



***Facility Study for Generation
Interconnection Request
GEN-2007-051***

***SPP Tariff Studies
(#GEN-2007-051)
February 2010***

Summary

Western Farmers Electric Cooperative (WFEC) performed the following Study at the request of the Southwest Power Pool (SPP) for Generation Interconnection request Gen-2007-051. 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, WFEC 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.

Interconnection Customer Interconnection Facilities

The Interconnection Customer will be responsible for the 138kV transmission line from the point of interconnection to its 138/34.5kV substation that will contain its 138/34.5kV transformer(s) and wind turbine collector feeders. In addition, the Customer will be required to maintain a +/- 95% power factor at the point of interconnection (WFEC Mooreland 138kV substation).

Transmission Owner Interconnection Facilities and Non Shared Network Upgrades

Per the following Facility Study, the Interconnection Customer is responsible for \$1,500,000 of Transmission Owner Interconnection Facilities and \$1,000,000 of non shared Network Upgrades.

Shared Network Upgrades

The GEN-2007-051 Interconnection Customer is included in the 1st Cluster Study approved in FERC Docket #ER09-262. The Interconnection Customer's shared upgrade costs are \$10,140,992. This cost is subject to change depending upon the Facility Study for the shared network upgrades. This cost is also 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.

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Introduction

The Southwest Power Pool (SPP) has requested a Facility Study for interconnecting a 138kV interconnection for a 200 MW wind farm facility near Mooreland, Oklahoma. The windfarm will connect to OG&E's Collector Station. Collector Station is connected to WFEC's Mooreland Switchyard with 20 miles of transmission.

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-2007-051.

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 200MW generation and related facilities. WFEC found no breakers that exceeded their interrupting capabilities on the system. Therefore there are no short circuit upgrade costs associated with the Gen-2007-051.

Power Flow Evaluation

WFEC found no issues with interconnecting 200 MW of generation to Mooreland Switchyard.

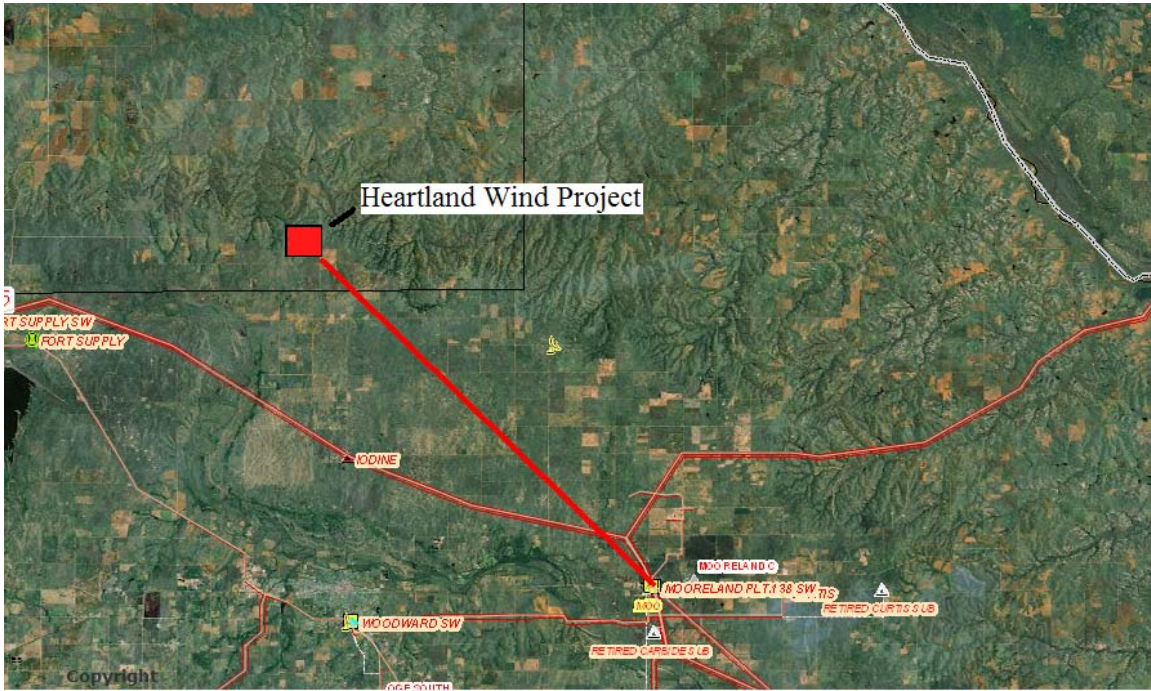
Interconnection Costs

Listed below are WFECC's costs associated with interconnecting the Customer's 200 MW wind farm generation facility to the Southwest Power Pool transmission system.

Power flow analysis has indicated that for the power flow cases studied, it is possible to interconnect the 200 MW of generation with the addition of a circuit (breaker, switches, and relay) and an upgrade to the bus Tie Breaker.

SYSTEM IMPROVEMENT	COST
Additional Circuit (Breaker, 3 Switches, and Relay)	\$1,500,000
Upgrades to the Bus Tie Breaker (4 Switches and 1 Breaker)	\$1,000,000
Total Cost	\$2,500,000

WFEC lines in GEN-007-051 Area



Mooreland One-Line Diagram

