



**Feasibility Study
For
Generation Interconnection
Request
GEN-2007-030**

SPP Tariff Studies
(#GEN-2007-030)

April, 2008

Executive Summary

<OMITTED TEXT> (Customer) has requested a Feasibility Study for the purpose of interconnecting 200 MW of wind generation within the control area of Southwestern Public Service Company (SPS) located in Gray County, TX. The proposed method of interconnection is to add a 230kV transmission line terminal to the Grapevine 230kV substation owned by SPS. The proposed in-service date of this request is March 1, 2009.

Power flow analysis has indicated that for the powerflow cases studied, it is possible to interconnect the 200 MW of generation with transmission system reinforcements within the local transmission system. Dynamic Stability studies performed as part of the System Impact Study will provide additional guidance as to whether reactive compensation will be required and whether or not it can be static or a portion must be dynamic (such as a SVC).

The requirement to interconnect the 200 MW of wind generation consists of adding a new 230kV transmission line terminal and circuit breaker at the SPS Grapevine substation. This line terminal will be constructed and maintained by SPS. The Customer did not propose a specific route for the 230 kV line extending to serve its 230/34.5 kV collection facilities. It is assumed that obtaining all necessary right-of-way for the new transmission line to serve its facilities will not be a significant expense.

The total minimum cost for building the required facilities necessary to interconnect this 200 MW of generation is \$690,000. These costs are shown in Tables 1 and 2. Network constraints in the American Electric Power West (AEPW), SPS, Sunflower Electric (SUNC), West Plains (WEPL) and Western Farmers Electric Cooperative (WFEC) transmission systems that were identified are shown in Table 3. These Network constraints will have to be verified with a Transmission Service Request (TSR) and associated studies. Network Constraints are in the local area of the new generation when this generation is sunk throughout the SPP footprint for the Energy Resource (ER) Interconnection request. With a defined source and sink in a Transmission Service Request, this list of Network Constraints will be refined and expanded to account for all Network Upgrade requirements. This cost does not include building the 230 kV line from the Customer 230/34.5 kV collector substation into the point of interconnection. This cost also does not include the Customer's 230/34.5 kV collector substation or reactive compensation, if required.

A powerflow solution could not be obtained for all outages simulated for this analysis. A more detailed analysis of the needs for network upgrades will be evaluated in the Impact Study for this interconnection request.

In Table 4, a value of Available Transfer Capability (ATC) associated with each overloaded facility is included. These values may be used by the Customer for future analyses including the determination of lower generation capacity levels that may be installed. When transmission service associated with this interconnection is evaluated, the loading of the facilities listed in this table may be greater due to higher priority reservations. If the loading of a facility is higher, the level of ATC will be lower.

There are several other proposed generation additions in the general area of the Customer's facility. It was assumed in this preliminary analysis that not all of these other projects within the American Electric Power West (AEPW) and SPS control areas will be in service. Those previously queued projects that have

advanced to nearly complete phases were included in this Feasibility Study. In the event that another request for a generation interconnection with a higher priority withdraws, then this request may have to be re-evaluated to determine the local Network Constraints.

The required interconnection costs listed in Tables 1 and 2 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 through Southwest Power Pool's OASIS.

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Introduction

<OMITTED TEXT> (Customer) has requested a Feasibility Study for the purpose of interconnecting 200 MW of wind generation within the control area of Southwestern Public Service Company (SPS) located in Gray County, TX. The proposed method of interconnection is to add a 230kV transmission line terminal to the Grapevine 230kV substation owned by SPS. The proposed in-service date of this request is March 1, 2009.

Interconnection Facilities

The primary objective of this study is to identify the system problems associated with connecting the generating plant 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 the interconnection receipt point.

The requirement to interconnect the 200 MW of wind generation into the proposed substation consists of adding a new 230kV line terminal and circuit breaker at the SPS Grapevine. This terminal will be constructed and maintained by SPS. The Customer did not propose a specific route for the 230 kV line extending to serve its 230/34.5 kV collection facilities. It is assumed that obtaining all necessary right-of-way for the new transmission line to serve its facilities will not be a significant expense.

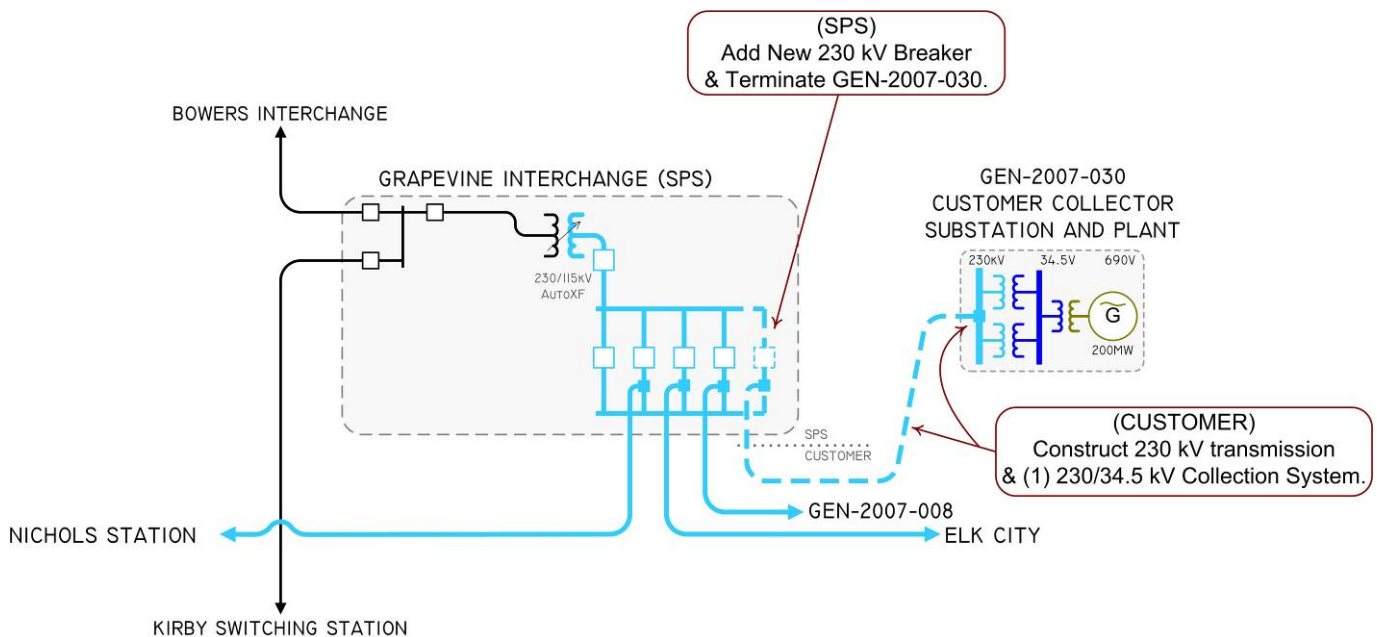


Figure 1: Proposed Method of Interconnection

(Final design to be determined)

Interconnection Estimated Costs

The minimum cost for adding a new 230 kV breaker and terminating the transmission line serving GEN-2007-030 facilities is estimated at \$690,000. These costs are listed in Tables 1 and 2. These estimates will be refined during the development of the System Impact Study based on the final designs. This cost does not include building the Customer's 230 kV transmission line extending from the point of interconnection to serve its 230/34.5 kV collection facilities. This cost also does not include the Customer's 230/34.5 kV collector substation, all of which should be determined by the Customer. The Customer is responsible for these 230 kV – 34.5 kV facilities up to the point of interconnection. Other Network Constraints in the American Electric Power West (AEPW), SPS, Sunflower Electric (SUNC), West Plains (WEPL) and Western Farmers Electric Cooperative (WFEC) transmission systems that were identified are shown in Table 3.

These costs do not include any cost that might be associated with short circuit study results or dynamic stability study results. These costs will be determined when and if a System Impact Study is conducted.

Table 1: Direct Assignment Facilities

FACILITY	ESTIMATED COST (2008 DOLLARS)
CUSTOMER – (1) 230/34.5 kV Customer collector substation facilities.	*
CUSTOMER – (1) 230 kV transmission line from Customer collector substation to the Grapevine Interchange substation.	*
CUSTOMER – Right-of-Way for all Customer facilities.	*
TOTAL	*

* Estimates of cost to be determined.

Table 2: Required Interconnection Network Upgrade Facilities

FACILITY	ESTIMATED COST (2008 DOLLARS)
SPS – (1) 230 kV breaker and line terminal for GEN-2007-030 at Grapevine Interchange.	\$690,000
TOTAL	*

* Estimates of cost to be determined.

Powerflow Analysis

A powerflow analysis was conducted for the facility using modified versions of the 2009 and 2012 summer and winter peak models, and the 2017 summer peak model. The output of the 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 proposed in-service date of the generation is March 1, 2009. The available seasonal models used were through the 2017 Summer Peak of which is the end of the current SPP planning horizon.

Following current practice, this analysis was conducted assuming that previous queued requests in the immediate area of this interconnect request were in service. The analysis of the Customer's project indicates that, given the requested generation level of 200 MW and location, additional criteria violations will occur on the existing AEPW, SPS, SUNC, WEPL and WFEC transmission systems under steady state and contingency conditions in the peak seasons. Table 3 lists these overloaded facilities.

There were certain outages in which a powerflow solution could not be obtained in this analysis. These outages were for transmission lines located in close proximity to the Customer project. The transmission network upgrades necessary to interconnect this request will be examined in more detail in the Impact Study.

In Table 4, a value of Available Transfer Capability (ATC) associated with each overloaded facility is included. These values may be used by the Customer to determine lower generation capacity levels that may be installed. When transmission service associated with this interconnection is evaluated, the loading of the facilities listed in this table may be greater due to higher priority reservations. When a facility is overloaded for more than one contingency, only the highest loading on the facility for each season is included in the table.

Voltage violations for load serving buses within the SPP footprint were also observed for some of the contingencies listed in Table 3. These voltage violations have not been listed in this report.

In order to maintain a zero reactive power flow exchanged at the point of interconnection, additional reactive compensation may be required. Dynamic Stability studies performed as part of the System Impact Study will provide additional guidance as to whether the reactive compensation, if needed, 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.

There are several other proposed generation additions in the general area of the Customer's facility. Some of the local projects that were previously queued were assumed to be in service in this Feasibility Study. Not all local projects that were previously queued and have advanced to nearly complete phases were included in this Feasibility 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 Planning Standards for System Adequacy and Security – Transmission System Table I hereafter referred to as NERC Table I) and its applicable standards and measurements”.

Using the created models and the ACCC function of PSS/E, single contingencies in portions or all of the modeled control areas of Sunflower Electric Power Corporation (SUNC), Missouri Public Service (MIPU), Westar Energy (WERE), Kansas City Power & Light (KCPL), West Plains (WEPL), Midwest Energy (MIDW), Oklahoma Gas and Electric OKGE, American Electric Power West (AEPW), Grand River Dam Authority (GRDA), Southwestern Public Service Company (SPS), Western Farmers Electric Cooperative (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 Results

Table 3: Network Constraints

AREA	OVERLOADED ELEMENT
AEPW	2006-02T 230.00 - ELK CITY 230KV 230KV CKT 1
AEPW	CARNEGIE - FORT COBB 138KV CKT 1
AEPW	CARNEGIE - HOBART JUNCTION 138KV CKT 1
AEPW	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
AEPW	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1
AEPW	CLINTON CITY - FOSS TAP 69KV CKT 1
AEPW	CLINTON CITY - THOMAS TAP 69KV CKT 1
AEPW	CLINTON JUNCTION - CLINTON NATURAL GAS TAP 138KV CKT 1
AEPW	CLINTON JUNCTION - ELK CITY 138KV CKT 1
AEPW	CLINTON JUNCTION - FOSS TAP 69KV CKT 1
AEPW	ELK CITY (ELKCTY-4) 138/69/13.8KV TRANSFORMER CKT 1
AEPW	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
AEPW	FORT COBB - SOUTHWESTERN STATION 138KV CKT 1
AEPW	HOBART JUNCTION - TAMARAC TAP 138KV CKT 1
AEPW	SOUTHWESTERN STATION (SWS GSU3) 138/13.8/13.8KV TRANSFORMER CKT 1
AEPW	THOMAS TAP - WEATHERFORD 69KV CKT 1
AEPW/SPS	MCLEAN RURAL SUB - SHAMROCK 115KV CKT 1
AEPW/WFEC	ALTUS JCT TAP - RUSSELL 138KV CKT 1
AEPW/WFEC	CLINTON - CLINTON JUNCTION 138KV CKT 1
AEPW/WFEC	ELDORADO - LAKE PAULINE 69KV CKT 1
AEPW/WFEC	ELK CITY - ELK CITY 69KV CKT 1
AEPW/WFEC	LAKE PAULINE - RUSSELL 138KV CKT 1
SPS	BOWERS INTERCHANGE 115/69KV TRANSFORMER CKT 1
SPS	CONWAY SUB - YARNELL SUB 115KV CKT 1
SPS	EAST PLANT INTERCHANGE - MANHATTAN SUB 115KV CKT 1
SPS	EAST PLANT INTERCHANGE - PIERCE STREET TAP 115KV CKT 1
SPS	EAST PLANT INTERCHANGE - WHITAKER SUB 115KV CKT 1
SPS	EXELL TAP - FAIN SUB 115KV CKT 1
SPS	FAIN SUB - NICHOLS STATION 115KV CKT 1
SPS	HAPPY INTERCHANGE - PALO DURO SUB 115KV CKT 1
SPS	HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1
SPS	KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1
SPS	MANHATTAN SUB - MANHATTAN TAP 115KV CKT 1
SPS	MANHATTAN TAP - OSAGE SWITCHING STATION 115KV CKT 1
SPS	MCCLELLAN SUB - MCLEAN RURAL SUB 115KV CKT 1
SPS	NICHOLS STATION - WHITAKER SUB 115KV CKT 1
SPS	NICHOLS STATION - YARNELL SUB 115KV CKT 1
SPS	OSAGE SWITCHING STATION - PIERCE STREET TAP 115KV CKT 1
SPS	PALO DURO SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1
SUNC/WEPL	SPEARVILLE (SPEARVL) 345/230/13.8KV TRANSFORMER CKT 1
WEPL	MEDICINE LODGE - SUN CITY 115KV CKT 1
WFEC	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1
WFEC	CARTER JCT - DILL JCT 69KV CKT 1
WFEC	CARTER JCT - LAKE CREEK 69KV CKT 1
WFEC	DILL JCT - ELK CITY 69KV CKT 1
WFEC	HAMON BUTLER - MOREWOOD 69KV CKT 1
WFEC	HAMON BUTLER - PUTNAM 69KV CKT 1
WFEC	MOORELAND - MOREWOOD SW 138KV CKT 1
WFEC	MOREWOOD SW 138/69KV TRANSFORMER CKT 1
WFEC	PUTNAM - TALOGA 69KV CKT 1
AEPW	American Electric Power West
SPS	Southwestern Public Service Company
SUNC	Sunflower Electric
WEPL	West Plains Electric
WFEC	Western Farmers Electric Cooperative

Table 4: Contingency Analysis

SEASON	OVERLOADED ELEMENT	RATING (MVA)	LOADING (%)	ATC (MW)	CONTINGENCY
09SP	No Solution			0	2006-02T 230.00 - ELK CITY 230KV 230KV CKT 1
09SP	No Solution			0	CONWAY SUB - YARNELL SUB 115KV CKT 1
09SP	No Solution			0	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
09SP	No Solution			0	NICHOLS STATION - YARNELL SUB 115KV CKT 1
09SP	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	287	243	0	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
09SP	CLINTON JUNCTION - ELK CITY 138KV CKT 1	143	232	0	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
09SP	2006-02T 230.00 - ELK CITY 230KV 230KV CKT 1	351	228	0	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
09SP	2006-02T 230.00 - ELK CITY 230KV 230KV CKT 1	319	199	0	BASE CASE
09SP	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1	170	172	0	CLINTON JUNCTION - ELK CITY 138KV CKT 1
09SP	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1	170	170	0	CLINTON JUNCTION - ELK CITY 138KV CKT 1
09SP	BOWERS INTERCHANGE 115/69KV TRANSFORMER CKT 1	84	153	0	BASE CASE
09SP	CONWAY SUB - YARNELL SUB 115KV CKT 1	180	147	0	BOWERS INTERCHANGE 115/69KV TRANSFORMER CKT 1
09SP	NICHOLS STATION - YARNELL SUB 115KV CKT 1	180	147	0	BOWERS INTERCHANGE 115/69KV TRANSFORMER CKT 1
09SP	ELK CITY (ELKCTY-4) 138/69/13.8KV TRANSFORMER CKT 1	72	145	0	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1
09SP	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1	158	144	0	CLINTON JUNCTION - ELK CITY 138KV CKT 1
09SP	DILL JCT - ELK CITY 69KV CKT 1	61	135	0	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1
09SP	CONWAY SUB - YARNELL SUB 115KV CKT 1	164	134	0	BASE CASE
09SP	NICHOLS STATION - YARNELL SUB 115KV CKT 1	164	134	0	BASE CASE
09SP	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1	147	133	0	BASE CASE
09SP	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1	147	131	0	BASE CASE
09SP	CLINTON CITY - THOMAS TAP 69KV CKT 1	48	129	0	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
09SP	ELK CITY - ELK CITY 69KV CKT 1	72	128	0	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1
09SP	CARTER JCT - DILL JCT 69KV CKT 1	61	128	0	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1
09SP	CLINTON JUNCTION - FOSS TAP 69KV CKT 1	72	127	0	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
09SP	MOREWOOD SW 138/69KV TRANSFORMER CKT 1	56	126	0	MOORELAND - MOREWOOD SW 138KV CKT 1
09SP	KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1	90	124	0	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
09SP	DILL JCT - ELK CITY 69KV CKT 1	47	123	0	BASE CASE
09SP	THOMAS TAP - WEATHERFORD 69KV CKT 1	48	122	0	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
09SP	MEDICINE LODGE - SUN CITY 115KV CKT 1	79	122	0	MULLERGREN - SPEARVILLE 230KV CKT 1
09SP	MCCLELLAN SUB - MCLEAN RURAL SUB 115KV CKT 1	90	122	0	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
09SP	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1	130	122	0	BASE CASE
09SP	PALO DURO SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1	99	118	0	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1
09SP	CLINTON JUNCTION - CLINTON NATURAL GAS TAP 138KV CKT 1	143	118	0	CLINTON JUNCTION (CLINTJCT) 138/69/13.8KV TRANSFORMER CKT 1
09SP	HAPPY INTERCHANGE - PALO DURO SUB 115KV CKT 1	99	117	0	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1
09SP	CLINTON CITY - FOSS TAP 69KV CKT 1	79	115	0	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
09SP	SOUTHWESTERN STATION (SWS GSU3) 138/13.8/13.8KV TRANSFORMER CKT 1	160	114	0	BASE CASE
09SP	MCLEAN RURAL SUB - SHAMROCK 115KV CKT 1	90	111	0	JERICO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1
09SP	EAST PLANT INTERCHANGE - PIERCE STREET TAP 115KV CKT 1	161	109	0	EAST PLANT INTERCHANGE - MANHATTAN SUB 115KV CKT 1

TABLE 4: Contingency Analysis (continued)

SEASON	OVERLOADED ELEMENT	RATING (MVA)	LOADING (%)	ATC (MW)	CONTINGENCY
09SP	EAST PLANT INTERCHANGE - MANHATTAN SUB 115KV CKT 1	161	109	0	EAST PLANT INTERCHANGE - PIERCE STREET TAP 115KV CKT 1
09SP	HOBART JUNCTION - TAMARAC TAP 138KV CKT 1	105	109	0	KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1
09SP	CARTER JCT - LAKE CREEK 69KV CKT 1	61	111	39	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
09SP	NICHOLS STATION - WHITAKER SUB 115KV CKT 1	249	101	109	CHERRY SUB - NICHOLS STATION 115KV CKT 1
09SP	LAKE PAULINE - RUSSELL 138KV CKT 1	72	104	137	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
09SP	HAPPY INTERCHANGE - TULIA TAP 115KV CKT 1	99	100	195	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1
09SP	ALTUS JCT TAP - RUSSELL 138KV CKT 1	72	100	198	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
09WP	No Solution			0	2006-02T 230.00 - ELK CITY 230KV 230KV CKT 1
09WP	No Solution			0	CONWAY SUB - YARNELL SUB 115KV CKT 1
09WP	No Solution			0	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
09WP	No Solution			0	GRAPEVINE INTERCHANGE - KIRBY SWITCHING STATION 115KV CKT 1
09WP	No Solution			0	NICHOLS STATION - YARNELL SUB 115KV CKT 1
09WP	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	287	261	0	TUCO INTERCHANGE (TUCO XX4) 345/230/13.2KV TRANSFORMER CKT 1
09WP	CLINTON JUNCTION - ELK CITY 138KV CKT 1	143	257	0	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
09WP	2006-02T 230.00 - ELK CITY 230KV 230KV CKT 1	351	257	0	SPP-SWPS-01: O.K.U. - TUCO INTERCHANGE 345KV CKT 1, AND TUCO INTERCHANGE (TUCO XX4) 345/230/13.2KV TRANSFORMER CKT 1
09WP	ELDORADO - LAKE PAULINE 69KV CKT 1	20	240	0	LAKE PAULINE - RUSSELL 138KV CKT 1
09WP	2006-02T 230.00 - ELK CITY 230KV 230KV CKT 1	319	215	0	BASE CASE
09WP	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1	192	172	0	CLINTON JUNCTION - ELK CITY 138KV CKT 1
09WP	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1	192	171	0	CLINTON JUNCTION - ELK CITY 138KV CKT 1
09WP	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1	158	165	0	CLINTON JUNCTION - ELK CITY 138KV CKT 1
09WP	DILL JCT - ELK CITY 69KV CKT 1	61	151	0	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1
09WP	CARTER JCT - DILL JCT 69KV CKT 1	61	145	0	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1
09WP	ELK CITY (ELKCTY-4) 138/69/13.8KV TRANSFORMER CKT 1	72	145	0	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1
09WP	ELK CITY - ELK CITY 69KV CKT 1	72	141	0	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1
09WP	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1	130	136	0	BASE CASE
09WP	MOREWOOD SW 138/69KV TRANSFORMER CKT 1	56	136	0	MOORELAND - MOREWOOD SW 138KV CKT 1
09WP	DILL JCT - ELK CITY 69KV CKT 1	47	133	0	BASE CASE
09WP	CARNEGIE - HOBART JUNCTION 138KV CKT 1	143	129	0	CLINTON JUNCTION - ELK CITY 138KV CKT 1
09WP	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1	172	128	0	BASE CASE
09WP	CARTER JCT - LAKE CREEK 69KV CKT 1	61	128	0	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
09WP	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1	172	127	0	BASE CASE
09WP	CARTER JCT - DILL JCT 69KV CKT 1	47	126	0	BASE CASE
09WP	KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1	107	122	0	TUCO INTERCHANGE (TUCO XX4) 345/230/13.2KV TRANSFORMER CKT 1
09WP	MCCLELLAN SUB - MCLEAN RURAL SUB 115KV CKT 1	107	121	0	TUCO INTERCHANGE (TUCO XX4) 345/230/13.2KV TRANSFORMER CKT 1
09WP	LAKE PAULINE - RUSSELL 138KV CKT 1	72	119	0	TUCO INTERCHANGE (TUCO XX4) 345/230/13.2KV TRANSFORMER CKT 1
09WP	CONWAY SUB - YARNELL SUB 115KV CKT 1	218	118	0	BOWERS INTERCHANGE - GRAPEVINE INTERCHANGE 115KV CKT 1
09WP	NICHOLS STATION - YARNELL SUB 115KV CKT 1	218	118	0	BOWERS INTERCHANGE 115/69KV TRANSFORMER CKT 1
09WP	CLINTON JUNCTION - FOSS TAP 69KV CKT 1	72	118	0	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
09WP	BOWERS INTERCHANGE 115/69KV TRANSFORMER CKT 1	84	118	0	BASE CASE
09WP	CLINTON JUNCTION - CLINTON NATURAL GAS TAP 138KV CKT 1	143	118	0	CLINTON - CLINTON JUNCTION 138KV CKT 1

TABLE 4: Contingency Analysis (continued)

SEASON	OVERLOADED ELEMENT	RATING (MVA)	LOADING (%)	ATC (MW)	CONTINGENCY
09WP	THOMAS TAP - WEATHERFORD 69KV CKT 1	53	118	0	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
09WP	CLINTON CITY - THOMAS TAP 69KV CKT 1	55	117	0	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
09WP	CONWAY SUB - YARNELL SUB 115KV CKT 1	198	111	0	BASE CASE
09WP	NICHOLS STATION - YARNELL SUB 115KV CKT 1	198	111	0	BASE CASE
09WP	MCLEAN RURAL SUB - SHAMROCK 115KV CKT 1	107	108	17	2006-02T 230.00 - STATELINE230230.00 230KV CKT 1
09WP	CARTER JCT - LAKE CREEK 69KV CKT 1	47	109	63	BASE CASE
09WP	ALTUS JCT TAP - RUSSELL 138KV CKT 1	72	113	81	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
09WP	CLINTON CITY - FOSS TAP 69KV CKT 1	79	107	85	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
09WP	HAMON BUTLER - MOREWOOD 69KV CKT 1	61	111	87	MOORELAND - MOREWOOD SW 138KV CKT 1
09WP	MOORELAND - MOREWOOD SW 138KV CKT 1	170	112	88	CLINTON JUNCTION - ELK CITY 138KV CKT 1
09WP	HAMON BUTLER - PUTNAM 69KV CKT 1	61	111	89	MOORELAND - MOREWOOD SW 138KV CKT 1
09WP	HOBART JUNCTION - TAMARAC TAP 138KV CKT 1	105	106	101	CARNEGIE - HOBART JUNCTION 138KV CKT 1
09WP	PUTNAM - TALOGA 69KV CKT 1	61	109	112	MOORELAND - MOREWOOD SW 138KV CKT 1
09WP	CARNEGIE - FORT COBB 138KV CKT 1	171	106	134	CLINTON JUNCTION - ELK CITY 138KV CKT 1
09WP	FORT COBB - SOUTHWESTERN STATION 138KV CKT 1	171	105	139	CLINTON JUNCTION - ELK CITY 138KV CKT 1
09WP	CLINTON - CLINTON JUNCTION 138KV CKT 1	143	104	146	WEATHERFORD JCT. - WEATHERFORD SOUTHEAST 138KV CKT 1
09WP	MEDICINE LODGE - SUN CITY 115KV CKT 1	79	101	170	MULLERGREN - SPEARVILLE 230KV CKT 1
12SP	No Solution			0	NICHOLS STATION - YARNELL SUB 115KV CKT 1
12SP	No Solution			0	CONWAY SUB - YARNELL SUB 115KV CKT 1
12SP	No Solution			0	2006-02T 230.00 - ELK CITY 230KV 230KV CKT 1
12SP	No Solution			0	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
12SP	No Solution			0	MOORE COUNTY INTERCHANGE - POTTER COUNTY INTERCHANGE 230KV CKT 1
12SP	No Solution			0	NORTH MEMPHIS REC - NW MEMPHIS 69KV CKT 1
12SP	2006-02T 230.00 - ELK CITY 230KV 230KV CKT 1	319	198	0	BASE CASE
12SP	BOWERS INTERCHANGE 115/69KV TRANSFORMER CKT 1	84	158	0	BASE CASE
12SP	ELK CITY (ELKCTY-4) 138/69/13.8KV TRANSFORMER CKT 1	72	149	0	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
12SP	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1	147	137	0	BASE CASE
12SP	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1	158	136	0	CLINTON JUNCTION - ELK CITY 138KV CKT 1
12SP	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1	147	134	0	BASE CASE
12SP	DILL JCT - ELK CITY 69KV CKT 1	61	134	0	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1
12SP	CONWAY SUB - YARNELL SUB 115KV CKT 1	164	131	0	BASE CASE
12SP	NICHOLS STATION - YARNELL SUB 115KV CKT 1	164	131	0	BASE CASE
12SP	ELK CITY - ELK CITY 69KV CKT 1	72	130	0	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
12SP	CARTER JCT - DILL JCT 69KV CKT 1	61	127	0	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1
12SP	DILL JCT - ELK CITY 69KV CKT 1	47	126	0	BASE CASE
12SP	CLINTON JUNCTION - FOSS TAP 69KV CKT 1	72	120	0	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
12SP	CARTER JCT - DILL JCT 69KV CKT 1	47	116	0	BASE CASE
12SP	CLINTON CITY - THOMAS TAP 69KV CKT 1	48	115	0	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
12SP	HOBART JUNCTION - TAMARAC TAP 138KV CKT 1	105	110	0	KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1
12SP	EAST PLANT INTERCHANGE - PIERCE STREET TAP 115KV CKT 1	161	105	0	EAST PLANT INTERCHANGE - MANHATTAN SUB 115KV CKT 1
12SP	EAST PLANT INTERCHANGE - MANHATTAN SUB 115KV CKT 1	161	105	0	EAST PLANT INTERCHANGE - PIERCE STREET TAP 115KV CKT 1
12SP	CLINTON CITY - FOSS TAP 69KV CKT 1	79	109	1	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1

TABLE 4: Contingency Analysis (continued)

SEASON	OVERLOADED ELEMENT	RATING (MVA)	LOADING (%)	ATC (MW)	CONTINGENCY
12SP	CARTER JCT - LAKE CREEK 69KV CKT 1	61	115	2	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
12SP	CLINTON JUNCTION - CLINTON NATURAL GAS TAP 138KV CKT 1	143	109	45	CLINTON JUNCTION (CLINTJCT) 138/69/13.8KV TRANSFORMER CKT 1
12SP	THOMAS TAP - WEATHERFORD 69KV CKT 1	48	109	64	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
12SP	PALO DURO SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1	99	105	72	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1
12SP	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1	130	111	73	BASE CASE
12SP	HAPPY INTERCHANGE - PALO DURO SUB 115KV CKT 1	99	104	98	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1
12SP	SPEARVILLE (SPEARVL) 345/230/13.8KV TRANSFORMER CKT 1	336	101	158	HOLCOMB - SETAB 345KV CKT 1
12SP	NICHOLS STATION - WHITAKER SUB 115KV CKT 1	249	100	190	EAST PLANT INTERCHANGE - HARRINGTON STATION 230KV CKT 1
12WP	No Solution			0	2006-02T 230.00 - ELK CITY 230KV 230KV CKT 1
12WP	No Solution			0	CONWAY SUB - YARNELL SUB 115KV CKT 1
12WP	No Solution			0	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
12WP	No Solution			0	NICHOLS STATION - YARNELL SUB 115KV CKT 1
12WP	ELDORADO - LAKE PAULINE 69KV CKT 1	20	249	0	LAKE PAULINE - RUSSELL 138KV CKT 1
12WP	2006-02T 230.00 - ELK CITY 230KV 230KV CKT 1	319	221	0	BASE CASE
12WP	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1	192	176	0	CLINTON JUNCTION - ELK CITY 138KV CKT 1
12WP	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1	158	165	0	CLINTON JUNCTION - ELK CITY 138KV CKT 1
12WP	DILL JCT - ELK CITY 69KV CKT 1	61	153	0	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1
12WP	ELK CITY (ELKCTY-4) 138/69/13.8KV TRANSFORMER CKT 1	72	149	0	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1
12WP	CARTER JCT - DILL JCT 69KV CKT 1	61	148	0	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1
12WP	ELK CITY - ELK CITY 69KV CKT 1	72	144	0	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1
12WP	DILL JCT - ELK CITY 69KV CKT 1	47	138	0	BASE CASE
12WP	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1	130	135	0	BASE CASE
12WP	MOREWOOD SW 138/69KV TRANSFORMER CKT 1	56	134	0	MOORELAND - MOREWOOD SW 138KV CKT 1
12WP	CARNEGIE - HOBART JUNCTION 138KV CKT 1	143	134	0	CLINTON JUNCTION - ELK CITY 138KV CKT 1
12WP	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1	172	133	0	BASE CASE
12WP	CARTER JCT - LAKE CREEK 69KV CKT 1	61	132	0	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
12WP	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1	172	132	0	BASE CASE
12WP	CARTER JCT - DILL JCT 69KV CKT 1	47	131	0	BASE CASE
12WP	KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1	107	121	0	2006-02T 230.00 - STATELINE230230.00 230KV CKT 1
12WP	BOWERS INTERCHANGE 115/69KV TRANSFORMER CKT 1	84	120	0	BASE CASE
12WP	MCCLELLAN SUB - MCLEAN RURAL SUB 115KV CKT 1	107	119	0	2006-02T 230.00 - STATELINE230230.00 230KV CKT 1
12WP	CLINTON JUNCTION - CLINTON NATURAL GAS TAP 138KV CKT 1	143	117	0	CLINTON - CLINTON JUNCTION 138KV CKT 1
12WP	LAKE PAULINE - RUSSELL 138KV CKT 1	72	117	0	2006-02T 230.00 - STATELINE230230.00 230KV CKT 1
12WP	CLINTON JUNCTION - FOSS TAP 69KV CKT 1	72	117	0	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
12WP	CONWAY SUB - YARNELL SUB 115KV CKT 1	218	116	0	BOWERS INTERCHANGE - GRAPEVINE INTERCHANGE 115KV CKT 1
12WP	NICHOLS STATION - YARNELL SUB 115KV CKT 1	218	116	0	BOWERS INTERCHANGE - GRAPEVINE INTERCHANGE 115KV CKT 1
12WP	THOMAS TAP - WEATHERFORD 69KV CKT 1	53	114	0	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
12WP	MCLEAN RURAL SUB - SHAMROCK 115KV CKT 1	107	113	0	2006-02T 230.00 - STATELINE230230.00 230KV CKT 1
12WP	CLINTON CITY - THOMAS TAP 69KV CKT 1	55	113	0	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
12WP	CONWAY SUB - YARNELL SUB 115KV CKT 1	198	109	0	BASE CASE
12WP	NICHOLS STATION - YARNELL SUB 115KV CKT 1	198	108	0	BASE CASE

TABLE 4: Contingency Analysis (continued)

SEASON	OVERLOADED ELEMENT	RATING (MVA)	LOADING (%)	ATC (MW)	CONTINGENCY
12WP	BOWERS INTERCHANGE 115/69KV TRANSFORMER CKT 1	105	108	10	GRAPEVINE INTERCHANGE - KIRBY SWITCHING STATION 115KV CKT 1
12WP	ALTUS JCT TAP - RUSSELL 138KV CKT 1	72	116	35	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
12WP	HOBART JUNCTION - TAMARAC TAP 138KV CKT 1	105	109	44	CARNEGIE - HOBART JUNCTION 138KV CKT 1
12WP	CARNEGIE - FORT COBB 138KV CKT 1	171	110	78	CLINTON JUNCTION - ELK CITY 138KV CKT 1
12WP	FORT COBB - SOUTHWESTERN STATION 138KV CKT 1	171	109	83	CLINTON JUNCTION - ELK CITY 138KV CKT 1
12WP	CLINTON - CLINTON JUNCTION 138KV CKT 1	143	108	88	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
12WP	MOORELAND - MOREWOOD SW 138KV CKT 1	170	112	92	CLINTON JUNCTION - ELK CITY 138KV CKT 1
12WP	CLINTON CITY - FOSS TAP 69KV CKT 1	79	106	94	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
12WP	HAMON BUTLER - MOREWOOD 69KV CKT 1	61	109	107	MOORELAND - MOREWOOD SW 138KV CKT 1
12WP	HAMON BUTLER - PUTNAM 69KV CKT 1	61	109	109	MOORELAND - MOREWOOD SW 138KV CKT 1
12WP	PUTNAM - TALOGA 69KV CKT 1	61	107	134	MOORELAND - MOREWOOD SW 138KV CKT 1
17SP	No Solution			0	FINNEY SWITCHING STATION - HOLCOMB 345KV CKT 1
17SP	No Solution			0	BOWERS INTERCHANGE 115/69KV TRANSFORMER CKT 1
17SP	No Solution			0	BOWERS INTERCHANGE - GRAPEVINE INTERCHANGE 115KV CKT 1
17SP	No Solution			0	NICHOLS STATION - YARNELL SUB 115KV CKT 1
17SP	No Solution			0	CONWAY SUB - YARNELL SUB 115KV CKT 1
17SP	No Solution			0	2006-02T 230.00 - ELK CITY 230KV 230KV CKT 1
17SP	No Solution			0	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1
17SP	BOWERS INTERCHANGE 115/69KV TRANSFORMER CKT 1	84	171	0	BASE CASE
17SP	NICHOLS STATION - WHITAKER SUB 115KV CKT 1	249	119	0	CHERRY SUB - NICHOLS STATION 115KV CKT 1
17SP	ELK CITY (ELKCTY-4) 138/69/13.8KV TRANSFORMER CKT 1	72	154	0	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
17SP	EAST PLANT INTERCHANGE - PIERCE STREET TAP 115KV CKT 1	161	123	0	EAST PLANT INTERCHANGE - MANHATTAN SUB 115KV CKT 1
17SP	EAST PLANT INTERCHANGE - MANHATTAN SUB 115KV CKT 1	161	122	0	EAST PLANT INTERCHANGE - PIERCE STREET TAP 115KV CKT 1
17SP	MANHATTAN TAP - OSAGE SWITCHING STATION 115KV CKT 1	161	118	0	EAST PLANT INTERCHANGE - PIERCE STREET TAP 115KV CKT 1
17SP	CLINTON JUNCTION - ELK CITY 138KV CKT 1	143	231	0	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
17SP	CONWAY SUB - YARNELL SUB 115KV CKT 1	180	134	0	KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1
17SP	NICHOLS STATION - YARNELL SUB 115KV CKT 1	180	134	0	KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1
17SP	ELK CITY 230KV (ELKCTY-6) 230/138/13.8KV TRANSFORMER CKT 1	287	230	0	2007-30T 230.00 - GRAPEVINE INTERCHANGE 230KV CKT 1
17SP	CONWAY SUB - YARNELL SUB 115KV CKT 1	164	128	0	BASE CASE
17SP	NICHOLS STATION - YARNELL SUB 115KV CKT 1	164	128	0	BASE CASE
17SP	EAST PLANT INTERCHANGE - WHITAKER SUB 115KV CKT 1	249	111	0	CHERRY SUB - NICHOLS STATION 115KV CKT 1
17SP	KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1	90	134	0	JERICHO - KIRBY SWITCHING STATION 115KV CKT 1
17SP	MCCLELLAN SUB - MCLEAN RURAL SUB 115KV CKT 1	90	132	0	JERICHO - KIRBY SWITCHING STATION 115KV CKT 1
17SP	2006-02T 230.00 - ELK CITY 230KV 230KV CKT 1	319	198	0	BASE CASE
17SP	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1	170	175	0	CLINTON JUNCTION - ELK CITY 138KV CKT 1
17SP	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1	170	172	0	CLINTON JUNCTION - ELK CITY 138KV CKT 1
17SP	2006-02T 230.00 - ELK CITY 230KV 230KV CKT 1	351	210	0	2007-30T 230.00 - GRAPEVINE INTERCHANGE 230KV CKT 1
17SP	OSAGE SWITCHING STATION - PIERCE STREET TAP 115KV CKT 1	161	109	0	EAST PLANT INTERCHANGE - MANHATTAN SUB 115KV CKT 1
17SP	MCLEAN RURAL SUB - SHAMROCK 115KV CKT 1	90	121	0	JERICHO (JERIC2WT) 115/69/14.4KV TRANSFORMER CKT 1
17SP	PALO DURO SUB - RANDALL COUNTY INTERCHANGE 115KV CKT 1	99	115	0	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1
17SP	DILL JCT - ELK CITY 69KV CKT 1	61	133	0	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1

TABLE 4: Contingency Analysis (continued)

SEASON	OVERLOADED ELEMENT	RATING (MVA)	LOADING (%)	ATC (MW)	CONTINGENCY
17SP	ELK CITY - ELK CITY 69KV CKT 1	72	129	0	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
17SP	HAPPY INTERCHANGE - PALO DURO SUB 115KV CKT 1	99	114	0	AMARILLO SOUTH INTERCHANGE - SWISHER COUNTY INTERCHANGE 230KV CKT 1
17SP	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1	147	137	0	BASE CASE
17SP	DILL JCT - ELK CITY 69KV CKT 1	47	125	0	BASE CASE
17SP	HOBART JUNCTION - TAMARAC TAP 138KV CKT 1	105	114	0	KIRBY SWITCHING STATION - MCCLELLAN SUB 115KV CKT 1
17SP	CLINTON AIR FORCE BASE TAP - HOBART JUNCTION 138KV CKT 1	147	134	0	BASE CASE
17SP	CLINTON JUNCTION - FOSS TAP 69KV CKT 1	72	119	0	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
17SP	CARTER JCT - DILL JCT 69KV CKT 1	61	125	0	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
17SP	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1	158	132	0	CLINTON JUNCTION - ELK CITY 138KV CKT 1
17SP	MANHATTAN SUB - MANHATTAN TAP 115KV CKT 1	161	105	0	EAST PLANT INTERCHANGE - PIERCE STREET TAP 115KV CKT 1
17SP	CARTER JCT - LAKE CREEK 69KV CKT 1	61	114	2	CLINTON AIR FORCE BASE TAP - ELK CITY 138KV CKT 1
17SP	CLINTON CITY - FOSS TAP 69KV CKT 1	79	108	34	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
17SP	CLINTON CITY - THOMAS TAP 69KV CKT 1	48	110	44	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1
17SP	CLINTON JUNCTION - CLINTON NATURAL GAS TAP 138KV CKT 1	143	107	85	CLINTON JUNCTION (CLINTJCT) 138/69/13.8KV TRANSFORMER CKT 1
17SP	FAIN SUB - NICHOLS STATION 115KV CKT 1	161	114	109	HERRING TAP - RIVERVIEW INTERCHANGE 115KV CKT 1
17SP	2002-05T 138.00 - MOREWOOD SW 138KV CKT 1	130	108	118	BASE CASE
17SP	EXELL TAP - FAIN SUB 115KV CKT 1	161	110	132	HERRING TAP - RIVERVIEW INTERCHANGE 115KV CKT 1
17SP	THOMAS TAP - WEATHERFORD 69KV CKT 1	48	104	135	WEATHERFORD TAP - WEATHERFORD WIND FARM 138KV CKT 1

Note: When transmission service associated with this interconnection is evaluated, the loading of the facilities listed in this table may be greater due to higher priority reservations. If the loading of a facility is higher, the level of ATC will be lower.

Conclusion

The minimum cost of interconnecting the Customer's interconnection request is estimated at \$690,000 for Direct Assignment Facilities and Network Upgrades. At this time, the cost estimates for other Direct Assignment facilities including those in Tables 1 and 2 have not been defined by the Customer. As stated earlier, some but not all of the local projects that were previously queued are assumed to be in service in this Feasibility Study. These costs exclude upgrades of other transmission facilities that were listed in Table 3 of which are Network Constraints.

In Table 4, a value of Available Transfer Capability (ATC) associated with each overloaded facility is included. These values may be used by the Customer to determine lower generation capacity levels that may be installed. When transmission service associated with this interconnection is evaluated, the loading of the facilities listed in this table may be greater due to higher priority reservations. When a facility is overloaded for more than one contingency, only the highest loading on the facility for each season is included in the table.

These interconnection costs do not include any cost that may be associated with short circuit or transient stability analysis. These studies will be performed if the Customer signs a System Impact Study Agreement. At the time of the System Impact Study, a better determination of the interconnection facilities may be available.

The required interconnection costs listed in Tables 1 and 2 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 through Southwest Power Pool's OASIS.

Appendix A: Point of Interconnection Area Map

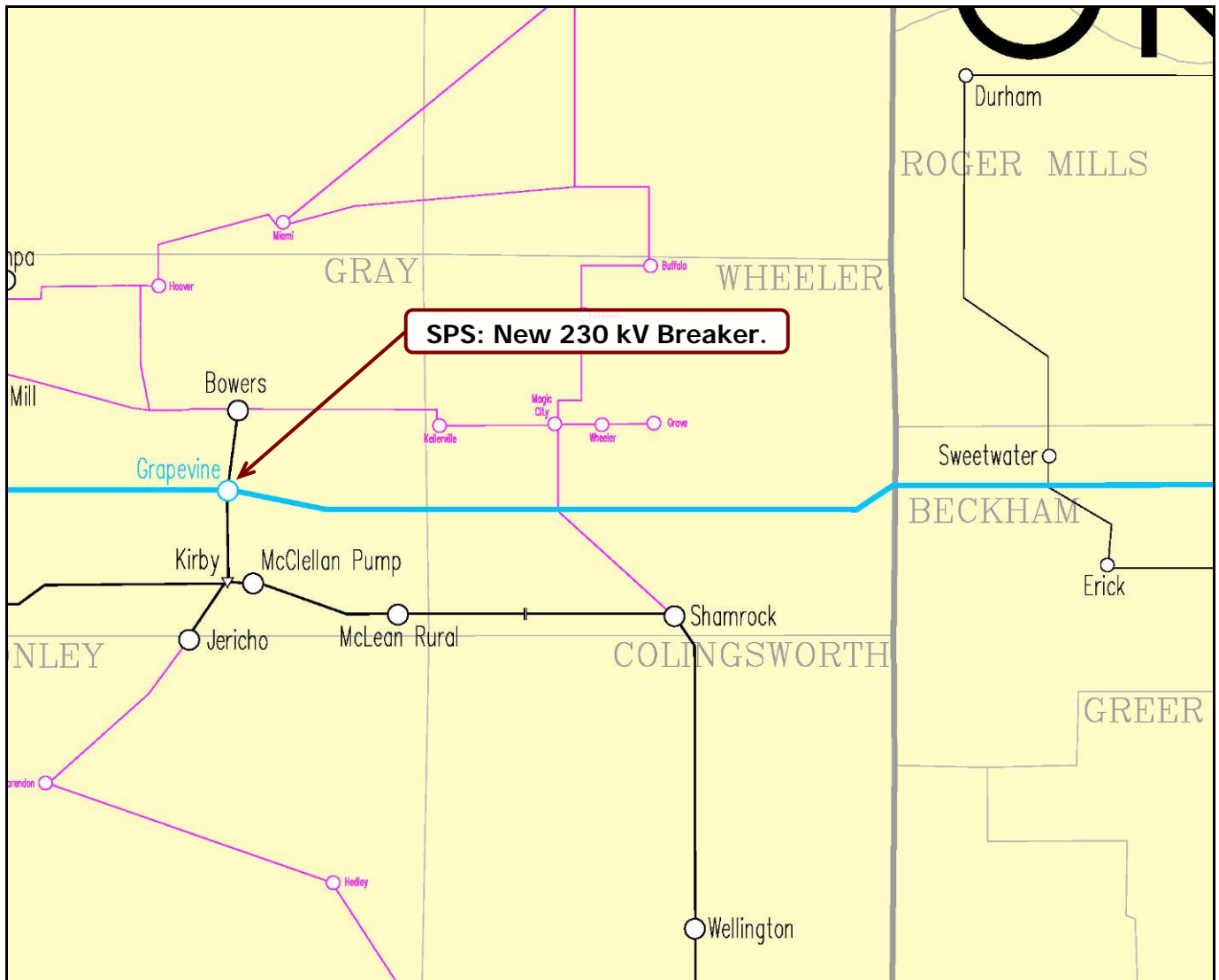


Figure 2: Point of Interconnection Area Map