



***FCS-2010-001 Shared Facility Study  
for  
Transmission Facilities in OGE  
(138kV Line Terminal at Gracemont Substation)***

***SPP Tariff Studies***

***(#FCS-2010-001)***

**February 2011**

## Summary

The Oklahoma Gas and Electric (OG&E) provided upgrade costs at the request of the Southwest Power Pool (SPP) for generation interconnection requests included in FCS-2010-001 Facilities Clustered Study. The requests for 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, the Oklahoma Gas and Electric was asked to provide costs for required network upgrades to satisfy the Facility Study Agreement executed by the requesting customer and SPP.

## Generation Interconnection Customers

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

GEN-2008-037  
GEN-2009-030  
GEN-2009-060

These interconnection customers are included in the DISIS-2010-001-1 Impact Study which identified the required network upgrades for each customer in order to interconnect to the OG&E transmission system.

## Shared Interconnection Upgrade Facilities Costs

The Interconnection Customers' shared upgrade costs are **\$871,986** and are allocated as follows:

<b>Generation Interconnection Request</b>	<b>Allocated Costs</b>
GEN-2008-037	\$450,346
GEN-2009-030	\$311,424
GEN-2009-060	\$110,216
<b>TOTAL</b>	<b>\$871,986</b>

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-2010-001 Impact Study that withdraw their interconnection request or suspend, terminate, or request unexecuted filings of their LGIAs.



## **FACILITY STUDY**

**for**

### **GI Cluster Study DISIS-2010-001**

138kV Line Terminal at Gracemont Substation  
In Caddo County  
Near  
Anadarko, 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 Cluster Study DISIS-2010-001. The request for interconnection was placed by the SPP. The requirements for interconnection consist of adding a new 138kV breaker and a terminal in the existing Gracemont Substation. The total cost for OKGE to add a new 138kV breaker and a terminal in the Gracemont substation, the interconnection facility, is estimated at \$871,986.

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## **Introduction**

The Southwest Power Pool has requested a Facility Study for the purpose of interconnecting a new 138kV transmission line into Gracemont substation within the service territory of OG&E Electric Services (OKGE) in Caddo County Oklahoma. This substation is owned by OKGE. The proposed in-service date is December 31, 2011.

The cost for adding a new 138kV terminal to the existing Gracemont Substation, the required interconnection facility, is estimated at \$128,370. 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 138kV terminal in the existing Gracemont Substation. This 138kV addition shall be constructed and maintained by OKGE.

The total cost for OKGE to add a new 138kV terminal in the Gracemont substation, the interconnection facility, is estimated at \$128,370. This cost does not include building the 138kV line into the existing Gracemont Substation. The Customer is responsible for this 138kV line up to the point of interconnection.

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 new 138kV terminal and related facilities in Gracemont substation. OG&E found no breakers that exceeded their interrupting capabilities on their system. Therefore, there is no short circuit upgrade costs associated with this Facility Study.

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

Facility	ESTIMATED COST (2010 DOLLARS)
OKGE – <b>Interconnection Facilities</b> - Add a single 138kV line terminal to the existing Gracemont Substation. Dead end structure, line relaying, revenue metering including CTs and PTs	<b>\$128,370</b>
OKGE – <b>Network Upgrades</b> at Gracemont sub, 1-138kV breaker, line relaying, disconnect switches, and associated equipment	<b>\$743,616</b>
OKGE - Right-of-Way for 138kV terminal addition	No Additional ROW
<b>Total</b>	<b>\$871,986</b>

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December 13, 2010

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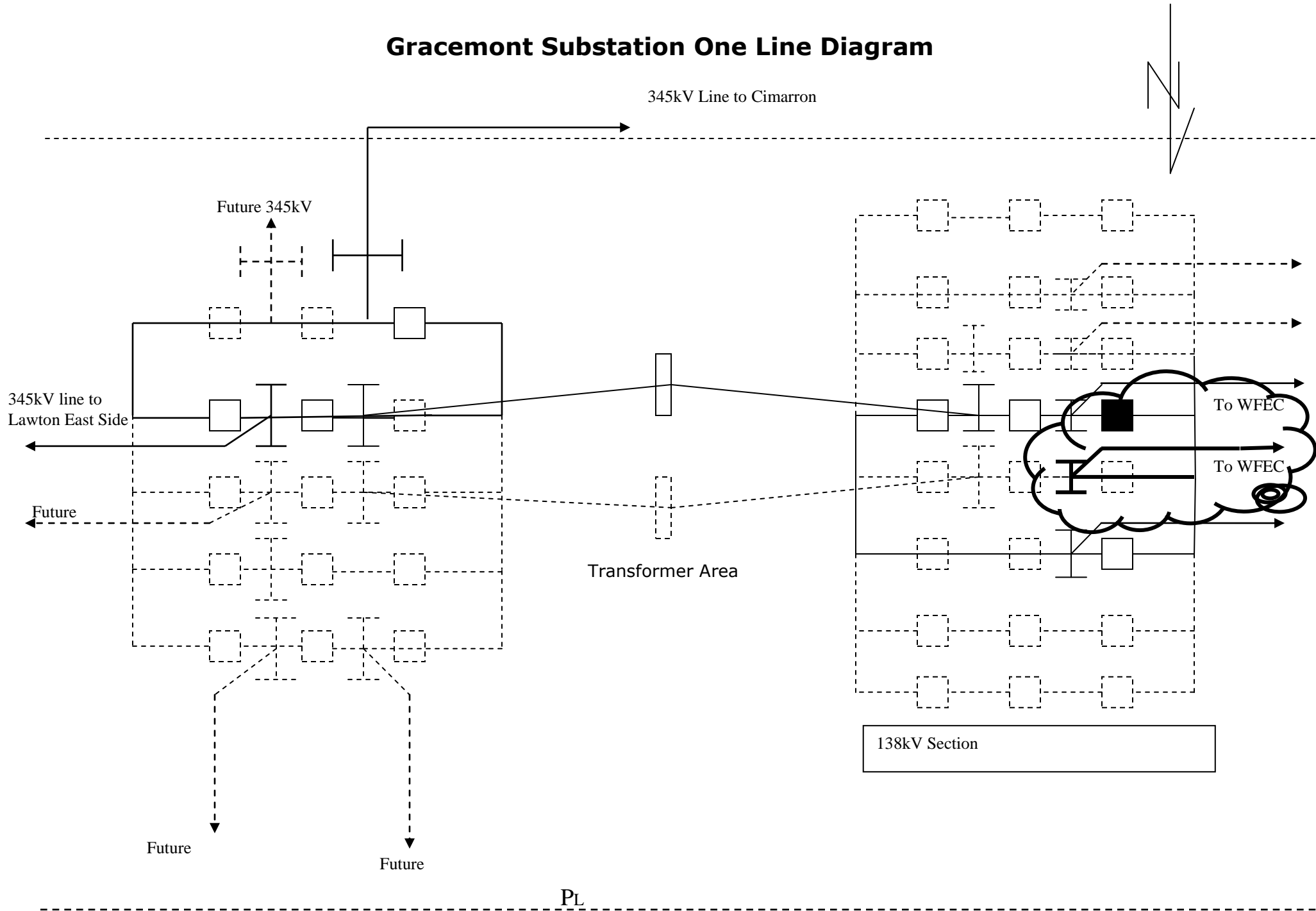
*Philip L. Crissup*

*December 14, 2010*

Philip L. Crissup  
Director, Regional Transmission Affairs



# Gracemont Substation One Line Diagram



PL