Generation Interconnection
Feasibility Study Report

For

PJM Generation Interconnection Request Queue Position AC2-166

Waterman

July 2017

Network Impacts

The Queue Project AC2-166 was evaluated as a 50.0 MW (Capacity 19.0 MW) injection at the Waterman 138 kV substation in the ComEd area. Project AC2-166 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AC2-166 was studied with a commercial probability of 53%. Potential network impacts were as follows:

Summer Peak Analysis - 2020

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

None

Multiple Facility Contingency
(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies for the full energy output)

None

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

Steady-State Voltage Requirements
(Results of the steady-state voltage studies should be inserted here)

To be determined

Short Circuit
(Summary of impacted circuit breakers)

None

Affected System Analysis & Mitigation

MISO Impacts:

There are potential impacts in MISO's area; the impacts will be determined during later study phases.

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.
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 will study all overload conditions associated with the overloaded element(s) identified.

1. (CE - CE) The WATERMAN ; B-GLIDDEN ;BT 138 kV line (from bus 272728 to bus 271560 ckt 1) loads from 99.22% to 109.03% (**DC power flow**) of its emergency rating (264 MVA) for the single line contingency outage of '138-L11301_R-R'. This project contributes approximately 25.91 MW to the thermal violation.

CONTINGENCY '138-L11301_R-R'
TRIP BRANCH FROM BUS 272728 TO BUS 272445 CKT 1 / WATER; B 138 SANDW; R 138
END

2. (CE - CE) The WATERMAN ; B-GLIDDEN ;BT 138 kV line (from bus 272728 to bus 271560 ckt 1) loads from 92.5% to 101.1% (**DC power flow**) of its normal rating (208 MVA) for non-contingency condition. This project contributes approximately 17.87 MW to the thermal violation.

Light Load Analysis - 2020

Light Load Studies to be conducted during later study phases (as required by PJM Manual 14B).

System Reinforcements

Short Circuit

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

None

Stability and Reactive Power Requirement

(Results of the dynamic studies should be inserted here)

To be determined

Summer Peak Load Flow Analysis Reinforcements

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