PJM Generator Interconnection Request
Queue Position #S29B
Somerset 23 kV
Feasibility Study Report

October 2007

Queue Position #S29B – Somerset 23 kV
Generation Interconnection

General

The Interconnection Customer (IC) has proposed the installation of 4 methane fired generators totaling 6.9 MW at their facilities on 5706 Glades Pike Road in Somerset, Pennsylvania (shown in Figure 2 of the Appendix). This generation has a proposed in-service date of June 1, 2008. The Queue Position #S29B project was studied as an injection of 5.7 MW at the existing facility on the Friedens 23 kV circuit, which is fed off Somerset substation. Queue Position #S29B was evaluated for compliance with reliability criteria for summer peak conditions in 2008 and 2009.

Direct Connection

It is proposed that the project be connected at the present 23 kV metering point for the plant facilities of the IC located on Glades Pike Road (shown in Figure 1 of the Appendix).

The IC is responsible for constructing all of the facilities on its side of the Point of Interconnection, which will be between the 23 kV line and the generating plant substation. It will be the developer's responsibility to obtain any needed right-of-way between the plant site and FirstEnergy's facilities. The IC will also be responsible for remote relay and control work at Somerset substation that is required due to connecting the generation facility.

The proposed interconnection facilities must be designed in accordance with the FirstEnergy "Requirements for Transmission Connected Facilities" document.

http://www.firstenergycorp.com/feconnect/Requirements_for_Transmission_Connected_Facilities.html

The 23 kV Point of Interconnection will require the installation of a breaker on the generator side of the interconnection and a radio controlled switch on the utility side of the interconnection.

Operational metering is also required for this generation connection. These requirements are also outlined in FirstEnergy "Requirements for Transmission Connected Facilities" document.

The Interconnection Customer will also be required to install metering and telemetry equipment to provide revenue metering and real-time telemetry data to PJM. The requirements for this equipment are listed in Appendix 2, section 8 of Attachment O to the PJM Tariff, as well as PJM manuals 01 and 14D.

Direct Transfer Trip (DTT) using a developer provided communications channel is required from any substation that may feed the generator. The type of communication channel shall be specified and/or approved by FirstEnergy. Currently, the generator would be fed from the Somerset substation and the cost estimates provided assume that DTT will be from Somerset substation. If the generator agrees to be disconnected from the 23kV system while the IC is fed from an alternate source, then DTT is

not required from the other alternate sources. (Alternate sources to feed this area are another circuit at Somerset substation, Hooversville substation, Allegheny substation, and Meyersdale North substation.)

Below are conceptual estimates for the engineering/construction associated with Direct Connection requirements.

Item	Description	Conceptual Cost Estimate
1	New 23 kV radio controlled switch at the connection termination point tapped off 23 kV line. Customer would be responsible for 23 kV breaker at the generation plant substation.	$35,000
2	Relay and control work at Somerset substation and the 23kV metering point to include DTT provision for the project.	$ 150,000
3	Revenue metering	$18,000

Conceptual Estimate: $203,000
Estimated Lead Time: 1.0 year from signed IA

Notes:

- Detailed Engineering & Construction Estimates TBD via Facility Study
- The above estimates do not include 1) tax gross-up, 2) property costs and site development up to rough grade which is to be provided by the developer, 3) interconnection metering and generation SCADA to be provided by the developer, 4) engineering and field activities for design review and commissioning of the developer's facilities, and 5) real estate costs that may be required for right-of-way easements to extend the single circuit 23 kV line.

Figure 1 in the Appendix provides a conceptual one-line of the direct connection facilities needed.

Network Impacts

The Queue Position #S29B project was studied as total injection of 5.7 MW into the Friedens 23 kV circuit. Queue Position #S29B was evaluated for compliance with reliability criteria for summer peak conditions in 2008 and 2009. Potential network impacts were as follows:

Generator Deliverability

No identified problems.

Multiple Facility Contingency – Tower line Outages (MAAC Criteria IIC)

No identified problems.

Single Contingency

No identified problems.

Short Circuit

No identified problems.

New System Reinforcements

None required.

Cost Allocation

Queue Position #S29B project will be responsible for 100% of the direct connection costs estimated at $203,000. There were not any system reinforcements identified for this project to accommodate interconnection of the project.

Summary

Conceptual estimates are provided under the assumption that the Point of Interconnection would be the existing 23 kV delivery point and that the customer interconnection substation would be adjacent to the 23kV delivery point. The generating unit site is located near 5706 Glades Pike Road in Somerset, Pennsylvania.

Direct Transfer Trip (DTT) using a developer provided communications channel is required from any substation that may feed the generator. Currently, the generator would be fed from the Somerset substation and the cost estimates provided assume that DTT will be from Somerset substation. If the generator agrees to be disconnected from the 23kV system while the IC is fed from an alternate source, then DTT is not required from the other alternate sources. (Alternate sources to feed this area are another circuit at Somerset substation, Hooversville substation, Allegheny substation, and Meyersdale North substation.)