W4-008 Madison-Tanners Creek 138kV

Generation Interconnection

Network Impacts

Queue project W4-008 was studied as a(n) 90.0 MW (11.7 MW of which was Capacity) injection into AEP's system at the 25.0% tap between Madison and Tanners Creek138.0 kV line. Project W4-008 was evaluated for compliance with reliability criteria for summer peak conditions in 2014.

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

(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

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)
(Summary form of Cost allocation for transmission lines and transformers will be inserted here if any)

No problems identified.

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.*

(AEP) The W4-004 TAP-Madison 138 kV line (from bus 905030 to bus 243333 ckt 1) loads from 77.83% to 109.99% (DC power flow) of its emergency rating (205 MVA) for the operational contingency '362_B2', loss of the Greentown-Jefferson 765kV circuit. This project contributes approximately 65.92 MW to the thermal violation.

(AEP) The W4-004 TAP-Madison 138 kV line (from bus 905030 to bus 243333 ckt 1) loads from 77.66% to 112.17% (DC power flow) of its normal rating (191 MVA) for non contingency condition. This project contributes approximately 65.92 MW to the thermal violation.

(AEP) The U4-038 TAP-Grant Tap 138 kV line (from bus 292052 to bus 243303 ckt 1) loads from 113.15% to 113.62% (DC power flow) of its normal rating (205 MVA) for non contingency condition. This project contributes approximately 5.92 MW to the thermal violation.

(AEP) The Madison-Cross Street 138 kV line (from bus 243333 to bus 243270 ckt 1) loads from 100.27% to 101.07% (DC power flow) of its emergency rating (167 MVA) for the operational contingency '674_B3'l loss of the Desoto 345/138kV transformer. This project contributes approximately 8.23 MW to the thermal violation.