#P05_Graceton 550 MW

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 **#P05 project was studied as an injection of 550 MW** into a tap of the Graceton --Peach Bottom – Nottingham 230kV circuit. Project #P05 was evaluated for compliance with reliability criteria for summer peak conditions in 2010. Potential network impacts were as follows:

Generator Deliverability

1. The Graceton – P05 tap 230 kV circuit is contingency overloaded at around 107.6% of its emergency rating (627 MVA) for the outage of the Conastone – Peach Bottom 500 kV circuit. The P05 project contributes approximately 459 MW to the contingency facility loading.
2. The Conowingo – Colora 230 kV circuit is contingency overloaded at around 100.5% of its emergency rating (533 MVA) for the outage of the Nottingham – Daleville 230 kV circuit. The P05 project contributes approximately 58 MW to the contingency facility loading.

Multiple Facility Contingency

3. The Graceton – Raphael 230 kV circuit is contingency overloaded at 112.3% of its emergency rating (659 MVA) for the Conastone -- Northwest 230 kV tower line outage. The P05 project contributes approximately 118 MW to the contingency facility loading.
4. The Northwest – Conastone 230 kV (#2322) circuit is contingency overloaded at 101.6% of its emergency rating (819 MVA) for the tower outage of the Brighton – Doubs 500 kV line and Brighton - Conastone 500 kV line. The P05 project contributes approximately 27 MW to the contingency facility loading.

Short Circuit

No problems identified.

New System Reinforcements

1. (BGE Portion of the P05 to Graceton line) Reconductor 230 kV line 220-08 from Graceton to the Pennsylvania / Maryland state line (220-08). The estimated cost is $835,200. This work will take approximately 18-36 months to complete depending on whether a CPCN filing is required.
   (PECO portion of the P05 to Graceton line) Reconductor 230kV line 220-08 from the Pennsylvania / Maryland state line to Queue P05 tap point. The estimated cost is $820,000. This work will take approximately 24 months to complete.
2. Upgrade terminal cables for 220-88 line at Conowingo substation. The estimated cost is $100,000 and the work can be done during the same 24 month timeframe as the other PECO upgrades.
3. Reconductor the Graceton – Raphael Rd. 230 kV circuit. The estimated cost is $17,900,000. This work will take approximately 48-60 months to complete.
4. The cost to reconductor the Northwest – Conastone 230 kV (#2322) circuit is estimated at $7,970,000. This work will take approximately 18 months to complete.

Contribution to Previously Identified Overloads

None.

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