Generation Interconnection Feasibility Study Report Queue Position AC1-140

General

"Interconnection Customer" has proposed an uprate to prior queue projects G30_W51 and Q79 consisting of a coal-fired steam engine generating facility located at 1375 Ft. Martin Road, Maidsville, Monongalia County in West Virginia. The increased capability associated with queue position AC1-140 is achieved through optimization of plant performance management. There is no new equipment to be installed and no electrical changes to be conducted. The following shows the MFO and Capacity Interconnection Rights (CIR) history for this Point of Interconnection with PJM:

- G30_W51 requested and received 600.0 MW Energy (MFO) and 600.0 MW CIR;
- Q79 requested an increase of 100.0 MW Energy and 100.0 MW CIR;
- Both projects combined, G30_W51 and Q79, have a total capability of 700.0 MW Energy (MFO) and 700.0 MW CIR.
  PJM generation performance monitor recognizes 700.0 MW (MFO) and 700.0 MW CIRs as of the date of issuing this feasibility study report;
- AC1-140 requested an increase of 10.0 MW Energy (MFO) and 10.0 MW CIR.
- All three projects combined, G30_W51/Q79 and AC1-140, will have a total capability of 710.0 MW Energy (MFO) and 710.0 MW CIRs.

The proposed in-service date for the AC1-140 project is 12-31-2017. **This study does not imply a West Penn Power ("Transmission Owner") commitment to this in-service date.**

Point of Interconnection

AC1-140 will interconnection with the West Penn Power transmission system via direction injection into the North Longview 500 kV switching station which is located adjacent to the Allegheny Power Kammer-Harrison-Fort Martin 500 kV line.

Network Impacts

The Queue Project AC1-140 was evaluated as a 10.0 MW (Capacity 10.0 MW) uprate to the G30_W51/Q79 project at the North Longview 500kV substation in the APS area. Project AC1-140 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AC1-140 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 during the system impact study stage.

Short Circuit:

None.

Affected System Analysis & Mitigation

NYISO Impacts: None.

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:

Not required.

System Reinforcements

Short Circuit:

None.

Stability Requirement:

None.

Reactive Power Requirement:

To be determined during the system impact study stage.

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 for mitigating 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.