

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 - 201 MW Capacity Injection

The #O64 project was studied as an injection of 201 MW into the Grays Ferry to Island Road 230 kV circuit. Project #O64 was evaluated for compliance with reliability criteria for summer peak conditions in 2009. Potential network impacts were as follows:

Generator Deliverability

1. The Parrish to Grays Ferry 230 kV circuit is loaded to 109% of its normal rating (736 MVA). The #O64 project contributes approximately 99 MW to the normally overloaded facility.
2. The Master to N. Phila 230 kV circuit is loaded to 108% of its emergency rating (614 MVA) for the outage of the Plymouth Meeting—White Marsh 230 kV circuit. The #O64 project contributes approximately 55 MW to the contingency overloaded facility.

See “New System Reinforcements” below for cost estimate to mitigate the above contingency overloads.

Multiple Facility Contingency – Tower Line Outages

The Master to N. Phila 230 kv circuit is loaded to 103% of its emergency rating (614 MVA) for the Whitpain—White Marsh Tap—Jenkintown and Whitpain—Jarret 230 kV tower line circuit. The #O64 project contributes approximately 55 MW to the contingency overloaded facility.

Short Circuit

No problems identified.

New System Reinforcements

Reconductor Parrish-Grays Ferry 220-27	\$ 3,880,000
Reconductor Master-North Phila 220-44	\$ 5,270,000
Modifications at Parrish	\$ 250,000
Modifications at Grays Ferry	<u>\$ 2,250,000</u>
Total Cost	\$ 9,150,000

Leadtime for construction of the above upgrades is approximately **24 months**.

Contribution to Previously Identified Overloads and Circuit Breaker Replacements/Upgrades

Camden to O04 230kV circuit upgrade:

The Queue O64 project contributes approximately 13 MW to the overload of the 230kV circuit from Camden switching station to the new project O04 switching station. The total overload due to all interconnections, up to and including project O64, is approximately 107% of its emergency rating (874 MVA) for the contingency outage of the Croydon – Burlington - Mt. Laurel - Cox’s Corner 230kV circuit. This overload was first identified for the QueueO04 project.

The Camden – Queue O04 230kV circuit can be upgraded to sufficient emergency rating by replacing the existing conductor with 1590 ACSS. The estimated cost is **\$2,500,000** and the construction leadtime is approximately **24 months**. Queue O64 may have a cost allocation toward this upgrade requirement.

Additional Network Impacts may be determined during the Impact Study for Queue O64 if it proceeds through the interconnection process. See Note below.

Note:

There are ongoing studies to identify system reinforcements to accommodate the generator retirements in Eastern PJM. All of the system upgrades have not been identified at the time the Feasibility Study was completed for generation project O64. The network impacts for this project will be re-evaluated at the Impact Study when a more complete set of system reinforcements for Eastern MAAC will be available.

Docs # 353161