

Generation Interconnection

Feasibility Study Report

Web Version

For

PJM Generation Interconnection Request

Queue Position W2-057

Laurel Mountain Project

PJM DOCS No. 617977v1

October, 2010

Overview

Interconnection Customer (IC) has submitted an Attachment N to propose the interconnection of 32 MW of battery storage on a tract of land at the site of the PJM Queue number P-59 Belington 138kV (Leadsville) Project for the purpose of participation in the PJM Regulation and energy markets via the Allegheny Power network. This project was studied as an injection into the same POI used by the P59 project. The Commercial Operation date for this project was requested to be October 30, 2010. The analysis was performed using a 2014 base year

PJM Report on the Transmission System

This portion of the report addresses the impacts on and the required reinforcements to that part of the transmission system under PJM jurisdiction.

Network Impacts

Queue project W2-057 was studied as a 32.0MW (0 MW of which was Capacity) injection into the 34.5kV collector bus to be constructed by the IC for the P59 Belington 138kV (Leadsville) wind project. Project W2-057 was evaluated for compliance with reliability criteria for summer peak conditions in 2014. 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 with full energy output. Stuck Breaker and Bus Fault contingencies will be applied during the Impact Study)

No problems identified.

Contribution to Previously Identified Overloads

(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project. This project may have % allocation of cost responsibility which will be calculated and reported for the Impact Study.)

No problems identified.

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.

Short Circuit

(Report Overdutied breakers here)

None.

Stability Analysis

Will be performed at the System Impact Study Stage.

Energy Portion of Interconnection Request

PJM also studied the delivery of the energy portion of the surrounding generation. Any potential 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. 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 analyzes all overload conditions associated with the overloaded element(s) identified. As a result of the aggregate energy resources in the area, the following violations were identified.

No problems identified.

APS Feasibility Analysis Report

This portion of this Feasibility Study Report has been prepared for PJM queue project W1-057 by Allegheny Power. It addresses the required reinforcements, if any, found in the PJM analysis of the Transmission System and provides the results of a similar analysis at the distribution level, including the attachment and direct connection facilities.

This project was studied as an injection into the 34.5kV collector bus to be constructed by IC for the P59 (Leadsville) wind project. Therefore, no attachment facilities are to be constructed by AP to support this installation.

Based on discussions with the developer of this project, it was assumed that the P59 wind generation facility will have a maximum output of 91.5 MW. Therefore, at the Leadsville bus, there will be no net increase of generation capacity with the installation of W2-057. Thus, no thermal violations were identified.