#R89 Conowingo 24 MW

Generation Interconnection

This analysis was completed to assess the reliability impact for a new generator interconnecting to the PJM system as a Capacity Resource.

Network Impacts

Queue R89 was studied as a 24 MW increase in capacity to the existing Conowingo 230 kV substation. Queue R89 was evaluated for compliance with reliability criteria for summer peak conditions in 2011. Potential network impacts were as follows:

NETWORK IMPACTS

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

No problems were identified

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

No problems were identified

Short Circuit
Not applicable, there is no change to generator and transformer impedance.

Stability Analysis
Not required.

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)

1. Contribution of 7 MW further overloads the Bradford – Planebrook 230 kV line 220-02 from 105% to 106% of its emergency rating (621 MVA) for the outage of Planebrook – Bradford 230 kV line (220-31) and Bradford 230/34.5 kV transformer (Cont Id. PE31).

NETWORK UPGRADES

New System Reinforcements
(Upgrades required to mitigate reliability criteria violations, i.e. "Network Impacts", initially caused by the addition of this project generation)

None required.

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 Impact Study)

1. Bradford – Planebrook 230 kV Upgrade (220-02 line) – This impact can be mitigated by upgrading line terminal equipment at a cost of $1.5 M and re-conductoring the line at a cost of $2.6 M for a total estimated cost of **$4.1 M**. This upgrade can be completed in **24 months**.

Docs #432731