SPP Southwest Power Pool

Facility Study

For

Generation Interconnection

Request

GEN-2010-012

SPP Generation

Interconnection

(#GEN-2010-012)

July 2011

Summary

Western Farmers Electric Cooperative performed the Generation request Gen-2010-012 at the request of SPP (Southwest Power Pool). The request for interconnection was placed with SPP in accordance with SPP's open Access Transmission Tariff, which cover new generation interconnections on SPP's transmission system.

Pursuant to the tariff, Western Farmers Electric Cooperative has performed this generation interconnect facility study to satisfy the agreement executed between the customer and SPP.

Customer Interconnection Facilities

It is assumed that the interconnection point to WFEC will be at the Brantley Substation. If this is not the case the customer must provide more clear details of the exact location of interconnection. The customer will be responsible for the 138kV line and right-of-way from the Wind turbine Collector Substation to the 138 kV Interconnection Substation at Brantley. The customer will also be responsible for the upgrade of electrical facilities at Brantley Substation as well as the 138 kV line from Brantley to the Windfarm Collector Station which according to the documentation provided is approximately 2.69 miles.

The customer will also be responsible for maintaining +/- 0.95 % power factor at the point of interconnection to WFEC's facilities.

Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades

Per the following Facility Study, the Interconnection Customer is responsible for **$3,500,000** of Transmission Owner Interconnection Facilities and non-shared network upgrades.

Shared Network Upgrades

The interconnection customer was studied within the DISIS-2010-002 Impact Restudy. At this time, the Interconnection Customer is allocated the following cost for shared network upgrades:

Upgrade Description	Allocated Cost	Total Cost
Clinton – Elk City 138kV. Rebuild 24 miles of 138kV transmission line between Clinton Junction and Elk City. Does not include substation work. (Construction by AEP)	$20,300,007	$20,300,007
Total	**$20,300,007**	

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.

WESTERN FARMERS ELECTRIC COOPERATIVE

FACILITY STUDY

For

Generation Interconnection Request 2010-012

65 MW Wind Generation Facility

In Dewey County

Near

Brantely, OK

July 12, 2011

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-2010-012. 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 exiting Brantley Substation is a distribution substation and will have to have a 3-breaker Ring-Bus added to accommodate the transmission line addition from the windfarm . The requirements for interconnection consist of constructing a 138 kV three breaker Ring-Bus and associated equipment. See table one for estimated costs for construction.

INTRODUCTION

The Southwest Power Pool has requested a facility Study for the purpose of interconnecting approximately 65MW of wind generation within the service territory of WFEC in Dewey County, Oklahoma. The interconnect station will be owned by WFEC. The proposed in-service date is July 1, 2014.

Power Flow analysis has indicated that for the power flow case studied, it is possible to interconnect the 65 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.

INTERCONNECTION & TRANSMISSION FACILITIES

The requirements for interconnection consist of adding a 138 kV three-breaker Ring-Bus to the existing Brantley Substation. Brantley Substation is a tap station with no circuit breakers . With the addition of another line a switching station will be required.

The transmission line is 336 ACSR conductor and is good for 106 MW at Rate A and 130 MW at Rate B (emergency rating). The addition 65 MW should not cause an overload on the WFEC transmission system in the area.

As stated in your request the collector sub is approximately 2.69 miles from 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 build the interconnect station at near Brantley Substation is estimated at $3,000,000. 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 (2011 Dollars)
WFEC-Interconnection facility(Brantley)-Add a 138kV three-breaker Ring-Bus Switching Station including right-of-way, dead-end structure, breakers, line switches, relaying, revenue metering, communications, and other necessary equipment, etc.	$3,500,000
Total	**$3,500,000**

Table One