



***FCS-2010-002 Shared Facility Study  
for  
Transmission Facilities***

***Beaver County – Gray County 345kV Transmission  
Line***

***(SUNC)***

***SPP Tariff Studies***

***(#FCS-2010-002)***

***July 2011***

## Summary

Sunflower Electric Power Corporation (SUNC) provided Facility Studies at the request of the Southwest Power Pool (SPP) for generation interconnection requests included in FCS-2010-002 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, SUNC 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 addition of a 345kV transmission line from Beaver County to Gray County.

## Generation Interconnection Customers

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

GEN-2010-001
GEN-2010-043
GEN-2010-045
GEN-2010-049
GEN-2010-052
GEN-2010-053

These interconnection customers are included in the DISIS-2010-002 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 add the 345kV transmission line from Beaver County to Gray County is \$64,600,000. The Interconnection Customers' total shared upgrade costs are broken down as follows for each project:

Project	Shared Upgrade Cost
GEN-2010-001	\$19,161,908
GEN-2010-043	\$8,699,224
GEN-2010-045	\$17,196,191
GEN-2010-049	\$867,483
GEN-2010-052	\$11,079,409
GEN-2010-053	\$7,595,781

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-2010-002 Impact Study that withdraw their interconnection request or suspend, terminate, or request unexecuted filings of their GIAs.

## **Executive Summary**

Pursuant to the tariff and at the request of the Southwest Power Pool (SPP), Sunflower Electric Power Corporation (SUNC) performed the following Facility Study to satisfy a Southwest Power Pool request in conjunction with DISIS-2010-002. The requirements of the study consist of installing one (1) breaker and one (1) new line terminal at the planned Gray County substation, and constructing 48 miles of the proposed transmission line between Beaver County Substation and Gray County Substation. The total cost for SUNC to install a 345kV breaker, a new line terminal, and constructing 48 miles of the proposed transmission line between Beaver County Substation and Gray County Substation is estimated at \$64,600,000.

## 1. Introduction

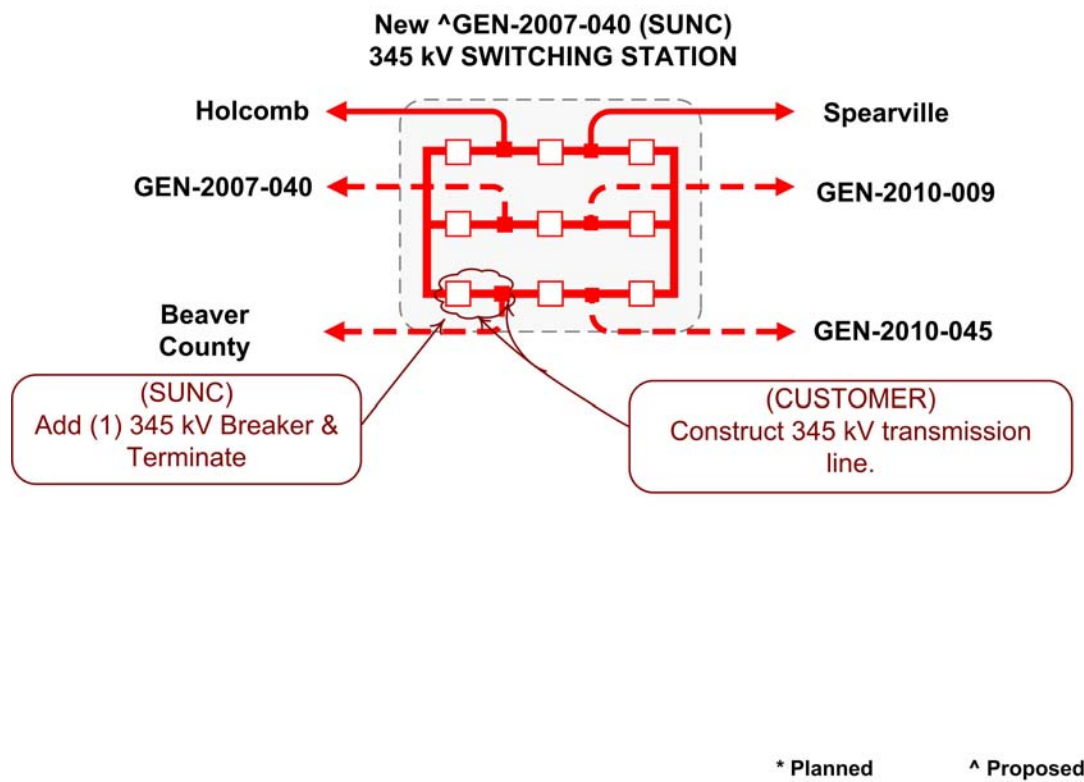
The Southwest Power Pool has requested a Facility Study for the purpose of interconnecting SUNC Gray County Substation within the service territory of SUNC in Gray County Kansas to the Beaver County Substation in Oklahoma located in the Oklahoma Gas and Electric service territory. This facility Study is for the cost of adding one (1) new breaker, one (1) new line terminal, and constructing 48 miles of the proposed transmission line between Beaver County Substation and Gray County Substation. The cost for adding a new breaker, a new 345kV terminal to the Gray County Substation, and constructing approximately 48 miles of transmission line, is estimated at \$64,600,000.

## 2. Interconnection Facilities and Network Upgrades

The cost for the Interconnection Facilities and Network Upgrades is listed below in Table 1. The one-line diagram is shown in Figure 1.

**Table 1: Required Interconnection Facilities and Non Shared Network Upgrades**

<b>Project</b>	<b>Description</b>	<b>Estimated Cost</b>
1	SUNC-add 345kV breaker and half leg to the ring bus at the planned Gray County substation, and terminate (reactor included).	\$7,000,000
2	Beaver County – Gray County 345kV CKT 1 Build approximately 48 miles of 345kV line	\$57,600,000
	<b>Total:</b>	<b>\$64,600,000</b>



**Figure 1. Gray County 345kV Substation**

### 3. Conclusion

The costs to add 48 miles of 345kV transmission line and add a 345kV line terminal to the Gray County Substation are estimated at \$64,600,000.