

X1-041 Dumont-Sorenson 345kV Generation

Interconnection

Local Network Impacts

The impact of the proposed transmission facility on the AEP transmission system was assessed according to applicable reliability criteria and AEP planning criteria. The transmission system must meet contingency performance in accordance with AEP FERC Form 715 criteria.

Normal System – Capacity Output

- No problems identified.

Single Contingency – Capacity Output

- No problems identified.

Multiple Contingency – Full Output

- No problems identified.

Short Circuit Analysis

- No problems identified

Contributions to Previously Identified Network Limitations

- No problems identified.

Additional Concerns – Full Output

- See below under “Network Impacts – Energy Portion of Interconnection Request”

Network Upgrades

- None required.

Network Impacts

Queue project X1-041 was studied as a(n) 262.0 MW (32.7 MW of which was Capacity) injection into AEP's system at the 50.0% tap between Dumont and Sorenson345.0 kV line. Project X1-041 was evaluated for compliance with reliability criteria for summer peak conditions in 2015.

Potential transmission network impacts are 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

(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)

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. (AEP) The T-130_TAP-East Lima 345 kV line (from bus 292438 to bus 242935 ckt 1) loads from 104.32% to 104.62% (DC power flow) of its emergency rating (878 MVA) for the operational contingency '676_B3_05ROB PK 345-5_MOAB', loss of the Robison Park 345/138kV transformer. This project contributes approximately 16.04 MW to the thermal violation.

2. (AEP) The R-060 TAP-T-130_TAP 345 kV line (from bus 296566 to bus 292438 ckt 1) loads from 114.83% to 115.13% (DC power flow) of its emergency rating (878 MVA) for the operational contingency '05MARYSV_05DUMONT_118'. This project contributes approximately 21.59 MW to the thermal violation.