



***Feasibility Study  
For  
Generation Interconnection  
Request  
GEN-2006-031***

***SPP Tariff Studies  
(#GEN-2006-031)***

**January, 2007**

## **Executive Summary**

<OMITTED TEXT> (Customer) has requested a Feasibility study for the purpose of interconnecting 75MW of generation within the control area of Midwest Energy (MIDW) in Ellis County, Kansas. The proposed method of interconnection is to interconnect into the existing 115kV switchyard at the Knoll substation. The Knoll 115kV bus is set up as a ring bus configuration. This substation is owned by MIDW. The proposed in-service date for the generation is June 1, 2008.

Power flow analysis has indicated that for the powerflow cases studied, it is possible to interconnect the 75MW of generation with transmission system reinforcements within the local transmission systems.

The requirements to interconnect the 75MW of generation at the existing MIDW Knoll 115kV substation consist of bringing a new 115kV terminal to the existing ring bus. An empty position in the ring bus exists at the present time. The total minimum cost for adding the 115kV terminal to the station is \$101,370 and is shown in Table 2. Other Network Constraints in the Westar (WERE), West Plains (WEPL), and MIDW transmission system that may be verified with a transmission service request and associated studies are listed in Table 3. 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. These costs do not include building the 115kV lines/buswork from the Customer' facilities into the MIDW Knoll 115kV substation.

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.

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 75MW of generation within the control area of Midwest Energy (MIDW) in Ellis County, Kansas. The proposed method of interconnection is to bring a 115kV terminal into the existing Knoll 115kV substation bus, which is owned by MIDW. The proposed in-service date is June 1, 2008.

## Interconnection Facilities

The primary objective of this study is to identify the system problems associated with connecting the plant into 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 requirements for interconnection of the 75MW consist of adding a new terminal into the 115kV bus at MIDW's Knoll substation. The Customer's facilities will include a 115/13.8kV station along with the proposed generation. The specifics of the number of generators and the generator configuration will be addressed in the Impact Study if the Customer executes an Impact Study agreement for this request. A specific layout for the Customer's 115kV facilities to serve the GSU and associated equipment has not been defined.

The Knoll 115kV substation ring bus presently has an empty position that will be utilized for the addition of this generation. The total estimated cost for MIDW to add a 115kV interconnect into the Knoll substation is \$101,370. This cost is shown in Table 2. These estimates will be refined during the development of the impact study based on the final designs. Other Network Constraints in the Westar and WEPL transmission system that were identified are listed in Table 3. This cost does not include building the 115kV facilities from the Customer facilities into the MIDW Knoll 115kV switchyard. The Customer is responsible for these 115kV facilities up to the point of interconnection.

The costs of interconnecting the facility to the MIDW transmission system are listed in Table 1 & 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.

A preliminary one-line drawing of the interconnection and direct assigned facilities are shown in Figure 1.

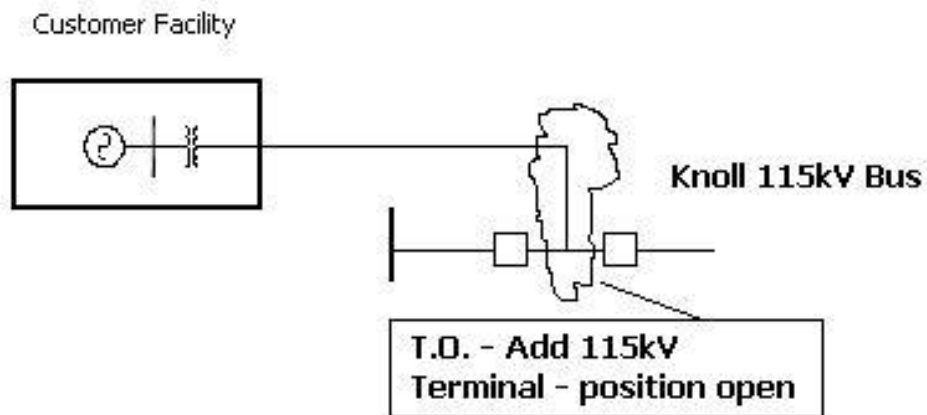
**Table 1: Direct Assignment Facilities**

Facility	ESTIMATED COST (2006 DOLLARS)
Customer – 115kV-GSU voltage Substation facilities.	*
Customer – 115kV facilities between Customer facilities and Midwest Knoll 115kV switching station	*
Customer - Right-of-Way for Customer facilities.	*
<b>Total</b>	*

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

**Table 2: Required Interconnection Network Upgrade Facilities**

Facility	ESTIMATED COST (2006 DOLLARS)
MIDW – Add 115kV terminal into the Knoll 115kV substation bus. Ring bus presently has an empty position.	\$101,370
<b>Total</b>	<b>\$101,370</b>



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

## **Powerflow Analysis**

A powerflow analysis was conducted for the facility using modified versions of the 2008 & 2011 summer and winter peak, and 2016 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 June 1, 2008. The available seasonal models used were through the 2016 Summer Peak of 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 75MW and location, additional criteria violations will occur on the existing WERE, WEPL, and MIDW transmission systems under steady state and contingency conditions in the peak seasons. These Network Constraints are shown in Table 3.

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.

There are several other proposed generation additions in the general area of the Customer's facility. Some, but not all of these 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 or all of the modeled control areas of Missouri Public Service (MIPU), Westar (WERE), Kansas City Power & Light (KCPL), West Plains (WEPL), Midwest Energy (MIDW), 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**

OWNER	NETWORK CONSTRAINT
WERE	'16TH & WOODLAWN JUNCTION - 3RD & VAN BUREN 69KV CKT 1'
WERE	'16TH & WOODLAWN JUNCTION - MEADOWLARK 69KV CKT 1'
WERE	'AUBURN ROAD - JEFFREY ENERGY CENTER 230KV CKT 1'
WEPL	'CIMARRON RIVER PLANT - NORTH LIBERAL TAP 115KV CKT 1'
WEPL	'CIMARRON RIVER TAP - EAST LIBERAL 115KV CKT 1'
WERE	'CLEARWT - GILL ENERGY CENTER WEST 138KV CKT 1'
WERE- WEPL	'CLEARWT - MILAN TAP 138KV CKT 1'
WERE	'COUNTY LINE (COLINE5X) 115/69/34.5KV TRANSFORMER CKT 1'
WEPL-SPS	'EAST LIBERAL - TEXAS COUNTY INTERCHANGE PHSF 115KV CKT 1'
WERE	'EL PASO - FARBER 138KV CKT 1'
WERE	'EVANS ENERGY CENTER SOUTH - LAKERIDGE 138KV CKT 1'
WEPL	'G06-21T 138 - HARPER 138KV CKT 1'
WEPL	'G06-21T 138 - MEDICINE LODGE 138KV CKT 1'
WEPL	'G06-22 115 115/34.5KV TRANSFORMER CKT 1'
WEPL	'G06-22 115 115/34.5KV TRANSFORMER CKT 1'
WERE	'GILL ENERGY CENTER EAST (GEC3 GSU) 138/69/14.4KV TRANSFORMER CKT 1'
WEPL	'GREENSBURG - JUDSON LARGE 115KV CKT 1'
WEPL	'HARPER - MILAN TAP 138KV CKT 1'
WERE	'HOYT - JEFFERY ENERGY CENTER 345KV CKT 1'
WERE	'HUNTSVILLE - HUTCHINSON ENERGY CENTER 115KV CKT 1'
MIDW	'HUNTSVILLE - ST JOHN 115KV CKT 1'
WERE	'LAWRENCE ENERGY CENTER UNIT 5 - LAWRENCE HILL 230KV CKT 1'
WERE	'LAWRENCE HILL - MIDLAND JUNCTION 230KV CKT 1'
WERE	'LAWRENCE HILL (LAWHL29X) 230/115/13.8KV TRANSFORMER CKT 1'
WEPL	'MEDICINE LODGE - PRATT 115KV CKT 1'
WEPL	'MEDICINE LODGE - SUN CITY 115KV CKT 1'
WEPL	'MEDICINE LODGE (MED-LDG4) 138/115/2.72KV TRANSFORMER CKT 1'
WERE	'NORTH AMERICAN PHILIPS - NORTH AMERICAN PHILIPS JUNCTION (SOUTH) 115KV CKT 1'
WERE	'NORTH AMERICAN PHILIPS JUNCTION (SOUTH) - WEST MCPHERSON 115KV CKT 1'
OKGE	'PECAN CREEK (PECANCK1) 345/161/13.8KV TRANSFORMER CKT 1'
SPS	'POTTER COUNTY INTERCHANGE (POTTR CO) 345/230/13.2KV TRANSFORMER CKT 1'
WEPL	'PRATT - ST JOHN 115KV CKT 1'
WEPL	'SEWARD - ST JOHN 115KV CKT 1'
WEPL- MIDW	'ST JOHN - ST JOHN 115KV CKT 1'
SPS	'TUCO INTERCHANGE (TUCO XX4) 345/230/13.2KV TRANSFORMER CKT 1'
MEC	'WRI MID869.0 - WRIGHT 869.0 69KV CKT 1'

**Table 4. Contingency Analysis**

ELEMENT	SEASON	RATE (MVA)	LOADING (%)	ATC (MW)	CONTINGENCY
<b>2008 SUMMER PEAK</b>					
'G06-21T 138 - HARPER 138KV CKT 1'	08sp	71.7	448.2	0	'PRATT - ST JOHN 115KV CKT 1'
'HARPER - MILAN TAP 138KV CKT 1'	08sp	95.6	316.9	0	'PRATT - ST JOHN 115KV CKT 1'
'CLEARWT - MILAN TAP 138KV CKT 1'	08sp	110	261.6	0	'PRATT - ST JOHN 115KV CKT 1'
'CLEARWT - GILL ENERGY CENTER WEST 138KV CKT 1'	08sp	110	247.0	0	'PRATT - ST JOHN 115KV CKT 1'
'LAWRENCE HILL (LAWHL29X) 230/115/13.8KV TRANSFORMER CKT 1'	08sp	308	127.5	0	'MIDLAND JUNCTION (MIDJ126X) 230/115/18.0KV TRANSFORMER CKT 1'
'G06-21T 138 - MEDICINE LODGE 138KV CKT 1'	08sp	71.7	143.7	0	'GEN:99933 1'
'LAWRENCE ENERGY CENTER UNIT 5 - LAWRENCE HILL 230KV CKT 1'	08sp	478	107.0	0	'GILL ENERGY CENTER EAST (GEC3 GSU) 138/69/14.4KV TRANSFORMER CKT 1'
'HOYT - JEFFERY ENERGY CENTER 345KV CKT 1'	08sp	1076	109.4	0	'JEFFERY ENERGY CENTER - MORRIS COUNTY 345KV CKT 1'
'POTTER COUNTY INTERCHANGE (POTTR CO) 345/230/13.2KV TRANSFORMER CKT 1'	08sp	560	111.8	0	'GEN:51442 1'
'16TH & WOODLAWN JUNCTION - 3RD & VAN BUREN 69KV CKT 1'	08sp	65	128.3	0	'HUTCHINSON ENERGY CENTER (HEC 122X) 115/69/34.5KV TRANSFORMER CKT 1'
'16TH & WOODLAWN JUNCTION - MEADOWLARK 69KV CKT 1'	08sp	71	117.4	0	'HUTCHINSON ENERGY CENTER (HEC 122X) 115/69/34.5KV TRANSFORMER CKT 1'
'EL PASO - FARBER 138KV CKT 1'	08sp	168	100.4	53	'WICHITA - WOODRING 345KV CKT 1'
<b>2008 WINTER PEAK</b>					
'G06-21T 138 - HARPER 138KV CKT 1'	08wp	71.7	427.0	0	'PRATT - ST JOHN 115KV CKT 1'
'HARPER - MILAN TAP 138KV CKT 1'	08wp	95.6	307.1	0	'PRATT - ST JOHN 115KV CKT 1'
'CLEARWT - MILAN TAP 138KV CKT 1'	08wp	110	255.4	0	'PRATT - ST JOHN 115KV CKT 1'
'CLEARWT - GILL ENERGY CENTER WEST 138KV CKT 1'	08wp	110	242.4	0	'PRATT - ST JOHN 115KV CKT 1'
'MEDICINE LODGE (MED-LDG4) 138/115/2.72KV TRANSFORMER CKT 1'	08wp	65	371.8	0	'G06-21T 138 - HARPER 138KV CKT 1'
'ST JOHN - ST JOHN 115KV CKT 1'	08wp	88	150.0	0	'G06-21T 138 - HARPER 138KV CKT 1'
'MEDICINE LODGE - SUN CITY 115KV CKT 1'	08wp	79.7	150.7	0	'G06-21T 138 - HARPER 138KV CKT 1'
'GREENSBURG - JUDSON LARGE 115KV CKT 1'	08wp	79.7	134.6	0	'G06-21T 138 - HARPER 138KV CKT 1'

**Table 4: Contingency Analysis**

ELEMENT	SEASON	RATE (MVA)	LOADING (%)	ATC (MW)	CONTINGENCY
'HOYT - JEFFERY ENERGY CENTER 345KV CKT 1'	08wp	1076	108.3	0	'JEFFERY ENERGY CENTER - MORRIS COUNTY 345KV CKT 1'
'HUNTSVILLE - ST JOHN 115KV CKT 1'	08wp	88	116.5	0	'G06-21T 138 - HARPER 138KV CKT 1'
'HUNTSVILLE - HUTCHINSON ENERGY CENTER 115KV CKT 1'	08wp	92	108.6	0	'G06-21T 138 - HARPER 138KV CKT 1'
'PRATT - ST JOHN 115KV CKT 1'	08wp	79.7	322.0	0	'G06-21T 138 - HARPER 138KV CKT 1'
'G06-21T 138 - MEDICINE LODGE 138KV CKT 1'	08wp	71.7	357.9	0	'G06-21T 138 - HARPER 138KV CKT 1'
'SEWARD - ST JOHN 115KV CKT 1'	08wp	79.7	159.3	71	'G06-21T 138 - HARPER 138KV CKT 1'
<b><u>2011 SUMMER PEAK</u></b>					
'G06-21T 138 - HARPER 138KV CKT 1'	11sp	71.7	413.3	0	'PRATT - ST JOHN 115KV CKT 1'
'HARPER - MILAN TAP 138KV CKT 1'	11sp	95.6	284.7	0	'PRATT - ST JOHN 115KV CKT 1'
'CLEARWT - MILAN TAP 138KV CKT 1'	11sp	110	232.8	0	'PRATT - ST JOHN 115KV CKT 1'
'CLEARWT - GILL ENERGY CENTER WEST 138KV CKT 1'	11sp	110	217.9	0	'PRATT - ST JOHN 115KV CKT 1'
'WEBRERICHARD'	11sp	1250	113.9	0	'BASE CASE'
'LAWRENCE HILL (LAWHL29X) 230/115/13.8KV TRANSFORMER CKT 1'	11sp	308	126.5	0	'MIDLAND JUNCTION (MIDJ126X) 230/115/18.0KV TRANSFORMER CKT 1'
'GILL ENERGY CENTER EAST (GEC3 GSU) 138/69/14.4KV TRANSFORMER CKT 1'	11sp	137	150.3	0	'GILL ENERGY CENTER SOUTH - GILL ENERGY CENTER WEST 138KV CKT 1'
'POTTER COUNTY INTERCHANGE (POTTR CO) 345/230/13.2KV TRANSFORMER CKT 1'	11sp	560	121.1	0	'GEN:51442 1'
'LAWRENCE ENERGY CENTER UNIT 5 - LAWRENCE HILL 230KV CKT 1'	11sp	478	108.9	0	'GILL ENERGY CENTER EAST (GEC3 GSU) 138/69/14.4KV TRANSFORMER CKT 1'
'EVANS ENERGY CENTER SOUTH - LAKERIDGE 138KV CKT 1'	11sp	382	104.6	0	'SPP-WERE-29'
'G06-21T 138 - MEDICINE LODGE 138KV CKT 1'	11sp	71.7	127.4	0	'GEN:99933 1'
'HOYT - JEFFERY ENERGY CENTER 345KV CKT 1'	11sp	1076	105.5	0	'JEFFERY ENERGY CENTER - MORRIS COUNTY 345KV CKT 1'
'NORTH AMERICAN PHILIPS JUNCTION (SOUTH) - WEST MCPHERSON 115KV CKT 1'	11sp	68	109.6	0	'2004-16T 230 - SUMMIT 230KV CKT 1'
'EAST LIBERAL - TEXAS COUNTY INTERCHANGE PHSF 115KV CKT 1'	11sp	119	107.5	0	'SPP-SWPS-04A'



**Table 4: Contingency Analysis**

ELEMENT	SEASON	RATE (MVA)	LOADING (%)	ATC (MW)	CONTINGENCY
'WRI MID869.0 - WRIGHT 869.0 69KV CKT 1'	11sp	83	999.0	0	'HOPE 5 161 161/69KV TRANSFORMER CKT 1'
'COUNTY LINE (COLINE5X) 115/69/34.5KV TRANSFORMER CKT 1'	11sp	66	999.0	0	'GEN:57957 1'
'NORTH AMERICAN PHILIPS - NORTH AMERICAN PHILIPS JUNCTION (SOUTH) 115KV CKT 1'	11sp	160	100.9	58	'2004-16T 230 - SUMMIT 230KV CKT 1'
<b><u>2011 WINTER PEAK</u></b>					
'G06-21T 138 - HARPER 138KV CKT 1'	11wp	71.7	420.7	0	'PRATT - ST JOHN 115KV CKT 1'
'HARPER - MILAN TAP 138KV CKT 1'	11wp	95.6	296.3	0	'PRATT - ST JOHN 115KV CKT 1'
'CLEARWT - MILAN TAP 138KV CKT 1'	11wp	110	245.8	0	'PRATT - ST JOHN 115KV CKT 1'
'CLEARWT - GILL ENERGY CENTER WEST 138KV CKT 1'	11wp	110	232.8	0	'PRATT - ST JOHN 115KV CKT 1'
'G06-21T 138 - MEDICINE LODGE 138KV CKT 1'	11wp	71.7	334.8	0	'HARPER - MILAN TAP 138KV CKT 1'
'ST JOHN - ST JOHN 115KV CKT 1'	11wp	88	150.0	0	'HARPER - MILAN TAP 138KV CKT 1'
'MEDICINE LODGE - SUN CITY 115KV CKT 1'	11wp	79.7	142.9	0	'HARPER - MILAN TAP 138KV CKT 1'
'GREENSBURG - JUDSON LARGE 115KV CKT 1'	11wp	79.7	126.9	0	'HARPER - MILAN TAP 138KV CKT 1'
'HOYT - JEFFERY ENERGY CENTER 345KV CKT 1'	11wp	1076	105.3	0	'JEFFERY ENERGY CENTER - MORRIS COUNTY 345KV CKT 1'
'PRATT - ST JOHN 115KV CKT 1'	11wp	79.7	308.6	0	'HARPER - MILAN TAP 138KV CKT 1'
'MEDICINE LODGE (MED-LDG4) 138/115/2.72KV TRANSFORMER CKT 1'	11wp	65	356.6	0	'HARPER - MILAN TAP 138KV CKT 1'
'MEDICINE LODGE - PRATT 115KV CKT 1'	11wp	79.7	148.7	0	'HARPER - MILAN TAP 138KV CKT 1'
'SEWARD - ST JOHN 115KV CKT 1'	11wp	79.7	142.4	0	'HARPER - MILAN TAP 138KV CKT 1'
'G06-22 115 115/34.5KV TRANSFORMER CKT 1'	11wp	150	104.7	0	'HARPER - MILAN TAP 138KV CKT 1'
'HUNTSVILLE - ST JOHN 115KV CKT 1'	11wp	88	101.2	0	'HARPER - MILAN TAP 138KV CKT 1'
<b><u>2016 SUMMER PEAK</u></b>					
'LAWRENCE HILL (LAWHL29X) 230/115/13.8KV TRANSFORMER CKT 1'	16sp	308	130.6	0	'MIDLAND JUNCTION (MIDJ126X) 230/115/18.0KV TRANSFORMER CKT 1'
'AUBURN ROAD - JEFFREY ENERGY CENTER 230KV CKT 1'	16sp	565	123.4	0	'HOYT - JEFFERY ENERGY CENTER 345KV CKT 1'
'PECAN CREEK (PECANCK1) 345/161/13.8KV TRANSFORMER CKT 1'	16sp	370	107.4	0	'CLARKSVILLE - MUSKOGEE 345KV CKT 1'

**Table 4: Contingency Analysis**

ELEMENT	SEASON	RATE (MVA)	LOADING (%)	ATC (MW)	CONTINGENCY
'LAWRENCE ENERGY CENTER UNIT 5 - LAWRENCE HILL 230KV CKT 1'	16sp	478	108.0	0	'GILL ENERGY CENTER EAST (GEC3 GSU) 138/69/14.4KV TRANSFORMER CKT 1'
'CIMARRON RIVER PLANT - NORTH LIBERAL TAP 115KV CKT 1'	16sp	115.3	117.0	0	'CIMARRON RIVER TAP - EAST LIBERAL 115KV CKT 1'
'SPPSPSTIES'	16sp	899	106.2	0	'BASE CASE'
'TUCO INTERCHANGE (TUCO XX4) 345/230/13.2KV TRANSFORMER CKT 1'	16sp	560	103.2	0	'GEN:52215 1'
'CIMARRON RIVER TAP - EAST LIBERAL 115KV CKT 1'	16sp	119.5	112.3	0	'CIMARRON RIVER PLANT - NORTH LIBERAL TAP 115KV CKT 1'
'HOYT - JEFFERY ENERGY CENTER 345KV CKT 1'	16sp	1076	104.5	0	'JEFFERY ENERGY CENTER - MORRIS COUNTY 345KV CKT 1'
'WEBRERICHARD'	16sp	1250	101.0	0	'BASE CASE'
'NORTH AMERICAN PHILIPS JUNCTION (SOUTH) - WEST MCPHERSON 115KV CKT 1'	16sp	68	112.4	0	'2004-16T 230 - SUMMIT 230KV CKT 1'
'LAWRENCE HILL - MIDLAND JUNCTION 230KV CKT 1'	16sp	359	101.1	0	'LAWRENCE HILL (LAWHL29X) 230/115/13.8KV TRANSFORMER CKT 1'
'POTTER COUNTY INTERCHANGE (POTTR CO) 345/230/13.2KV TRANSFORMER CKT 1'	16sp	560	114.2	0	GEN:50721 1'
'NORTH AMERICAN PHILIPS - NORTH AMERICAN PHILIPS JUNCTION (SOUTH) 115KV CKT 1'	16sp	160	103.5	16	'2004-16T 230 - SUMMIT 230KV 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 \$101,370 for MIDW's interconnection Network Upgrade facilities listed in Table 2. These costs exclude upgrades of other transmission facilities by MIDW, Westar and WEPL listed in Table 3 of which are 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. As stated earlier, 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.

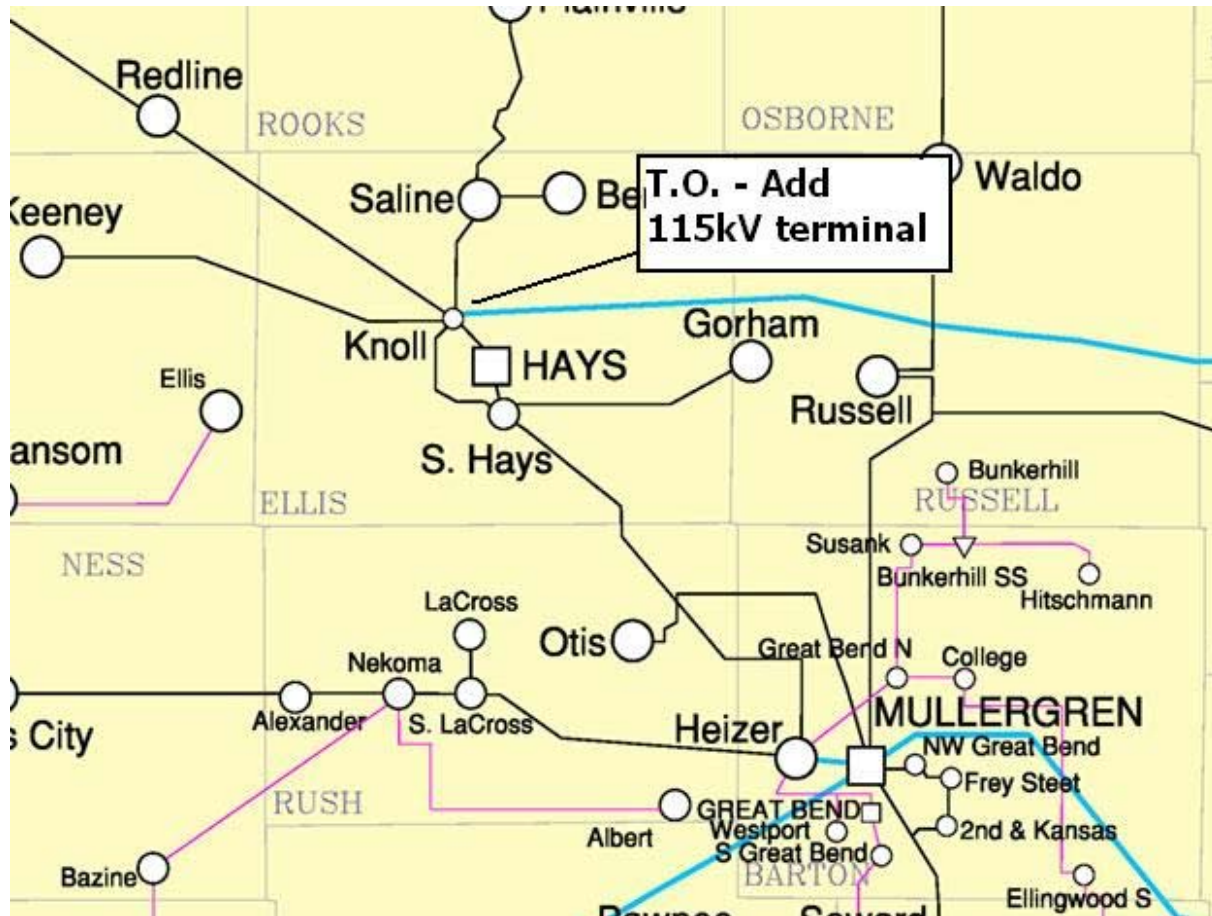


FIGURE 2. MAP OF THE LOCAL AREA