SPP Southwest Power Pool

Facility Study For Generation Interconnection Request GEN-2008-037

SPP Tariff Studies

(#GEN-2008-037)

February 2011

Summary

Western Farmers Electric Cooperative performed the following study at the request of Southwest Power Pool (SPP) for Generation Interconnection request GEN-2008-037. 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.

Pursuant to the tariff, Western Farmers Electric Cooperative (WFEC) was asked to perform a detailed Facility Study of the generation interconnect request to satisfy the agreement executed between the requesting customer and SPP. The WFEC Study follows this summary.

Interconnection Customer Interconnection Facilities

The Interconnection Customer will be responsible for the 138 kV transmission line from the Wind turbine Collector Substation to the 138 kV Interconnection Substation near Apache, Ok. Additionally, the customer will be responsible for reactive power compensation equipment to maintain a power factor of 95% lagging (providing vars) and a power factor of 95% leading (absorbing vars) at the point of interconnection (WFEC's Washita 138kV substation).

Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades

Per the following Facility Study, the Interconnection Customer will be responsible for an estimated $1,500,000 in costs to construct the Interconnection Substation near Apache, OK.

Shared Network Upgrades

The Interconnection Customer is part of DISIS-2010-001 with a latest estimation of its shared cost allocation at approximately $2,905,561 out of a total $5,821,986 in shared upgrade costs. However, because the customer has requested an expedited in-service date, the customer will initially be required to fund the full $5,821,986 in Shared Network Upgrade costs. When equally queued customers with these shared costs in DISIS-2010-001 give authorization to proceed, the interconnection customer will be able to recoup the difference in their estimated cost allocation and the full estimated cost of the Interconnection Facilities and Network Upgrades.

Details of the shared cost allocation is shown in the following table:

1. Washita – Gracemont 138kV CKT 2. Build approximately 11 miles of 138kV.	$2,903,533
2. Lake Creek – Lone Wolf 69 kV CKT 1. Reset CT	$2,028
Shared Network Upgrade Costs - TOTAL	**$2,905,561**

Additional Required Network Upgrades

The Interconnection Customer is required to delay generation in-service date until the Balanced Portfolio project, Gracemont 345/138kV Autotransformer and substation, has been placed in service. Interconnection Customer has does not have cost responsibility for this project.

WESTERN FARMERS ELECTRIC COOPERATIVE

FACILITY STUDY

For

Generation Interconnection Request 2008-037

100 MW Wind Generation Facility

In Caddo County

Near

Apache, Ok.

October 21, 2010

SUMMARY

Pursuant to the tariff and at the request of the Southwest Power Pool (SPP), Western Farmers Electric Cooperative (WFEC) performed the following facility Study to satisfy the Facility Study agreement executed by the requesting customer for SPP Generation Interconnection request Gen-2008-037. 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. The requirements for interconnection consist of constructing a new 138 kV substation with a single circuit breaker and associated equipment. A single breaker at the interconnect station was agreed upon, however, if reliability or expansion occurs in the future the customer will be responsible for upgrading the single breaker interconnect station to a three breaker ring bus solely at their expense. The customer will also be responsible for engineering, procuring, and constructing the 138 kV line from their collector station to the 138kV line near Blue Canyon. See table one for estimated costs for construction.

INTRODUCTION

The Southwest Power Pool has requested a facility Study for the purpose of interconnecting approximately 100MW of wind generation within the service territory of WFEC in Caddo county, Oklahoma. The interconnect station will be owned by WFEC. The proposed in-service date is October 31, 2011

Power Flow analysis has indicated that for the power flow case studied, it is possible to interconnect the 100 MW of generation with transmission reinforcements within the local transmission system. Given the point of interconnection there are additional requirements for interconnection including bus, breakers, switches, relaying, metering, etc.

See table one for estimated costs for construction. Other network constraints with OG&E or AEP should be verified with a transmission service request and associated studies.

INTERCONNECTION & TRANSMISSION FACILITIES

The requirements for interconnection consist of adding a new single breaker interconnect station near Blue Canyon. A single breaker at the interconnect station was agreed upon, however, if reliability of expansion occurs in the future the customer will be responsible for upgrading the single breaker interconnect station to a three breaker ring bus solely at their expense. Adequate land shall be acquired up front to accommodate a three breaker ring bus for future expansion should that occur.

The transmission line from Washita to Blue Canyon is a 26 mile radial line with 1590 ACSR conductor and is rated for 315 MW at Rate A and 482 MW at Rate B (emergency rating). With the current generation the line is approximately 72% loaded. With the addition of 100MW of new generation the line becomes loaded at 103% of Rate A . Since this line only serves wind farms today, it is allowed to exceed its normal rating assuming the wind is blowing at least 10Mph.

The collector sub is within a mile of the proposed site for the interconnect sub and it is assumed that the customer has acquired the necessary right-of-way for the interconnect transmission line.

The total cost for WFEC to add the interconnect station is estimated at $1,500,000. This does not include building the line from the collector substation to the interconnect station. In addition, the customer is required to maintain +/- 0.95% power factor at the point of interconnection to WFEC's facilities. For other costs see table one.

This facility study does not guarantee the availability of transmission service necessary to deliver additional generation to any specific point inside or outside of the SPP transmission system. The transmission network may not be adequate to deliver any additional generation output to the system. If

the customer requests firm transmission service under the SPP open access transmission tariff at a future date, network upgrades or other new construction may be required to provide the service.

The costs of interconnecting to WFEC's facilities are listed in Table one below.

Facility	Estimated Cost (2010 Dollars)
WFEC-Interconnection facility-Add a single 138 kV breaker station including dead-end structure, line switches,relaying equipment,revenue metering equipment, etc.	$1,500,000
Total	$1,500,000

Table One