Generation Interconnection Request
Queue Position V2-021

General

The Interconnection Customer (IC), has proposed a 64 MWE (64 MWC) oil and natural gas fueled combustion turbine generating facility. The facility will consist of a single simple cycle combustion turbine to be located near the Clayville substation in Vineland, New Jersey. V2-021 was studied as a 64 MW injection into the Atlantic City Electric's (ACE) system and evaluated for compliance with reliability criteria for summer peak conditions in 2013. The planned in-service date is June 1, 2014.

Point of Interconnection

V2-021 will interconnect with the ACE system either as a tap of the Butler-South Millville 69kV circuit (Primary option) or as a direct connection into ACE's Lincoln 138kV substation (Secondary option).

Primary Option

Direct Connection Requirements

Transmission Owner Scope of Direct Connection Work

The scope of work and estimated costs for the direct connection facilities is as follows:

Atlantic City Electric (ACE) will construct a new 69 kV three breaker ring bus substation adjacent to the Butler-South Millville 69kV circuit to interconnect Queue V2-021 generation. The total estimated cost is **$4,700,000** with an estimated construction time of **24 – 36 months** after the receipt of a fully executed Interconnection Service Agreement (ISA) and Interconnection Construction Service Agreement (CSA).

The above cost estimate assumes that the generation site is electrically close (less than 500 feet) from the new 69 kV substation. Queue V2-021 Interconnection Customer will be required to provide 2-3 acres (depending upon zoning requirements) of property for the construction of the new 69 kV substation.

Note: the above cost does not include the Contribution in Aid of Construction (CIAC) tax.

Interconnection Customer Scope of Direct Connection Work

The Interconnection Customer assumes full responsibility for design and construction of all facilities associated with the V2-021 generating station and the 69kV direct connection line on the IC side of the POI. Site preparation including grading and an access road, as necessary, is assumed to be by the

IC. Route selection, line design, right-of-way acquisition and construction of lines will be entirely the responsibility of the IC.

The IC will be required to install metering and telemetry equipment to provide revenue metering and real-time telemetry data to PJM. The requirements for this equipment are listed in Appendix 2, Section 8 of Attachment O to the PJM Tariff, as well as PJM Manuals 01 and 14D. Protective relaying and metering design and installation must comply with Atlantic City Electric Applicable Standards.

Cost and Timing Summary

While the information in this transmittal is reasonable for the scope of work defined, it should however be noted that the cost figures are conceptual in nature at this stage, as an engineering team has not been assigned to the project. Obviously, any change to the scope of work will require that the estimates be revisited. The costs are a best estimate, but the developer will be charged for actual costs. Any under or over-runs will be reconciled at the conclusion of the project.

Network Impacts

Potential network impacts were as follows:

Generator Deliverability

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

None

Multiple Facility Contingency

*(Double Circuit Tower Line, Line with Failed 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

Short Circuit

The following breakers were found to be overstressed as a result of V2-021.

Second Street 69kV CB 'G' (103.1%)
Second Street 69kV CB 'H' (109.9%)
Sherman 69kV CB 'D' (106.5%)

South Millville 69kV CB 'A' (121.6%)
South Millville 69kV CB 'B' (105.4%)

The estimated cost to replace the above breakers is **$1,500,000**.

New System Reinforcements

(Upgrades required to mitigate reliability criteria violations, i.e. "Network Impacts," initially caused by the addition of this project's generation)

None

Contribution to Previously Identified System Reinforcements

(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project.

None

Stability Analysis

Will be performed during the System Impact Study phase (for both Options).

Secondary Option

Direct Connection Requirements

Transmission Owner Scope of Direct Connection Work

The scope of work and estimated costs for the direct connection facilities is as follows:

Atlantic City Electric (ACE) will create a breaker position for the Queue V2-021 generation at the existing Lincoln 138kV substation.

Interconnection Customer Scope of Direct Connection Work

The Interconnection Customer assumes full responsibility for design and construction of all facilities associated with the V2-021 generating station and the 138kV direct connection line on the IC side of the POI. Site preparation including grading and an access road, as necessary, is assumed to be by the developer. Route selection, line design, right-of-way acquisition and construction of lines will be entirely the responsibility of the IC.

The IC will be required to install metering and telemetry equipment to provide revenue metering and real-time telemetry data to PJM. The requirements for this equipment are listed in Appendix 2, Section 8 of Attachment O to the PJM Tariff, as well as PJM Manuals 01 and 14D. Protective relaying and metering design and installation must comply with Atlantic City Electric Applicable Standards.

Network Impacts

Potential network impacts were as follows:

Generator Deliverability

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

None

Multiple Facility Contingency

*(Double Circuit Tower Line, Line with Failed 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)

1. The BLE-SCULL#2 138kV line (from bus 8110 to bus 7906 ckt 1) loads from 110.64% to 112.46% (DC power flow) of its emergency rating (307MVA) for the single line outage of BL England to Skull#1 138kV as a result of V2-021. This project contributes approximately 5.6MW to cause this thermal violation.

2. The SCULL#1-MILL#1 138kV line (from bus 7905 to bus 7903 ckt 1) loads from 104.87% to 106.81% (DC power flow) of its emergency rating (268MVA) for the single line outage of BL England to Skull#2 138kV as a result of V2-021. This project contributes approximately 5.2MW to cause this thermal violation.

3. The MILL#1-LEWIS#1 138kV line (from bus 7903 to bus 7902 ckt 1) loads from 104.68% to 106.61% (DC power flow) of its emergency rating (268MVA) for the single line outage of BL England to Skull#1 138kV as a result of V2-021. This project contributes approximately 5.2MW to cause this thermal violation.

4. The SCULL#2-MILL#2 138kV line (from bus 7906 to bus 7904 ckt 1) loads from 103.89% to 105.71% (DC power flow) of its emergency rating (307MVA) for the single line outage of BL England to Skull#1 138kV as a result of V2-021. This project contributes approximately 5.6MW to cause this thermal violation.

5. The BLE-SCULL#1 138kV line (from bus 8110 to bus 7905 ckt 1) loads from 103.02% to 104.71% (DC power flow) of its emergency rating (307MVA) for the single line outage of BL England to Skull#1 138kV as a result of V2-021. This project contributes approximately 5.2MW to cause this thermal violation.

Short Circuit

No overstressed breakers were identified.

New System Reinforcements

(Upgrades required to mitigate reliability criteria violations, i.e. "Network Impacts," initially caused by the addition of this project's generation)

None

Contribution to Previously Identified System Reinforcements

(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project.

Will be determined during the System Impact Study phase if Secondary Option is chosen.