Generation Interconnection

Queue Project AE1-139

Ortanna – Lincoln Tap 115kV

Feasibility Study Report

Capacity : 39 MW / Energy : 65 MW

(Revised)

March, 2019

General

Interconnection Customer has proposed a new solar generating facility located in Adams County, Pennsylvania. The installed facilities will have a total capability of 65 MW with 39 MW of this output being recognized by PJM as Capacity. The proposed in-service date for this project is December 31, 2021. **This study does not imply a Mid-Atlantic Interstate Transmission, LLC (Transmission Owner or MAIT) commitment to this in-service date.**

Point of Interconnection (POI)

The AE1-139 solar facility will interconnect with the MAIT transmission system as follows:

1. Option 1 POI: via a tap onto the Orrtanna - Lincoln Tap 115 kV Line; or
2. Option 2 POI: via direct injection into the Hunterstown II substation (Adams County, PA).

Network Impacts

The Queue Project AE1-139 was evaluated as a 65 MW (Capacity 39.0 MW) tap of circuit #963, 115 kV transmission line, between Orrtanna substation, bus #204550, and Lincoln Tap substation, bus#204543, at a point located approximately 5.1 miles from Ortanna substation, in the Meted zone (FirstEnergy, MAIT area). Project AE1-139 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AE1-139 was studied with a commercial probability of 53%. Potential network impacts were as follows:

Primary POI: Summer Peak Analysis – 2022

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

Short Circuit
None. (No overdutied circuit breakers identified)

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.

None

Primary POI: System Reinforcements:

Short Circuit
None.

Stability and Reactive Power Requirement
Will be determined at a later study stages.

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.

Secondary POI: Summer Peak Analysis – 2022

The Queue Project AE1-139 was evaluated as a 65 MW (Capacity 39 MW) injection at the Hunterstown 115 kV substation in the ME area. Project AE1-139 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AE1-139 was studied with a commercial probability of 53%. Potential network impacts were as follows:

Secondary POI: Summer Peak Analysis – 2022

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

Short Circuit

None. (No overdutied circuit breakers identified)

Potential Congestion due to Local Energy Deliverability

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.

ID	FROM BUS#	FROM BUS	FROM BUS AREA	TO BUS#	TO BUS	TO BUS AREA	CKT ID	CONT NAME	Type	Rating MVA	PRE PROJECT LOADING %	POST PROJECT LOADING %	AC|DC	MW IMPACT
698281	933970	AD1-020 TAP	METED	204544	27LINCOLN	METED	1	ME-P2-2-ME-115-007B	operation	160	94.77	102.78	DC	12.8