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 - 803 MW Injection

At system normal, the addition of 803 MW of generation at the Mickleton 230 kV bus causes an overload of the Mickleton-Mantua 69 kV line. Upgrade of the Mickleton-Mantua 69 kV line to 1600 amp rating is required. This upgrade is estimated to cost $0.9 Million and take 18 months to complete.

The worst single contingencies and a limited number of double contingencies were analyzed for addition of this generation. Contingency loss of the Hope Creek - Red Lion 500 kV line was found to cause an overload of the Mickleton - Delco Tap - Trainer - Chichester 230 kV path for some generator outage scenarios. Upgrade requirements, if any, will be determined in more detail during the Impact Study for this project. Upgrade of the 11.2 mile Mickleton - Delco Tap - Trainer - Chichester 230 kV path, if required, is estimated to cost $3.3 Million to $9 Million and take 18 to 24 months. Cost and time estimates reflect the uncertainty of whether sections of this 230 kV path can be upgraded to adequate thermal capability without replacing existing transmission line structures.

Short Circuit analysis indicates that the addition of 803 MW at Mickleton 230kV bus may cause the need to replace three 230 kV circuit breakers at Chichester substation because of increased short circuit interrupting rating requirements at Chichester. If required, replacement of 3 circuit breakers at Chichester is estimated to cost $1.1 Million and take 12 to 18 months.