

#T113 Richmond 230 kV (16 MW)

Generator 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

Queue T113 was studied as a 16 MW Capacity increase at Richmond 230 kV bus. Project T113 was evaluated for compliance with reliability criteria for summer peak conditions in 2012. Network impacts were as follows:

Generator Deliverability

(Normal System with all facilities in-service and Single, or N-1, contingencies for the Capacity portion only of the interconnection)

No problems were identified.

Multiple Facility Contingency

(Double Circuit Tower Line contingencies only for the full energy output. Stuck breaker and bus fault contingencies will be performed for the Impact Study)

No problems were identified.

Contribution to Previously Identified Overloads

(This project contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)

None identified.

Short Circuit

Not applicable, there is no change to generator and transformer impedance.

Stability Analysis

Not required, there are no changes to generator characteristics

Power Factor Analysis

Preliminary evaluation indicates that T113 can meet PJM's Power Factor requirements.

Queue T113 generator interconnection design must be capable of either;

- A power factor of 0.95 lead to 0.90 lag (at the generator terminals) at the new MW value, or

- A MVAR capability equal to the original MVAR capability (grandfathered lead and lag MVAR capability before the MW increase, or 0.95 lead to 0.90 lag for the original MWs whichever is less) plus a power factor of 1.0 to 0.90 lag for T113 MW increase, all measured at the generator terminals.

Power Factor requirements will be evaluated further during the Impact Study.

New System Reinforcements

(Upgrades required to mitigate reliability criteria violations, i.e. “Network Impacts”, initially caused by the addition of this project generation)

None

Contribution to Previously Identified System Reinforcements

(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have a % allocation cost responsibility which will be calculated and reported for the Impact Study)

None.