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

Network Impacts - Injection into the Harwood 69kV bus (D3)

The proposal of two 33 MW generators does not increase the MW injection into the system since the new generation will utilize capacity interconnection rights for units #1 (4 MW) and #2 (60 MW) at the site and 2 MW from the A11 project that was evaluated at 35 MW, but will be installed at 33 MW.

Network Impacts

Potential network impacts for the addition of the new generating units to the 69kV system were evaluated for summer peak conditions in 2005.
The system, as planned, was evaluated for compliance with reliability criteria. The results are summarized below.

Normal System

- No identified problems

Multiple Facility Contingency (MAAC Criteria IIC)

- No identified problems.

Generator Deliverability

- No identified problems.

CETO/CETL (MAAC Criteria III / VIIB)

- No identified problems.

Short Circuit Analysis

- Three existing 69kv CBs at the Harwood substation have a fault to service ratio greater that 1.0 and would have to be replaced. The three overdutied CBs were identified as the Jenkins #1, East Hazleton #1 and East Hazleton #2 69kv breakers.

Northern Pennsylvania Stability Issues

The proposed generating facility is expected to exacerbate existing dynamic instability concerns in northern Pennsylvania, and transmission and/or plant control solutions may be required to enforce stability. Specifically, this facility will cause the existing Northern Stability Transfer Limit to be exceeded. This operational limit is designed to prevent system dynamic instability by limiting the magnitude of northern Pennsylvania generation, because there are a limited number of transmission exits from the geographic area. The limit is monitored by measuring the aggregate flow over a cutset of 500 kV and 230 kV lines emanating from the region. This limit will need to be recalculated during the Impact Study

System Reinforcements

The three overdutied circuit breakers identified will be replaced with breakers having a higher interrupting capability. The estimated cost for replacement is $315,500.