



***FCS-2011-001 Shared Facility Study
for
Transmission Facilities***

***(WFEC) Mooreland – (OKGE) Glass Mountain 138kV
Transmission Line***

(OKGE portion)

SPP Tariff Studies

(#FCS-2011-001)

March 2012

Summary

Oklahoma Gas and Electric (OKGE) provided Facility Studies at the request of the Southwest Power Pool (SPP) for generation interconnection requests included in FCS-2011-001 Facilities Clustered Study. The requests for generation interconnection were placed with SPP in accordance with SPP's Open Access Transmission Tariff which covers new generation interconnections on the SPP transmission system.

Pursuant to the tariff, OKGE was requested to provide costs for required network upgrades to satisfy the Facility Study Agreement executed by the requesting customer and SPP. The specific network upgrade is the rebuild of a 138kV transmission line from OKGE Glass Mountain to WFEC Mooreland. The associated substation work at Glass Mountain to allow for this increased capacity is included in the OKGE Facility study for the Glass Mountain – Cleo Corner – Meno Tap 138kV rebuild. The associated substation work at WFEC Mooreland to allow for this increased capacity is included in the WFEC Facility study for the Mooreland – Cedardale – Okeene – Dover Switch 138kV rebuild.

Generation Interconnection Customers

The generation interconnection requests covered in this document are as follows:

GEN-2011-019
GEN-2011-020

These interconnection customers are included in the DISIS-2011-001 Impact Study which identified the required network upgrades for each customer in order to interconnect to the transmission system.

Shared Interconnection Upgrade Facilities Costs

The OKGE cost to rebuild the 138kV transmission line from WFEC Mooreland to OKGE Glass Mountain is \$15,072,467. The Interconnection Customers' total shared upgrade costs are broken down as follows for each project:

Project	Shared Upgrade Cost
GEN-2011-019	\$7,536,233.50
GEN-2011-020	\$7,536,233.50

This cost allocation is subject to change for restudies conducted by the Transmission Provider in response to the higher queued customers or other customers in the DISIS-2011-001 Impact Study that withdraw their interconnection request or suspend, terminate, or request unexecuted filings of their GIAs.



FACILITY STUDY

for

Facility Request DISIS-2011-001

Rebuild 138kV Transmission Line
From Glass Mountain Substation
Approximately 23 Miles east of
Mooreland, Oklahoma
To
WFEC Mooreland Substation
Near
Mooreland, Oklahoma

February 02, 2012

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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 request by the SPP for Facility request DISIS-2011-001. The SPP request consists of rebuilding the 138kV transmission line from OG&E Glass Mountain substation to WFEC Mooreland substation to 2000A capacity as well as the work necessary at Glass Mountain substation to accommodate 2000A. It will be necessary to completely rebuild approximately 27.3 miles of 138kv transmission line, where approximately 4 miles are double circuit structures with a different circuit sharing the structures, and install a new transmission line with 2-795ACSR conductors per phase to accommodate 2000A under emergency conditions. The cost to rebuild approximately 23.3 miles of single circuit 138kV transmission line and approximately 4 miles of double circuit 138kV transmission line with bundled 795ACSR is estimated to be \$15,072,467.

Glass Mountain substation will be rebuilt under this DISIS 2011-001. The project to upgrade Meno Tap to Cleo Corner to Glass Mountain will rebuild Glass Mountain substation to 2000A capacity. Therefore no work is necessary at Glass Mountain substation for this project under DISIS 2011-001.

There will be additional work necessary at WFEC Mooreland substation to allow for the 2000A capacity of the line. WFEC should be responsible for this work.

The proposed time line for construction would be approximately forty-two months after an NTC is received by OG&E to allow for right of way procurement, engineering, construction and completion.

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Introduction

The Southwest Power Pool has requested a Facility Study for the purpose of rebuilding a 138kV transmission line from Glass Mountain substation within the service territory of OG&E Electric Services (OKGE) in Major County Oklahoma to the Mooreland substation within the service territory of Western Farmers Electric Cooperative (WFEC) in Woodward County Oklahoma.

WFEC will have to replace equipment at Mooreland substation to accommodate the 2000A rating.

The total cost to rebuild the 138kV transmission line from OG&E Glass Mountain to WFEC Mooreland is \$15,072,467

Interconnection Facilities

The primary objective of this study is to identify attachment facilities. The requirements for connection consists of Glass Mountain substation being rebuilt under this DISIS 2011-001 on the project to upgrade the Meno Tap to Cleo Corner to Glass Mountain to 2000A. This 138kV replacement will be constructed and maintained by OKGE. Additional Right of Way may be required.

The cost of rebuilding the 138kV transmission line in 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 re-closer de-rating applied, as determined by the ANSI/IEEE C37.5-1979, C37.010-1979 & C37.04-1979 breaker rating methods.

For this interconnection, no breakers were found to exceed their interrupting capability after the addition of the 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 DISIS-2011-001 interconnection.

Table 1: Required Interconnection Network Upgrade Facilities

Facility	ESTIMATED COST (2012 DOLLARS)
OKGE – Network Upgrades at Glass Mountain substation, None necessary if the Meno Tap to Cleo Corner to Glass Mountain substation project is completed	\$0
OKGE – Transmission line H Frame, bundled 795ACSR, 2000A, steel shield wire, 27.3 miles	\$15,072,467
Total	\$15,072,467

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February 02, 2012

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138kV Route from Glass Substation to Mooreland Substation

