Southwest Power Pool

Feasibility Study For Generation Interconnection Request GEN-2007-006

SPP Tariff Studies
(#GEN-2007-006)

August 2007

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 Oklahoma Gas and Electric (OKGE) in Blaine County, Oklahoma. The proposed point of interconnection is OKGE's Roman Nose Substation. The proposed in-service date is December 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. In order to maintain acceptable reactive power compensation, the customer will need to install 40 Mvar of 34.5 kV capacitor bank(s) in the Customer's collector substation on the 34.5 kV bus. Dynamic Stability studies performed as part of the impact 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 requirement to interconnect the 200 MW of generation into the existing OKGE Roman Nose Substation consists of rebuilding the substation into a three breaker 138 kV ring bus. The Customer did not propose a specific 138 kV line extending to serve its138/34.5 kV facilities. It is assumed that obtaining all necessary right-of-way for the new switching station will not be a significant expense.

The minimum estimated cost for building the required facilities for this 200 MW of generation is $1,050,000. These costs are shown in Tables 1 and 2. The Network Constraints, listed in Table 3, for American Electric Power West (AEPW), Oklahoma Gas and Electric (OKGE), Southwestern Public Service Company (SPS), Kansas City Power and Light (KACP), Western Resources (WERE), and Western Farmers Electric Cooperative (WFEC) transmission systems may be verified with a transmission service request and associated studies. These 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 (TSR), this list of Network Constraints will be refined and expanded to account for all Network Upgrade requirements. This cost does not include building the 138 kV line from the Customer's substation to the Roman Nose Substation. Also, not included is the cost of the Customer's 138/34.5 kV substation and the 34.5 kV, 40 Mvar capacitor bank(s).

Table 4 lists the Available Transfer Capability (ATC) associated with each overloaded facility. 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 OKGE control area 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 Table 2 and other upgrades associated with Network Constraints listed in Table 3 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 requests transmission service through Southwest Power Pool's OASIS.

Introduction

<OMITTED TEXT> (Customer) has requested a Feasibility Study for the purpose of interconnecting 200 MW of wind generation within the control area of OKGE in Blaine County, Oklahoma. The proposed point of interconnection is OKGE's Roman Nose Substation. The proposed in-service date is December 1, 2009.

Interconnection Facilities

The primary objective of this study is to identify the system problems associated with connecting the Customer 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 generation into the existing OKGE Roman Nose Substation consists of rebuilding the substation into a three breaker 138 kV ring bus. The Customer did not propose a specific 138 kV line extending to serve its138/34.5 kV facilities. It is assumed that obtaining all necessary right-of-way for the new switching station will not be a significant expense.

The minimum estimated cost for the required interconnection facilities is $1,050,000. This estimate will be refined during the development of the impact study based on the final designs. This cost does not include building the 138 kV transmission line from the Customer's substation to the 138 kV termination point at the Roman Nose Substation. The Customer is responsible for these 138 kV facilities up to the point of interconnection. This cost also does not include the Customer's 138/34.5 kV substation and capacitor which should be determined by the Customer.

The costs of interconnecting the Customer's facility to the OKGE transmission system are listed in Tables 1 and 2. **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.

The minimum estimated cost does not include other Network Constraints in the American Electric Power West (AEPW), Oklahoma Gas and Electric (OKGE), Southwestern Public Service Company (SPS), Kansas City Power and Light (KACP), Western Resources (WERE) and Western Farmers Electric Cooperative (WFEC) transmission systems that were identified and listed in Table 3.

A preliminary one-line drawing of the interconnection and direct assigned facilities is shown in Figure 1. The location of the interconnection facility is shown in Figure 2.

Table 1: Direct Assignment Facilities

FACILITY	ESTIMATED COST (2007 DOLLARS)
Customer – 138/34.5 kV Substation facilities.	*
Customer – 138 kV transmission line facilities between Customer facilities and the Roman Nose Substation.	*
Customer - Right-of-Way for Customer facilities.	*
Customer – 34.5 kV, 40 Mvar capacitor bank(s) in Customer substation.	*
OKGE – Add 138 kV line terminal equipment including revenue metering at Roman Nose Substation	$350,000
Total	$350,000

Note: * Estimates of cost to be determined by Customer.

Table 2: Required Interconnection Network Upgrade Facilities

FACILITY	ESTIMATED COST (2007 DOLLARS)
OKGE – Rebuild Roman Nose Substation into three breaker 138 kV ring bus, disconnect switches, and associated equipment.	$700,000
Total	$700,000

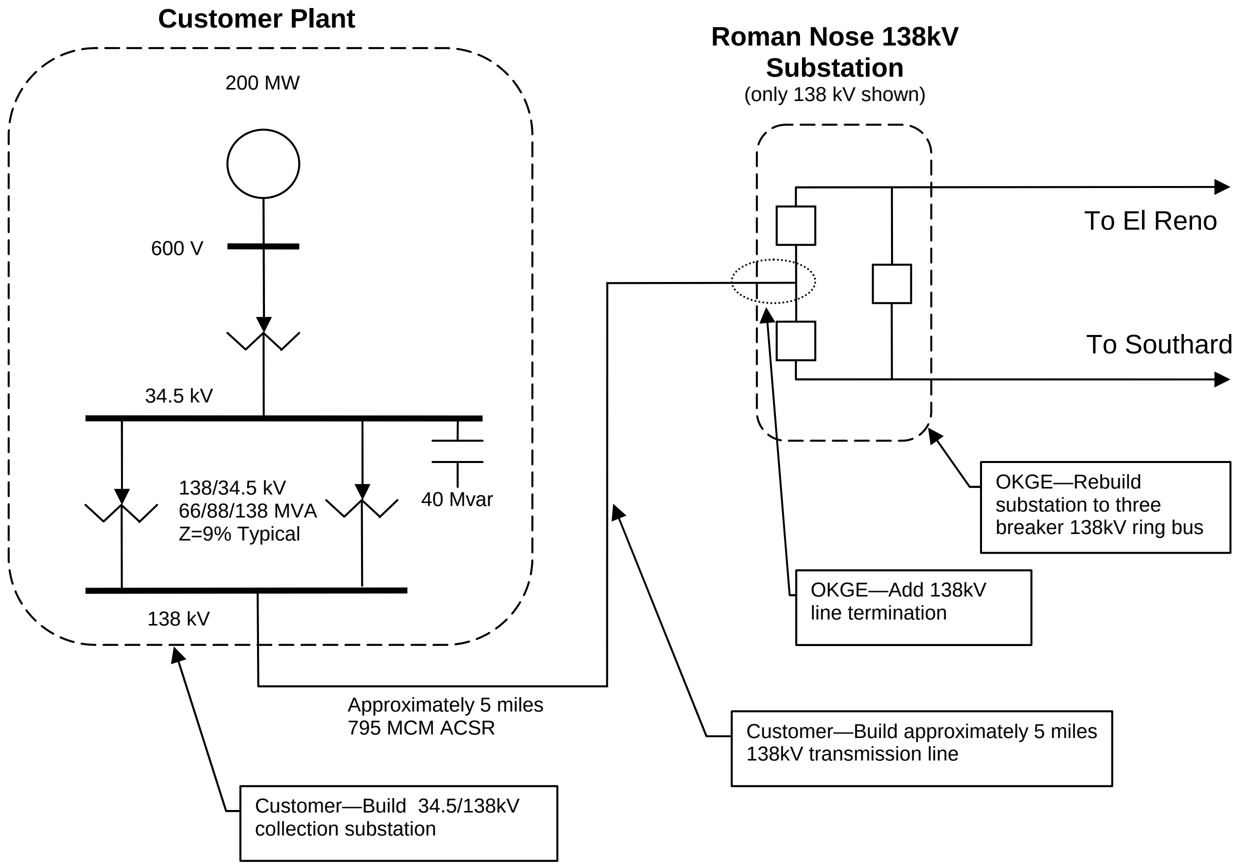

Figure 1: Proposed Interconnection
(Final design to be determined)

Powerflow Analysis

A powerflow analysis was conducted for the facility using modified versions of the 2009 and 2012 Winter Peak, and 2012 and 2017 Summer Peak models. 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 December 1, 2009. The available seasonal models used were through the 2017 Summer Peak which is the end of the current SPP planning horizon.

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, WERE, OKGE, KAPC, and WFEC transmission systems under steady state and contingency conditions in the peak seasons.

The Available Transfer Capability (ATC) associated with each overloaded facility is shown in Table 4. 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.

In order to maintain a zero reactive power flow exchanged at the point of interconnection,   additional reactive compensation is required at Customer's substation. The Customer will be required to install 40 Mvar capacitor bank(s) on the 34.5 kV bus in its substation. Dynamic Stability studies performed as part of the Impact Study will provide additional guidance as to whether the reactive compensation can be static or a portion must be dynamic (such as a SVC or STATCOM). 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. Those 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 of or all of the modeled control areas of Sunflower Electric Power Corporation (SUNC), Missouri Public Service (MIPU), Westar (WESTAR), 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.

Table 3: Network Constraints

AREA	ELEMENT
AEPW-WFEC	ELK CITY 138KV CKT 1 - 2002-05T 138.00KV CKT1
KACP	STILWELL (STLWL 11) 345/161/13.8KV TRANSFORMER CKT 11
OKGE	ALVA - KNOBHILL 69KV CKT1
OKGE	CIMARRON - HAYMAKER 138KV CKT 1
OKGE	CLASSEN - SW 5TAP 138KV CKT 1
OKGE	CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1
OKGE	DIVISION AVE - HAYMAKER 138KV CKT 1
OKGE	EL RENO - ROMAN NOSE 138KV CKT 1
OKGE	SOUTHARD - ROMAN NOSE 138KV CKT 1
OKGE-WFEC	DEWEY - TALOGA 138KV CKT1
OKGE-WFEC	FPL SWITCH - MOORELAND 138KV CKT1
OKGE-WFEC	WOODWARD - WOODWARD 69KV CKT 1
SPS	LEA COUNTY REC-WAITS INTERCHANGE 115/69KV TRANSFORMER CKT1
SPS	TERRY COUNTY INTERCHANGE - LYNTEGAR REC-BROWNFIELD 69KV CKT1
WERE	ANZIO - FORT JUNCTION SWITCHING STATION 115KV CKT 1
WERE	CLAY CENTER JUNCTION - CHAPMAN 115KV CKT1
WFEC	CANTON - OKEENE 69KV CKT 1
WFEC	CANTON - TALOGA 69KV CKT 1
WFEC	DOVER SW - OKEENE 138KV CKT 1
WFEC	EL RENO SW - EL RENO 69KV CKT 1
WFEC	MOORELAND - MOREWOOD SW 138KV CKT 1
WFEC	MOREWOOD SW - 2002-5T 138KV CKT1
WFEC	TALOGA 138/69KV TRANSFORMER CKT 1
WFEC-AEPW	2002-05T 138.00 - ELK CITY 138KV CKT 1
WFEC-OKGE	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
WFEC-OKGE	KNOBHILL - MOORELAND 138KV CKT 1
AEPW	American Electric Power West
KACP	Kansas City Power and Light
OKGE	Oklahoma Gas and Electric
SPS	Southwestern Public Service Company
WERE	Western Resources
WFEC	Western Farmers Electric Cooperative

Table 4: Contingency Analysis

ELEMENT	SEASON	RATE (MVA)	LOADING (%)	ATC (MW)	CONTINGENCY
2009 Winter Peak Model					
GLASS MOUNTAIN - MOORELAND 138KV CKT 1	09WP	124	154.2	0	EL RENO - ROMAN NOSE 138KV CKT1
2002-05T 138.00 - ELK CITY 138KV CKT 1	09WP	158	156.8	0	CLEO CORNER - MEN TAP 138KV CKT 1
2002-05T 138.00 - ELK CITY 138KV CKT 1	09WP	130	161.8	0	BASE CASE
ELK CITY 138KV CKT 1 - 2002-05T 138.00KV CKT1	09WP	158	181.8	0	EL RENO - ROMAN NOSE 138KV CKT1
TALOGA 138/69KV TRANSFORMER CKT 1	09WP	56	206.1	0	EL RENO - ROMAN NOSE 138KV CKT1
WOODWARD - WOODWARD 69KV CKT 1	09WP	38	233.1	0	FPL SWITCH - MOORELAND 138KV CKT 1
DOVER SW - OKEENE 138KV CKT 1	09WP	122	131.3	16	EL RENO - ROMAN NOSE 138KV CKT1
EL RENO - ROMAN NOSE 138KV CKT 1	09WP	185	173.5	17	2002-05T 138.00 - ELK CITY 138KV CKT 1
EL RENO - ROMAN NOSE 138KV CKT 1	09WP	171	149.1	73	BASE CASE
DEWEY - TALOGA 138KV CKT1	09WP	143	151.3	84	EL RENO - ROMAN NOSE 138KV CKT1
CANTON - TALOGA 69KV CKT 1	09WP	61	121.2	86	EL RENO - ROMAN NOSE 138KV CKT1
CANTON - OKEENE 69KV CKT 1	09WP	61	116.9	109	EL RENO - ROMAN NOSE 138KV CKT1
MOREWOOD SW - 2002-5T 138KV CKT1	09WP	158	107.6	154	EL RENO - ROMAN NOSE 138KV CKT1
DIVISION AVE - HAYMAKER 138KV CKT 1	09WP	308	101.9	163	CIMARRON - CZECH HALL 138KV CKT 1
EL RENO SW - EL RENO 69KV CKT 1	09WP	26	104.6	169	EL RENO - ROMAN NOSE 138KV CKT1
CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1	09WP	185	102.1	182	EL RENO - ROMAN NOSE 138KV CKT1
FPL SWITCH - MOORELAND 138KV CKT1	09WP	212	102.2	183	EL RENO - ROMAN NOSE 138KV CKT1
KNOBHILL - MOORELAND 138KV CKT 1	09WP	96	100.1	198	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
2012 Summer Peak Model					
KNOBHILL - MOORELAND 138KV CKT 1	12SP	96	113.2	0	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1	12SP	153	125.1	0	2002-05T 138.00 - ELK CITY 138KV CKT 1
GLASS MOUNTAIN - MOORELAND 138KV CKT 1	12SP	124	157.5	0	2002-05T 138.00 - ELK CITY 138KV CKT 1
2002-05T 138.00 - ELK CITY 138KV CKT 1	12SP	158	168.6	0	CLEO CORNER - MEN TAP 138KV CKT 1
2002-05T 138.00 - ELK CITY 138KV CKT 1	12SP	130	176.2	0	BASE CASE
ELK CITY 138KV CKT 1 - 2002-05T 138.00KV CKT1	12SP	158	192.1	0	EL RENO - ROMAN NOSE 138KV CKT1
WOODWARD - WOODWARD 69KV CKT 1	12SP	38	199.3	0	FPL SWITCH - MOORELAND 138KV CKT 1
EL RENO - ROMAN NOSE 138KV CKT 1	12SP	153	204.0	0	2002-05T 138.00 - ELK CITY 138KV CKT 1
TALOGA 138/69KV TRANSFORMER CKT 1	12SP	56	207.1	0	EL RENO - ROMAN NOSE 138KV CKT1
EL RENO - ROMAN NOSE 138KV CKT 1	12SP	133	179.3	41	BASE CASE
DOVER SW - OKEENE 138KV CKT 1	12SP	122	128.0	51	EL RENO - ROMAN NOSE 138KV CKT1
CANTON - TALOGA 69KV CKT 1	12SP	61	121.1	93	EL RENO - ROMAN NOSE 138KV CKT1
DEWEY - TALOGA 138KV CKT1	12SP	143	140.5	105	EL RENO - ROMAN NOSE 138KV CKT1

Table 4: Contingency Analysis (continued)

ELEMENT	SEASON	RATE (MVA)	LOADING (%)	ATC (MW)	CONTINGENCY
2012 Summer Peak Model (continued)					
MOREWOOD SW - 2002-5T 138KV CKT1	12SP	158	116.8	108	EL RENO - ROMAN NOSE 138KV CKT1
DOVER SW - OKEENE 138KV CKT 1	12SP	94	105.9	116	BASE CASE
CANTON - OKEENE 69KV CKT 1	12SP	61	114.0	129	EL RENO - ROMAN NOSE 138KV CKT1
EL RENO SW - EL RENO 69KV CKT 1	12SP	26	110.5	129	EL RENO - ROMAN NOSE 138KV CKT1
MOORELAND - MOREWOOD SW 138KV CKT 1	12SP	170	103.6	173	EL RENO - ROMAN NOSE 138KV CKT1
SOUTHARD - ROMAN NOSE 138KV CKT 1	12SP	153	112.0	177	EL RENO - ROMAN NOSE 138KV CKT1
CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1	12SP	133	100.3	194	BASE CASE
2012 Winter Peak Model					
GLASS MOUNTAIN - MOORELAND 138KV CKT 1	12WP	124	140.5	0	EL RENO - ROMAN NOSE 138KV CKT1
2002-05T 138.00 - ELK CITY 138KV CKT 1	12WP	158	149.9	0	CLEO CORNER - MEN TAP 138KV CKT 1
2002-05T 138.00 - ELK CITY 138KV CKT 1	12WP	130	157.9	0	BASE CASE
ELK CITY 138KV CKT 1 - 2002-05T 138.00KV CKT1	12WP	158	176.1	0	EL RENO - ROMAN NOSE 138KV CKT1
TALOGA 138/69KV TRANSFORMER CKT 1	12WP	56	192.5	0	EL RENO - ROMAN NOSE 138KV CKT1
WOODWARD - WOODWARD 69KV CKT 1	12WP	38	235.6	0	FPL SWITCH - MOORELAND 138KV CKT 1
EL RENO - ROMAN NOSE 138KV CKT 1	12WP	185	164.3	34	2002-05T 138.00 - ELK CITY 138KV CKT 1
DOVER SW - OKEENE 138KV CKT 1	12WP	122	119.0	89	EL RENO - ROMAN NOSE 138KV CKT1
EL RENO - ROMAN NOSE 138KV CKT 1	12WP	171	142.3	89	BASE CASE
DEWEY - TALOGA 138KV CKT1	12WP	143	146.4	91	EL RENO - ROMAN NOSE 138KV CKT1
ANZIO - FORT JUNCTION SWITCHING STATION 115KV CKT 1	12WP	92	103.6	114	FORT JUNCTION – WEST JUNCTION CITY 115KV CKT 1&2
CANTON - TALOGA 69KV CKT 1	12WP	61	116.0	116	EL RENO - ROMAN NOSE 138KV CKT1
DIVISION AVE - HAYMAKER 138KV CKT 1	12WP	308	103.4	135	CIMARRON - CZECH HALL 138KV CKT 1
CANTON - OKEENE 69KV CKT 1	12WP	61	111.5	140	EL RENO - ROMAN NOSE 138KV CKT1
MOREWOOD SW - 2002-5T 138KV CKT1	12WP	158	102.5	185	EL RENO - ROMAN NOSE 138KV CKT1
FPL SWITCH - MOORELAND 138KV CKT1	12WP	212	101.9	185	EL RENO - ROMAN NOSE 138KV CKT1
2017 Summer Peak Model					
CIMARRON - HAYMAKER 138KV CKT 1	17SP	308	112.7	0	CIMARRON - CZECH HALL 138KV CKT 1
CLASSEN - SW 5TAP 138KV CKT 1	17SP	191	114.5	0	COUNCIL - MUSTANG 138KV CKT 1
DOVER SW - OKEENE 138KV CKT 1	17SP	122	120.9	0	EL RENO - ROMAN NOSE 138KV CKT1
CLEO CORNER - GLASS MOUNTAIN 138KV CKT 1	17SP	153	121.1	0	2002-05T 138.00 - ELK CITY 138KV CKT 1
GLASS MOUNTAIN - MOORELAND 138KV CKT 1	17SP	124	152.8	0	2002-05T 138.00 - ELK CITY 138KV CKT 1
2002-05T 138.00 - ELK CITY 138KV CKT 1	17SP	158	175.3	0	CLEO CORNER - MEN TAP 138KV CKT 1
2002-05T 138.00 - ELK CITY 138KV CKT 1	17SP	130	186.9	0	BASE CASE

Table 4: Contingency Analysis (continued)

ELEMENT	SEASON	RATE (MVA)	LOADING (%)	ATC (MW)	CONTINGENCY
2017 Summer Peak Model (continued)					
WOODWARD - WOODWARD 69KV CKT 1	17SP	38	198.4	0	FPL SWITCH - MOORELAND 138KV CKT 1
EL RENO - ROMAN NOSE 138KV CKT 1	17SP	153	207.7	0	2002-05T 138.00 - ELK CITY 138KV CKT 1
KNOBHILL - MOORELAND 138KV CKT 1	17SP	96	108.7	17	GLASS MOUNTAIN - MOORELAND 138KV CKT 1
EL RENO - ROMAN NOSE 138KV CKT 1	17SP	133	179.8	40	BASE CASE
TALOGA 138/69KV TRANSFORMER CKT 1	17SP	56	208.1	42	EL RENO - ROMAN NOSE 138KV CKT1
DIVISION AVE - HAYMAKER 138KV CKT 1	17SP	308	108.1	52	CIMARRON - CZECH HALL 138KV CKT 1
STILWELL (STLWL 11) 345/161/13.8KV TRANSFORMER CKT 11	17SP	605	100.8	55	STILWELL (STLWL 22) 345/161/13.8KV TRANSFORMER CKT 22
DEWEY - TALOGA 138KV CKT1	17SP	143	138.2	74	EL RENO - ROMAN NOSE 138KV CKT1
MOORELAND - MOREWOOD SW 138KV CKT 1	17SP	130	103.0	143	BASE CASE
CANTON - TALOGA 69KV CKT 1	17SP	61	117.7	149	EL RENO - ROMAN NOSE 138KV CKT1
CANTON - OKEENE 69KV CKT 1	17SP	61	110.6	168	EL RENO - ROMAN NOSE 138KV CKT1
LEA COUNTY REC-WAITS INTERCHANGE 115/69KV TRANSFORMER CKT1	17SP	56	106.5	172	EL RENO - ROMAN NOSE 138KV CKT1
SOUTHARD - ROMAN NOSE 138KV CKT 1	17SP	153	110.3	179	EL RENO - ROMAN NOSE 138KV CKT1
EL RENO SW - EL RENO 69KV CKT 1	17SP	26	108.1	182	EL RENO - ROMAN NOSE 138KV CKT1
CLAY CENTER JUNCTION - CHAPMAN 115KV CKT1	17SP	25	106.4	184	EL RENO - ROMAN NOSE 138KV CKT1
ALVA - KNOBHILL 69KV CKT1	17SP	48	101.2	196	EL RENO - ROMAN NOSE 138KV CKT1
TERRY COUNTY INTERCHANGE - LYNTEGAR REC-BROWNFIELD 69KV CKT1	17SP	54	100.2	199	EL RENO - ROMAN NOSE 138KV CKT1

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 $1,050,000 for Direct Assignment facilities and Network Upgrades listed in Tables 1 and 2. These costs exclude upgrades of other transmission facilities that were listed in Table 3 Network Constraints. At this time, the cost estimates for other Direct Assignment facilities including those in Table 1 have not been defined by the Customer. In addition to the Customer’s proposed interconnection facilities, the Customer will be responsible for installing 40 Mvar of 34.5 kV capacitor bank(s) in the Customer’s substation for reactive support. Dynamic stability analysis will determine if a portion of this should be dynamic (SVC). 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.

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.

The required interconnection costs listed in Table 2 and other upgrades associated with Network Constraints listed in Table 3 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 requests transmission service through Southwest Power Pool’s OASIS.

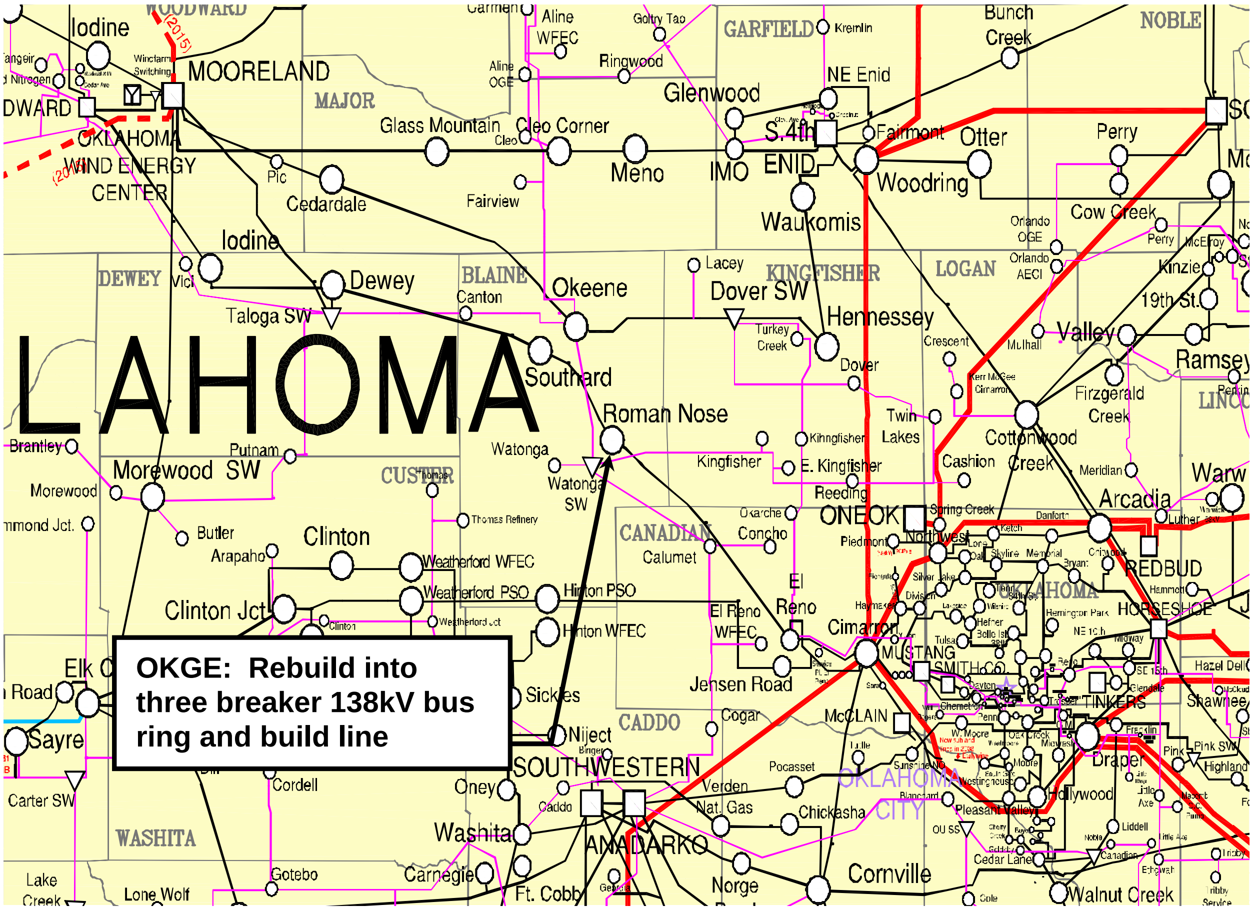

FIGURE 2: MAP OF THE LOCAL AREA