



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

***Southard – Roman Nose – El Reno 138kV
Transmission Line***

(OKGE)

SPP Tariff Studies

(#FCS-2011-001)

February 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 Southard to Roman Nose to El Reno, including the required substation work to accommodate the increased capacity.

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 cost to rebuild the 138kV transmission line from Southard to Roman Nose to El Reno is \$24,431,134. The Interconnection Customers' total shared upgrade costs are broken down as follows for each project:

Project	Shared Upgrade Cost
GEN-2011-019	\$12,215,567.00
GEN-2011-020	\$12,215,567.00

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 Southard Substation
Near
Canton, Oklahoma
To
Roman Nose Substation
Near
Watonga, Oklahoma
To
El Reno Substation
Near
El Reno, 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 Southard substation to Roman Nose substation to El Reno substation to 2000A capacity as well as the work necessary at Southard, Roman Nose and El Reno substations to accommodate 2000A. It will be necessary to completely reconstruct approximately 48.28 miles of 138kv transmission line and install a new transmission line with 2-795ACSR conductors per phase to accommodate 2000A under emergency conditions. The distance from Southard to Roman Nose is approximately 17.28 miles and from Roman Nose to El Reno is approximately 31 miles. The cost to rebuild approximately 48.28 miles of 138kV transmission line with bundled 795ACSR is estimated to be \$23,791,134.

In order for Southard, Roman Nose and El Reno substations to accommodate 2000A it will be necessary to replace a dead-end structure, rebuild bus work to 2000A and replace 1200A switches with 2000A switches at Southard, replace a dead-end structure rebuild bus work to 2000A and replace 1200A switches with 2000A switches at Roman Nose substation, and replace a dead-end structure rebuild bus work to 2000A and replace 1200A switches with 2000A switches at El Reno substation at a total cost for all substation work of \$650,000.

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.

Table of Contents

Table of Contents	3
Introduction	4
Interconnection Facilities	5
Interconnection Costs	6
Line route form Southard to Roman Nose to Glass Mountain	7
Southard Substation Diagram	8
Roman Nose Substation Diagram	9
El Reno Substation Diagram	10

Introduction

The Southwest Power Pool has requested a Facility Study for the purpose of rebuilding a 138kV transmission line between Southard, Roman Nose and El Reno substations within the service territory of OG&E Electric Services (OKGE) in Canadian, Kingfisher, and Blaine Counties Oklahoma to 2000A capacity. Each of the substations have 1200A switches that will be replaced with 2000A switches as well as dead-end structures that will be necessary to replace and bus work to be rebuilt. The total cost to rebuild 48.28 miles of transmission line from Southard to Roman Nose to El Reno substations and replace all 1200A switches, dead-end structure and bus work in each of the substations is \$24,441,134

Connection Facilities

The primary objective of this study is to identify attachment facilities. The requirements for connection consist of replacing dead-end structures and 1200A switches at Southard, Roman Nose and El Reno substations. This 138kV replacement will be constructed and maintained by OKGE.

The total cost for OKGE to replace dead-end structures and bus work and replacing 1200A switches with 2000A switches at Southard, Roman Nose and El Reno substations is \$650,000.

The costs of replacements at Southard, Roman Nose and El Reno substations and 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

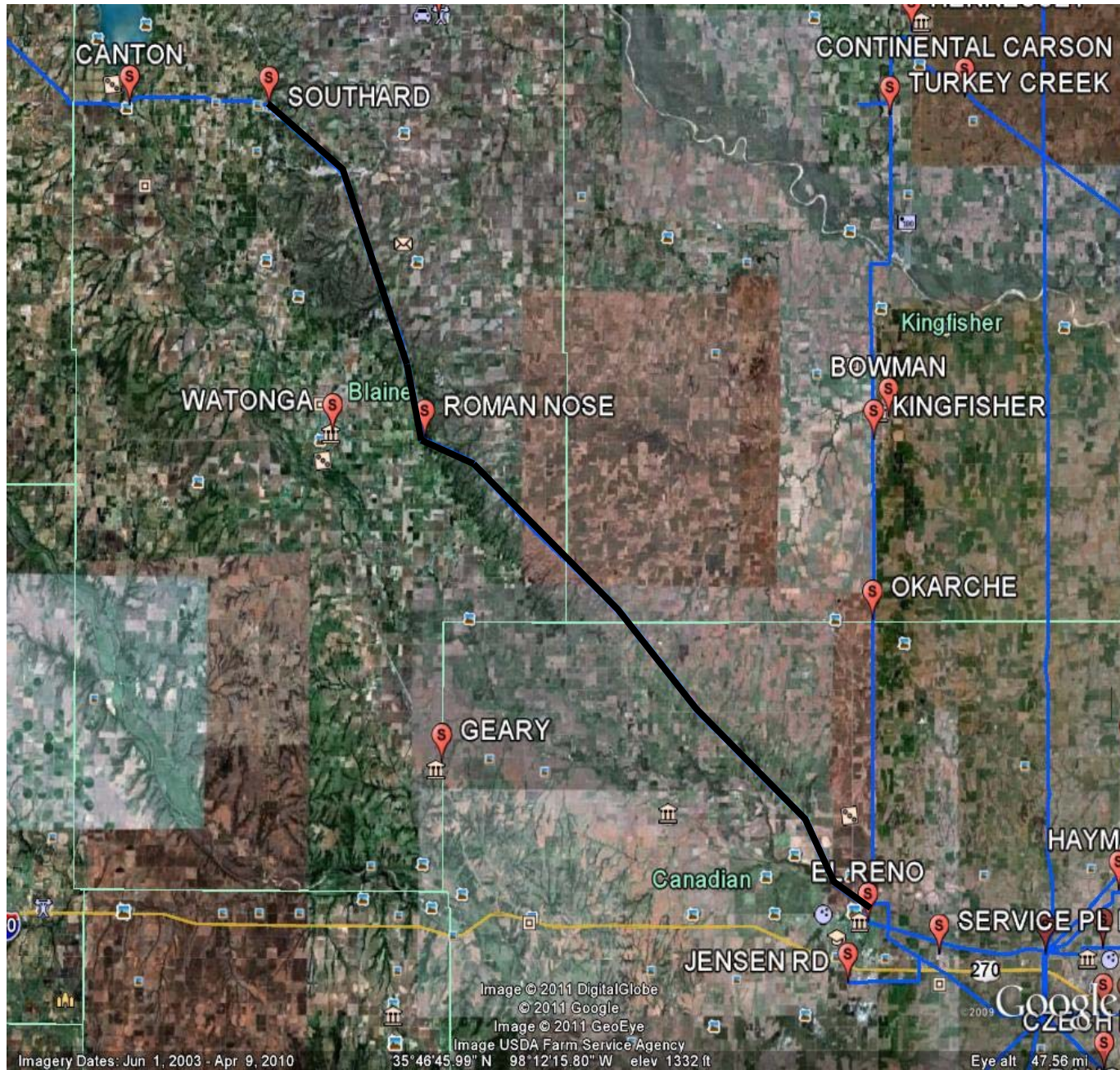
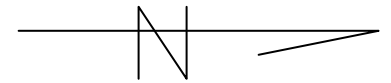
Facility	ESTIMATED COST (2011 DOLLARS)
OKGE – Network Upgrades Southard substation, Replace Dead-End Structure, Replace Bus Work, Replace a 4-1200A switches with a 4-2000A switches.	\$150,000
OKGE – Network Upgrades Roman Nose substation, Replace Dead-End Structure, Replace Bus Work, Replace a 4-1200A switches with a 4-2000A switches El Reno substation, Replace a 3-1200A switches with 3-2000A switches	\$150,000
OKGE – Network Upgrades El Reno substation, Replace Dead-End Structure, Replace Bus Work, Replace 3-1200A switches with a 3-2000A switches, Replace 1200A Wave Trap with 2000A Wave Trap	\$350,000
OKGE – Transmission line H Frame, bundled 795ACSR, 2000A, steel shield wire, approximately 48.28 miles	\$23,791,134
Total	\$24,441,134

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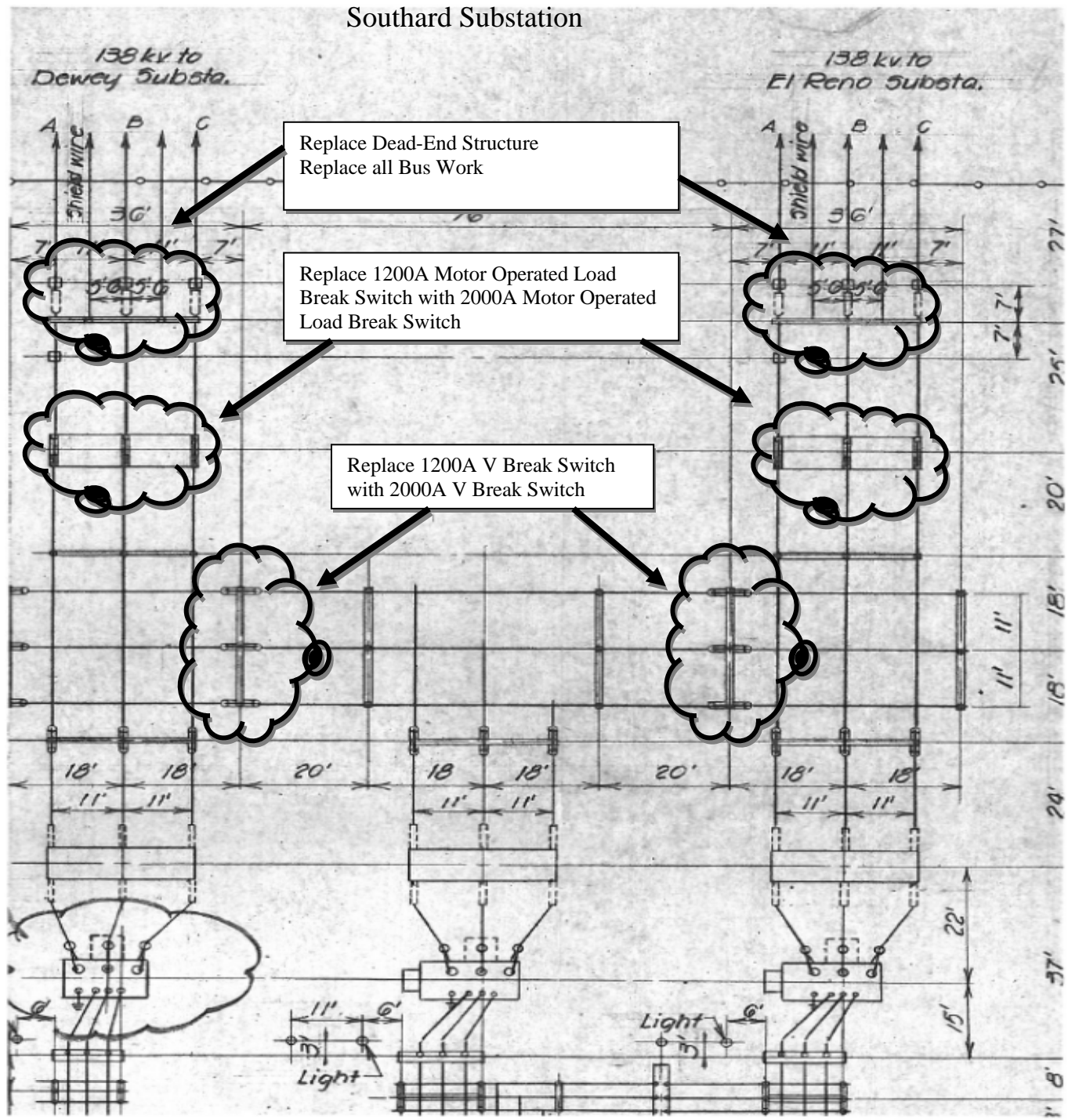
February 02, 2012

Reviewed by:
Travis D. Hyde
Travis D. Hyde
Director T&D Planning & Control

138kV Transmission Line Route from Southard to Roman Nose to El Reno

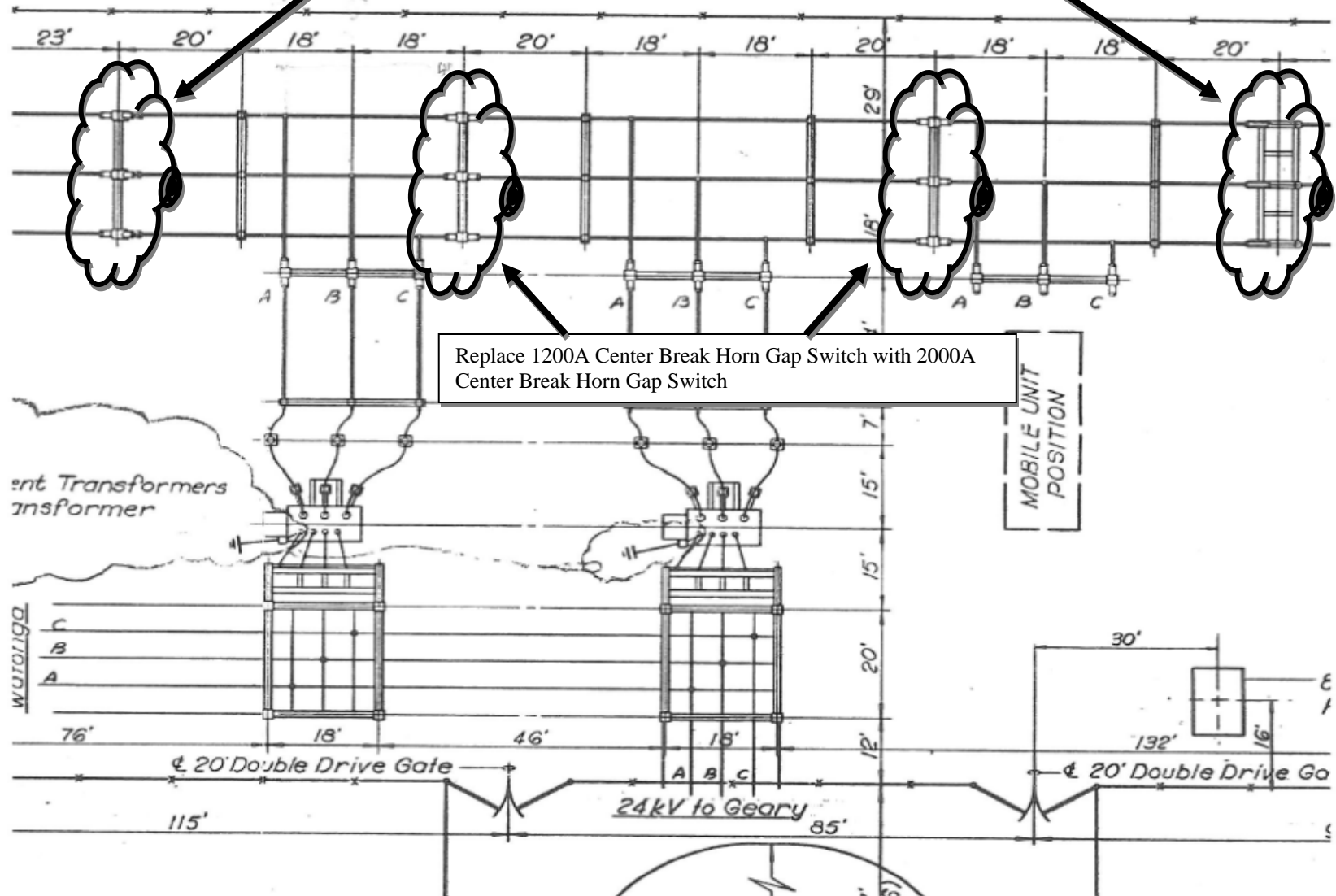


Southard Substation



Roman Nose Substation

Replace 1200A Vertical Break Load Interrupting Switch with 2000A Vertical Break Load Interrupting Switch, Replace Dead-End Structures and Bus Work



El Reno Substation

