



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 -500 MW Injection at Lakewood 230kV bus

Potential network impacts for the injection of 500 MW into the Lakewood 230 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.

This evaluation included all prior generation in the queue except for the South River A24 and Sayreville A37. This was done in an attempt to provide the most meaningful results. If either, or both, of those projects move forward the reinforcements required for those projects plus the reinforcements described below will be required. The impact study results would then provide a more accurate definition of the transmission reinforcements required.

A summary of results is as follows:

A) Normal Conditions - No problems were identified.

B) Single Contingency -

Contingency overload on Raritan River - Kilmer I 230 kV and Kilmer I - Lake Nelson 230 kV for outage of Raritan River - Gillette 230 kV (W1037). The new generator contributes 15 MVA to the limiting facilities.

C) Tower Line Contingency -

Contingency overload on the Cedar Bridge-Leisure Village 34.5kV circuit and the Manitou-Lakehurst 34.5kV circuit for the Leisure Village-Lakewood, Lakewood-Larrabee 230kV tower line outage.

D) Short Circuit Analysis -

The fault duty was evaluated at all bulk power substations that had greater than 5% increase in fault current due to the addition of a 500 MW generator at the Lakewood 230kV substation. The fault duty was below all circuit breaker interrupting capabilities and, as such, no bulk circuit breaker replacements would be expected due to this new generation.

Following is one solution to maintain the reliability of the system. A more detailed analysis of reinforcement options will be evaluated in the Impact Study.

- Reconstructor the double circuit tower line from Raritan River to Gillette at an approximate cost of \$20 million. Construction is anticipated at two years.
- Reconstructor 3.4 miles of the Cedar Bridge-Leisure Village 34.5kV line with 795 ACSR wire at an estimated cost of \$2.1 million. Construction is anticipated to be two years.
- Reconstructor the 7.2 mile Manitou-Lakehurst line with 556 ACSR wire at an estimated cost of \$4.4 million. Construction is anticipated to be two years.