Facility Study
For
Generator Interconnection
Request
GEN-2014-003

(IFS-2014-001-03)

SPP Generator
Interconnection Studies

(#GEN-2014-003)

January 2015

Revision History

Date	Author	Change Description
1/13/2015	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-2014-003 (15.84 MW/Wind) located in Blaine County, Oklahoma. GEN-2014-003 is an interconnection capacity uprate to GEN-2007-044. The Interconnection Request has been assigned the Interconnection Queue position of IFS-2014-001-03. SPP has proposed the in-service date will be delayed until GEN-2007-044 Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades are constructed along with a fully executed Generation Interconnection Agreement (GIA) for GEN-2014-003. 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 the Oklahoma Gas and Electric (OKGE) owned 345kV bus at Tatonga Substation. GEN-2014-003 generation will utilize the GEN-2007-044 generator lead from the Customer Substation to OKGE Tatonga 345kV. 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. Additionally, reactive power analysis within the DISIS-2014-001 study shows the need for approximately 32.0Mvars of reactors or other means[1] to compensate for reactive injection into the transmission system.

Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades

To allow interconnection the Transmission Owner has verified that the associated terminal equipment is acceptable for the addition of the Interconnection Customer's Interconnection Facilities. At this time GEN-2014-003 is responsible for $0 of Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades. If GEN-2007-044 Interconnection Request is withdrawn or has its Generator Interconnection Agreement terminated and GEN-2014-003 continues with the SPP Generation Interconnection process, then the estimated $3,073,333 cost for Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades assigned to GEN-2007-044 could be assigned to GEN-2014-003.

Shared Network Upgrades

The Interconnection Customer was studied within the DISIS-2014-001 Impact Study. At this time, the Interconnection Customer is allocated $0 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

[1] Such as the G.E. "Wind-Free" option

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	$0
Total	$0	

Other Network Upgrades

Certain Other Network Upgrades are currently not the cost responsibility of the Customer but will be required for full Interconnection Service. Currently, no Other Network Upgrades are required.

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-2014-003 will be contingent upon the completion of a fully executed Generation Interconnection Agreement (GIA) for GEN-2014-003. The Interconnection Customer is responsible for $0 of Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades. At this time, the Interconnection Customer is allocated $0 for Shared Network Upgrades. After all Interconnection Facilities and Network Upgrades have been placed into service, Interconnection Service for 15.84 MW, as requested by GEN-2014-003, can be allowed. At this time the total allocation of costs assigned to GEN-2014-003 for Interconnection Service are estimated at $0.

FACILITY STUDY

for

Generation Interconnection Request 2014-003

Uprate to a combined total of 315.04 to Existing Wind Generating Facility
In Blaine County
Near
Oakwood, Oklahoma

November 20, 2014

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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-2014-003. 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 adding 15.84 MW to an existing Point of Interconnection. There are no requirements for addition of 15.84 MW to the existing Point of Interconnection. No new or additional facilities are necessary to accommodate the additional generation.

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Introduction

The Southwest Power Pool has requested a Facility Study for the purpose of interconnecting an additional 15.84 MW of wind generation to an existing Point of Interconnection within the service territory of OG&E Electric Services (OKGE) in Dewey County Oklahoma. The proposed 345kV point of interconnection is at the existing Tatonga Substation in Dewey County. This substation is owned by OKGE. The proposed in-service date for the additional generation is unknown.

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 Tatonga 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 15.84 MW 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-2014-003 interconnection.

Table 1: Required Interconnection Network Upgrade Facilities

Facility	ESTIMATED COST (2014 DOLLARS)
OKGE – **Interconnection Facilities**- No new interconnection facilities necessary	**$0**
OKGE – **Network Upgrades** No new network upgrades necessary	**$0**
OKGE - Right-of-Way for 345kV terminal addition	No Additional ROW
Total	**$0**

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Tatonga Substation