Generation Interconnection
Feasibility Study Report

For

PJM Generation Interconnection Request Queue Position AB2-191

Mendota Hills

August 2016

Network Impacts

The Queue Project AB2-191 was evaluated as a 20.0 MW (Capacity 11.9 MW) uprate to the Z1-073 project at the Mendota Hills 138kV substation in the ComEd area. Project AB2-191 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AB2-191 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 in the Impact Study phase

Short Circuit
(Summary of impacted circuit breakers)

None.

Affected System Analysis & Mitigation

MISO Impacts:

MISO Impacts to be determined during later study phases (as applicable).

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 HAUMESSER; B-W DEKALB ;3T 138 kV line (from bus 271680 to bus 272756 ckt 1) loads from 101.75% to 104.17% (**DC power flow**) of its emergency rating (452 MVA) for the single line contingency outage of '345-L0627__B-R'. This project contributes approximately 10.98 MW to the thermal violation.

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CONTINGENCY '345-L0627__B-R'
 TRIP BRANCH FROM BUS 274768 TO BUS 270678 CKT 1            / LEECO;BP 345 BYRON; B 345
 END
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2. (CE - CE) The MCGIRR RD;-DIXON ; R 138 kV line (from bus 272002 to bus 271333 ckt 1) loads from 101.3% to 105.82% (**DC power flow**) of its emergency rating (442 MVA) for the single line contingency outage of '094-L11323__'. This project contributes approximately 19.99 MW to the thermal violation.

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CONTINGENCY '094-L11323__'
 TRIP BRANCH FROM BUS 271680 TO BUS 272756 CKT 1            / HAUME; B 138 W DEK;3T 138
 END
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3. (CE - CE) The ESS H445 ;3B-STEWARD ; B 138 kV line (from bus 272362 to bus 272516 ckt 1) loads from 97.82% to 102.44% (**DC power flow**) of its emergency rating (176 MVA) for the single line contingency outage of '186-L16914__'. This project contributes approximately 8.14 MW to the thermal violation.

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CONTINGENCY '186-L16914__'
 TRIP BRANCH FROM BUS 272365 TO BUS 272516 CKT 1            / H440 ;RT 138 STEWA; B 138
 END
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4. (CE - CE) The ESS H440 ;RT-ESS H440 ; R 138 kV line (from bus 272365 to bus 272363 ckt 1) loads from 183.94% to 191.41% (**DC power flow**) of its emergency rating (109 MVA) for the single line contingency outage of '186-L16914__'. This project contributes approximately 8.14 MW to the thermal violation.

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CONTINGENCY '186-L16914__'
 TRIP BRANCH FROM BUS 272365 TO BUS 272516 CKT 1            / H440 ;RT 138 STEWA; B 138
 END
```

Light Load Analysis - 2020

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

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 conducted during later study phases.

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.