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 - 14MW Increased Injection at Brunner Island

Potential network impacts for the injection of an additional 14 MW at Brunner Island 230kV substation were evaluated for summer peak conditions in 2004.

Based on this analysis, the 14 MW increased injection contributes to normal and contingency overloads on the Brunner - West Hempfield 230kV circuit and the Brunner - South Manheim 230kV circuit.

Normal Conditions

· Normal overload on Brunner - West Hempfield 230kV circuit. The increased generation at Brunner Island 230kV substation increases the flow on this circuit by 3 MVA.

· Normal overload on Brunner - South Manheim 230kV circuit. The increased generation at Brunner Island 230kV substation increases the flow on this circuit by 1 MVA.

Single Contingency

· Contingency overload on the Brunner - West Hempfield 230kV circuit for the outage of the Brunner - South Manheim 230kV circuit and for the South Mannheim - South Akron 230kV circuit. The increased generation at Brunner Island 230kV substation increases the flow for these two contingencies by approximately 3 MVA each.

· Contingency overload on the Brunner - South Manheim 230kV circuit for the outage of the Berks - South Reading 230kV circuit and for the Brunner - West Hempfield 230kV circuit. The increased generation at Brunner Island 230kV substation increases the flow by 3 MVA for the Berks - South Reading outage and by 4 MVA for the Brunner - West Hempfield outage.

Tower Line Outages

· No system problems were identified.

Short Circuit Analysis

· A short circuit analysis was completed for the increased injection of 14 MW at Brunner Island. No breaker short circuit capability problems have been identified.

The flows on the Brunner - West Hempfield 230kV circuit and the Brunner - South Manheim 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 as 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 $52 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.