

U3-022 Sherman-Cumberland 138kV Generation Interconnection

General

The Interconnection Customer (IC), has proposed a 14 MW energy (5.32 MW capacity) solar photovoltaic generating facility to be located in Millville, New Jersey. The project was evaluated for compliance with reliability criteria for summer peak conditions in 2012. The Attachment "N" in-service date for the project is September 15, 2009.

Point of Interconnection: U3-022 will interconnect with the Atlantic City Electric's transmission system as a tap of the Sherman-Cumberland 138kV circuit via a new 138kV substation.

Direct Connection Requirements

Transmission Owner Scope of Direct Connection Work

The Transmission Owner's scope of work for the direct connection facility includes constructing a new 138 kV substation in a three (3) breaker ring bus configuration on land provided by the IC. The substation will include a control building, which will house all protective relaying, metering, and SCADA RTU communications equipment required to accommodate the electrical facilities.

The estimated cost to perform this work is **\$6,000,000 in 2009 dollars**. The estimated time to provide for the interconnection of this project is **24 to 36 months** after the receipt of a signed Interconnection Service Agreement and Construction Service Agreement.

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

Interconnection Customer Scope of Direct Connection Work

The IC's facility is comprised of solar photovoltaic panels and will be connected to the ACE's new 138kV substation. Prior to connecting to the new 138kV substation the voltage will be stepped up to 138kV. The developer assumes full responsibility for design and construction of all facilities associated with the U3-022 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.

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

U3-022 was studied as a 14 MW (5.32 MW capacity) injection into the Sherman-Cumberland 138kV substation. Potential network impacts were 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 contingencies only for the **full energy** output. Stuck breaker and bus fault contingencies will be performed for the System Impact Study)*

No problems identified.

Short Circuit

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)

No problems identified.

Stability and Reactive Power Requirements

Stability not required. Power Factor requirements to be determined during the U3-022 System Impact Study.

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 System Impact Study)

None

Delivery of Energy Portion of Interconnection Request

*(PJM also studied the delivery of the full 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 Transmission Interconnection Request. Note: Only the most severely overloaded conditions are listed below. 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 shall study all overload conditions associated with the overloaded element(s) identified. **These are not required reinforcements.***

No problems identified.