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 -50 MW Injection into the Bergen 230kV substation (G10)

Network Impacts

Potential network impacts for the injection of 50 MW into the existing Bergen 230 kV substation was evaluated for summer peak conditions in 2005.

Normal System

No identified problems.

Multiple Facility Contingency (MAAC Criteria IIC)

No identified problems.

Generator Deliverability

No identified problems.

Short Circuit Analysis

No identified problems.

System Reinforcements

No new system reinforcements are required.

Contribution to Previously Identified System Reinforcements

The new generator will be allocated a percentage of the costs for the previously identified network reinforcements as follows:

1. Upgrade of the Kearny – Roseland 138 kV circuit (D-1304) to 230 kV operation and terminate one end at Roseland 230 kV substation and the other end at the new Kearny 230 kV substation. The conversion of the line is estimated to cost $6 million and take 2 years to complete.

2. Install a new 230 kV cable circuit between Bergen and Athenia substations. Install a 1% reactor, with bypass switch, at Bergen in series with the new cable. The reactor is being added to this new

circuit path to provide impedance that will optimize transmission circuit flows. Provide for termination of the circuit at both Bergen and Athenia. The cost is estimated at $37 million with a three-year lead-time.

3. Provide forced cooling circulation on the Bergen – Leonia Tap 230 kV underground circuit to increase the cable rating. The cost is estimated at $ 2 million and will take 2 years to complete.

4. Convert the Kearny – Roseland, G-1307-7, 138 kV circuit to 230 kV. Provide new line terminal at Roseland and Essex for the converted 230 kV circuit. The cost is estimated at $10 million and takes three years to complete.

5. Construct a new 230 kV four breaker ring bus close to Hudson that connects the existing Essex-Hudson and Hudson - Belleville circuits. The cost is estimated at $6 million with a 4-year lead-time.

6. The New Milford - Maywood 230 kV cable will need to be replaced with a higher ampacity cable. The cost is estimated at $15.5 million with a 4 - 5 year lead-time.

Cost allocation percentages are not provided as part of the Feasibility Study analysis, however, cost allocation will be provided at the conclusion of the Queue D, E, F & G Impact Study evaluations.