



***Facility Study
For
Generation Interconnection
Request
GEN-2008-071***

SPP Tariff Studies

(GEN-2008-071)

March 2011

SPP Summary

Oklahoma Gas & Electric (OG&E) performed a detailed Facility Study at the request of Southwest Power Pool (SPP) for Generation Interconnection request GEN-2008-071. 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 138 kV transmission line from the Generation Facility to the Point of Interconnection (POI), a new 138kV substation to be constructed by OG&E in Kay County, OK. 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.

Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades

Per the following Facility Study, the Interconnection Customer is responsible for **\$2,889,212** of Transmission Owner Interconnection Facilities and non-shared network upgrades.

Shared Network Upgrades

The interconnection customer was studied within the DISIS-2010-001 Impact Study. At this time, the Interconnection Customer is allocated **\$0** of 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.



FACILITY STUDY

for

Generation Interconnection Request 2008-071

76.8 MW Wind Generating Facility
In Kay County
Near
Newkirk, Oklahoma

January 18, 2011

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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-2008-071. 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 requirements for interconnection consist of adding three new 138kV breakers and a terminal in a new Substation. This will require the addition of a new substation site with three new breakers. The total cost for OKGE to add three new 138kV breakers and a terminal in the new substation, the interconnection facility, is estimated at \$2,889,212.

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Introduction

The Southwest Power Pool has requested a Facility Study for the purpose of interconnecting 76.8MW of wind generation within the service territory of OG&E Electric Services (OKGE) in Kay County Oklahoma. The proposed 138kV point of interconnection will be at a new 138kV substation on the Kildare to Creswell 138kV transmission line in Kay County Oklahoma. This substation will be owned by OKGE. The proposed in-service date is August 06, 2012.

Power flow analysis has indicated that for the power flow cases studied, it is possible to interconnect the 76.8MW of generation with transmission system reinforcements within the local transmission system. Given the Point of Interconnection at a new substation, there are additional requirements for interconnection including bus, breakers, switches, relaying, metering, etc.

The cost for adding a new line terminal in a new 138kV Substation, the required interconnection facility, is estimated at \$410,000. Other 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. The requirements for interconnection consist of adding a new three breaker ring in a new 138kV Substation. This 138kV substation shall be constructed and maintained by OKGE. The Customer did not propose a route of its 138kV line to serve its 138/34.5kV facilities.

The total cost for OKGE to add a new 138kV line terminal in a new 138kV substation, the interconnection facility, is estimated at \$410,000. This cost does not include building the 138kV line from the Customer substation into the new 138kV Substation. The Customer is responsible for this 138kV line up to the point of interconnection. This cost does not include the Customer's 138-34.5kV substation and the cost estimate should be determined by the Customer.

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 76.8MW 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-2008-071 interconnection.

Table 1: Required Interconnection Network Upgrade Facilities

Facility	ESTIMATED COST (2010 DOLLARS)
OKGE – Interconnection Facilities - Add a single 138kV line terminal to a new 138kV Substation. Dead end structure, line relaying, revenue metering including CTs and PTs	\$410,000
OKGE – Network Upgrades at a new 138kV sub site, property, 3-138kV 2000A breakers, line relaying, disconnect switches, and associated equipment	\$2,079,212
OKGE - Right-of-Way for new 138kV substation site	\$400,000
Total	\$2,889,212

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New 138kV Substation to Serve Chilocco Wind

