R21 – Short Mountain
Generation Interconnection

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

Network Impacts

The #R21 project was studied as a 70 MW (14 MW of Capacity) injection at two distinct points of the APS system. The first option is into a tap of the Medowbrook-Greenland Gap 500 kV line; and the second option is into a tap of the Hardy-Baker 138 kV line. Project #R21 was evaluated for compliance with reliability criteria for summer peak conditions in 2011. Potential network impacts were as follows:

Generator Deliverability

No problems were identified

Multiple Facility Contingency

No problems were identified

Contribution to Previously Identified Overloads

No problems were identified

New System Reinforcements

None

Contribution to Previously Identified System Reinforcements

To be determined at the System Impact Study

Short Circuit

No overdutied breakers identified.

Delivery of Energy Portion of interconnection Request

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below may result in operational restrictions to the project under study. The developer can proceed with upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

As a result of the aggregate energy resources in the area, the following violations were identified:

For the 138 kV injection point further contributions to overloads:

1. Albright – P52 – Mettiki – William 138 kV circuit.
2. William – Parsons – Loughs Lane

For the 500 kV interconnection option, The R21 contributes 10 MW to increase congestion on the following facilities:

1. Conastone-Peach Bottom 500 kV for the outage of the #220-06&07 Peach Bottom transformer. Pre and post loading values are 149% and 150%, respectively.
2. Brighton-Doubs 500 kV for the outage of the Burchess-Possum 500 kV line. Pre and post loading values are 116%.
3. Contribution of 11 MW further overloads the Albright-P52 from 169% to 175% of its normal rating (176 MVA).
4. Contribution of 10 MW further overloads the Loughs Lane-Parsons 138 kV line from 115% to 153% of its normal rating (126 MVA).
5. Contribution of 11 MW further overloads the Mettiki-P52 138 kV line from 135% to 141% of its normal rating (176 MVA).
6. Contribution of 11 MW further overloads the William-Mettiki 138 kV line from 132% to 138% of its normal rating (176 MVA).