



# 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 - 557MW Injection at North Temple

Potential network impacts for the injection of 557 MW at the North Temple 230kV substation were evaluated for summer peak conditions in 2004. Several generation scenarios were studied in an attempt to bracket expected system conditions in 2004. Based on this analysis, the 557 MW injection contributes to a normal and contingency overload on the Brunner - West Hempfield 230kV circuit.

### A. Normal Conditions

- Normal overload on Brunner - West Hempfield 230kV. The new generation at North Temple 230kV increases the flow on this circuit by approximately 25 MVA.

### A. Single Contingency

- Contingency overload on Brunner - West Hempfield 230kV for the outage of the Brunner - South Manheim 230kV circuit. The new generator at North Temple 230kV increases the flow for this contingency by approximately 25 MVA.

### A. Tower Line Outages

- No system problems were identified.

### A. Short Circuit Analysis

- A short circuit analysis was completed at all substations that had a greater than 5% increase in fault current due to a 557 MW generator at the North Temple 230kV substation. The fault level was below all circuit breaker interrupting capabilities and, as such, no circuit breaker replacements would be expected due to the addition of this generator.

The flows on the Brunner - West Hempfield 230kV circuit are negatively impacted by several new generation projects. Due to the existing number of generation interconnection requests that impact these circuits, it is not reasonable, at this time to completely develop what, if any, reinforcements will be required.

One possible solution that will be evaluated is the addition of a new 230kV transmission

line from Brunner to South Akron, which alleviates some existing network problems and will provide capability to relieve the overloads listed above. The line will cost approximately \$30 million and take approximately six years to build. However, the Brunner area will be studied extensively during the next level of analysis. The impact of this resource will be evaluated, along with all others in the area, and any system reinforcements and associated costs will be specified at that time, if required.