

Generation Interconnection Feasibility Study Report Queue Position AC2-021

General

Interconnection Customer has proposed a 15 MW hydro generating facility to be built near Jennings Randolph Dam, Garrett County, Maryland; PJM recognizes 15 MW as Capacity Interconnection Rights for this project. The proposed in-service date is August 31, 2018. **This study does not imply a Potomac Edison (“Transmission Owner”) commitment to this in-service date.**

Point of Interconnection

AC2-021 will interconnect with the Potomac Edison transmission system by tapping the Mt. Zion – Beryl 138 kV line via a three breaker switching station;

Network Impacts

The Queue Project AC2-021 was evaluated as a 15.0 MW (Capacity 15.0 MW) injection tapping the Mount Zion – Westvaco 138 kV line in the APS area. Project AC2-021 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AC2-021 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

To be determined at later study stages

Short Circuit

None

The fault currents and X/R ratios on the Albright – Cross School 138 kV line, 2.95 miles from the Mt. Zion 138 kV Tap are listed below.

	<u>Three Phase</u>	<u>Single Line</u>
X/R Ratio	6.4523	4.0824
Fault Current (Amps)	8565	6585

These values are for the current system configuration. Any system changes in the area could have a significant impact on these values. It will be the responsibility of the Interconnection Customer to make any protection upgrades required should this occur. The proposed interconnection facilities must be designed in accordance with the “FirstEnergy Requirements for Transmission Connected Facilities” document.

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.

Not Applicable

Light Load Analysis - 2020

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

System Reinforcements

Short Circuit

None

Stability and Reactive Power Requirement

To be determined at 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)

None

Light Load 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