Queue R78
Dresden - Pontiac Midpoint 345kV
Feasibility Study Report

Network Impacts

The #R78 project was studied as a 300 MW (60 MW of capacity) injection into the Dresden to #O24 345 kV line #18814 in the ComEd territory. Project #R78 was evaluated for compliance with reliability criteria for summer peak conditions in 2011. Potential network impacts were as follows:

Generator Deliverability

(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 were studied for the full energy output. The contingencies of Line with Failed Breaker and Bus Fault will be performed for the System Impact Study)

No problems were identified.

Short Circuit

(Summary of impacted circuit breakers)

To be completed in the System Impact Study.

Contribution to Previously Identified Overloads

(#R78 contributes to the following contingency overloads, i.e. "Network Impacts", identified for earlier generation or transmission interconnection projects in the PJM Queue)

No problems were identified.

Steady-State Voltage Requirements

(Summary of VAR requirements based upon the results of the steady-state voltage studies)

To be determined in the System Impact Study

Stability and Reactive Power Requirements for Low Voltage Ride Through

(Summary of VAR requirements based upon the results of the dynamic studies.)

To be determined in the System 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 System Impact Study)

To be determined in the System Impact Study

Potential Issues

The #R78 project may impact stability at Dresden and/or Kincaid stations due to the interconnection into the existing Pontiac to Dresden 345kV line #8014. Stability studies will be performed during the System Impact Study.

Impacts on the MISO member transmission systems are not included in this analysis, but they will be included in the System Impact Study, which may reveal upgrades needed in the MISO system not identified in this Feasibility Study.

Delivery of Energy Portion of Interconnection Request
PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below are likely to result in operational restrictions to the project under study. The developer can proceed with network upgrades to eliminate the operational restriction at their discretion by submitting a Merchant Transmission Interconnection request.

As a result of the aggregate energy resources in the area, the following violations were identified:

1. Contribution of 33 MW overloads the Dresden 345/138 kV Transformer #83 from 97% to 104% of its emergency rating (480 MVA) for the outage of the Electric Junction to Wolfs Crossing 345 kV line #14323, which also removes the 2nd Wolfs Transformer #83 from service.
2. Contribution of 156 MW further overloads the Pontiac to #O51 345 kV line #8012 from 127% to 140% of its emergency rating (1234 MVA) for the outage of the #R78 to Dresden 345 kV line. This overload was caused by projects prior to the R-queue with an additional contribution from project #R30.