Southwest Power Pool

Facility Study
For
Generation Interconnection Request
GEN-2012-028

SPP Generator Interconnection Studies

(#GEN-2012-028)

August 2013

Revision History

Date	Author	Change Description
8/27/2013	SPP	Facility Study Report Issued

Summary
Western Farmers Electric Cooperative (WFEC) performed a detailed Facility Study at the request of Southwest Power Pool (SPP) for Generation Interconnection request GEN-2012-028 (74.8 MW/Wind) located in Washita County, Oklahoma. The originally proposed in-service date for GEN-2012-028 was December 1, 2014. 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 Western Farmers Electric Cooperative owned Gotebo 69kV 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 will need to construct a new 69kV terminal and install one new breaker along with any associated terminal equipment for acceptance of the Interconnection Customer's Interconnection Facilities is adequate. Additionally, A Non-Shared Network Upgrade of resetting the CTs on Lake Creek – Lone Wolf 69kV circuit #1 will be needed. At this time GEN-2012-028 is responsible for $947,972.00 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 $0.00 for Shared Network Upgrades. If higher or equally 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
None	$0.00	$0.00
Total	$0.00	

Conclusion

The Interconnection Customer is responsible for $947,972.00 of Transmission Owner Interconnection Facilities and Non-Shared Network Upgrades. At this time, the Interconnection Customer is allocated $0.00 for Shared Network Upgrades.
At this time, the total allocation of costs assigned to GEN-2012-028 for Interconnection Service is estimated at $947,972.00.

Summary

Western Farmers Electric Cooperative performed this study 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 covers 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

The customer will be responsible for the Wind Turbine Collector Substation, 69kV transmission line to the 69kV switch and the 69kV breaker at the point of interconnection in Gotebo Substation.

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

WESTERN FARMERS ELECTRIC COOPERATIVE

FACILITY STUDY

For

Generation Interconnection Request 2012-028

74.8 MW Wind Generation Facilities

In Washita County

Near

Gotebo, Ok.

August 19, 2013

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-2012-028. 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 attaching 69kV line to Gotebo Substation facilities; standard 69kV tap structure, metering and communications.

See table 1 for estimated costs of construction.

INTRODUCTION

The Southwest Power Pool has requested a facility Study for the purpose of interconnecting approximately 74.8MW of wind generation within the service territory of WFEC in Washita County, Oklahoma.

Power Flow analysis has indicated that for the power flow case studied, it is possible to interconnect the 74.8 MW of generation without upgrades to the existing transmission system. Given the point of interconnection there are additional requirements for interconnection including bus, breakers, switches, relaying, metering, etc.

See table 1 for estimated costs of construction. Other network constraints with OG&E or AEP should be verified with a transmission service request and associated studies.

INTERCONNECTION & TRANSMISSION FACILITIES

There are WFEC requirements for interconnection of the additional 74.8 MW for GEN-2012-028.

The 69kV, 336.5ACSR, TH-1G transmission line is owned by WFEC and serves 22MW of peak load in the local area, with the addition of 74.8MW of new generation at peak production the existing WFEC transmission line becomes loaded at 98.1% of Rate A and 80.0% of Rate B during summer peak.

With the interconnection site at the existing WFEC Gotebo substation, a dead-end transmission structure and a line tap onto the point of interconnect will be needed from WFEC. WFEC will require customer to install a single breaker at Gotebo Substation, controllable by WFEC, along with appropriate relaying and switches in its collector substation to allow disconnection when necessary.

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 (2013 Dollars)
ROW, Environmental, Engineering	$150,000
Install 2-pole DE structure for line tap to Little Elk Wind interconnection and any changes to existing substation	$150,000
Temporary transmission facilities, for connection to WFEC bus if required	$100,000
New 69kVbay, Breaker, Metering and communications	$350,000
Total	$750,000

Table 1