Combined Feasibility/System Impact Study Report

PJM Generation Interconnection Request Queue Position #S05 Seneca 230kV

March 2010

Preface

The intent of the Generation Interconnection Feasibility Study and the System Impact Study is to determine a plan, with cost and construction time estimates, to connect the subject Generation Interconnection Request to the PJM network at a location specified by the Interconnection Customer. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system. All facilities required for interconnection of a Generation Interconnection Request must be designed to meet the technical specifications (located on the PJM web site: http://www.pjm.com/planning/trans-standard.html) for the appropriate Transmission Owner. It must be noted that this project is currently interconnected to the FirstEnergy system and the requirements for connection to the FirstEnergy system have been met, therefore no changes have been identified as being required for this project during this study.

In some instances an Interconnection Customer may not be responsible for 100% of the identified Network Upgrade cost because other transmission network uses, e.g. another generation interconnection or merchant transmission upgrade, may also contribute to the need for the same network reinforcement.

The study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities unless noted in the report. The project developer is responsible for acquiring any necessary right of way and real estate, as well as applying for and obtaining construction permits unless prior agreement by interested parties allows for other arrangements. For properties currently owned by Transmission Owners, some costs may be included in the study.

Cost and Timing Estimates

The estimates in this report do not include tax gross-up.

While the information in this transmittal is reasonable for the scope of work defined, it should, however, be noted that the cost figures and time estimates are conceptual in nature at this stage, as an engineering team has not been assigned to the project. Any change to the scope of work will require that the estimates be revisited. The costs are a best estimate, but the Interconnection Customer will be charged for actual costs. Any under-runs or over-runs will be reconciled at the conclusion of the project.

General

First Energy Solutions has proposed the upgrade of one of the existing pumped hydro generators at Seneca Generating Station by 16 MW. Queue Position# S05 increases #2 generator from 195 to 211MW. No modification to the direct connection on the Transmission Owner side of the Point of Interconnection is anticipated as a result of this increase in generation. Queue Position #S05 was evaluated for compliance with reliability criteria for summer peak conditions in 2011.

This increased generation capacity is proposed for interconnection with Pennsylvania Electric Company (Penelec), a FirstEnergy Company, at a location at the existing Seneca 230 kV Generating Station.

It is estimated that no costs will be associated with this interconnection.

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

http://www.pjm.com/planning/design-engineering/to-tech-standards.aspx

Metering

The Interconnection Customer will be required to maintain metering and telemetry equipment to provide revenue metering and real-time telemetry data to PJM and the Transmission Owner. The PJM 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.

Potential network impacts were as follows:

Direct Connection Facilities

None identified

Generator Deliverability

(Single or N-1 contingencies for the Capacity Resource portion only of the interconnection)

None identified

Multiple Facility Contingency

(Double Circuit Tower Line for the full energy output. Stuck breaker and bus fault contingencies will be performed for the System Impact Study)

None identified

Contribution to Previously Identified Overloads

(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)

None identified

Contribution to Previously Identified System Reinforcements

(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which will be calculated and reported for the System Impact Study)

None identified

Potential Congestion Issues

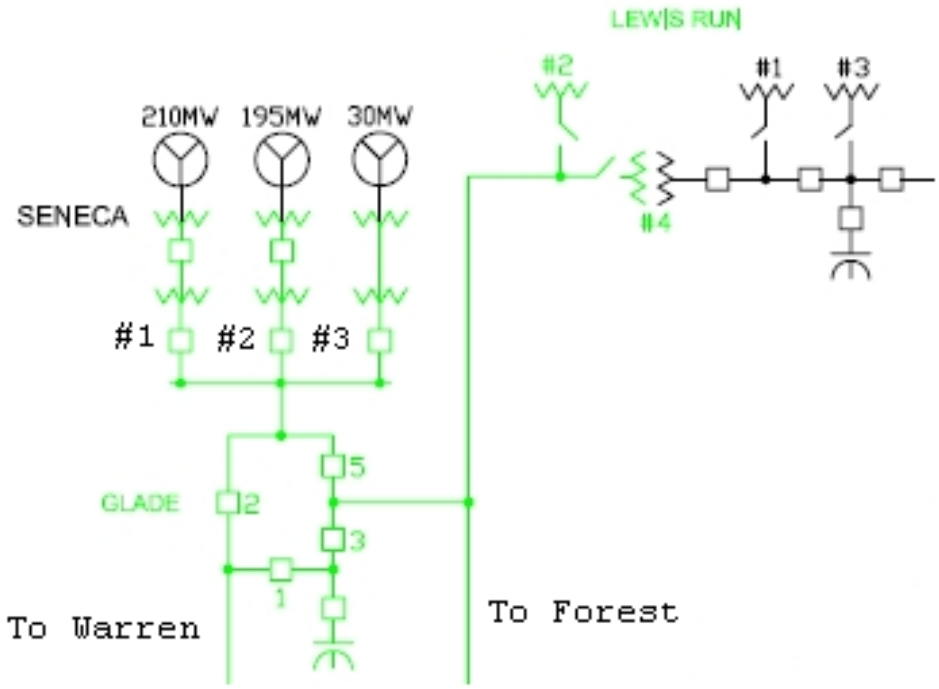
PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.
Note: Only the most severely overloaded conditions are listed below. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which shall study all overload conditions associated with the overloaded element(s) identified.

None

Short Circuit

Not required

Figure #1
Penelec Area Transmission Facilities - Existing Configuration (No change for proposed configuration)



S05 Increases #2 from 195 to 211MW
Q63 Increases #1 from 210 to 226MW