PJM Generator Interconnection #G22 North Wales 38MW Feasibility Study Report

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DMS# 159118

Preface

The intent of the feasibility study is to determine a plan, with ballpark cost and construction time estimates, to connect the subject generation to the PJM network at a location specified by the Interconnection Customer. The Interconnection Customer may request the interconnection of generation as a capacity resource or as an energy-only resource. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: (1) Direct Connections, which are new facilities and/or facilities upgrades needed to connect the generator to the PJM network, and (2) Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system.

In some instances a generator interconnection may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection, may also contribute to the need for the same network reinforcement. The possibility of sharing the reinforcement costs with other projects may be identified in the feasibility study, but the actual allocation will be deferred until the impact study is performed.

The Feasibility Study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The project developer is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs may be included in the study.

General

Project G22 is the interconnection customer (IC) for 38MW (summer capacity) Generator Interconnection Request. The IC has proposed the installation of a 38 MW General Electric Frame 6 Gas Fired Combustion Turbine at the IC facility on two circuits sourced from the North Wales substation in Upper Gwynedd Township, Montgomery County, PA. The additional 38 MW unit is capable of going into operation May 2001 as a 28 MW net, energy only. The IC electrical system has two existing generators, nominally rated 3 MW and 25 MW, both operating and directly connected to the IC 13.8 kV system. Following completion of the project, under normal operating conditions, the three IC generators (3 MW and 25 MW, existing; and 38 MW, new) will all operate in parallel with the two PECO circuits. However, connection of the new 38 MW generator is conditioned on restricted operation whereby net energy to the PECO system will be limited to the requested aggregate of 38 MW capacity injection.

Direct Connection

Project G22 will be connected to the IC system which is sourced from the PECO North Wales 230/34.5 kV substation via three 34.5 kV distribution circuits. No additional direct connection work will be required.

Figure 1 - Project G22 Direct Connection

Figure 2 - Simplified one-line diagram of G22 connection to the transmission network

Network Impacts

The North Wales #G22 project was studied as 38MW capacity injection into the North Wales 230kV-34.5kV substation. Project #G22 was evaluated for compliance with reliability criteria for summer peak conditions in 2005. Potential network impacts were as follows:

Generator Deliverability
No identified problems.

Multiple Facility Contingency – Tower Line Outages (MAAC Criteria IIC)
No identified problems.

Short Circuit
No identified problems.

New System Reinforcements
None

Contribution to Previously Identified System Reinforcements
None