#W1-030 Pontiac Midpoint-Reynolds 345kV

Generation Interconnection

Network Impacts

Queue project W1-030 was studied as a(n) 300.0MW (39.0MW of which was Capacity) injection into AEP's system at a tap point along the proposed Pontiac Midpoint - Reynolds 345kV transmission line. Project W1-030 was evaluated for compliance with reliability criteria for summer peak conditions in 2014. Potential network impacts were as follows:

Generator Deliverability

(Single or N-1 contingencies for the Capacity portion only of the interconnection)

No problems identified

Multiple Facility Contingency

(Double Circuit Tower Line, Line with Failed Breaker and Bus Fault contingencies for the full energy output)

No problems identified

Short Circuit

(Summary form of Cost allocation for breakers will be inserted here if any)

No problems identified

Contribution to Previously Identified Overloads

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

No problems identified.

New System Reinforcements

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.

Energy Portion of Interconnection Request

(PJM also studied the delivery of the energy portion of the surrounding generation. Any potential 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 Transmission Interconnection request.
Note: Only the most severely overloaded conditions are listed. There is no guarantee of full delivery of energy for this project by fixing only the conditions listed in this section. With a Transmission Interconnection Request, a subsequent analysis will be performed which analyzes all overload conditions associated with the overloaded element(s) identified. As a result of the aggregate energy resources in the area, the following violations were identified.)

1. The Dresden R-ELECT;4R 345 kV line (from bus 270717 to bus 270731 ckt 1) loads from 107.96% to 108.25% (DC power flow) of its emergency rating (1479 MVA) for the single line contingency ('345-L1222__R-S'). This project contributes approximately 26.17 MW to cause the thermal violation.

2. The Pontiac Midpoint; R-O24 345 kV line (from bus 270853 to bus 293660 ckt 1) loads from 107.39% to 111% (DC power flow) of its normal rating (1339 MVA) for non-contingency condition. This project contributes approximately 48.29 MW to cause the thermal violation.

3. The O24-R78_TAP 345 kV line (from bus 293660 to bus 296769 ckt 1) loads from 117.64% to 121.24% (DC power flow) of its normal rating (1339 MVA) for non-contingency condition. This project contributes approximately 48.18 MW to cause the thermal violation.

4. The Pontiac Midpoint; R-O24 345 kV line (from bus 270853 to bus 293660 ckt 1) loads from 118.47% to 122.28% (DC power flow) of its emergency rating (1739 MVA) for the single line contingency ('345-L8012___-S_O51B'). This project contributes approximately 66.27 MW to cause the thermal violation.

5. The R78_TAP-Dresden; R 345 kV line (from bus 296769 to bus 270717 ckt 1) loads from 125.77% to 129.37% (DC power flow) of its normal rating (1339 MVA) for non-contingency condition. This project contributes approximately 48.18 MW to cause the thermal violation.

6. The O24-R78_TAP 345 kV line (from bus 293660 to bus 296769 ckt 1) loads from 127.29% to 131.09% (DC power flow) of its emergency rating (1739 MVA) for the single line contingency ('345-L8012___-S_O51B'). This project contributes approximately 66.17 MW to cause the thermal violation.

7. The R78_TAP-Dresden; R 345 kV line (from bus 296769 to bus 270717 ckt 1) loads from 134.6% to 138.4% (DC power flow) of its emergency rating (1739 MVA) for the single line contingency ('345-L8012___-S_O51B'). This project contributes approximately 66.17 MW to cause the thermal violation.

8. The Dresden; R-Elwood; R 345 kV line (from bus 270717 to bus 270737 ckt 1) loads from 139.66% to 142.52% (DC power flow) of its emergency rating (1434 MVA) for the single line

contingency ('345-L1223_TR-S'). This project contributes approximately 40.97 MW to cause the thermal violation.

9. The Pontiac Midpoint; B-O51 345 kV line (from bus 270852 to bus 290022 ckt 1) loads from 142.35% to 147.8% (DC power flow) of its emergency rating (1201 MVA) for the single line contingency ('345-L8014_T_-S'). This project contributes approximately 65.48 MW to cause the thermal violation.

10. The O51-Wilton; B 345 kV line (from bus 290022 to bus 270926 ckt 1) loads from 181.98% to 187.42% (DC power flow) of its emergency rating (1201 MVA) for the single line contingency ('345-L8014_T_-S'). This project contributes approximately 65.37 MW to cause the thermal violation.