



SPP

*Southwest
Power Pool*

**Facility Study
For
Generation Interconnection
Request
GEN-2011-050**

***SPP Generation
Interconnection***

(#GEN-2011-050)

July 2012

Summary

American Electric Power West performed a detailed Facility Study at the request of Southwest Power Pool (SPP) for Generation Interconnection request GEN-2011-050 (109.8 MW/Wind). The originally proposed in-service date was December 31, 2013. However due to upgrades required for interconnection SPP has proposed to delay in-service date until the completion of Network Upgrades. 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.

Phases of Interconnection Service

It is not expected that interconnection will require phases however, interconnection service will not be available until all interconnection facilities and network upgrades can be placed in service.

Interconnection Customer Interconnection Facilities

The Interconnection Customer will be responsible for the 138kV transmission line from its wind farm Substation to the Point of Interconnection (POI), a new 138kV substation on the Cornville to Duncan 138 kV Transmission Line, between Rush Springs Chestnut Street Tap and Marlow Tap. 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 (POI).

Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades

To allow interconnection the Transmission Owner will need to construct a new 138kV three-breaker ring-bus substation with three-138kV line terminals and associated equipment for acceptance of the Interconnection Customer's Interconnection Facilities. The estimated in-service data for these Interconnection Facilities is unknown but not expected to delay in-service date after completion of Network Upgrades. Per the following Facility Study, the Interconnection Customer is responsible for \$7,310,940 of Transmission Owner Interconnection Facilities and for Non-Shared Network Upgrades.

Shared Network Upgrades

The interconnection customer was studied within the DISIS-2011-002 Impact Study. At this time, the Interconnection Customer is allocated \$3,244 for shared Network Upgrades, as listed below. As the Facility Study for these shared Network Upgrades is completed, these costs may change.

1. Cimarron – Draper 345kV CKT 1, Replace wave trap at Cimarron and current transformer at Cimarron (NRIS Only)

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 Other Network Upgrades are currently not the cost responsibility of the Customer but will be required for full Interconnection Service. No Other Network Upgrades were assigned to this request in the DISIS-2011-002 study.

Depending upon the status of higher or equally queued customers, the Interconnection Customer's in-service date is at risk of being delayed or their Interconnection Service is at risk of being reduced until the in-service date of these Other Network Upgrades.

Conclusion

Interconnection Service for GEN-2011-050 will be delayed until the Transmission Owner Interconnection Facilities and Network Upgrades are constructed. The Customer is responsible for \$7,310,940 of Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades. At this time, the Interconnection Customer is also allocated \$3,244 for Shared Network Upgrades. After all Interconnection Facilities and Network Upgrades have been placed into service, Interconnection Service for 109.8MW, as requested by GEN-2011-050, can be allowed. At this time the total allocation of costs of Interconnection Service for GEN-2011-050 are estimated at \$7,314,184.

***Generation Interconnection
Facilities Study***

For

GEN-2011-050

Southwest Power Pool

***American Electric Power
West Transmission Planning***

May 2012

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Introduction

The Southwest Power Pool (SPP) has requested a Facilities Study for interconnecting the 109.8 MW GEN-2011-050. The interconnect facilities are proposed to be located in Grady County, Oklahoma.

The purpose of this Facilities Study is to identify the costs for connecting GEN-2011-050 to AEP's transmission system. This Facilities Study is done in conjunction with SPP Feasibility and Impact Studies for Generation Interconnection Request GEN-2011-050.

A detailed description of all costs associated with the construction of this interconnection is shown in Table 1.

Interconnection Facilities

The interconnection point for **GEN-2011-050** has been identified as a new 138kV substation on the Cornville to Duncan 138 kV Transmission Line, between Rush Springs Chestnut Street Tap and Marlow Tap. At this interconnection point AEP will install, operate, and own a new 138 kV Three Breaker Ring Bus Substation.

The design and construction of the new 138 kV terminal will meet all AEP specifications for stations. 138 kV metering equipment will be installed at the AEP interconnecting substation to monitor the generator output and will meet the required accuracy specifications. AEP will construct monitoring and communications equipment at the IPP collector station, to include RTU, DME, and SDR.

AEP will perform remote terminal work at the following substations to accommodate the new interconnection:

Duncan and Cornville 138kV Substations

- Upgrade Relays to current standards for reliable coordination with relays at interconnecting facility

Short Circuit Fault Duty Evaluation

Short circuit duty at the interconnection point is not expected to exceed 6 kA so no upgrades to AEP facilities are needed.

Table 1 - Interconnection Costs

Listed below are the costs associated with interconnecting the 109.8 MW GEN-2011-050 generation facilities to the AEP transmission system.

System Improvement	Cost (2012 Dollars)
New 138 kV 3 Breaker Ring Bus Substation	\$6,616,442
Remote Terminal Upgrades	\$411,749
AEP Equipment @ IPP Collector Station	\$282,749
Interconnection Facilities Total Costs	\$7,310,940

Appendix

Figure 1: New 138 kV Interconnecting Facilities

