



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 -550 MW Injection into the Hummelstown 230kV substation (D17)

Network Impacts

Potential network impacts for the injection of 550 MW into the Hummelstown 230 kV substation via an approximately 7 mile radial circuit were evaluated for summer peak conditions in 2005. All load flow studies were performed under the assumption that the Yorkana-Otter Creek 230kV line and Otter Creek 230 kV switchyard are in-service. The D17 project cannot be granted capacity certification without the Yorkana-Otter Creek 230kV line and Otter Creek 230kV switchyard in-service.

Normal System

No identified problems.

Multiple Facility Contingency - Tower Line Outages (MAAC Criteria IIC)

No identified problems.

Generator Deliverability

The Yorkana- Brunner Island 230 kV was overloaded at 101% of the emergency rating (617 MVA) due to an outage of the Brunner - West Hempfield 230 kV circuit. Project D17 contributes 53 MW to the facility loading.

Short Circuit Analysis

This project contributes to 6 overdutied breakers at the Brunner Island 230 kV substation.

System Reinforcements

The Yorkana - Brunner Island 230 kV contingency overload can be alleviated by reconductoring a .64 mile section of the line with 1590 ACSR conductor. This would increase the summer rating of the circuit to 653 MVA normal and 793 MVA emergency. This upgrade is expected to cost \$660,000 with a lead-time of 2 years.

Replacement of 6 breakers at Brunner Island 230 kV substation is expected to cost \$1.8 million with a lead-time of 2 years. The new generator will be allocated a percentage of

the costs for the upgrades based on their short circuit contribution in relation to other new generators. Cost allocation percentages are not provided as part of the Feasibility Study analysis, and will be provided in the Impact Study report.