



**Facility Study
For
Generation Interconnection
Request
GEN-2012-031**

***SPP Generation
Interconnection Studies***

(#GEN-2012-031)

July 2013

Revision History

Date	Author	Change Description
7/8/2013	SPP	Facility Study Report Issued

Summary

Oklahoma Gas and Electric (OKGE) performed a detailed Facility Study at the request of Southwest Power Pool (SPP) for Generation Interconnection request GEN-2012-031 (200.1 MW/Wind) located in Canadian County, Oklahoma. The originally proposed in-service date for GEN-2012-031 was November 30, 2014. SPP has proposed the in-service date will be after the assigned Interconnection Facilities and Non-Shared network upgrades are completed. Full Interconnection Service will require the Network Upgrades listed in the "Other Network Upgrades" section. 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 service 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 all of the transmission facilities connecting the customer owned substation to the Point of Interconnection (POI), at Oklahoma Gas and Electric (OKGE) owned Cimarron substation. GEN-2012-031 will utilize the existing GEN-2010-040 transmission interconnection line to the Cimarron Substation. The Interconnection Customer will also be responsible for any equipment located at the Customer substation necessary to maintain a power factor of 0.95 lagging to 0.95 leading at the POI.

Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades

To allow interconnection the Transmission Owner will need to verify associated terminal equipment is acceptable for the addition of the Interconnection Customer's Interconnection Facilities. OKGE has proposed an in-service date for these Interconnection Facilities estimated at August 1, 2015. At this time GEN-2012-031 is responsible for \$40,000.00 of Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades.

Shared Network Upgrades

The Interconnection Customer was studied within the DISIS-2012-002 Impact Study. At this time, the Interconnection Customer is allocated \$0.00 for Shared Network Upgrades. 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. At this time, the Interconnection Customer is allocated the following cost for Shared Network Upgrade:

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

Other Network Upgrades

Certain Other Network Upgrades are currently not the cost responsibility of the Customer but will be required for full Interconnection Service. These Other Network Upgrades include:

1. Mathewson – Cimarron 345kV transmission line circuit #2, Assigned to DISIS-2011-001 Customers

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-2012-031 will be delayed until the Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades are constructed. The Interconnection Customer is responsible for \$40,000.00 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 200.1 MW, as requested by GEN-2012-031, can be allowed. At this time the total allocation of costs assigned to GEN-2012-031 for Interconnection Service are estimated at \$40,000.00.



FACILITY STUDY

for

Generation Interconnection Request 2012-031

200 MW Wind Generating Facility
In Canadian County
Near
El Reno, Oklahoma

May 22, 2013

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Summary

Pursuant to the tariff and at the request of the Southwest Power Pool (SPP), Oklahoma Gas and Electric (OG&E) performed the following Facility Study to satisfy the Facility Study Agreement executed by the requesting customer for SPP Generation Interconnection request Gen-2012-031. The request for interconnection was placed with SPP in accordance SPP's Open Access Transmission Tariff, which covers new generation interconnections on SPP's transmission system. The request is for tapping and adding 200MW to an existing generator lead established under Gen-2011-054 which is a tap off of a generator lead established under Gen-2010-040. This will be additional generation on the existing point of interconnection established under Gen-2010-040. The requirements for addition of 200MW to the existing generator lead is for relay settings and fault current analysis only. The cost for checking and verifying relay settings, fault current analysis, and line switching is \$40,000. No new or additional facilities are necessary to accommodate the additional generation. The generator is proposing to install a ring bus switching station in the existing generator lead line to connect the new generator lead to the existing generator lead.

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Introduction

The Southwest Power Pool has requested a Facility Study for the purpose of interconnecting an additional 200MW of wind generation to an existing Point of Interconnection within the service territory of OG&E Electric Services (OKGE) in Canadian County Oklahoma. The proposed 345kV point of interconnection is at a point on an existing generator lead approximately 14.2 miles from the existing point of interconnection at OG&E Cimarron substation. The existing generator lead is approximately 20 miles in length. The proposed in-service date is August 01, 2015.

Network Constraints in the American Electric Power West (AEPW), OKGE and Western Farmers Electric Cooperative (WFEC) systems may be verified with a transmission service request and associated studies.

Interconnection Facilities

The primary objective of this study is to identify attachment facilities. There are no requirements for additional interconnection facilities at the existing Cimarron Substation.

This Facility Study does not guarantee the availability of transmission service necessary to deliver the additional generation to any specific point inside or outside the Southwest Power Pool (SPP) transmission system. The transmission network facilities may not be adequate to deliver the additional generation output to the transmission system. If the customer requests firm transmission service under the SPP Open Access Transmission Tariff at a future date, Network Upgrades or other new construction may be required to provide the service requested under the SPP OATT.

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

Short Circuit Fault Duty Evaluation

It is standard practice for OG&E to recommend replacing a circuit breaker when the current through the breaker for a fault exceeds 100% of its interrupting rating with recloser de-rating applied, as determined by the ANSI/IEEE C37.5-1979, C37.010-1979 & C37.04-1979 breaker rating methods.

For this generator interconnection, no breakers were found to exceed their interrupting capability after the addition of the Customer's 200MW generation and related facilities. OG&E found no breakers that exceeded their interrupting capabilities on their system. Therefore, there is no short circuit upgrade costs associated with the Gen-2012-031 interconnection.

Table 1: Required Interconnection Network Upgrade Facilities

Facility	ESTIMATED COST (2013 DOLLARS)
OKGE – Interconnection Facilities - No new interconnection facilities necessary	\$0
OKGE – Network Upgrades No new network upgrades necessary	\$0
OKGE – Relay settings and fault current verification and line switching	\$40,000
Total	\$40,000

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May 22, 2013

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Proposed Tap on Existing Generator Lead

