Generation Interconnections

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

Network Impacts - 73MW Injection at Pequest River

Potential network impacts for the injection of 73 MW into the Pequest River 115 kV substation were evaluated for summer peak conditions in 2004. Several generation scenarios were studied in an attempt to bracket expected system conditions in 2004.

A summary of the results follows:

A) Normal Conditions

· No problems were identified.

B) Single Contingency

· No problems were identified.

C) Tower Line Contingency

· Contingency overload on Belvidere Tap - Pequest River 115 kV for tower line outage of Portland - Kittatinny 230 kV and Portland - Greystone 230 kV. The new generator contributes 55 MVA to the overloaded circuit.

· Contingency overload on Portland - Kittatinny 230 kV for tower line outage of Gilbert - Morristown 230 kV and Portland - Greystone 230 kV. The new generator contributes 10 MVA to the overloaded circuit.

D) Short Circuit Analysis

· The fault duty was evaluated at all 34.5, 115 and 230 kV substations that had a greater than 5% increase in fault current due to the new generator. The fault duty was below all circuit breaker interrupting capabilities and, as such, no circuit breaker replacements would be expected due to this new generation.

The Belvidere Tap - Pequest River 115 kV line section can be upgraded to a 260MVA summer 4 hour rating by replacing conductor compression accessories and required joints and dead ends. The upgrade will cost approximately $25,000 and can be completed to meet the project service date.

Upgrade of the Portland - Kittatinny 230 kV line will require replacement of a switch at the Kittatinny termination that will cost approximately $50,000 and upgrade of a current transformer at the Portland termination that will cost approximately $5,000. Both changes can be completed to meet the project service date.

It should be noted that the flows on the northern Jersey Central Power & Light transmission system are directly impacted by connection of new generation on either side of the system. Due to the number of generation interconnection requests that impact the northern Jersey Central system, it is not reasonable at this time to suggest what, if any, transmission reinforcements will finally be required. The northern Jersey Central transmission system will be extensively evaluated in the development of the Regional Transmission Expansion Plan.