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 - 600MW Injection at Martins Creek

Potential Network impacts for the injection of 600 MW at Martins Creek 230 kV substation were evaluated for summer peak conditions in 2004. The analysis was done under two different generation scenarios; one includes all generation in present queue order and one, which represented the original queue order.

Based on load growth, PP&L presently has a regional upgrade project scheduled for 2004 to uprate the Martins Creek-Mount Bethel single circuit 69 kV and Nazareth-Lone Star 69 kV double circuit. North End/Mount Bethel may require advancing the schedule for this project to 2002 for either generation scenario studied. As such, there is an exposure for the developer to pick up the carrying charges for the advancement of this project. The exposure is approximately $500,000.

Based upon the analysis done under present queue order no bulk transmission network upgrades were identified.

Analysis done based upon the initial queue order showed that there were a number of potential circuit overloads. The highest overload on each circuit is listed below.

Portland - Greystone 110% of rating
Kittatinny - Newton 111% of rating
Martins Creek - Morris Park 105% of rating
Greystone - Whippany (Q line) 104% of rating
Portland - Kittatinny 104% of rating

Approximately 45 miles of double circuit 230 kV transmission, listed above, could require uprate, with an exposure of about $2.7 million. This cost is based upon being able to increase the rating by replacing suspension type insulator assemblies with suspension-tension type assemblies, and/or retensioning the lines to reduce sag. This does not include the cost to replace limiting terminal equipment, if any, which could add approximately $1 million to the cost of increasing the ratings. Time to implement this fix is approximately two years. If rebuilding of the lines is required the cost will be significantly higher and the implementation will be much longer.

The analysis shows that the reinforcement requirements for the transmission lines that cross northern New Jersey are going to be highly dependant upon the set of proposed generation that moves forward into the impact study stage of analysis. Reinforcements will be required if there is a significantly greater amount of generation installed west of these lines than is installed east of these lines.