Generation Interconnection
Feasibility Study Report
Queue Position AC1-154

The Interconnection Customer (IC), has proposed a 3.2 MW MFO (1.2 MWC) solar generating facility to be located in Chestertown, Maryland. PJM studied AC1-154 as a 3.2 MW injection into the Delmarva Power and Light Company's (DPL) system at the I.B. Corners 69 kV Substation and evaluated it for compliance with reliability criteria for summer peak conditions in 2020. The planned in-service date, as stated during the project kick-off call, is March 31, 2018.

Point of Interconnection

The Interconnection Customer requested a distribution level interconnection. Distribution facilities in the area of the AC1-154 project are owned by the Choptank Electric Cooperative (CEC). As a result, AC1-154 will interconnect with the CEC system at a tap of the 12 kV feeder from the I.B. Corners Substation. The DPL system feeds the I. B. Corners Substation.

Transmission Owner Scope of Work

There is no DPL Attachment Facility work required for the AC1-154 project. The IC must contact CEC for the work scope and schedule.

Required Relaying and Communications

DPL does not anticipate any additional relay and communications work for this project.

Metering

Revenue metering specifications will be established by CEC.

Interconnection Customer Scope of Work

The Interconnection Customer assumes full responsibility for design and construction of all facilities associated with the AC1-154 generating station and the direct connection line on the IC side of the Point of Interconnection.

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.

It is the IC's responsibility to send the data that PJM and DPL requires directly to PJM. The IC will grant permission for PJM to send DPL the following telemetry that the IC sends to PJM: real time MW, MVAR, volts, amperes, generator status, and interval MWH and MVARH.

Summer Peak Analysis - 2020

Transmission Network Impacts

Potential transmission network impacts are 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, 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

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)

None

Steady-State Voltage Requirements

To be determined in later study phases.

Short Circuit

No issues identified.

Stability and Reactive Power Requirement

To be performed in later study phases if required.

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. (DP&L - DP&L) The OIL_CITY-STEEL138 138 kV line (from bus 232801 to bus 232103 ckt 1) loads from 99.87% to 100.27% (DC power flow) of its emergency rating (159 MVA) for the single line contingency outage of 'CKT 138XX_B'. This project contributes approximately 0.64 MW to the thermal violation.

   CONTINGENCY 'CKT 138XX_B'
   OPEN LINE FROM BUS 923320 TO BUS 232101 CIRCUIT 1/AB1-141 TAP - WYE MILLS 138
   END

Light Load Analysis - 2020

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

Facilities Study Estimate
The estimated time for PJM to issue a Facilities Study Report is 7 months. The deposit required for project will be $50,000.

Delmarva Power and Light Costs
Cost estimates will further be refined as a part of the Impact Study and Facilities Study for this project. The Interconnection Customer will be responsible for all costs incurred by DPL in connection with the AC1-154 project. Such costs may include, but are not limited to, any transmission system assets currently in DPL's rate base that are prematurely retired due to the AC1-154 project. PJM shall work with DPL to identify these retirement costs and any additional expenses. DPL reserves the right to reassess issues presented in this document and, upon appropriate justification, submit additional costs related to the AC1-154 project.

Appendices

The following appendices contain additional information about each flowgate presented in the body of the report. For each appendix, a description of the flowgate and its contingency was included for convenience. However, the intent of the appendix section is to provide more information on which projects/generators have contributions to the flowgate in question. Although this information is not used "as is" for cost allocation purposes, it can be used to gage other generators impact.

It should be noted the generator contributions presented in the appendices sections are full contributions, whereas in the body of the report, those contributions take into consideration the commercial probability of each project.

None