



***Facility Study for Generation  
Interconnection Request  
GEN – 2003 – 005***

***SPP Coordinated Planning  
(#GEN-2003-005)***

**April, 2005  
Amended November, 2005**

## Summary

Western Farmers Electric Cooperative (WFECC) performed the following Study at the request of the Southwest Power Pool (SPP) for Generation Interconnection request Gen-2003-005. The request for interconnection was placed with SPP in accordance SPP's Open Access Transmission Tariff, which covers new generation interconnections on SPP's transmission system.

Pursuant to the tariff, WFECC was asked to perform a detailed Facility Study of the generation interconnection request to satisfy the Facility Study Agreement executed by the requesting customer and SPP.

It should be noted that this Facility Study is valid provided that the Customer installs the 34.5, 30MVAR Static Var Compensator (SVC) in the Customer substation as required in the Impact Re-Study posted in September, 2005. If for some reason the Customer does not install the SVC, the Facility needs for this Generation Interconnection Request will need to be re-evaluated.

*Generation Interconnection Facility  
Study*

*For*

*GEN-2003-005*

*Western Farmers Electric Cooperative*

**April 2005**

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## **Introduction**

The Southwest Power Pool (SPP) has requested a Facility Study for interconnecting Gen-2003-005 100 MW wind farm to a new switching station on the Western Farmers Electric Cooperative (WFEC) Paradise to Anadarko 138 kV transmission line located near Apache, Oklahoma.

The wind farm will be connected to a new switching station with approximately a five mile radial 138 kV transmission line. The new switching station will be connected into the Anadarko and Paradise existing 25 mile 138 kV line.

The purpose of this study is to identify the facilities and their costs that are needed to interconnect the Customer's wind farm with the Southwest Power Pool transmission system. This facility study is done in conjunction with SPP Feasibility and Impact Studies for Generation Interconnection Request GEN-2003-005.

WFEC will construct a new three breaker ring switching station on the Paradise to Anadarko 138 kV transmission line.

A detailed description of all costs associated with the construction of this new switching station is shown in Table 1.

## **Interconnection Facilities (See Figures 1 and 2)**

### New Switching Station – New construction (138 kV)

The proposed Customer's plant is to be interconnected with a new switching station, with approximately a five mile radial 138 kV tap line. The station will be constructed as a three breaker switching station.

### Short Circuit Fault Duty Evaluation

It is standard practice for WFEC 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 Customer's 100MW generation and related facilities. WFEC found no breakers that exceeded their interrupting capabilities on the systems. Therefore there are no short circuit upgrade costs associated with the Gen-2003-005 interconnection.

## **Interconnection Costs**

Listed below are WFEC's costs associated with interconnecting the Customer's 100 MW wind farm generation facility to the Southwest Power Pool transmission system.

SYSTEM IMPROVEMENT	COST (2005 DOLLARS)
Construct new switching station at Paradise – three breaker ring.	\$1,920,000
<b>TRANSMISSION INTERCONNECTION FACILITY WFEC TOTAL COSTS</b>	<b>\$1,920,000</b>

# New Switching Station One-line Diagram





