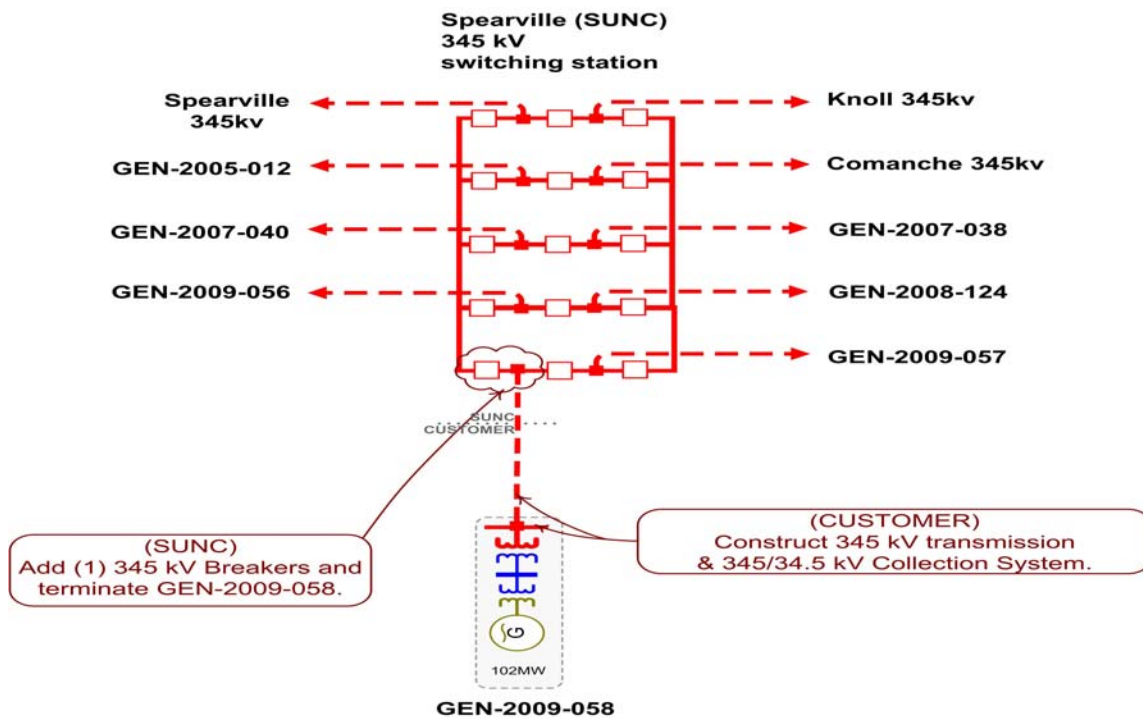
GEN-2009-056



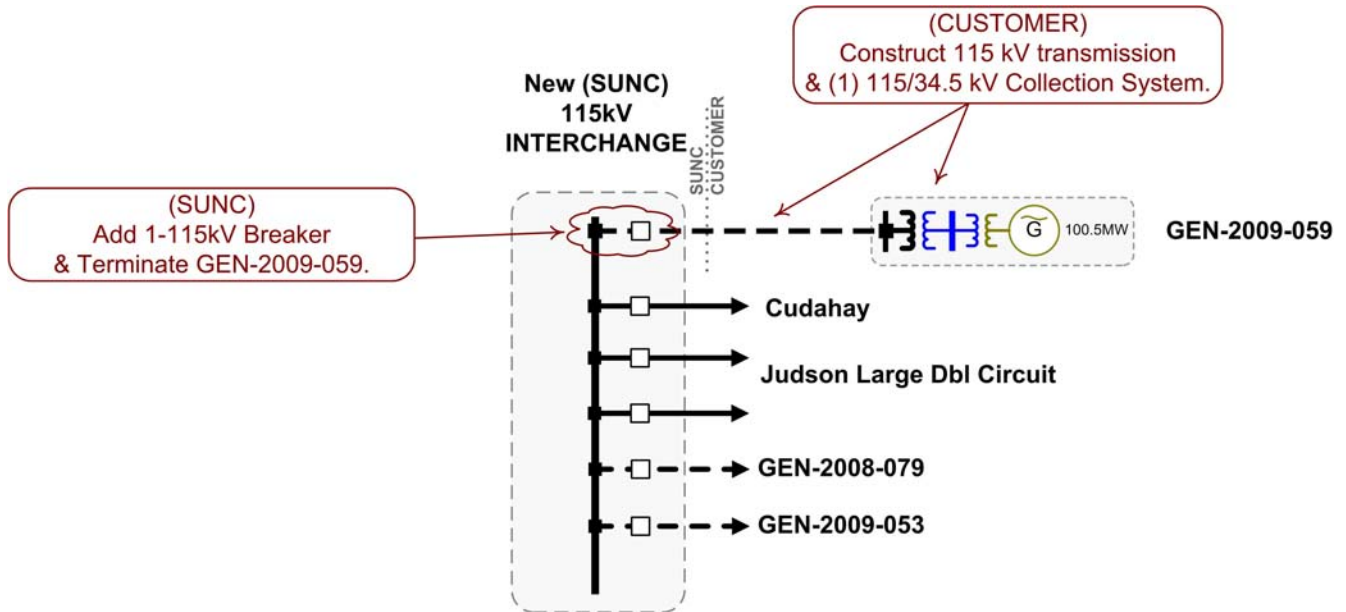
GEN-2009-057



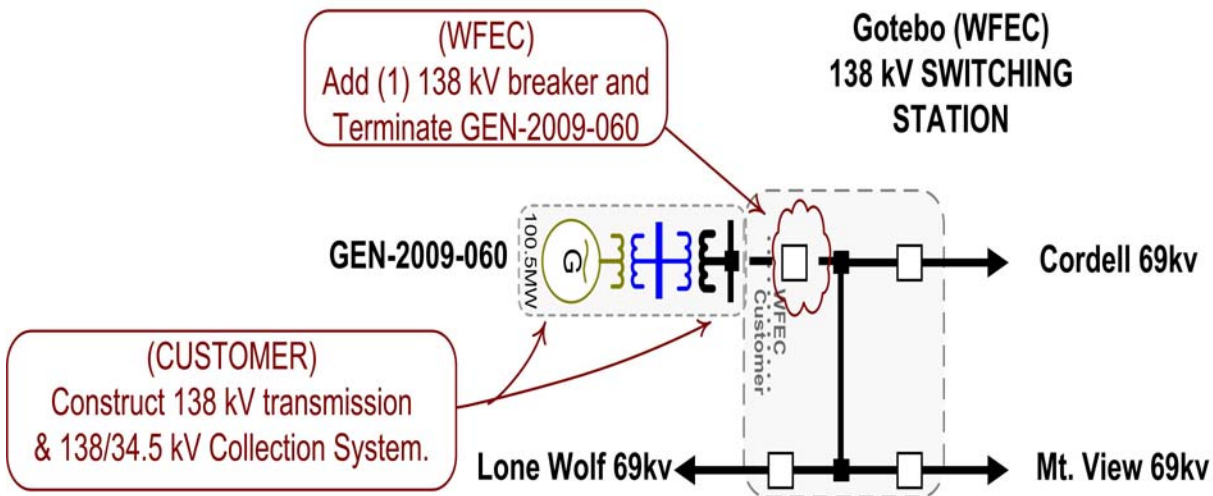
GEN-2009-058



GEN-2009-059



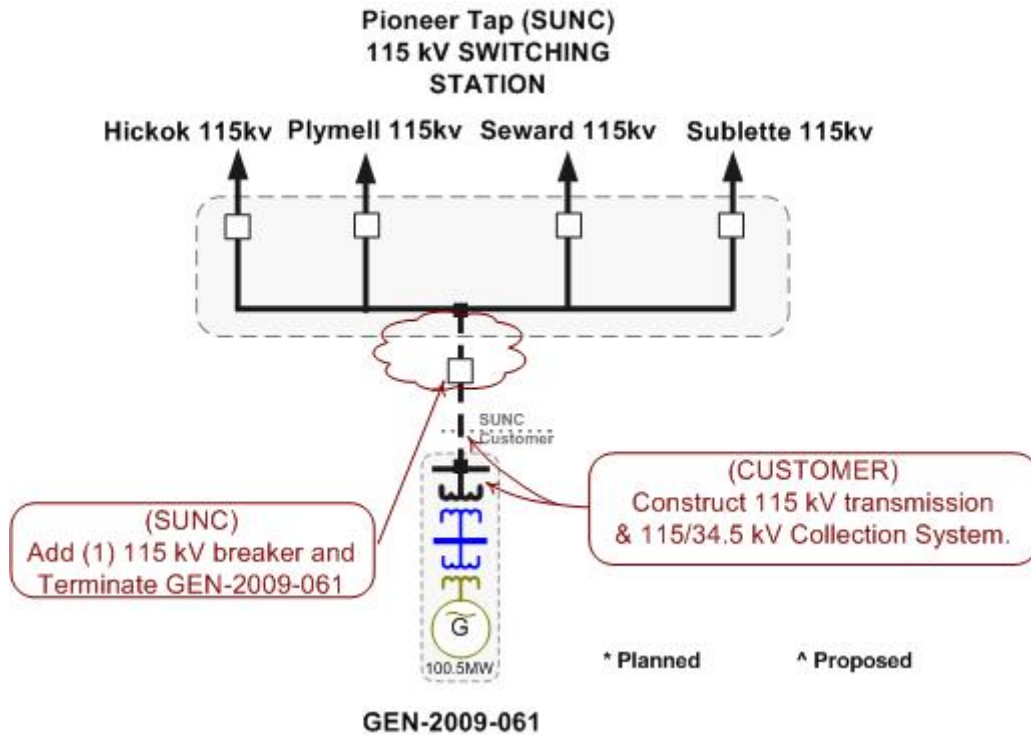
GEN-2009-060



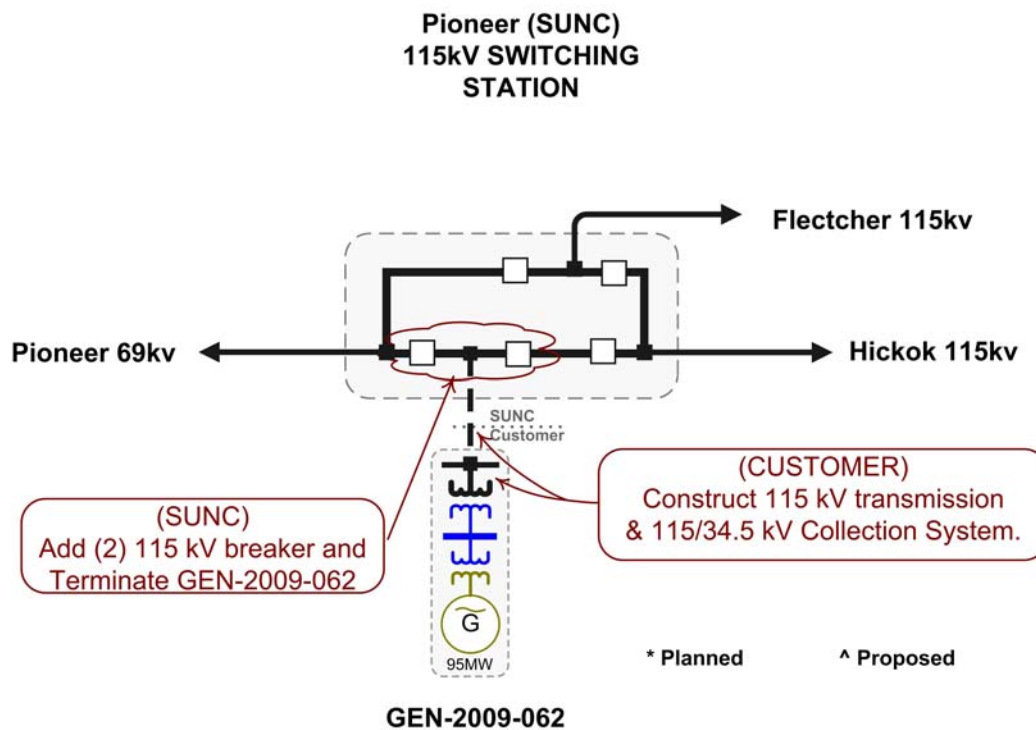
* Planned

^ Proposed

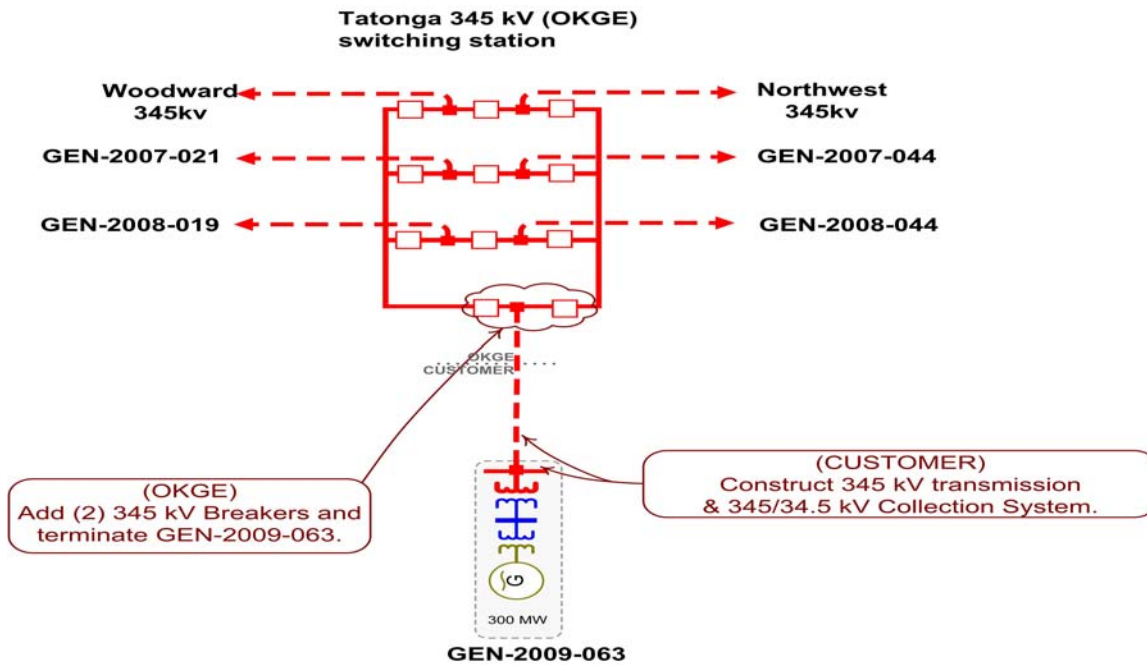
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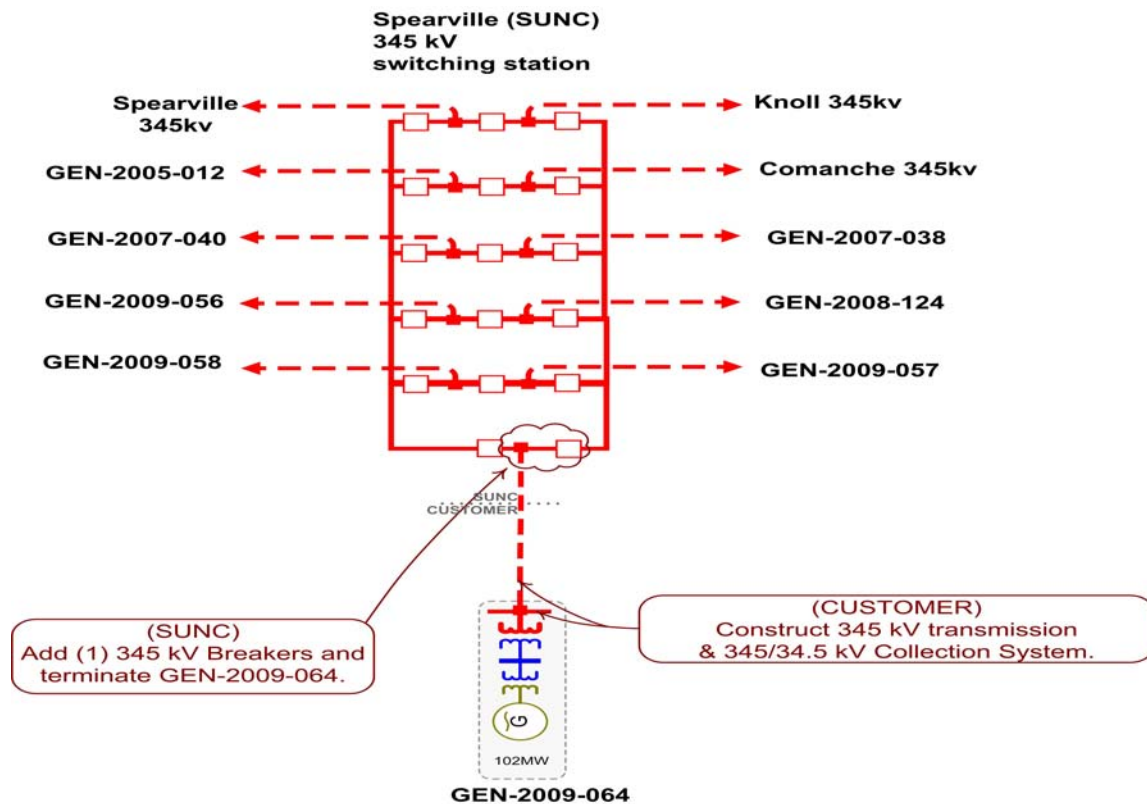
GEN-2009-062



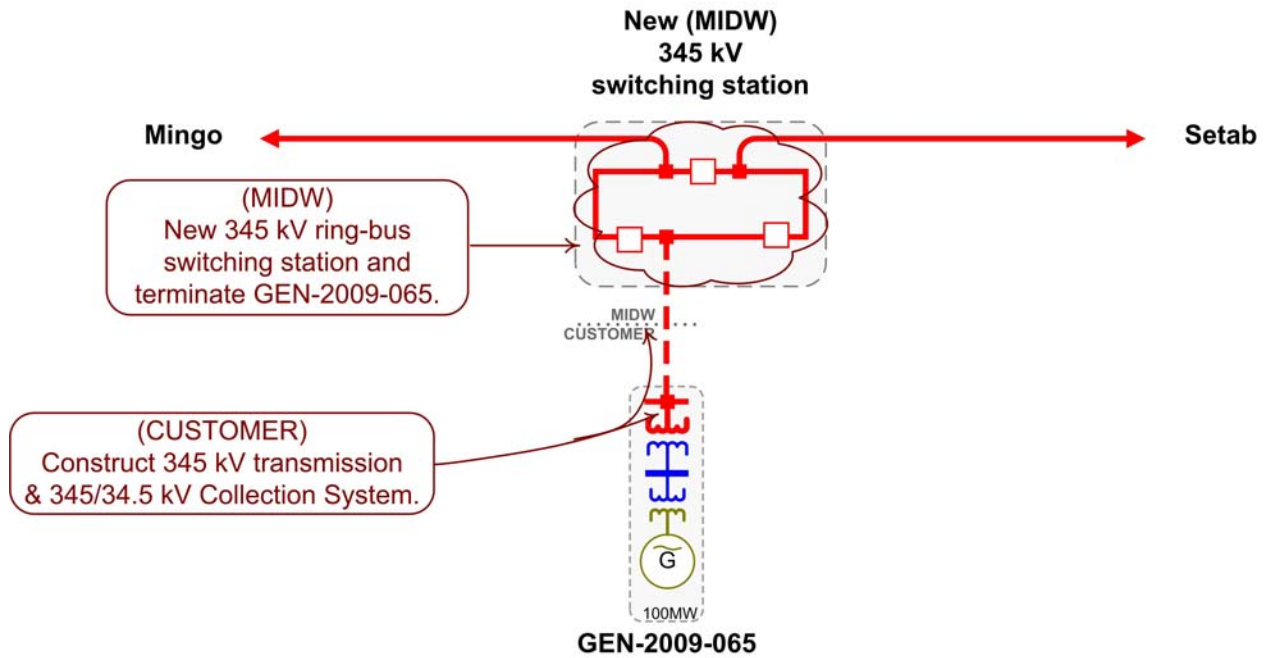
GEN-2009-063



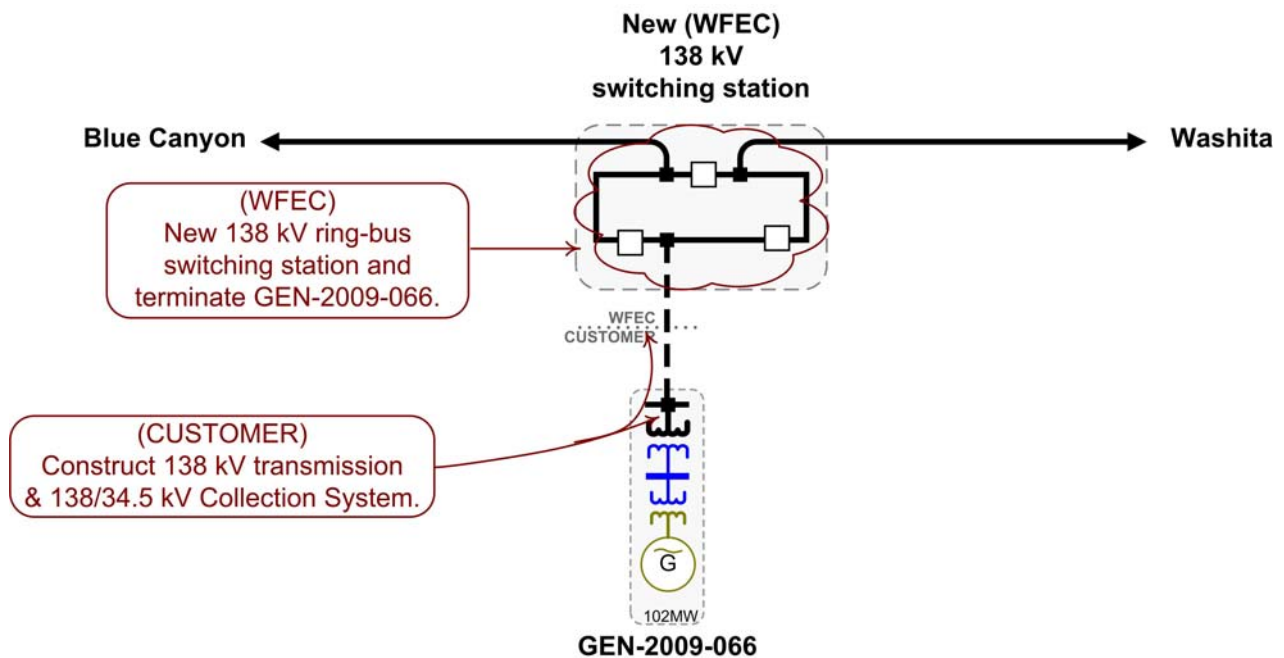
GEN-2009-064



GEN-2009-065

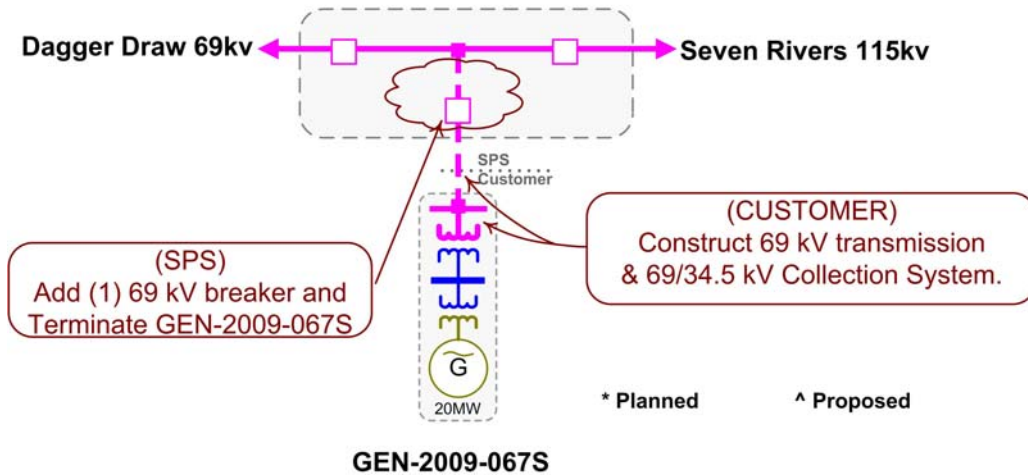


GEN-2009-066



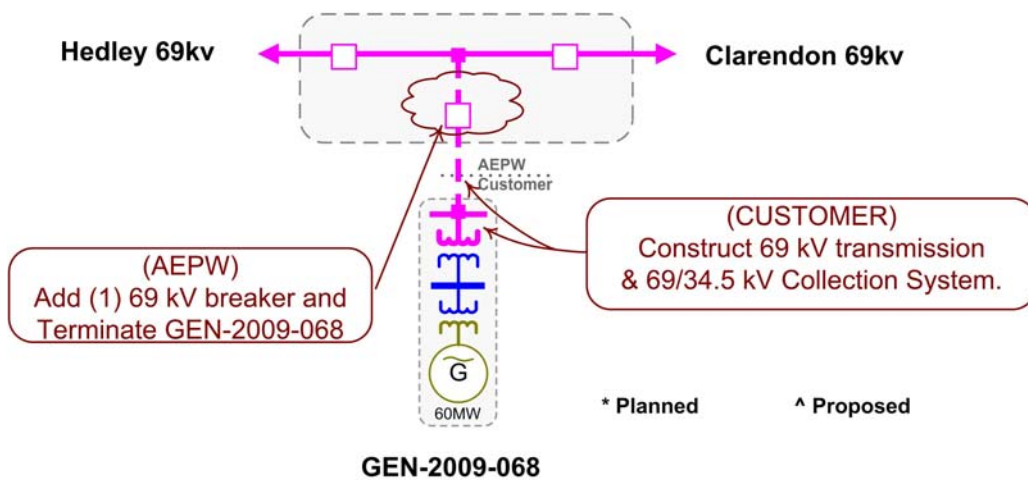
GEN-2009-067S

**Seven Rivers (SPS)
69 kV SWITCHING STATION**

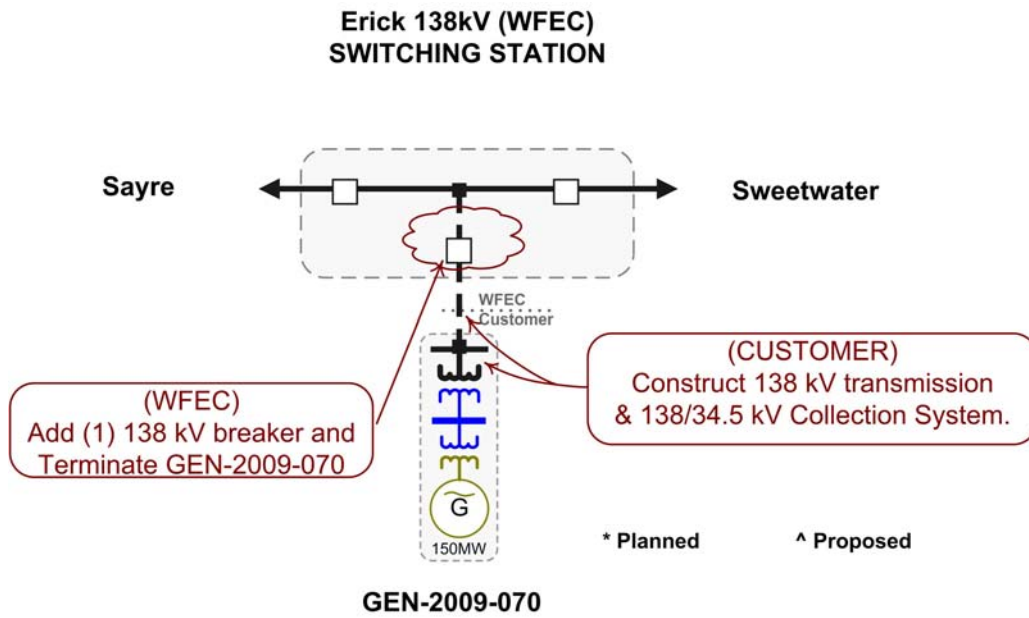


GEN-2009-068

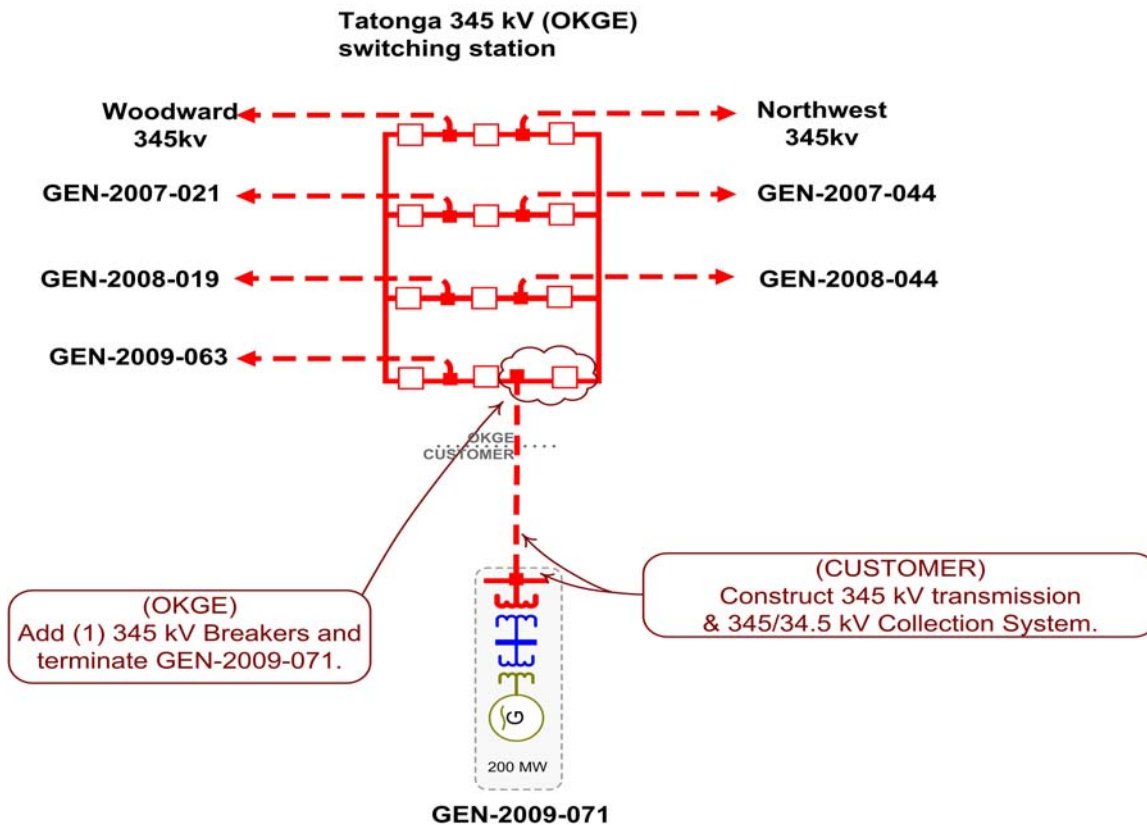
**New (AEPW)
69 kV SWITCHING STATION**



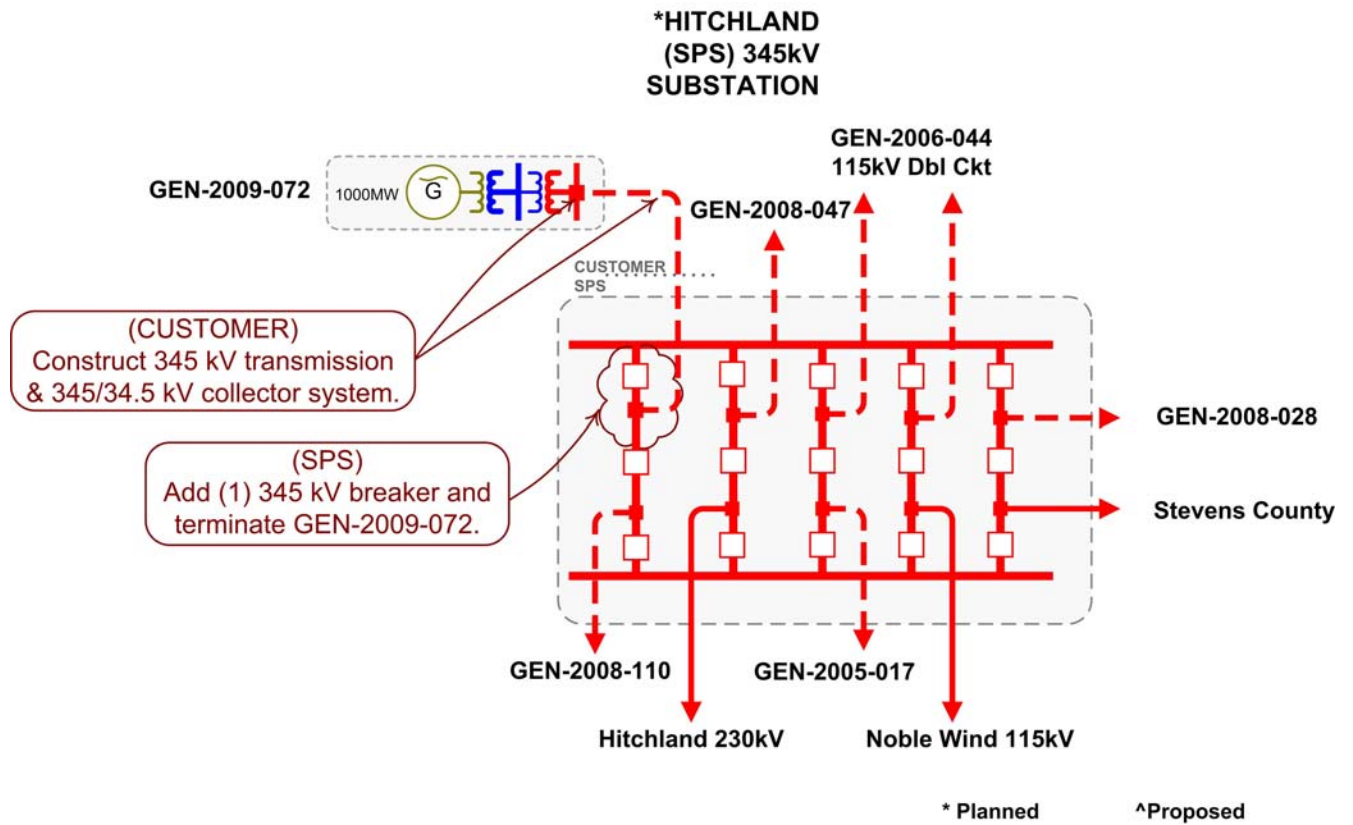
GEN-2009-070



GEN-2009-071



GEN-2009-072



E: Cost Allocation per Interconnection Request

This section shows each Generation Interconnection Request Customer and their Direct Assigned Facilities and Network Upgrades upon which they have an impact in this study assuming all prior queued projects remain in the queue and achieve commercial operation.

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

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

Appendix E. - Cost Allocation Per Request

Interconnection Request	Allocated Costs	E + C Costs
GEN-2008-042		
GEN-2008-042 Interconnection Costs	\$3,000,000.00	\$3,000,000.00
Total	\$3,000,000.00	
GEN-2008-043		
GEN-2008-043 Interconnection Costs	\$3,000,000.00	\$3,000,000.00
Total	\$3,000,000.00	
GEN-2009-045		
Amoco tap - West Childress 69KV	\$46,998.94	\$3,000,000.00
Clinton Junction - Elk City 138KV CKT 1 Rebuild	\$3,805,166.82	\$25,000,000.00
GEN-2009-045 Interconnection Costs	\$1,000,000.00	\$1,000,000.00
Kress - Randall 115KV Rebuild	\$15,000,000.00	\$15,000,000.00
Total	\$19,852,165.76	
GEN-2009-047		
GEN-2009-047 Interconnection Costs	\$8,000,000.00	\$8,000,000.00
Total	\$8,000,000.00	
GEN-2009-048		
GEN-2009-048 Interconnection Costs	\$10,000,000.00	\$10,000,000.00
Total	\$10,000,000.00	
GEN-2009-049		
GEN-2009-049 Interconnection Costs	\$2,500,000.00	\$2,500,000.00
Total	\$2,500,000.00	
GEN-2009-050		
GEN-2009-050 Interconnection Costs	\$2,500,000.00	\$2,500,000.00
Total	\$2,500,000.00	
GEN-2009-051		
GEN-2009-051 Interconnection Costs	\$8,000,000.00	\$8,000,000.00
Total	\$8,000,000.00	
GEN-2009-052		

Interconnection Request	Allocated Costs	E + C Costs
GEN-2009-052 Interconnection Costs	\$2,000,000.00	\$2,000,000.00
Total	\$2,000,000.00	
GEN-2009-053		
GEN 2008-79 Tap - Spearville 115KV	\$5,720,467.51	\$12,800,000.00
GEN-2009-053 Interconnection Costs	\$5,000,000.00	\$5,000,000.00
Upgrade Spearville 115-230KV Transformers	\$3,272,973.23	\$8,000,000.00
Upgrade Spearville 230-345kv Transformers	\$5,514,556.67	\$12,000,000.00
Total	\$19,507,997.41	
GEN-2009-055S		
Amoco tap - West Childress 69KV	\$681,517.60	\$3,000,000.00
Clinton Junction - Elk City 138KV CKT 1 Rebuild	\$828,177.02	\$25,000,000.00
GEN-2009-055S Interconnection Costs	\$700,000.00	\$700,000.00
Jericho 69/115KV Transformer	\$796,714.81	\$3,000,000.00
Total	\$3,006,409.43	
GEN-2009-056		
GEN-2009-056 Interconnection Costs	\$2,000,000.00	\$2,000,000.00
Total	\$2,000,000.00	
GEN-2009-057		
GEN-2009-057 Interconnection Costs	\$2,000,000.00	\$2,000,000.00
Total	\$2,000,000.00	
GEN-2009-058		
GEN-2009-058 Interconnection Costs	\$2,000,000.00	\$2,000,000.00
Total	\$2,000,000.00	
GEN-2009-059		
GEN 2008-79 Tap - Spearville 115KV	\$5,720,467.51	\$12,800,000.00
GEN-2009-059 Interconnection Costs	\$1,000,000.00	\$1,000,000.00
Upgrade Spearville 115-230KV Transformers	\$3,272,973.23	\$8,000,000.00

Interconnection Request	Allocated Costs	E + C Costs
Upgrade Spearville 230-345kv Transformers	\$5,514,556.67	\$12,000,000.00
Total	\$15,507,997.41	
GEN-2009-060		
Clinton Junction - Elk City 138KV CKT 1 Rebuild	\$4,398,880.80	\$25,000,000.00
Erick - Midpoint 345KV	\$980,925.55	\$12,000,000.00
GEN-2009-060 Interconnection Costs	\$2,000,000.00	\$2,000,000.00
Gotebo area 138KV Conversion	\$23,034,892.23	\$25,000,000.00
Washita - Southwest 138KV CKT 2	\$1,395,475.85	\$4,000,000.00
Total	\$31,810,174.43	
GEN-2009-061		
GEN 2008-79 Tap - Spearville 115KV	\$1,359,064.98	\$12,800,000.00
GEN-2009-061 Interconnection Costs	\$800,000.00	\$800,000.00
Upgrade Spearville 115-230KV Transformers	\$740,211.08	\$8,000,000.00
Upgrade Spearville 230-345kv Transformers	\$970,886.65	\$12,000,000.00
Total	\$3,870,162.71	
GEN-2009-062		
GEN-2009-062 Interconnection Costs	\$1,000,000.00	\$1,000,000.00
Total	\$1,000,000.00	
GEN-2009-063		
GEN-2009-063 Interconnection Costs	\$2,500,000.00	\$2,500,000.00
Woodward - Woodring 345KV CKT 1	\$21,210,290.89	\$110,000,000.00
Total	\$23,710,290.89	
GEN-2009-064		
GEN-2009-064 Interconnection Costs	\$3,000,000.00	\$3,000,000.00
Total	\$3,000,000.00	
GEN-2009-065		
GEN-2009-065 Interconnection Costs	\$8,000,000.00	\$8,000,000.00
Total	\$8,000,000.00	

Interconnection Request	Allocated Costs	E + C Costs
GEN-2009-066		
Erick - Midpoint 345KV	\$318,023.00	\$12,000,000.00
GEN-2009-066 Interconnection Costs	\$1,000,000.00	\$1,000,000.00
Washita - Southwest 138KV CKT 2	\$2,417,336.09	\$4,000,000.00
Total	\$3,735,359.09	
GEN-2009-068		
Amoco tap - West Childress 69KV	\$2,271,483.46	\$3,000,000.00
Clinton Junction - Elk City 138KV CKT 1 Rebuild	\$2,503,961.69	\$25,000,000.00
GEN-2009-068 Interconnection Costs	\$2,000,000.00	\$2,000,000.00
Jericho 69/115KV Transformer	\$2,203,285.19	\$3,000,000.00
Total	\$8,978,730.34	
GEN-2009-070		
Clinton Junction - Elk City 138KV CKT 1 Rebuild	\$13,463,813.67	\$25,000,000.00
Erick - Midpoint 345KV	\$10,701,051.44	\$12,000,000.00
GEN-2009-070 Interconnection Costs	\$1,000,000.00	\$1,000,000.00
Gotebo area 138KV Conversion	\$1,965,107.77	\$25,000,000.00
Washita - Southwest 138KV CKT 2	\$187,188.06	\$4,000,000.00
Total	\$27,317,160.94	
GEN-2009-071		
GEN-2009-071 Interconnection Costs	\$2,000,000.00	\$2,000,000.00
Woodward - Woodring 345KV CKT 1	\$14,140,193.93	\$110,000,000.00
Total	\$16,140,193.93	
GEN-2009-072		
GEN-2009-072 Interconnection Costs	\$4,000,000.00	\$4,000,000.00
Hitchland - Woodward 345KV CKT 2	\$168,000,000.00	\$168,000,000.00
Woodward - Woodring 345KV CKT 1	\$74,649,515.18	\$110,000,000.00
Total	\$246,649,515.18	

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

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

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

If a higher queued interconnection request (listed in Appendix B.) withdraws or terminates their LGIA the Network Upgrades assigned to the higher queued requests may be reallocated to the remaining requests that have an impact on the Network Upgrade under a restudy. The actual costs allocated to each Generation Interconnection Request Customer will be determined at the time of a restudy.

Additionally, Expansion Plan (STEP), Aggregate Study, and Balanced Portfolio assigned projects are also included in this table so that the Customer will know that interconnection service may be delayed until the completion of these projects.

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

Appendix F. - Cost Allocation Per Request

(Including Previously Allocated Network Upgrades*)

Interconnection Request	Upgrade Type	Allocated Costs	E + C Costs
GEN-2008-042			
GEN-2008-042 Interconnection Costs	Feasibility Study Allocation	\$3,000,000.00	\$3,000,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
	Current Study Total	\$3,000,000.00	
GEN-2008-043			
GEN-2008-043 Interconnection Costs	Feasibility Study Allocation	\$3,000,000.00	\$3,000,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
	Current Study Total	\$3,000,000.00	
GEN-2009-045			
GEN-2009-045 Interconnection Costs	Feasibility Study Allocation	\$1,000,000.00	\$1,000,000.00
Kress - Randall 115KV Rebuild	Feasibility Study Allocation	\$15,000,000.00	\$15,000,000.00
Clinton Junction - Elk City 138KV CKT 1 Rebuild	Feasibility Study Allocation	\$3,805,166.82	\$25,000,000.00
Amoco tap - West Childress 69KV	Feasibility Study Allocation	\$46,998.94	\$3,000,000.00
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Hitchland - Woodward 345kv CKT 1 via GEN-2008-047 Tap on CKTs 1 & 2	Previously Assigned		\$168,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Finney Switching Station - Holcomb 345KV CKT 2 Per GEN-2006-044 Facility Study	Previously Allocated		\$6,299,839.00
Conway - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$40,000,000.00

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

Interconnection Request	Upgrade Type	Allocated Costs	E + C Costs
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00
Flat Ridge Wind Farm Tap - Harper 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$6,037,500.00
	Current Study Total	\$19,852,165.76	
GEN-2009-047			
GEN-2009-047 Interconnection Costs	Feasibility Study Allocation	\$8,000,000.00	\$8,000,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
	Current Study Total	\$8,000,000.00	
GEN-2009-048			
GEN-2009-048 Interconnection Costs	Feasibility Study Allocation	\$10,000,000.00	\$10,000,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
	Current Study Total	\$10,000,000.00	
GEN-2009-049			
GEN-2009-049 Interconnection Costs	Feasibility Study Allocation	\$2,500,000.00	\$2,500,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
	Current Study Total	\$2,500,000.00	
GEN-2009-050			
GEN-2009-050 Interconnection Costs	Feasibility Study Allocation	\$2,500,000.00	\$2,500,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
	Current Study Total	\$2,500,000.00	
GEN-2009-051			
GEN-2009-051 Interconnection Costs	Feasibility Study Allocation	\$8,000,000.00	\$8,000,000.00
Spearville - Comanche 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$50,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00

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

Interconnection Request	Upgrade Type	Allocated Costs	E + C Costs
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00
Flat Ridge Wind Farm Tap - Harper 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$6,037,500.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Hitchland - Woodward 345kV CKT 1 via GEN-2008-047 Tap on CKTs 1 & 2	Previously Assigned		\$168,000,000.00
	Current Study Total	\$8,000,000.00	

GEN-2009-052

GEN-2009-052 Interconnection Costs	Feasibility Study Allocation	\$2,000,000.00	\$2,000,000.00
Spearville - Comanche 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$50,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00
Flat Ridge Wind Farm Tap - Harper 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$6,037,500.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Hitchland - Woodward 345kV CKT 1 via GEN-2008-047 Tap on CKTs 1 & 2	Previously Assigned		\$168,000,000.00
	Current Study Total	\$2,000,000.00	

GEN-2009-053

GEN-2009-053 Interconnection Costs	Feasibility Study Allocation	\$5,000,000.00	\$5,000,000.00
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* Current Study Requests' Costs of Previously Allocated Network Upgrades will be determined by a restudy, if necessary.

Interconnection Request	Upgrade Type	Allocated Costs	E + C Costs
Upgrade Spearville 115-230KV Transformers	Feasibility Study Allocation	\$3,272,973.23	\$8,000,000.00
Upgrade Spearville 230-345kv Transformers	Feasibility Study Allocation	\$5,514,556.67	\$12,000,000.00
GEN 2008-79 Tap - Spearville 115KV	Feasibility Study Allocation	\$5,720,467.51	\$12,800,000.00
Spearville - Comanche 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$50,000,000.00
GEN-2008-079 Tap - Judson Large 115KV CKT 2 Construct approximately 16 miles of new 115kV for 2nd circuit	DISIS Allocation		\$6,400,000.00
Judson Large - North Judson Large 115KV CKT 2 Construct approximately 1 mile of new 115kV for 2nd circuit	DISIS Allocation		\$400,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
North Judson Large - Spearville 115KV CKT 2 Construct approximately 15 miles of new 115kV for 2nd circuit	DISIS Allocation		\$6,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00
Flat Ridge Wind Farm Tap - Harper 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$6,037,500.00
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Hitchland - Woodward 345kv CKT 1 via GEN-2008-047 Tap on CKTs 1 & 2	Previously Assigned		\$168,000,000.00
	Current Study Total	\$19,507,997.41	

GEN-2009-055S

GEN-2009-055S Interconnection Costs	Feasibility Study Allocation	\$700,000.00	\$700,000.00
Jericho 69/115KV Transformer	Feasibility Study Allocation	\$796,714.81	\$3,000,000.00
Amoco tap - West Childress 69KV	Feasibility Study Allocation	\$681,517.60	\$3,000,000.00
Clinton Junction - Elk City 138KV CKT 1 Rebuild	Feasibility Study Allocation	\$828,177.02	\$25,000,000.00
Conway - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$40,000,000.00

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

Interconnection Request	Upgrade Type	Allocated Costs	E + C Costs
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Finney Switching Station - Holcomb 345KV CKT 2 Per GEN-2006-044 Facility Study	Previously Allocated		\$6,299,839.00
Hitchland - Woodward 345kV CKT 1 via GEN-2008-047 Tap on CKTs 1 & 2	Previously Assigned		\$168,000,000.00
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00
Flat Ridge Wind Farm Tap - Harper 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$6,037,500.00
	Current Study Total	\$3,006,409.43	

GEN-2009-056

GEN-2009-056 Interconnection Costs	Feasibility Study Allocation	\$2,000,000.00	\$2,000,000.00
Spearville - Comanche 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$50,000,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00
Flat Ridge Wind Farm Tap - Harper 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$6,037,500.00
Hitchland - Woodward 345kV CKT 1 via GEN-2008-047 Tap on CKTs 1 & 2	Previously Assigned		\$168,000,000.00

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

Interconnection Request

Upgrade Type

Allocated Costs

E + C Costs

	Current Study Total	\$2,000,000.00	
GEN-2009-057			
GEN-2009-057 Interconnection Costs	Feasibility Study Allocation	\$2,000,000.00	\$2,000,000.00
Spearville - Comanche 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$50,000,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00
Flat Ridge Wind Farm Tap - Harper 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$6,037,500.00
Hitchland - Woodward 345kV CKT 1 via GEN-2008-047 Tap on CKTs 1 & 2	Previously Assigned		\$168,000,000.00
	Current Study Total	\$2,000,000.00	

GEN-2009-058			
GEN-2009-058 Interconnection Costs	Feasibility Study Allocation	\$2,000,000.00	\$2,000,000.00
Spearville - Comanche 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$50,000,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00

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

Interconnection Request	Upgrade Type	Allocated Costs	E + C Costs
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00
Flat Ridge Wind Farm Tap - Harper 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$6,037,500.00
Hitchland - Woodward 345kV CKT 1 via GEN-2008-047 Tap on CKTs 1 & 2	Previously Assigned		\$168,000,000.00
	Current Study Total	\$2,000,000.00	
GEN-2009-059			
GEN-2009-059 Interconnection Costs	Feasibility Study Allocation	\$1,000,000.00	\$1,000,000.00
Upgrade Spearville 115-230KV Transformers	Feasibility Study Allocation	\$3,272,973.23	\$8,000,000.00
Upgrade Spearville 230-345kv Transformers	Feasibility Study Allocation	\$5,514,556.67	\$12,000,000.00
GEN 2008-79 Tap - Spearville 115KV	Feasibility Study Allocation	\$5,720,467.51	\$12,800,000.00
Spearville - Comanche 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$50,000,000.00
GEN-2008-079 Tap - Judson Large 115KV CKT 2 Construct approximately 16 miles of new 115kV for 2nd circuit	DISIS Allocation		\$6,400,000.00
Judson Large - North Judson Large 115KV CKT 2 Construct approximately 1 mile of new 115kV for 2nd circuit	DISIS Allocation		\$400,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
North Judson Large - Spearville 115KV CKT 2 Construct approximately 15 miles of new 115kV for 2nd circuit	DISIS Allocation		\$6,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00
Flat Ridge Wind Farm Tap - Harper 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$6,037,500.00
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Hitchland - Woodward 345kV CKT 1 via GEN-2008-047 Tap on CKTs 1 & 2	Previously Assigned		\$168,000,000.00

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

Interconnection Request

Upgrade Type

Allocated Costs

E + C Costs

Current Study Total \$15,507,997.41

GEN-2009-060

GEN-2009-060 Interconnection Costs	Feasibility Study Allocation	\$2,000,000.00	\$2,000,000.00
Gotebo area 138KV Conversion	Feasibility Study Allocation	\$23,034,892.23	\$25,000,000.00
Washita - Southwest 138KV CKT 2	Feasibility Study Allocation	\$1,395,475.85	\$4,000,000.00
Erick - Midpoint 345KV	Feasibility Study Allocation	\$980,925.55	\$12,000,000.00
Clinton Junction - Elk City 138KV CKT 1 Rebuild	Feasibility Study Allocation	\$4,398,880.80	\$25,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Midpoint(Wheeler) - TUCO Interchange 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Finney Switching Station - Holcomb 345KV CKT 2 Per GEN-2006-044 Facility Study	Previously Allocated		\$6,299,839.00
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Current Study Total		\$31,810,174.43	

GEN-2009-061

GEN-2009-061 Interconnection Costs	Feasibility Study Allocation	\$800,000.00	\$800,000.00
Upgrade Spearville 115-230KV Transformers	Feasibility Study Allocation	\$740,211.08	\$8,000,000.00
GEN 2008-79 Tap - Spearville 115KV	Feasibility Study Allocation	\$1,359,064.98	\$12,800,000.00
Upgrade Spearville 230-345kv Transformers	Feasibility Study Allocation	\$970,886.65	\$12,000,000.00
Spearville - Comanche 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$50,000,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00

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

Interconnection Request	Upgrade Type	Allocated Costs	E + C Costs
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00
GEN-2008-079 Tap - Judson Large 115KV CKT 2 Construct approximately 16 miles of new 115kV for 2nd circuit	DISIS Allocation		\$6,400,000.00
Spearville (SPEARVL2) 345/230/13.8KV Transformer CKT 1	Previously Assigned		\$6,000,000.00
Judson Large - North Judson Large 115KV CKT 2 Construct approximately 1 mile of new 115kV for 2nd circuit	DISIS Allocation		\$400,000.00
North Judson Large - Spearville 115KV CKT 2 Construct approximately 15 miles of new 115kV for 2nd circuit	DISIS Allocation		\$6,000,000.00
Hitchland - Woodward 345kV CKT 1 via GEN-2008-047 Tap on CKTs 1 & 2	Previously Assigned		\$168,000,000.00
Spearville (SPEARVL6-2) 230/115/13.8KV Transformer CKT 1	Previously Assigned		\$3,000,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00
Flat Ridge Wind Farm Tap - Harper 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$6,037,500.00
Conway - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$40,000,000.00
	Current Study Total	\$3,870,162.71	
GEN-2009-062			
GEN-2009-062 Interconnection Costs	Feasibility Study Allocation	\$1,000,000.00	\$1,000,000.00
	Current Study Total	\$1,000,000.00	
GEN-2009-063			
GEN-2009-063 Interconnection Costs	Feasibility Study Allocation	\$2,500,000.00	\$2,500,000.00
Woodward - Woodring 345KV CKT 1	Feasibility Study Allocation	\$21,210,290.89	\$110,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00

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

Interconnection Request	Upgrade Type	Allocated Costs	E + C Costs
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Midpoint(Wheeler) - TUCO Interchange 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Finney Switching Station - Holcomb 345KV CKT 2 Per GEN-2006-044 Facility Study	Previously Allocated		\$6,299,839.00
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00
	Current Study Total	\$23,710,290.89	

GEN-2009-064

GEN-2009-064 Interconnection Costs	Feasibility Study Allocation	\$3,000,000.00	\$3,000,000.00
Spearville - Comanche 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$50,000,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00
Flat Ridge Wind Farm Tap - Harper 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$6,037,500.00
Hitchland - Woodward 345KV CKT 1 via GEN-2008-047 Tap on CKTs 1 & 2	Previously Assigned		\$168,000,000.00
	Current Study Total	\$3,000,000.00	

GEN-2009-065

GEN-2009-065 Interconnection Costs	Feasibility Study Allocation	\$8,000,000.00	\$8,000,000.00
Spearville - Comanche 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$50,000,000.00

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

Interconnection Request	Upgrade Type	Allocated Costs	E + C Costs
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Hitchland - Woodward 345kV CKT 1 via GEN-2008-047 Tap on CKTs 1 & 2	Previously Assigned		\$168,000,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00
Flat Ridge Wind Farm Tap - Harper 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$6,037,500.00
GEN-2008-079 Tap - Judson Large 115KV CKT 2 Construct approximately 16 miles of new 115kV for 2nd circuit	DISIS Allocation		\$6,400,000.00
Conway - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$40,000,000.00
Judson Large - North Judson Large 115KV CKT 2 Construct approximately 1 mile of new 115kV for 2nd circuit	DISIS Allocation		\$400,000.00
North Judson Large - Spearville 115KV CKT 2 Construct approximately 15 miles of new 115kV for 2nd circuit	DISIS Allocation		\$6,000,000.00
Spearville (SPEARVL2) 345/230/13.8KV Transformer CKT 1	Previously Assigned		\$6,000,000.00
	Current Study Total	\$8,000,000.00	

GEN-2009-066

GEN-2009-066 Interconnection Costs	Feasibility Study Allocation	\$1,000,000.00	\$1,000,000.00
Washita - Southwest 138KV CKT 2	Feasibility Study Allocation	\$2,417,336.09	\$4,000,000.00
Erick - Midpoint 345KV	Feasibility Study Allocation	\$318,023.00	\$12,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Midpoint(Wheeler) - TUCO Interchange 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00

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

Interconnection Request**Upgrade Type****Allocated Costs****E + C Costs**

Finney Switching Station - Holcomb 345KV CKT 2 Per GEN-2006-044 Facility Study	Previously Allocated		\$6,299,839.00
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Current Study Total	\$3,735,359.09
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GEN-2009-067S

Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Hitchland - Woodward 345KV CKT 1 via GEN-2008-047 Tap on CKTs 1 & 2	Previously Assigned		\$168,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Finney Switching Station - Holcomb 345KV CKT 2 Per GEN-2006-044 Facility Study	Previously Allocated		\$6,299,839.00
Conway - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$40,000,000.00
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00
Flat Ridge Wind Farm Tap - Harper 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$6,037,500.00

Current Study Total	\$6,189,920.06
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GEN-2009-068

GEN-2009-068 Interconnection Costs	Feasibility Study Allocation	\$2,000,000.00	\$2,000,000.00
Jericho 69/115KV Transformer	Feasibility Study Allocation	\$2,203,285.19	\$3,000,000.00
Amoco tap - West Childress 69KV	Feasibility Study Allocation	\$2,271,483.46	\$3,000,000.00
Clinton Junction - Elk City 138KV CKT 1 Rebuild	Feasibility Study Allocation	\$2,503,961.69	\$25,000,000.00
Conway - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$40,000,000.00
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00

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

Interconnection Request	Upgrade Type	Allocated Costs	E + C Costs
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Finney Switching Station - Holcomb 345KV CKT 2 Per GEN-2006-044 Facility Study	Previously Allocated		\$6,299,839.00
Hitchland - Woodward 345kV CKT 1 via GEN-2008-047 Tap on CKTs 1 & 2	Previously Assigned		\$168,000,000.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Flat Ridge Wind Farm Tap - Harper 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$6,037,500.00
	Current Study Total	\$8,978,730.34	

GEN-2009-070

GEN-2009-070 Interconnection Costs	Feasibility Study Allocation	\$1,000,000.00	\$1,000,000.00
Erick - Midpoint 345KV	Feasibility Study Allocation	\$10,701,051.44	\$12,000,000.00
Clinton Junction - Elk City 138KV CKT 1 Rebuild	Feasibility Study Allocation	\$13,463,813.67	\$25,000,000.00
Gotebo area 138KV Conversion	Feasibility Study Allocation	\$1,965,107.77	\$25,000,000.00
Washita - Southwest 138KV CKT 2	Feasibility Study Allocation	\$187,188.06	\$4,000,000.00
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Midpoint(Wheeler) - TUCO Interchange 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Finney Switching Station - Holcomb 345KV CKT 2 Per GEN-2006-044 Facility Study	Previously Allocated		\$6,299,839.00
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00
Flat Ridge Wind Farm Tap - Harper 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$6,037,500.00

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

Interconnection Request	Upgrade Type	Allocated Costs	E + C Costs
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GEN-2008-079 Tap - Judson Large 115KV CKT 2 Construct approximately 16 miles of new 115kV for 2nd circuit	DISIS Allocation		\$6,400,000.00
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Current Study Total	\$27,317,160.94		
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GEN-2009-071

GEN-2009-071 Interconnection Costs	Feasibility Study Allocation	\$2,000,000.00	\$2,000,000.00
Woodward - Woodring 345KV CKT 1	Feasibility Study Allocation	\$14,140,193.93	\$110,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Midpoint(Wheeler) - TUCO Interchange 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Finney Switching Station - Holcomb 345KV CKT 2 Per GEN-2006-044 Facility Study	Previously Allocated		\$6,299,839.00
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00

Current Study Total	\$16,140,193.93		
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GEN-2009-072

GEN-2009-072 Interconnection Costs	Feasibility Study Allocation	\$4,000,000.00	\$4,000,000.00
Hitchland - Woodward 345KV CKT 2	Feasibility Study Allocation	\$168,000,000.00	\$168,000,000.00
Woodward - Woodring 345KV CKT 1	Feasibility Study Allocation	\$74,649,515.18	\$110,000,000.00
Hitchland - Woodward 345kV CKT 1 via GEN-2008-047 Tap on CKTs 1 & 2	Previously Assigned		\$168,000,000.00
Comanche - Woodward 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$80,000,000.00
Medicine Lodge - Wichita 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$90,000,000.00
Comanche - Medicine Lodge 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$60,000,000.00

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

Interconnection Request	Upgrade Type	Allocated Costs	E + C Costs
Finney Switching Station - Holcomb 345KV CKT 2 Per GEN-2006-044 Facility Study	Previously Allocated		\$6,299,839.00
Knoll - Spearville 345KV CKT 1 Total E & C Cost for Spearville-Knoll-Axtell Project	Previously Allocated		\$236,000,000.00
Anadarko - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$130,000,000.00
Midpoint(Wheeler) - Woodward 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Conway - Midpoint(Wheeler) 345KV CKT 1 Per Cluster I Impact Restudy	Previously Allocated		\$40,000,000.00
Medicine Lodge - Flat Ridge Wind Farm Tap 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$2,012,500.00
Medicine Lodge 138/115/xxKV Autotransformer CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$5,625,000.00
Flat Ridge Wind Farm Tap - Harper 138KV CKT 1 Per 2007-AG3-AFS9	Previously Allocated		\$6,037,500.00
GEN-2008-079 Tap - Judson Large 115KV CKT 2 Construct approximately 16 miles of new 115kV for 2nd circuit	DISIS Allocation		\$6,400,000.00
Midpoint(Wheeler) - TUCO Interchange 345KV CKT 1 Total E & C Cost for TUCO - Woodward Project	Previously Allocated		\$229,000,000.00
Current Study Total			\$246,649,515.18

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

G: Cost Allocation per Proposed Network Upgrade

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

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

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

Appendix G. - Cost Allocation Per Upgrade Facility

Upgrade Facility	Allocated Costs	E + C Costs
Amoco tap - West Childress 69KV		\$3,000,000.00
GEN-2009-045	\$46,998.94	
GEN-2009-055S	\$681,517.60	
GEN-2009-068	\$2,271,483.46	
Total	\$3,000,000.00	
Clinton Junction - Elk City 138KV CKT 1 Rebuild		\$25,000,000.00
GEN-2009-045	\$3,805,166.82	
GEN-2009-055S	\$828,177.02	
GEN-2009-060	\$4,398,880.80	
GEN-2009-068	\$2,503,961.69	
GEN-2009-070	\$13,463,813.67	
Total	\$25,000,000.00	
Erick - Midpoint 345KV		\$11,999,999.99
GEN-2009-060	\$980,925.55	
GEN-2009-066	\$318,023.00	
GEN-2009-070	\$10,701,051.44	
Total	\$11,999,999.99	
GEN 2008-79 Tap - Spearville 115KV		\$12,800,000.00
GEN-2009-053	\$5,720,467.51	
GEN-2009-059	\$5,720,467.51	
GEN-2009-061	\$1,359,064.98	
Total	\$12,800,000.00	
GEN-2008-042 Interconnection Costs		\$3,000,000.00
GEN-2008-042	\$3,000,000.00	
Total	\$3,000,000.00	
GEN-2008-043 Interconnection Costs		\$3,000,000.00
GEN-2008-043	\$3,000,000.00	
Total	\$3,000,000.00	
GEN-2009-045 Interconnection Costs		\$1,000,000.00

Upgrade Facility	Allocated Costs	E + C Costs
GEN-2009-045	\$1,000,000.00	
Total	\$1,000,000.00	
GEN-2009-047 Interconnection Costs		\$8,000,000.00
GEN-2009-047	\$8,000,000.00	
Total	\$8,000,000.00	
GEN-2009-048 Interconnection Costs		\$10,000,000.00
GEN-2009-048	\$10,000,000.00	
Total	\$10,000,000.00	
GEN-2009-049 Interconnection Costs		\$2,500,000.00
GEN-2009-049	\$2,500,000.00	
Total	\$2,500,000.00	
GEN-2009-050 Interconnection Costs		\$2,500,000.00
GEN-2009-050	\$2,500,000.00	
Total	\$2,500,000.00	
GEN-2009-051 Interconnection Costs		\$8,000,000.00
GEN-2009-051	\$8,000,000.00	
Total	\$8,000,000.00	
GEN-2009-052 Interconnection Costs		\$2,000,000.00
GEN-2009-052	\$2,000,000.00	
Total	\$2,000,000.00	
GEN-2009-053 Interconnection Costs		\$5,000,000.00
GEN-2009-053	\$5,000,000.00	
Total	\$5,000,000.00	
GEN-2009-055S Interconnection Costs		\$700,000.00
GEN-2009-055S	\$700,000.00	
Total	\$700,000.00	
GEN-2009-056 Interconnection Costs		\$2,000,000.00
GEN-2009-056	\$2,000,000.00	
Total	\$2,000,000.00	

Upgrade Facility	Allocated Costs	E + C Costs
GEN-2009-057 Interconnection Costs		\$2,000,000.00
GEN-2009-057	\$2,000,000.00	
	Total	\$2,000,000.00
GEN-2009-058 Interconnection Costs		\$2,000,000.00
GEN-2009-058	\$2,000,000.00	
	Total	\$2,000,000.00
GEN-2009-059 Interconnection Costs		\$1,000,000.00
GEN-2009-059	\$1,000,000.00	
	Total	\$1,000,000.00
GEN-2009-060 Interconnection Costs		\$2,000,000.00
GEN-2009-060	\$2,000,000.00	
	Total	\$2,000,000.00
GEN-2009-061 Interconnection Costs		\$800,000.00
GEN-2009-061	\$800,000.00	
	Total	\$800,000.00
GEN-2009-062 Interconnection Costs		\$1,000,000.00
GEN-2009-062	\$1,000,000.00	
	Total	\$1,000,000.00
GEN-2009-063 Interconnection Costs		\$2,500,000.00
GEN-2009-063	\$2,500,000.00	
	Total	\$2,500,000.00
GEN-2009-064 Interconnection Costs		\$3,000,000.00
GEN-2009-064	\$3,000,000.00	
	Total	\$3,000,000.00
GEN-2009-065 Interconnection Costs		\$8,000,000.00
GEN-2009-065	\$8,000,000.00	
	Total	\$8,000,000.00
GEN-2009-066 Interconnection Costs		\$1,000,000.00

Upgrade Facility	Allocated Costs	E + C Costs
GEN-2009-066	\$1,000,000.00	
Total	\$1,000,000.00	
GEN-2009-068 Interconnection Costs		\$2,000,000.00
GEN-2009-068	\$2,000,000.00	
Total	\$2,000,000.00	
GEN-2009-070 Interconnection Costs		\$1,000,000.00
GEN-2009-070	\$1,000,000.00	
Total	\$1,000,000.00	
GEN-2009-071 Interconnection Costs		\$2,000,000.00
GEN-2009-071	\$2,000,000.00	
Total	\$2,000,000.00	
GEN-2009-072 Interconnection Costs		\$4,000,000.00
GEN-2009-072	\$4,000,000.00	
Total	\$4,000,000.00	
Gotebo area 138KV Conversion		\$25,000,000.00
GEN-2009-060	\$23,034,892.23	
GEN-2009-070	\$1,965,107.77	
Total	\$25,000,000.00	
Hitchland - Woodward 345KV CKT 2		\$168,000,000.00
GEN-2009-072	\$168,000,000.00	
Total	\$168,000,000.00	
Jericho 69/115KV Transformer		\$3,000,000.00
GEN-2009-055S	\$796,714.81	
GEN-2009-068	\$2,203,285.19	
Total	\$3,000,000.00	
Kress - Randall 115KV Rebuild		\$15,000,000.00
GEN-2009-045	\$15,000,000.00	
Total	\$15,000,000.00	
Upgrade Spearville 115-230KV Transformers		\$7,286,157.54

Upgrade Facility	Allocated Costs	E + C Costs
GEN-2009-053	\$3,272,973.23	
GEN-2009-059	\$3,272,973.23	
GEN-2009-061	\$740,211.08	
Total	\$7,286,157.54	
Upgrade Spearville 230-345kv Transformers		\$11,999,999.99
GEN-2009-053	\$5,514,556.67	
GEN-2009-059	\$5,514,556.67	
GEN-2009-061	\$970,886.65	
Total	\$11,999,999.99	
Washita - Southwest 138KV CKT 2		\$4,000,000.00
GEN-2009-060	\$1,395,475.85	
GEN-2009-066	\$2,417,336.09	
GEN-2009-070	\$187,188.06	
Total	\$4,000,000.00	
Woodward - Woodring 345KV CKT 1		\$110,000,000.00
GEN-2009-063	\$21,210,290.89	
GEN-2009-071	\$14,140,193.93	
GEN-2009-072	\$74,649,515.18	
Total	\$110,000,000.00	
Current Study Upgrades Total		\$477,086,157.52

H: FCITC Analysis (No Upgrades)

Source	Sink	Element	Direction	TDF	Rating	Loading	Contingency
G09_045	FOOTPRINT, 'FINNEY SWITCHING STATION - STEVENS CO	345.00 345KV CKT 1'	TO->FROM	0.20836	1051.6	115.5505	'GEN08-047 345.00 - HITCHLAND 7 345.00 345KV CKT 1'
G09_045	FOOTPRINT, 'FINNEY SWITCHING STATION - STEVENS CO	345.00 345KV CKT 1'	TO->FROM	0.20836	1051.6	115.1987	'GEN08-047 345.00 - WWRDEHV7 345.00 345KV CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'		FROM->TO	0.54633	98.9	122.1298	'G07-48T 230.00 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
G09_045	FOOTPRINT, 'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'		TO->FROM	0.54633	98.8	118.3061	'G07-48T 230.00 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'		FROM->TO	0.56408	98.9	103.1761	'TOLK STATION EAST 230/24.0KV TRANSFORMER CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'		FROM->TO	0.566	98.9	101.3746	'CONWAY EHV 345.00 - MIDPT_BUS 7 345.00 345KV CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'		FROM->TO	0.56674	98.9	100.8604	'GRAPEVINE INTERCHANGE - WHEELER 6 230.00 230KV CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'		FROM->TO	1	98.9	100.8091	'HAPPY INTERCHANGE - PALO DURO SUB 115KV CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - PALO DURO SUB 115KV CKT 1'		FROM->TO	1	99	100.7072	'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'		FROM->TO	0.54633	98.9	132.1026	'G07-48T 230.00 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
G09_045	FOOTPRINT, 'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'		TO->FROM	0.54633	98.8	128.289	'G07-48T 230.00 - SWISHER COUNTY INTERCHANGE 230KV CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'		FROM->TO	1	98.9	131.1426	'HAPPY INTERCHANGE - PALO DURO SUB 115KV CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - PALO DURO SUB 115KV CKT 1'		FROM->TO	1	99	131.0101	'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'		FROM->TO	0.56408	98.9	116.1158	'TOLK STATION EAST 230/24.0KV TRANSFORMER CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'		FROM->TO	1	98.9	128.4125	'PALO DURO SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1'
G09_045	FOOTPRINT, 'PALO DURO SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1'		FROM->TO	1	99	128.2828	'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'
G09_045	FOOTPRINT, 'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'		TO->FROM	1	98.8	127.4292	'HAPPY INTERCHANGE - PALO DURO SUB 115KV CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - PALO DURO SUB 115KV CKT 1'		FROM->TO	1	99	127.1717	'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'
G09_045	FOOTPRINT, 'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'		TO->FROM	1	98.8	124.6964	'PALO DURO SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1'
G09_045	FOOTPRINT, 'PALO DURO SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1'		FROM->TO	1	99	124.4444	'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'		FROM->TO	0.566	98.9	113.6501	'CONWAY EHV 345.00 (CONWAY) 345/115/13.8KV TRANSFORMER CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'		FROM->TO	0.566	98.9	113.6501	'CONWAY EHV 345.00 - MIDPT_BUS 7 345.00 345KV CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'		FROM->TO	0.56674	98.9	113.2568	'GRAPEVINE INTERCHANGE - WHEELER 6 230.00 230KV CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'		FROM->TO	0.56408	98.9	112.4954	'GS-MUSTANG6 230.00 - MUSTANG STATION 230KV CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'		FROM->TO	0.56408	98.9	112.3943	'TOLK STATION WEST 230/24.0KV TRANSFORMER CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'		FROM->TO	0.56408	98.9	112.3478	'HAPPY INTERCHANGE - SWISHER COUNTY REC-HAPPY 69KV CKT 1'

Source	Sink	Element	Direction	TDF	Rating	Loading	Contingency
G09_045	FOOTPRINT, 'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'		TO->FROM	0.56408	98.8	112.2859	'TOLK STATION EAST 230/24.0KV TRANSFORMER CKT 1'
G09_045	FOOTPRINT, 'HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1'		FROM->TO	0.56408	89.8	112.4855	'BASE CASE'
G09_045	FOOTPRINT, 'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'		TO->FROM	0.566	98.8	109.8178	'CONWAY EHV 345.00 (CONWAY) 345/115/13.8KV TRANSFORMER CKT 1'
G09_045	FOOTPRINT, 'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'		TO->FROM	0.566	98.8	109.8178	'CONWAY EHV 345.00 - MIDPT_BUS 7 345.00 345KV CKT 1'
G09_045	FOOTPRINT, 'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'		TO->FROM	0.56674	98.8	109.5253	'GRAPEVINE INTERCHANGE - WHEELER 6 230.00 230KV CKT 1'
G09_045	FOOTPRINT, 'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'		TO->FROM	0.56408	98.8	108.6619	'GS-MUSTANG6 230.00 - MUSTANG STATION 230KV CKT 1'
G09_045	FOOTPRINT, 'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'		TO->FROM	0.56408	98.8	108.5607	'TOLK STATION WEST 230/24.0KV TRANSFORMER CKT 1'
G09_045	FOOTPRINT, 'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'		TO->FROM	0.56408	98.8	108.5142	'HAPPY INTERCHANGE - SWISHER COUNTY REC- HAPPY 69KV CKT 1'
G09_045	FOOTPRINT, 'KRESS INTERCHANGE - TULIA TAP 115KV CKT 1'		TO->FROM	0.56408	89.8	108.1425	'BASE CASE'
G09_045	FOOTPRINT, HITCHLAND 7 345.00 - WWRDEHV7 345.00 345KV CKT 1'		FROM->TO	0.20875	1189.7	109.1512	'FINNEY SWITCHING STATION - STEVENS CO 345.00 345KV CKT 1'
G09_053	FOOTPRINT, 'NORTH JUDSON LARGE SUB - SPEARVILLE 115KV CKT 2'		FROM->TO	0.64248	177.6	111.764	'NORTH JUDSON LARGE SUB - SPEARVILLE 115KV CKT 1'
G09_053	FOOTPRINT, 'NORTH JUDSON LARGE SUB - SPEARVILLE 115KV CKT 1'		FROM->TO	0.64248	177.6	111.764	'NORTH JUDSON LARGE SUB - SPEARVILLE 115KV CKT 2'
G09_053	FOOTPRINT, 'G08-79T 115.00 - JUDSON LARGE 115KV CKT 1'		FROM->TO	0.76023	129.5	115.7031	'G08-79T 115.00 - JUDSON LARGE 115KV CKT 2'
G09_053	FOOTPRINT, 'G08-79T 115.00 - JUDSON LARGE 115KV CKT 2'		FROM->TO	0.76023	129.5	115.7031	'G08-79T 115.00 - JUDSON LARGE 115KV CKT 1'
G09_055S	FOOTPRINT, 'GRAPEVINE INTERCHANGE - KIRBY SWITCHING STATION 115KV CKT 1'		TO->FROM	0.40222	94	125.1803	'CONWAY EHV 345.00 (CONWAY) 345/115/13.8KV TRANSFORMER CKT 1'
G09_055S	FOOTPRINT, 'GRAPEVINE INTERCHANGE - KIRBY SWITCHING STATION 115KV CKT 2'		TO->FROM	0.40222	94	125.1803	'CONWAY EHV 345.00 - MIDPT_BUS 7 345.00 345KV CKT 1'
G09_055S	FOOTPRINT, 'AMOCO TAP - CHILDRESS 69KV CKT 1'		FROM->TO	0.39321	42.5	114.7645	'KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1'
G09_055S	FOOTPRINT, 'AMOCO TAP - CHILDRESS 69KV CKT 1'		FROM->TO	0.39321	42.5	111.9409	'MCCLELLAN SUB - MCLEAN RURAL SUB 115KV CKT 1'
G09_055S	FOOTPRINT, 'AMOCO TAP - CHILDRESS 69KV CKT 1'		FROM->TO	0.39321	42.5	107.4703	'MCLEAN RURAL SUB - SHAMROCK 115KV CKT 1'
G09_055S	FOOTPRINT, 'AMOCO TAP - CHILDRESS 69KV CKT 1'		FROM->TO	0.39321	42.5	107.235	'SHAMROCK (SHAMRCK1) 115/69/14.4KV TRANSFORMER CKT 1'
G09_055S	FOOTPRINT, 'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'		FROM->TO	1	45.8	111.7906	'TRANSFORMER CKT 1'
G09_055S	FOOTPRINT, 'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'		FROM->TO	1	46	111.3045	'HEDLEY - NORTH MEMPHIS REC 69KV CKT 1'
G09_055S	FOOTPRINT, 'AMOCO TAP - CHILDRESS 69KV CKT 1'		FROM->TO	1	42.5	110.3531	'HEDLEY - NORTH MEMPHIS REC 69KV CKT 1'
G09_055S	FOOTPRINT, 'AMOCO TAP - CHILDRESS 69KV CKT 1'		FROM->TO	0.39321	42.5	103.4704	'CLARENDON REC - G08-55T 69.000 69KV CKT 1'
G09_055S	FOOTPRINT, 'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'		FROM->TO	1	45.8	107.4238	'SHAMROCK (SHAMRCK2) 138/69/14.4KV TRANSFORMER CKT 1'
G09_055S	FOOTPRINT, 'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'		FROM->TO	1	45.8	107.2054	'NORTH MEMPHIS REC - NW MEMPHIS 69KV CKT 1'
G09_055S	FOOTPRINT, 'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'		FROM->TO	1	45.8	107.2054	'MEMPHIS - NW MEMPHIS 69KV CKT 1'
G09_055S	FOOTPRINT, 'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'		FROM->TO	1	46	106.9567	'SPP-AEPW-25'
G09_055S	FOOTPRINT, 'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'		FROM->TO	1	46	106.7393	'NORTH MEMPHIS REC - NW MEMPHIS 69KV CKT 1'
G09_055S	FOOTPRINT, 'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'		FROM->TO	1	46	106.7393	'MEMPHIS - NW MEMPHIS 69KV CKT 1'

Source	Sink	Element	Direction	TDF	Rating	Loading	Contingency
G09_055S	FOOTPRINT,	'AMOCO TAP - CHILDRESS 69KV CKT 1'	FROM->TO	0.39321	42.5	103.2351	'SHAMROCK - WELLINGTON 138KV CKT 1'
G09_055S	FOOTPRINT,	'AMOCO TAP - CHILDRESS 69KV CKT 1'	FROM->TO	1	42.5	102.1179	'CLARENDON - CLARENDON REC 69KV CKT 1'
G09_055S	FOOTPRINT,	'GRAPEVINE INTERCHANGE - KIRBY SWITCHING STATION 115KV CKT 1'	TO->FROM	0.40222	94	108.981	'CONWAY EHV 345.00 (CONWAY) 345/115/13.8KV TRANSFORMER CKT 1'
G09_055S	FOOTPRINT,	'GRAPEVINE INTERCHANGE - KIRBY SWITCHING STATION 115KV CKT 2'	TO->FROM	0.40222	94	108.981	'CONWAY EHV 345.00 - MIDPT_BUS 7 345.00 345KV CKT 1'
G09_059	FOOTPRINT,	'NORTH JUDSON LARGE SUB - SPEARVILLE 115KV CKT 2'	FROM->TO	0.64248	177.6	111.764	'NORTH JUDSON LARGE SUB - SPEARVILLE 115KV CKT 1'
G09_059	FOOTPRINT,	'NORTH JUDSON LARGE SUB - SPEARVILLE 115KV CKT 1'	FROM->TO	0.64248	177.6	111.764	'NORTH JUDSON LARGE SUB - SPEARVILLE 115KV CKT 2'
G09_059	FOOTPRINT,	'G08-79T 115.00 - JUDSON LARGE 115KV CKT 1'	FROM->TO	0.76023	129.5	115.7031	'G08-79T 115.00 - JUDSON LARGE 115KV CKT 2'
G09_059	FOOTPRINT,	'G08-79T 115.00 - JUDSON LARGE 115KV CKT 2'	FROM->TO	0.76023	129.5	115.7031	'G08-79T 115.00 - JUDSON LARGE 115KV CKT 1'
G09_060	FOOTPRINT,	'LAKE CREEK - LONEWOLF 69KV CKT 1'	TO->FROM	0.6265	47.9	118.6584	'GOTEBO - MOUNTAIN VIEW 69KV CKT 1'
G09_060	FOOTPRINT,	'SOUTHWESTERN STATION - WASHITA 138KV CKT 1'	TO->FROM	0.19596	257.3	105.0691	'ANADARKO - WASHITA 138KV CKT 1'
G09_060	FOOTPRINT,	'LAKE CREEK - LONEWOLF 69KV CKT 1'	TO->FROM	0.6265	47.9	114.483	'MOUNTAIN VIEW - PINE RIDGE 69KV CKT 1'
G09_060	FOOTPRINT,	'LAKE CREEK - LONEWOLF 69KV CKT 1'	TO->FROM	0.6265	47.9	111.1427	'PINE RIDGE - WASHITA 69KV CKT 1'
G09_060	FOOTPRINT,	'LAKE CREEK - LONEWOLF 69KV CKT 1'	TO->FROM	0.6265	47.9	154.0971	'GOTEBO - MOUNTAIN VIEW 69KV CKT 1'
G09_060	FOOTPRINT,	'LAKE CREEK - LONEWOLF 69KV CKT 1'	TO->FROM	0.6265	47.9	149.9217	'MOUNTAIN VIEW - PINE RIDGE 69KV CKT 1'
G09_060	FOOTPRINT,	'LAKE CREEK - LONEWOLF 69KV CKT 1'	TO->FROM	0.6265	47.9	146.5814	'PINE RIDGE - WASHITA 69KV CKT 1'
G09_060	FOOTPRINT,	'GOTEBO - MOUNTAIN VIEW 69KV CKT 1'	FROM->TO	0.65461	65	121.5788	'GOTEBO - LONEWOLF 69KV CKT 1'
G09_060	FOOTPRINT,	'LAKE CREEK - LONEWOLF 69KV CKT 1'	TO->FROM	0.27223	47.9	111.751	'ELK CITY (ELKCTY-4) 138/69/13.8KV TRANSFORMER CKT 1'
G09_060	FOOTPRINT,	'GOTEBO - MOUNTAIN VIEW 69KV CKT 1'	FROM->TO	0.65461	65	120.9635	'LAKE CREEK - LONEWOLF 69KV CKT 1'
G09_060	FOOTPRINT,	'LAKE CREEK - LONEWOLF 69KV CKT 1'	TO->FROM	0.46895	47.9	117.1581	'CORDELL - GOTEBO 69KV CKT 1'
G09_060	FOOTPRINT,	'MOUNTAIN VIEW - PINE RIDGE 69KV CKT 1'	FROM->TO	0.65461	65	116.6558	'GOTEBO - LONEWOLF 69KV CKT 1'
G09_060	FOOTPRINT,	'MOUNTAIN VIEW - PINE RIDGE 69KV CKT 1'	FROM->TO	0.65461	65	116.1942	'LAKE CREEK - LONEWOLF 69KV CKT 1'
G09_060	FOOTPRINT,	'GOTEBO - LONEWOLF 69KV CKT 1'	FROM->TO	0.6265	64.9	114.5031	'GOTEBO - MOUNTAIN VIEW 69KV CKT 1'
G09_060	FOOTPRINT,	'LAKE CREEK - LONEWOLF 69KV CKT 1'	TO->FROM	0.46895	47.9	113.1915	'CORDELL - INDUSTRIAL PARK 69KV CKT 1'
G09_060	FOOTPRINT,	'PINE RIDGE - WASHITA 69KV CKT 1'	FROM->TO	0.65461	65	112.8096	'GOTEBO - LONEWOLF 69KV CKT 1'
G09_060	FOOTPRINT,	'LAKE CREEK - LONEWOLF 69KV CKT 1'	TO->FROM	0.46895	47.9	111.9389	'ARAPAHO - HAMON BUTLER 69KV CKT 1'
G09_060	FOOTPRINT,	'LAKE CREEK - LONEWOLF 69KV CKT 1'	TO->FROM	0.46895	47.9	111.9389	'ARAPAHO - INDUSTRIAL PARK 69KV CKT 1'
G09_060	FOOTPRINT,	'LAKE CREEK - LONEWOLF 69KV CKT 1'	TO->FROM	0.46895	47.9	111.9389	'HAMON BUTLER - PUTNAM 69KV CKT 1'
G09_060	FOOTPRINT,	'PINE RIDGE - WASHITA 69KV CKT 1'	FROM->TO	0.65461	65	112.3481	'LAKE CREEK - LONEWOLF 69KV CKT 1'
G09_060	FOOTPRINT,	'GOTEBO - LONEWOLF 69KV CKT 1'	FROM->TO	0.6265	64.9	111.5755	'MOUNTAIN VIEW - PINE RIDGE 69KV CKT 1'
G09_060	FOOTPRINT,	'LAKE CREEK - LONEWOLF 69KV CKT 1'	TO->FROM	0.46895	47.9	110.8951	'PUTNAM - TALOGA 69KV CKT 1'
G09_060	FOOTPRINT,	'GOTEBO - LONEWOLF 69KV CKT 1'	FROM->TO	0.6265	64.9	109.1102	'PINE RIDGE - WASHITA 69KV CKT 1'
G09_060	FOOTPRINT,	'GOTEBO - MOUNTAIN VIEW 69KV CKT 1'	FROM->TO	0.53105	65	104.4327	'CORDELL - GOTEBO 69KV CKT 1'
G09_060	FOOTPRINT,	'GOTEBO - MOUNTAIN VIEW 69KV CKT 1'	FROM->TO	0.53105	65	101.2019	'CORDELL - INDUSTRIAL PARK 69KV CKT 1'
G09_060	FOOTPRINT,	'GOTEBO - MOUNTAIN VIEW 69KV CKT 1'	FROM->TO	0.53105	65	100.125	'ARAPAHO - HAMON BUTLER 69KV CKT 1'
G09_060	FOOTPRINT,	'GOTEBO - MOUNTAIN VIEW 69KV CKT 1'	FROM->TO	0.53105	65	100.125	'ARAPAHO - INDUSTRIAL PARK 69KV CKT 1'
G09_060	FOOTPRINT,	'GOTEBO - MOUNTAIN VIEW 69KV CKT 1'	FROM->TO	0.53105	65	100.125	'HAMON BUTLER - PUTNAM 69KV CKT 1'
G09_063	FOOTPRINT,	'NORTHWEST - TATONGA EHV 345.00 345KV CKT 1'	TO->FROM	0.48721	1194.4	104.184	'COMANCH5 345.00 - WWRDEHV7 345.00 345KV CKT 1'
G09_063	FOOTPRINT,	'NORTHWEST - TATONGA EHV 345.00 345KV CKT 1'	TO->FROM	0.43853	1194.4	100.2098	'COMANCH5 345.00 - MED-LDG5 345.00 345KV CKT 1'
G09_063	FOOTPRINT,	'NORTHWEST - TATONGA EHV 345.00 345KV CKT 1'	TO->FROM	0.43853	1194.4	100.1679	'MED-LDG5 345.00 - WICHITA 345KV CKT 1'
G09_066	FOOTPRINT,	'ANADARKO - WASHITA 138KV CKT 1'	TO->FROM	0.74821	227.4	109.8479	'SOUTHWESTERN STATION - WASHITA 138KV CKT 1'
G09_066	FOOTPRINT,	'SOUTHWESTERN STATION - WASHITA 138KV CKT 1'	TO->FROM	0.83663	257.3	105.0691	'ANADARKO - WASHITA 138KV CKT 1'

Source	Sink	Element	Direction	TDF	Rating	Loading	Contingency
G09_066	FOOTPRINT	'ANADARKO - WASHITA 138KV CKT 1'	TO->FROM	0.74821	227.4	105.5925	'SOUTHWESTERN STATION - WASHITA 138KV CKT 1'
G09_066	FOOTPRINT	'SOUTHWESTERN STATION - WASHITA 138KV CKT 1'	TO->FROM	0.83663	257.3	101.0246	'ANADARKO - WASHITA 138KV CKT 1'
G09_067S	FOOTPRINT	'PLANT X STATION - TOLK STATION WEST 230KV CKT 1'	TO->FROM	0.2623	496.9	100.1703	'PLANT X STATION - TOLK STATION EAST 230KV CKT 2'
G09_068	FOOTPRINT	'ELDORADO - LAKE PAULINE 69KV CKT 1'	TO->FROM	0.19935	18.6	196.6641	'LAKE PAULINE - RUSSELL 138KV CKT 1'
G09_068	FOOTPRINT	'GRAPEVINE INTERCHANGE - KIRBY SWITCHING STATION 115KV CKT 1'	TO->FROM	0.38559	94	125.1803	'CONWAY EHV 345.00 (CONWAY) 345/115/13.8KV TRANSFORMER CKT 1'
G09_068	FOOTPRINT	'GRAPEVINE INTERCHANGE - KIRBY SWITCHING STATION 115KV CKT 1'	TO->FROM	0.38559	94	125.1803	'CONWAY EHV 345.00 - MIDPT_BUS 7 345.00 345KV CKT 1'
G09_068	FOOTPRINT	'ELDORADO - ELDORADO JCT 69KV CKT 1'	FROM->TO	0.19935	26.1	135.5537	'LAKE PAULINE - RUSSELL 138KV CKT 1'
G09_068	FOOTPRINT	'ELDORADO JCT - GYPSUM 69KV CKT 1'	FROM->TO	0.19935	26.3	131.4811	'LAKE PAULINE - RUSSELL 138KV CKT 1'
G09_068	FOOTPRINT	'GYPSUM - RUSSELL 69KV CKT 1'	FROM->TO	0.19935	26.6	122.4794	'LAKE PAULINE - RUSSELL 138KV CKT 1'
G09_068	FOOTPRINT	'AMOCO TAP - CHILDRESS 69KV CKT 1'	FROM->TO	0.43473	42.5	114.7645	'KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1'
G09_068	FOOTPRINT	'AMOCO TAP - CHILDRESS 69KV CKT 1'	FROM->TO	0.43473	42.5	111.9409	'MCCLELLAN SUB - MCLEAN RURAL SUB 115KV CKT 1'
G09_068	FOOTPRINT	'AMOCO TAP - CHILDRESS 69KV CKT 1'	FROM->TO	0.43473	42.5	107.4703	'MCLEAN RURAL SUB - SHAMROCK 115KV CKT 1'
G09_068	FOOTPRINT	'AMOCO TAP - CHILDRESS 69KV CKT 1'	FROM->TO	0.43473	42.5	107.235	'SHAMROCK (SHAMRCK1) 115/69/14.4KV TRANSFORMER CKT 1'
G09_068	FOOTPRINT	'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'	FROM->TO	1	45.8	111.7906	'HEDLEY - NORTH MEMPHIS REC 69KV CKT 1'
G09_068	FOOTPRINT	'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'	FROM->TO	1	46	111.3045	'HEDLEY - NORTH MEMPHIS REC 69KV CKT 1'
G09_068	FOOTPRINT	'AMOCO TAP - CHILDRESS 69KV CKT 1'	FROM->TO	1	42.5	110.3531	'CLARENDON REC - G08-55T 69.000 69KV CKT 1'
G09_068	FOOTPRINT	'AMOCO TAP - CHILDRESS 69KV CKT 1'	FROM->TO	0.43473	42.5	103.4704	'SHAMROCK (SHAMRCK2) 138/69/14.4KV TRANSFORMER CKT 1'
G09_068	FOOTPRINT	'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'	FROM->TO	1	45.8	107.4238	'NORTH MEMPHIS REC - NW MEMPHIS 69KV CKT 1'
G09_068	FOOTPRINT	'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'	FROM->TO	1	45.8	107.2054	'MEMPHIS - NW MEMPHIS 69KV CKT 1'
G09_068	FOOTPRINT	'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'	FROM->TO	1	45.8	107.2054	'SPP-AEPW-25'
G09_068	FOOTPRINT	'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'	FROM->TO	1	46	106.9567	'NORTH MEMPHIS REC - NW MEMPHIS 69KV CKT 1'
G09_068	FOOTPRINT	'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'	FROM->TO	1	46	106.7393	'MEMPHIS - NW MEMPHIS 69KV CKT 1'
G09_068	FOOTPRINT	'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'	FROM->TO	1	46	106.7393	'SPP-AEPW-25'
G09_068	FOOTPRINT	'AMOCO TAP - CHILDRESS 69KV CKT 1'	FROM->TO	0.43473	42.5	103.2351	'MEMPHIS - NW MEMPHIS 69KV CKT 1'
G09_068	FOOTPRINT	'AMOCO TAP - CHILDRESS 69KV CKT 1'	FROM->TO	1	42.5	102.1179	'SHAMROCK - WELLINGTON 138KV CKT 1'
G09_068	FOOTPRINT	'ELDORADO - LAKE PAULINE 69KV CKT 1'	TO->FROM	0.19935	18.6	191.1882	'CLARENDON - CLARENDON REC 69KV CKT 1'
G09_068	FOOTPRINT	'GRAPEVINE INTERCHANGE - KIRBY SWITCHING STATION 115KV CKT 1'	TO->FROM	0.38559	94	125.4632	'LAKE PAULINE - RUSSELL 138KV CKT 1'
G09_068	FOOTPRINT	'GRAPEVINE INTERCHANGE - KIRBY SWITCHING STATION 115KV CKT 1'	TO->FROM	0.38559	94	125.4632	'CONWAY EHV 345.00 (CONWAY) 345/115/13.8KV TRANSFORMER CKT 1'
G09_068	FOOTPRINT	'ELDORADO - ELDORADO JCT 69KV CKT 1'	FROM->TO	0.19935	26.1	131.6513	'CONWAY EHV 345.00 - MIDPT_BUS 7 345.00 345KV CKT 1'
G09_068	FOOTPRINT	'ELDORADO JCT - GYPSUM 69KV CKT 1'	FROM->TO	0.19935	26.3	127.6084	'LAKE PAULINE - RUSSELL 138KV CKT 1'
G09_068	FOOTPRINT	'GYPSUM - RUSSELL 69KV CKT 1'	FROM->TO	0.19935	26.6	118.6504	'LAKE PAULINE - RUSSELL 138KV CKT 1'
G09_068	FOOTPRINT	'AMOCO TAP - CHILDRESS 69KV CKT 1'	FROM->TO	0.43473	42.5	110.5501	'KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1'
G09_068	FOOTPRINT	'AMOCO TAP - CHILDRESS 69KV CKT 1'	FROM->TO	0.43473	42.5	107.7266	'MCCLELLAN SUB - MCLEAN RURAL SUB 115KV CKT 1'
G09_068	FOOTPRINT	'AMOCO TAP - CHILDRESS 69KV CKT 1'	FROM->TO	0.43473	42.5	103.256	'MCLEAN RURAL SUB - SHAMROCK 115KV CKT 1'

Source	Sink	Element	Direction	TDF	Rating	Loading	Contingency
G09_068	FOOTPRINT	'AMOCO TAP - CHILDRESS 69KV CKT 1'	FROM->TO	0.43473	42.5	103.0207	'SHAMROCK (SHAMRCK1) 115/69/14.4KV TRANSFORMER CKT 1'
G09_068	FOOTPRINT	'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'	FROM->TO	1	45.8	103.0568	'HEDLEY - NORTH MEMPHIS REC 69KV CKT 1'
G09_068	FOOTPRINT	'JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1'	FROM->TO	1	46	102.6087	'HEDLEY - NORTH MEMPHIS REC 69KV CKT 1'
G09_068	FOOTPRINT	'AMOCO TAP - CHILDRESS 69KV CKT 1'	FROM->TO	1	42.5	101.4118	'G08-55T 69.000 - HEDLEY 69KV CKT 1'
G09_068	FOOTPRINT	'AMOCO TAP - CHILDRESS 69KV CKT 1'	FROM->TO	1	42.5	100.9412	'CLARENDON REC - G08-55T 69.000 69KV CKT 1'
G09_070	FOOTPRINT	'CLINTON JUNCTION - ELK CITY 138KV CKT 1'	TO->FROM	0.19225	142.6	100.2605	'NORTHWEST - TATONGA EHV 345.00 345KV CKT 1'
G09_070	FOOTPRINT	'CLINTON JUNCTION - ELK CITY 138KV CKT 1'	TO->FROM	0.19735	142.4	103.2351	'ANADARK7 345.00 - MIDPT_BUS 7 345.00 345KV CKT 1'
G09_070	FOOTPRINT	'CLINTON JUNCTION - ELK CITY 138KV CKT 1'	TO->FROM	0.19638	141.9	114.4841	'ANADARK7 345.00 - MIDPT_BUS 7 345.00 345KV CKT 1'
G09_070	FOOTPRINT	'CLINTON JUNCTION - ELK CITY 138KV CKT 1'	TO->FROM	0.23066	141.9	105.3624	'MIDPT_BUS 7 345.00 (WHEEL-MIDPT) 345/230/13.2KV TRANSFORMER CKT 1'
G09_070	FOOTPRINT	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'	FROM->TO	0.39314	347.4	110.3466	'WEATHERFORD JCT. - WEATHERFORD SOUTHEAST 138KV CKT 1'
G09_070	FOOTPRINT	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'	FROM->TO	0.39314	347.4	109.1089	'HINTON - WEATHERFORD JCT. 138KV CKT 1'
G09_070	FOOTPRINT	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'	FROM->TO	0.39314	347.4	108.6771	'CAN_GAS4 138.00 - HINTON 138KV CKT 1'
G09_070	FOOTPRINT	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'	FROM->TO	0.39314	347.4	108.2453	'CAN_GAS4 138.00 - JENSEN ROAD 138KV CKT 1'
G09_070	FOOTPRINT	'ERICK - SWEETWATER 138KV CKT 1'	FROM->TO	0.99604	129.7	155.073	'ELK CITY - FALCON ROAD 138KV CKT 1'
G09_070	FOOTPRINT	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'	FROM->TO	0.36156	347.4	106.5094	'TOLK STATION EAST 230/24.0KV TRANSFORMER CKT 1'
G09_070	FOOTPRINT	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'	FROM->TO	0.36156	315	106.633	'BASE CASE' TOLK STATION WEST 230/24.0KV TRANSFORMER CKT 1'
G09_070	FOOTPRINT	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'	FROM->TO	0.36156	347.4	105.7308	'WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1'
G09_070	FOOTPRINT	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'	FROM->TO	0.37943	347.4	106.3554	'ELK CITY - FALCON ROAD 138KV CKT 1'
G09_070	FOOTPRINT	'DURHAM - SWEETWATER 138KV CKT 1'	TO->FROM	0.99604	130	144.3305	'ELK CITY - FALCON ROAD 138KV CKT 1'
G09_070	FOOTPRINT	'BRANTLEY - DURHAM 138KV CKT 1'	TO->FROM	0.99604	130	143.0997	'ELK CITY - FALCON ROAD 138KV CKT 1'
G09_070	FOOTPRINT	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'	FROM->TO	0.37943	347.4	105.607	'WEATHERFORD SOUTHEAST - WEATHERFORD TAP 138KV CKT 1'
G09_070	FOOTPRINT	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'	FROM->TO	0.36156	347.4	104.3669	'GS-MUSTANG6 230.00 - MUSTANG STATION 230KV CKT 1'
G09_070	FOOTPRINT	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'	FROM->TO	0.46029	347.4	105.6978	'MOORELAND - MOREWOOD SW 138KV CKT 1'
G09_070	FOOTPRINT	'CLINTON JUNCTION - ELK CITY 138KV CKT 1'	TO->FROM	0.3141	143	112.1587	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'
G09_070	FOOTPRINT	'ELK CITY - FALCON ROAD 138KV CKT 1'	TO->FROM	0.99604	186.5	107.8443	'ERICK - SWEETWATER 138KV CKT 1'
G09_070	FOOTPRINT	'MOREWOOD SW - MORWOOD 138KV CKT 1'	TO->FROM	0.99604	179	103.3685	'ELK CITY - FALCON ROAD 138KV CKT 1'
G09_070	FOOTPRINT	'BRANTLEY - MORWOOD 138KV CKT 1'	FROM->TO	0.99604	179	103.3685	'ELK CITY - FALCON ROAD 138KV CKT 1'
G09_070	FOOTPRINT	'ELK CITY - FALCON ROAD 138KV CKT 1'	TO->FROM	0.99604	186.5	100.6057	'DURHAM - SWEETWATER 138KV CKT 1'
G09_070	FOOTPRINT	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'	FROM->TO	0.39314	347.4	114.6146	'WEATHERFORD JCT. - WEATHERFORD SOUTHEAST 138KV CKT 1'
G09_070	FOOTPRINT	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'	FROM->TO	0.39314	347.4	113.3768	'HINTON - WEATHERFORD JCT. 138KV CKT 1'
G09_070	FOOTPRINT	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'	FROM->TO	0.39314	347.4	112.945	'CAN_GAS4 138.00 - HINTON 138KV CKT 1'
G09_070	FOOTPRINT	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'	FROM->TO	0.39314	347.4	112.5132	'CAN_GAS4 138.00 - JENSEN ROAD 138KV CKT 1'
G09_070	FOOTPRINT	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'	FROM->TO	0.36156	347.4	111.2976	'TOLK STATION EAST 230/24.0KV TRANSFORMER CKT 1'
G09_070	FOOTPRINT	'ERICK - SWEETWATER 138KV CKT 1'	FROM->TO	0.99604	129.7	180.6523	'ELK CITY - FALCON ROAD 138KV CKT 1'

Source	Sink	Element	Direction	TDF	Rating	Loading	Contingency
G09_070	FOOTPRINT, 'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'		FROM->TO	0.36156	347.4	110.496	'TOLK STATION WEST 230/24.0KV TRANSFORMER CKT 1'
G09_070	FOOTPRINT, 'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'		FROM->TO	0.36156	315	111.5981	'BASE CASE'
G09_070	FOOTPRINT, 'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'		FROM->TO	0.37943	347.4	110.7411	'WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1'
G09_070	FOOTPRINT, 'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'		FROM->TO	0.37943	347.4	109.9927	'WEATHERFORD SOUTHEAST - WEATHERFORD TAP 138KV CKT 1'
G09_070	FOOTPRINT, 'DURHAM - SWEETWATER 138KV CKT 1'		TO->FROM	0.99604	130	169.8508	'ELK CITY - FALCON ROAD 138KV CKT 1'
G09_070	FOOTPRINT, 'BRANTLEY - DURHAM 138KV CKT 1'		TO->FROM	0.99604	130	168.62	'ELK CITY - FALCON ROAD 138KV CKT 1'
G09_070	FOOTPRINT, 'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'		FROM->TO	0.36156	347.4	109.0928	'GS-MUSTANG6 230.00 - MUSTANG STATION 230KV CKT 1'
G09_070	FOOTPRINT, 'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'		FROM->TO	0.46029	347.4	111.0373	'MOORELAND - MOREWOOD SW 138KV CKT 1'
G09_070	FOOTPRINT, 'CLINTON JUNCTION - ELK CITY 138KV CKT 1'		TO->FROM	0.3141	143	113.9965	'BECKHAM CO 230.00 - WHEELER 6 230.00 230KV CKT 1'
G09_070	FOOTPRINT, 'ELK CITY - FALCON ROAD 138KV CKT 1'		TO->FROM	0.99604	186.5	125.6332	'ERICK - SWEETWATER 138KV CKT 1'
G09_070	FOOTPRINT, 'MOREWOOD SW - MORWOOD 138KV CKT 1'		TO->FROM	0.99604	179	121.9028	'ELK CITY - FALCON ROAD 138KV CKT 1'
G09_070	FOOTPRINT, 'BRANTLEY - MORWOOD 138KV CKT 1'		FROM->TO	0.99604	179	121.9028	'ELK CITY - FALCON ROAD 138KV CKT 1'
G09_070	FOOTPRINT, 'ELK CITY - FALCON ROAD 138KV CKT 1'		TO->FROM	0.99604	186.5	118.3946	'DURHAM - SWEETWATER 138KV CKT 1'
G09_070	FOOTPRINT, 'ELK CITY - FALCON ROAD 138KV CKT 1'		TO->FROM	0.99604	186.5	117.5367	'BRANTLEY - DURHAM 138KV CKT 1'
G09_070	FOOTPRINT, 'ELK CITY - FALCON ROAD 138KV CKT 1'		TO->FROM	0.99604	186.5	117.0005	'BRANTLEY - MORWOOD 138KV CKT 1'
G09_070	FOOTPRINT, 'ELK CITY - FALCON ROAD 138KV CKT 1'		TO->FROM	0.99604	186.5	117.0005	'MOREWOOD SW - MORWOOD 138KV CKT 1'
G09_070	FOOTPRINT, 'ELK CITY - FALCON ROAD 138KV CKT 1'		TO->FROM	0.75846	167.3	107.8117	'BASE CASE'
G09_070	FOOTPRINT, 'ERICK - SWEETWATER 138KV CKT 1'		FROM->TO	1	129.7	109.946	'ERICK - SAYRE 138KV CKT 1'
G09_070	FOOTPRINT, 'ELK CITY - FALCON ROAD 138KV CKT 1'		TO->FROM	0.79673	186.5	103.8121	'MOORELAND - MOREWOOD SW 138KV CKT 1'
G09_070	FOOTPRINT, 'ERICK - SWEETWATER 138KV CKT 1'		FROM->TO	1	129.7	103.9322	'FALCON ROAD - SAYRE 138KV CKT 1'
G09_071	FOOTPRINT, 'NORTHWEST - TATONGA EHV 345.00 345KV CKT 1'		TO->FROM	0.48721	1194.4	104.184	'COMANCH5 345.00 - WWRDEHV7 345.00 345KV CKT 1'
G09_071	FOOTPRINT, 'NORTHWEST - TATONGA EHV 345.00 345KV CKT 1'		TO->FROM	0.43853	1194.4	100.2098	'COMANCH5 345.00 - MED-LDG5 345.00 345KV CKT 1'
G09_071	FOOTPRINT, 'NORTHWEST - TATONGA EHV 345.00 345KV CKT 1'		TO->FROM	0.43853	1194.4	100.1679	'MED-LDG5 345.00 - WICHITA 345KV CKT 1'
G09_072	FOOTPRINT, 'FINNEY SWITCHING STATION - STEVENS CO 345.00 345KV CKT 1'		TO->FROM	0.43579	1051.6	115.5505	'GEN08-047 345.00 - HITCHLAND 7 345.00 345KV CKT 1'
G09_072	FOOTPRINT, 'FINNEY SWITCHING STATION - STEVENS CO 345.00 345KV CKT 1'		TO->FROM	0.43579	1051.6	115.1987	'GEN08-047 345.00 - WWRDEHV7 345.00 345KV CKT 1'
G09_072	FOOTPRINT, 'FINNEY SWITCHING STATION - STEVENS CO 345.00 345KV CKT 1'		TO->FROM	0.43579	1051.6	128.004	'GEN08-047 345.00 - HITCHLAND 7 345.00 345KV CKT 1'
G09_072	FOOTPRINT, 'FINNEY SWITCHING STATION - STEVENS CO 345.00 345KV CKT 1'		TO->FROM	0.43579	1051.6	127.6522	'GEN08-047 345.00 - WWRDEHV7 345.00 345KV CKT 1'
G09_072	FOOTPRINT, 'FINNEY SWITCHING STATION - STEVENS CO 345.00 345KV CKT 1'		TO->FROM	0.43579	1051.6	128.004	'GEN08-047 345.00 - HITCHLAND 7 345.00 345KV CKT 1'
G09_072	FOOTPRINT, 'FINNEY SWITCHING STATION - STEVENS CO 345.00 345KV CKT 1'		TO->FROM	0.43579	1051.6	127.6522	'GEN08-047 345.00 - WWRDEHV7 345.00 345KV CKT 1'
G09_072	FOOTPRINT, 'FINNEY SWITCHING STATION - STEVENS CO 345.00 345KV CKT 1'		TO->FROM	0.43579	1051.6	127.6522	'FINNEY SWITCHING STATION - STEVENS CO CKT 1'
G09_072	FOOTPRINT, 'HITCHLAND 7 345.00 - WWRDEHV7 345.00 345KV CKT 1'		FROM->TO	0.47912	1189.7	121.007	'FINNEY SWITCHING STATION - STEVENS CO 345.00 345KV CKT 1'
G09_072	FOOTPRINT, 'HITCHLAND 7 345.00 - WWRDEHV7 345.00 345KV CKT 1'		FROM->TO	0.47912	1189.7	109.1512	'FINNEY SWITCHING STATION - STEVENS CO 345.00 345KV CKT 1'