PJM Generator Interconnection Request #E17 Limerick 75 MW Feasibility Study Report

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General

Project #E17 is a 75 MW (Summer) capacity addition to the #B12 Generator Interconnection Request. It is also scheduled to be in service May 2002. The #E17 / #B12 generating facility property is located in Lower Pottsgrove, PA., at the intersection of Sanatoga Rd. and Longview Rd. The property is adjacent to a right-of-way that contains two 500 kV transmission lines that connect the Limerick 500 kV substation to the Whitpain 500 kV substation. The site is approximately ¾ of a mile from the Limerick 500 kV substation.

Direct Connection

The generating facility is planned for connection to the Limerick 230 kV bus as shown on the one-line diagram below. This plan would require the construction of a 230 kV line from the proposed generating facility to the Limerick 230 kV substation. The length of the line would be approximately 1.2 miles, and the right-of-way would need to be acquired. In addition a new bus section and 1 circuit breaker would be needed for attachment of the line to the 230 kV bus at Limerick.

Assuming that project #B12 direct connection facilities are already constructed, there are no additional direct connection facility requirements for the incremental addition of 75MW for request #E17.

Network Requirements

The system, as planned, was evaluated for compliance with reliability criteria. **The Limerick E17 project was studied as 75 MW capacity.** The results are summarized below.

Normal System
No identified problems.

Single Contingency (MAAC Criteria IIA)
No identified problems.

Multiple Facility Contingency (Tower Line Outages)
No identified problems.

Generator Deliverability

1) The Barbados – Plymouth Meeting 230kV circuit was overloaded due to an outage involving Cromby - Perkiomen 230 kV. Project E17 contributes approximately 25 MW to the facility loading. This overload was identified for a previous project.

2) The Limerick 500/230kV transformer was overloaded due to an outage involving Cromby – Barbados 230kV circuit. Project E17 contributes approximately 25 MW to the facility loading.

Short Circuit Analysis

3) Six circuit breakers (515, 535, 625, 715, 725, 735) at the Limerick 230kV substation were overdutied. One of these circuit breakers (625) has been identified as being overdutied by a project in an earlier queue.

System Reinforcements

1) The Barbados – Plymouth Meeting 230kV circuit overload can be eliminated by replacing terminal equipment on the facility. The cost is estimated at $100,000 and is expected to take one month to complete.

2) The Limerick 500/230kV transformer overload can be eliminated by adding a third Limerick 500/230kV transformer. The cost of this upgrade is estimated to be $8.8M, including the tax gross-up. The estimated time needed for delivery and installation of the transformer is 18 months, if the work crews and equipment are available. This does not include the cost or time required to obtain the property and permitting needed for construction. It should be noted that there may be other options for alleviating this transmission problem, at potentially lower cost. The feasibility and costs for other options can be investigated in the System Impact Study.

3) The six circuit breakers at the Limerick 230kV must be replaced. The cost estimate for these replacements is estimated at $1,500,000 and is estimated to take one year to complete.