



**SPP**

*Southwest  
Power Pool*

***Facility Study  
For  
Generation Interconnection  
Request  
GEN-2009-032S***

***SPP Generation  
Interconnection***

***(#GEN-2009-032S)***

**January 2011**

## **Summary**

Oklahoma Gas & Electric (OG&E) performed a detailed Facility Study at the request of Southwest Power Pool (SPP) for Generation Interconnection request GEN-2009-032S. 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 34.5 kV transmission line from its 4.16/34.5 kV substation to the Point of Interconnection (POI), the Discovery 138/34.5 kV Substation on the Foster to Oak Creek 138 kV transmission line in Oklahoma County Oklahoma.

### **Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades**

Per the following Facility Study, the Interconnection Customer is responsible for **\$238,259** 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 2009-032S**

7.5 MW Generating Facility  
In Oklahoma County  
Near  
Oklahoma City, Oklahoma

December 13, 2010

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**OG&E Electric Services**

## **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-2009-032S. 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 one new 34.5kV bay and recloser in the existing Discovery Substation. The total cost for OKGE to add one new 34.5kV bay and recloser the existing substation, the interconnection facility, is estimated at \$238,259.

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## **Introduction**

The Southwest Power Pool has requested a Facility Study for the purpose of interconnecting 7.5MW of generation within the service territory of OG&E Electric Services (OKGE) in Oklahoma County Oklahoma. The proposed 34.5kV point of interconnection will be at the existing 138/34.5kV substation, Discovery substation, on the Foster to Oak Creek 138kV transmission line in Oklahoma County Oklahoma. This substation is owned by OKGE. The proposed in-service date is September 01, 2011.

Power flow analysis has indicated that for the power flow cases studied, it is possible to interconnect the 7.5MW of generation with substation reinforcements within the local substation. Given the Point of Interconnection at an existing substation, there are additional requirements for interconnection including bus, recloser, switches, relaying, metering, etc.

The cost for adding a new bay and recloser in the existing 138/34.5kV Substation, the required interconnection facility, is estimated at \$238,259.

### **Interconnection Facilities**

The primary objective of this study is to identify attachment facilities. The requirements for interconnection consist of adding a new bay and recloser in the 34.5kV side of the existing 138/34.5kV Substation. This 138/34.5kV substation is owned and maintained by OKGE. The Customer did not propose a route of its 34.5kV line to serve its 34.5kV facilities.

The total cost for OKGE to add a new 34.5kV bay and recloser in the existing Discovery substation, the interconnection facility, is estimated at \$238,259. This cost does not include building 34.5kV line from the Customer substation into the Discovery Substation. The Customer is responsible for this 34.5kV line up to the point of interconnection. This cost does not include the Customer's 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 7.5MW 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-2009-032S interconnection.

**Table 1: Required Interconnection Network Upgrade Facilities**

Facility	ESTIMATED COST (2010 DOLLARS)
OKGE – <b>Substation Interconnection Facilities</b> - Add a single 34.5kV bay and disconnect switches to Discovery Substation	<b>\$173,433</b>
OKGE – <b>SP&amp;C Interconnection Facilities</b> at Discovery Substation, 1-34.5kV recloser, line relaying, revenue metering including CTs and PTs and associated equipment	<b>\$64,826</b>
OKGE - Right-of-Way for the 34.5kV substation site	<b>N/A</b>
<b>Total</b>	<b>\$238,259</b>

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# One-Line Diagram of Discovery Substation

