Network Impacts

Potential network impacts for the injection of 6 MW into the existing Essex 230 kV system 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 following previously identified network reinforcements:

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 and take 3 years to complete.
3. Provide forced cooling circulation on the Bergen – Leona 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 a 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 adjacent 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.

Project G20 contributes approximately 2 MW toward the need for these projects. 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 Impact Study evaluations. Several projects in the Northern New Jersey area have recently withdrawn. The withdrawal of these projects may have an impact on these results. Any system network changes will be captured during the impact study.