

Queue #O27 - Powerton-Goodings Grove 345kV PJM Generator Interconnection

Network Impacts

The #O27 project was studied as a total injection of 500 MW (100 MW of Capacity) into a tap of the Powerton to Goodings Grove 345 kV line 0303. Project #O27 was evaluated for compliance with reliability criteria for summer peak conditions in 2009. Potential network impacts were as follows:

Generator Deliverability

No problems were identified

Multiple Facility Contingency

1. The Powerton to Tazewell 345 kV line 0304 loads to 103% of its load-dump rating (1374 MVA) for the tower outage of lines 16101 (existing Line 0301) and 97503. The #O27 project contributes approximately 308 MW to the contingency overloaded facility.
2. The Dresden to #O23 345 kV line 1202 loads to 103% of its load-dump rating (1320 MVA) for the tower outage of lines 16101 (existing Line 0301) and 97503. The #O27 project contributes approximately 187 MW to the contingency overloaded facility.

Contribution to Previously Identified Overloads

It contributes 46 MW thermal violation of the Kammer 765/500 kV transformer in AP, which was originally caused by the #N42 project. The necessary reinforcements and associated cost estimates are being studied by Allegheny Power and will be available at the Impact Study phase for this project.

Contribution to Previously Identified System Reinforcements

To be determined

Short Circuit

No problems were identified.

Potential Issues

The #O27 project may impact the Powerton Stability Schemes due to the interconnection point on line 0303 Powerton to Goodings Grove.

The ComEd thermal studies performed for this Feasibility Study indicate that the #O27 project may potentially cause the need for reinforcements, or advancement of reinforcements, in the East Frankfort-Davis Creek area. This will be assessed further during the Impact Study.

MISO Impact

Impact on the MISO member transmission systems is not included in this analysis but will be in the Impact Study, which possibly may reveal upgrade need in the MISO system not identified in this Feasibility Study.

New System Reinforcements

Cost estimate:

Qty	Item Description	Material	Labor	Total
1	MISO / Cilco to provide analysis and cost for work associated with adequacy of load-dump rating for line 0304.	TBD	TBD	TBD
1	Review and upgrade station equipment at Dresden for Line 1202 (ex Line 0302). Includes line and CB disconnects, leads, CTs, metering, relays, etc.	\$ 416,000	\$ 510,000	\$ 926,000

System Reinforcement Schedule:

Estimated timeframe to complete engineering, procurement, and construction for this reinforcement is approximately 18 – 24 months, and can be done concurrently with the Direct Connection schedule.