



***FCS-2008-001 Shared Facility Study
for
Transmission Facilities in SPS***

SPP Tariff Studies

(#FCS-2008-001)

March 2010

Summary

Southwestern Public Service Company (SPS) provided upgrade costs at the request of the Southwest Power Pool (SPP) for generation interconnection requests included in FCS-2008-001. 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, Southwestern Public Service Company 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-2007-005
GEN-2007-008
GEN-2007-034
GEN-2007-045
GEN-2007-046
GEN-2007-048
GEN-2007-057
GEN-2008-008
GEN-2008-009
GEN-2008-014
GEN-2008-016

Shared Interconnection Upgrade Facilities Costs

The FCS-2008-001 Interconnection Customers are included in the 1st Cluster Study approved in FERC Docket #ER09-262. The Interconnection Customer's shared upgrade costs are shown in the four tables that follow. The description of each upgrade can be found in FCS-2008-001, Appendix G.

Conway-Wheeler County 345kV ckt #1

GEN-2007-005:	\$4,927,846.19
GEN-2007-008:	\$4,711,278.83
GEN-2007-034:	\$1,840,196.60
GEN-2007-045:	\$29,380,240.85
GEN-2007-046:	\$4,002,740.55
GEN-2007-048:	\$9,253,560.02
GEN-2007-057:	\$913,307.10
GEN-2008-008:	\$374,611.45
GEN-2008-009:	\$749,410.67
GEN-2008-016:	\$1,563,916.74
<u>Total:</u>	<u>\$57,717,109.00</u>

Conway 345/115kV Transformer

GEN-2007-005:	\$301,406.76
GEN-2007-008:	\$288,160.64
GEN-2007-034:	\$112,553.78
GEN-2007-045:	\$1,797,012.92
GEN-2007-046:	\$244,823.61
GEN-2007-048:	\$565,984.70
GEN-2007-057:	\$55,861.51
GEN-2008-008:	\$22,912.73
GEN-2008-009:	\$45,836.95
GEN-2008-016:	\$95,655.40
<u>Total:</u>	<u>\$3,530,209.00</u>

Wheeler County-Anadarko 345kV ckt#1

(Note: This allocation covers only the SPS/Texas portion of the upgrade. The OGE/Oklahoma portion of the upgrade is covered in another study.)

GEN-2007-005:	\$571,628.92
GEN-2007-008:	\$1,370,768.68
GEN-2007-034:	\$552,300.00
GEN-2007-045:	\$874,647.31
GEN-2007-046:	\$516,122.48
GEN-2007-048:	\$1,328,483.26
GEN-2007-057:	\$102,421.40
GEN-2008-008:	\$222,899.88
GEN-2008-009:	\$220,906.89
GEN-2008-014:	\$391,189.28
GEN-2008-016:	\$921,156.90
<u>Total:</u>	<u>\$7,072,525.00</u>

Wheeler County 345/230kV Transformer

GEN-2007-005:	\$921,765.80
GEN-2007-008:	\$8,508,522.95
GEN-2007-034:	\$58,698.39
GEN-2007-046:	\$727,055.39
GEN-2007-048:	\$1,714,212.28
GEN-2007-057:	\$159,926.59
GEN-2008-009:	\$27,253.61
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Total:	\$12,117,435.00

These cost allocations are subject to change for restudies conducted by the Transmission Provider in response to the higher queued customers or other customers in the 1st Cluster that withdraw their interconnection request or suspend, terminate, or request unexecuted filings of their LGIAs. For the Wheeler County-Anadarko 345kV ckt#1 upgrade the costs shown in this report are only for the Texas portion of the upgrade. There are additional costs for the upgrades on the Oklahoma portion and will be reported in a separate study.

Appendix A: SPS Shared Facilities Costs

**SHARED FACILITIES STUDY of
SPS TRANSMISSION FACILITIES**

for

Facility Request FCS-2008-001

Introduction

The Southwest Power Pool (SPP) has determined the need for a Shared Facilities Study for the purpose of interconnecting Generation Interconnection Cluster Study Customers. In ICS-2008-001, Restudy #1, SPP has identified four network upgrades in the SPS area that need to be studied for implementation for the following Generation Interconnection Cluster Study Customers:

GEN-2007-005
GEN-2007-008
GEN-2007-034
GEN-2007-045
GEN-2007-046
GEN-2007-048
GEN-2007-057
GEN-2008-008
GEN-2008-009
GEN-2008-014
GEN-2008-016

The four network upgrades are as follows:

1. Build 10 miles 345 kV transmission line from Wheeler (State Line) to Texas/Oklahoma border.
2. Build 80 miles 345 kV transmission line from Wheeler (State Line) to Conway Interchange.
3. Build the Wheeler (State Line) Interchange to include 345/230 kV autotransformer.
4. Expand Conway Interchange to include 345/115 kV autotransformer.

Network Upgrades

The primary objective of this study is to identify certain Network Upgrades required for the interconnection of previously mentioned Generation Interconnection Customers to the network. The requirements for interconnection consist of adding the four upgrades described in the following subsections. These upgrades shall be constructed and maintained by SPS (unless specified different at a later time). For the transmission lines a preferred route will be determined once the project(s) has been approved.

The costs associated for each upgrade are shown in each subsection.

1. Wheeler (State Line) to Texas/Oklahoma border 345 kV Transmission Line

This upgrade is the addition of 10 miles of 345 kV transmission line from the Wheeler (State Line) Interchange to the Texas/Oklahoma border. The 345 kV transmission line continues from the Texas/Oklahoma border to the Anadarko Interchange in Oklahoma, but this portion of the transmission line comes under the responsibility of another entity. Table 1 shows the costs of this upgrade.

Facility	ESTIMATED COST (2010 DOLLARS)
SPS – Transmission line, bundled 795 ACSR, 2000A, steel shield wire. 10 miles from Wheeler (State Line) Interchange to Texas/Oklahoma border	\$6,427,525
SPS – Right of Way for above lines	\$645,000
Total	\$7,072,525

Table 1: Wheeler (State Line) to Texas/Oklahoma border 345 kV Transmission Line

2. Conway-Wheeler (State Line) 345 kV Transmission Line

This upgrade is the addition of 80 miles of 345 kV line between the Conway Interchange and the Wheeler (State Line) Interchange. The costs for this upgrade are shown in Table 2.

Facility	ESTIMATED COST (2010 DOLLARS)
SPS – Transmission line, bundled 795ACSR, 2000A, steel shield wire. 80 miles from Conway Interchange to Wheeler (State Line) Interchange.	\$54,147,109
SPS – Right of Way for above lines	\$3,570,000
Total	\$57,717,109

Table 2: Conway-Wheeler (State Line) 345 kV Transmission Line

3. Wheeler (State Line) Interchange

This upgrade is for construction of the Wheeler (State Line) Interchange 345 kV. It includes the addition of a 345/230 kV autotransformer. The costs for this upgrade are shown in Table 3.

Facility	ESTIMATED COST (2010 DOLLARS)
SPS – Build Wheeler (State Line) Interchange. Does not include Reactors. Includes the TUCO – Woodward 345 kV transmission line in and out. Includes 345/230 kV autotransformer.	\$12,012,435
SPS – Land for above	\$105,000
Total	\$12,117,435

Table 3: Conway-Wheeler (State Line) 345 kV Transmission Line

4. Conway Interchange 345/115 kV Autotransformer

This upgrade is for adding a 345/115 kV autotransformer to the Conway Interchange. The costs associated with this upgrade are shown in Table 4.

Facility	ESTIMATED COST (2010 DOLLARS)
SPS – Add 345/115 kV autotransformer.	\$3,505,209
SPS – Land for above expansion	\$25,000
Total	\$3,530,209

Table 4: Conway-Wheeler (State Line) 345 kV Transmission Line

Short Circuit Fault Duty Evaluation

It is standard practice 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.

Fault current information was sent to SPS. At the time of this posting, no breakers in the SPS area were found to exceed their interrupting capability after the addition of the related facilities.