



**Facility Study  
For  
Generation Interconnection  
Request  
GEN-2012-036**

***SPP Generator  
Interconnection Studies***

***(#GEN-2012-036)***

**August 2013**

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## Revision History

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Date	Author	Change Description
8/26/2013	SPP	Facility Study Report Issued

## Summary

Xcel Energy Inc (Xcel), a subsidiary of Southwestern Public Service Company (SPS), performed a detailed Facility Study at the request of Southwest Power Pool (SPP) for Generation Interconnection request GEN-2012-036 (7 MW Uprate/Combustion Turbine) located in Yoakum County, Texas. The originally proposed in-service date for GEN-2012-036 was Jun 1, 2013, however SPP has proposed a new in-service date that will be after the assigned Shared Network Upgrade are constructed. The request for interconnection was placed with SPP in accordance with SPP's Open Access Transmission Tariff, which covers new generation interconnections on SPP's transmission system.

## Phases of Interconnection Service

It is not expected that interconnection service will require phases however, interconnection service will not be available until all interconnection facilities and network upgrades can be placed in service.

## Interconnection Customer Interconnection Facilities

The Interconnection Customer will be responsible for all of the transmission facilities connecting the customer owned substation to the Point of Interconnection (POI), at the Southwestern Public Service Company (SPS) owned 230kV bus at Mustang Substation. The Interconnection Customer will also be responsible for any equipment located at the Customer substation necessary to maintain a power factor of 0.95 lagging to 0.95 leading at the POI.

## Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades

To allow interconnection the Transmission Owner has verified the associated terminal equipment is adequate for acceptance of the Interconnection Customer's Interconnection Facilities. At this time GEN-2012-036 is responsible for \$0.00 of Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades.

## Shared Network Upgrades

The Interconnection Customer was studied within the DISIS-2012-002 Impact Study. At this time, the Interconnection Customer is allocated \$80,410.48 for Shared Network Upgrades. If higher queued interconnection customers withdraw from the queue, suspend or terminate their GIA, restudies will have to be conducted to determine the Interconnection Customers' allocation of Shared Network Upgrades. All studies have been conducted on the basis of higher queued interconnection requests and the upgrades associated with those higher queued interconnection requests being placed in service. At this time, the Interconnection Customer is allocated the following cost for Shared Network Upgrade:

Share Network Upgrade Description	Allocated Cost	Total Cost
TUCO 345/230/13.2kV Autotransformer CKT 3, Build and install a third TUCO 345/230/13.2kV autotransformer, install breakers, and associated terminal equipment.	\$80,410.48	\$9,274,171.00
Total	\$80,410.48	

## **Previous Network Upgrades**

Certain Other Network Upgrades are currently not the cost responsibility of the Customer but will be required for full Interconnection Service. These Other Network Upgrades include:

1. TUCO Interchange – Border – Woodward 345kV circuit #1, scheduled for 5/19/2014 in service
2. Hitchland – Woodward 345kV double circuit, scheduled for 6/30/2014 in-service
3. Beaver County – Buckner 345kV circuit #1, assigned to DISIS-2011-001 Customers
4. Beaver County Expansion – Tap and Tie Hitchland 345kV circuit #2, assigned to DISIS-2011-001 Customers
5. Mustang – Yoakum 230kV circuit #1 terminal equipment upgrade, assigned to DISIS-2011-002 Customers
6. Amoco Wasson – Oxy Tap - Yoakum 230kV circuit #1 terminal equipment upgrade, assigned to DISIS-2011-002 Customers
7. Thistle – Woodward 345kV double circuit, scheduled for 12/31/2014 in-service
8. TUCO Interchange 345/230/13kV autotransformer circuit #2, scheduled for 10/1/2013 in-service

Depending upon the status of higher or equally queued customers, the Interconnection Customer's in-service date is at risk of being delayed or their Interconnection Service is at risk of being reduced until the in-service date of these Other Network Upgrades.

## **Conclusion**

Interconnection Service for GEN-2012-036 will be delayed until the Shared Network Upgrade is constructed. The Interconnection Customer is responsible for \$0.00 of Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades. At this time, the Interconnection Customer is allocated \$80,410.48 for Shared Network Upgrades. After the Shared Network Upgrade has been placed into service, Interconnection Service for 7 MW, as requested by GEN-2012-036, can be allowed. At this time the total allocation of costs assigned to GEN-2012-036 for Interconnection Service are estimated at \$80,410.48.

**1. Introduction**

<OMITTED TEXT> (Customer) has requested a Facility Study under the Southwest Power Pool Open Access Transmission Tariff (OATT) for interconnecting a 7 MW uprate to an existing facility in Yoakum County, Texas to the transmission system of Southwestern Public Service Company (SPS). The Interconnection Customer will utilize the existing generation lead to the Point of Interconnection (POI) at Mustang 230kV.

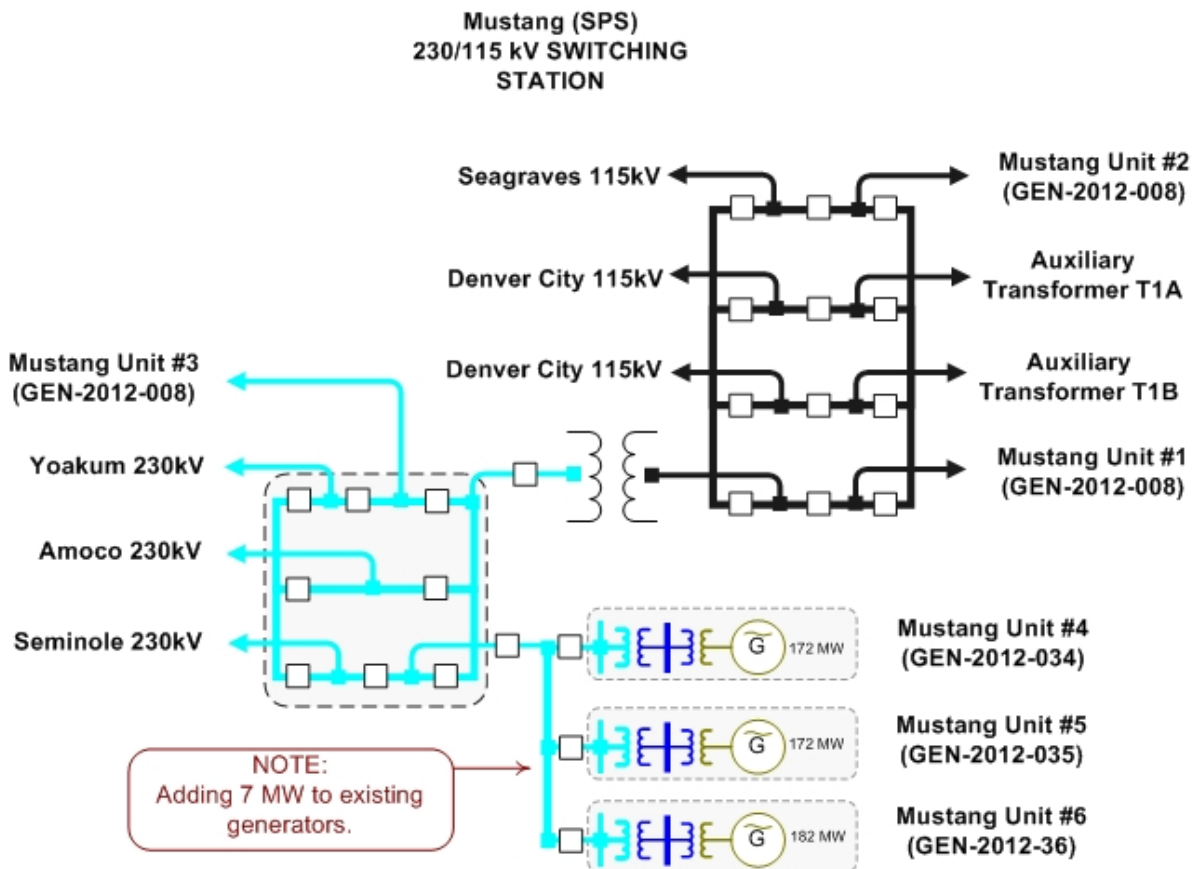
**2. Interconnection Facilities and Network Upgrades**

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 Transmission Owner Interconnection Facilities and Non Shared Network Upgrades**

Project	Description	Estimated Cost
1	None	\$0.00
	<b>Total:</b>	<b>\$0.00</b>

**Figure 1: Interconnection Configuration for GEN-2012-034**



**2.1. Customer Facilities** – The Customer will be responsible for its Generating Facility and its existing 230/18.5kV transformer that connects to the uprate and existing combustion turbine generation. In addition, the Customer will be required to install the following equipment in its facilities.

**2.1.1. Reactive Power Equipment** – The Customer will be responsible for reactive power compensation equipment to maintain 95% lagging (providing vars) and 95% leading (absorbing vars) power factor at the point of interconnection. Any capacitor banks installed by the Interconnection Customer shall not cause voltage distortion in accordance with Article 9.7.4 of the standard SPP Generation Interconnection Agreement.

### **3. Conclusion**

The Interconnection Customer's Interconnection Facilities and non-shared Network Upgrades are estimated at \$0.00.