



SPP

*Southwest
Power Pool*

***Facility Study
For
Generation Interconnection
Request
GEN-2009-020***

***SPP Generation
Interconnection***

(#GEN-2009-020)

June 2013

Revision History

Date	Author	Change Description
03/02/2011	SPP	Facility Study Report Issued
06/25/2013	SPP	Account for Definitive Interconnection System Impact Restudy Results (DISIS-2010-001-7)

Summary

Midwest Energy (MIDW) has updated Facility Study costs for Generation Interconnection request GEN-2009-020. The request for interconnection was placed with SPP in accordance with SPP's Open Access Transmission Tariff, which covers new generation interconnections on SPP's transmission system.

Interconnection Customer Interconnection Facilities

The Interconnection Customer will be responsible for the 69 kV transmission line from its Generation Facility Substation to the Point of Interconnection (POI), a new 69 kV breaker station on the Midwest Energy's Nekoma-Bazine 69 kV transmission line. In addition, the customer will be responsible for reactive power compensation equipment to maintain 95% lagging (providing vars) and 95% leading (absorbing vars) power factor at the point of interconnection. The Interconnection Customer will be required to install a +/-8 Mvar Static VAR Compensator and 4.8 Mvar capacitor bank on its 34.5kV bus.

Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades

Per the following Facility Study, the Interconnection Customer is responsible for \$3,691,270.00 of Transmission Owner Interconnection Facilities and non-shared network upgrades.

Shared Network Upgrades

The interconnection customer was studied within the DISIS-2010-001-7 Impact Restudy (June 2013). At this time, the Interconnection Customer is allocated the following costs for shared network upgrades:

Upgrade Description	Allocated Cost	Total Cost
None	\$0.00	\$0.00
Total	\$0.00	

If higher queued interconnection customers withdraw from the queue, suspend or terminate their GIA, restudies will have to be conducted to determine the Interconnection Customers' allocation of shared network upgrades. All studies have been conducted on the basis of higher queued interconnection requests and the upgrades associated with those higher queued interconnection requests being placed in service.

Other Network Upgrades

Certain Network Upgrades that are not the cost responsibility of the Customer are required for Interconnection. These Network Upgrades include:

1. Axtell - Post Rock - Spearville 345kV transmission line, In-Service as of 2012.
2. Spearville - Clark County - Thistle - Wichita double circuit 345kV transmission line, scheduled 12/31/2014 in-service.

Depending upon the status of higher or equally queued customers, the Interconnection Customer's in service date may be delayed until the in service date of these Network Upgrades.

Conclusion

Interconnection Service for GEN-2009-020 will be delayed until the Transmission Owner Interconnection Facilities Shared Network Upgrades are constructed. The Customer is responsible for \$3,691,270.00 of Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades. At this time, the Interconnection Customer is allocated \$0.00 for Shared Network Upgrades. After all Interconnection Facilities and Network Upgrades have been placed into service, Interconnection Service for 48.3 MW, as requested by GEN-2009-020, can be allowed. At this time the total allocation of costs assigned to GEN-2009-020 for Interconnection Service are estimated at \$3,691,270.00.

1. Introduction

<OMITTED TEXT> (Customer) has requested a Facility Study under the Southwest Power Pool Open Access Transmission Tariff (OATT) for interconnecting a 48.3 MW wind powered generation facility in Alexander County, Kansas to the transmission system of Midwest Energy (MIDW). The generation facility studied is comprised of twenty-one (21) Siemens 2.3 MW wind turbines. The wind powered generation facility will interconnect into a new Midwest Energy owned new 69 kV breaker station on the Nekoma-Bazine 69 kV transmission line.

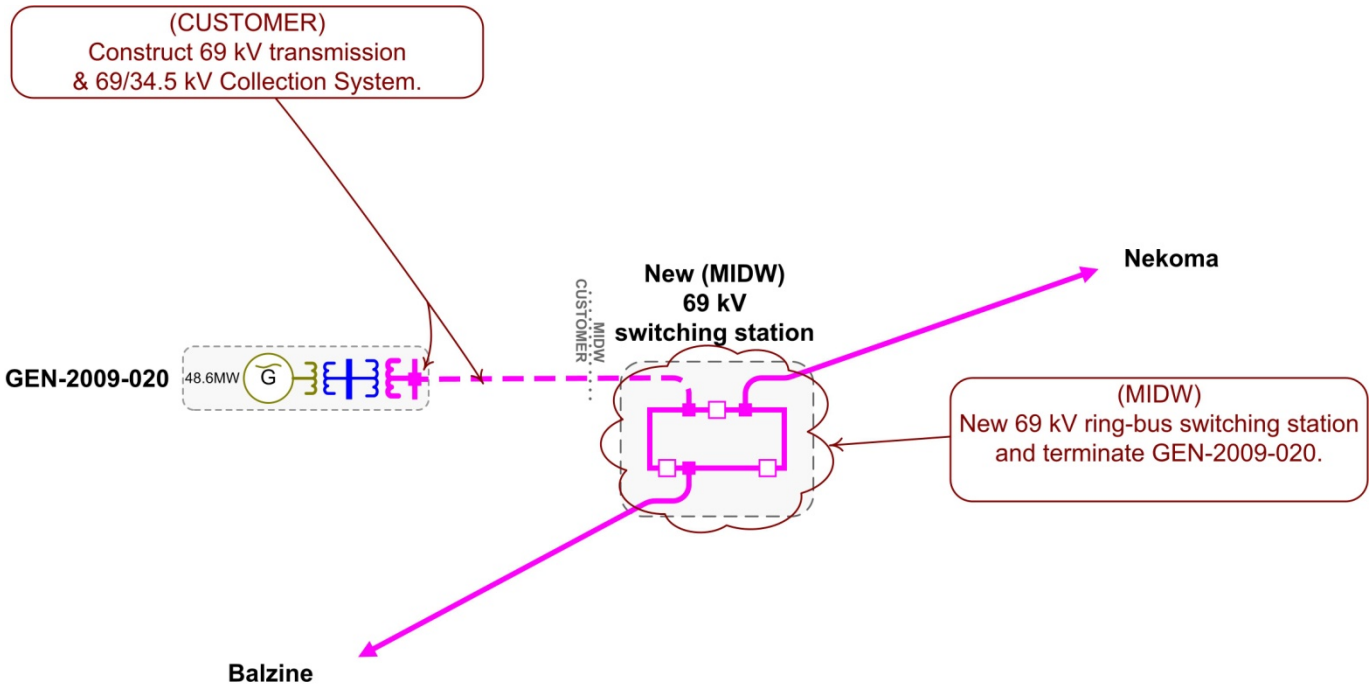
2. Interconnection Facilities and Network Upgrades

The cost for the Interconnection Facilities and Network Upgrades is listed below in Table 1. The one-line diagram is shown in Figure 1.

Table 1: Required Interconnection Facilities and Non Shared Network Upgrades

Project	Description	Estimated Cost
1	MIDW – Build 3 breaker ring bus, along with switches, CTs, PTs, and control panels. Substation work at Nekoma and Hanston.	\$3,691,270.00
	Total:	\$3,691,270.00

Figure 1: Interconnection Configuration for GEN-2009-020



2.1. Customer Facilities – The Customer will be responsible for its Generating Facility and its 69/34.5 kV transformer along with the 34.5/.69kV GSU transformers that will connect to the twenty-one (21) Siemens 2.3 MW wind turbines. In addition, the Customer will be required to install the following equipment in its facilities.

2.1.1. Reactive Power Equipment – The Customer will be responsible for reactive power compensation equipment to maintain 95% lagging (providing vars) and 95% leading (absorbing vars) power factor at the point of interconnection. The Interconnection Customer will be required to install a +/-8 Mvar Static VAR Compensator and 4.8 Mvar capacitor bank on its 34.5kV bus. Any capacitor banks installed by the Interconnection Customer shall not cause voltage distortion in accordance with Article 9.7.4 of the standard SPP Generation Interconnection Agreement.

3. Conclusion

The Interconnection Customer's interconnection facilities are estimated at \$3,691,270.00.