

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 -600 MW Injection into the Keystone-Conemaugh 500kV substation (G42)

Network Impacts

Potential network impacts for the capacity injection of 600 MW into the Keystone-Conemaugh 500 kV circuit were evaluated for the summer peak conditions in 2005.

Generator Deliverability

The generator causes a greater than 5% voltage drop problem at Juniata 500kV substation for the outage of Hunterstown - Conastone 500kV circuit and the Hunterstown 500/230 kV transformer #1.

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

No identified problems.

Short Circuit

Short circuit analysis was not performed due to the magnitude of reinforcements required to eliminate the identified problem. Any required breaker replacements are not expected to materially alter the total network reinforcement cost.

New System Reinforcements

Two alternatives were reviewed to resolve the voltage problems. One alternative is to provide a new West to East 500 kV transmission path. The other alternative is to build a second Hunterstown - Conastone 500 kV circuit. The viability of either alternative was not studied at the Feasibility study. In either case, the cost is expected to exceed \$50 million and take in excess of 5 years. A more refined analysis of reinforcement options will be completed in the Impact Study.

Contribution to Previously Identified System Reinforcements

The G42 project will contribute to the cost of the following previously identified network reinforcements:

1. The voltage drop concern at Juniata will be alleviated by installing an SVC at the 500 kV substation. Estimated cost for installing a 350 MVAR SVC at Juniata, determined to be necessary for previous projects is estimated to cost \$24.4 million. This includes the capacitors, appropriately sized transformer, 500kV circuit breaker, all associated controls, site prep and substation modifications. It does not include gross-up for taxes. The SVC is estimated at \$16.5 million and site expansion costs and line relocations at \$7.9 million.

Cost allocation percentages are not provided as part of the Feasibility Study analysis, however, cost allocation will be provided at the conclusion of the Queue D, E, & F Impact Study evaluations.