

P01 - Westover South-Madera 115 kV Generation Interconnection

Network Impacts

The #P01 project was studied as a total injection of 100 MW (20 MW of Capacity) into a tap of the Westover to Madera 115 kV circuit. Project #P01 was evaluated for compliance with reliability criteria for summer peak conditions in 2010. Potential network impacts were as follows:

Generator Deliverability – at the 20 MW capacity value level

No problems were identified (no facility overloads under system single contingency conditions)

Multiple Facility Contingency – Reliability Requirements at the 100 MW full output level

No problems were identified (no facility loading that exceeded the facility's normal or emergency rating.)

NOTE: For Feasibility Studies, only double circuit (tower) outages are evaluated – not line fault and stuck breaker.

Contribution to Previously Identified Overloads

None

New System Reinforcements – Single Contingency Reliability Requirements

None

Contribution to Previously Identified System Reinforcements

None

Short Circuit

Under study

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.

As a result of the aggregate energy resources in the area, the following violations were identified:

1. The P01 project contributes 11.5 MW to the previously identified overload of the Glory-Dixonville 115 kV line for the outage of the Wayne - Erie West 345 kV circuit.
2. The P01 project contributes 7 MW to the previously identified overload of the Altoona to Raystown 230 kV line for the outage of the Homer-Shelocta-Keystone 230 kV circuit.
3. The P01 project contributes to the overload of the Altoona-N39/O38/P22 230 kV line under normal operating conditions. It loads the Altoona-N39/O38/P22 230 kV line to 105%. It contributes 5% (or 12 MW) to the overload condition. It will

- require the replacement/upgrade of the Altoona-N39/O38/P22 230 kV transmission line conductor – which is approximately 16 miles in length.
4. The P01 project contributes to the loading of the Westfall-S21 Tap 115 kV line to 100% for the loss of the Altoona-N39/O38/P22 230 kV line.

The P01 project will be responsible for:

- 100% of the direct connection costs estimated at \$2.16 million

Other Concerns

The P01 project contributes to the overload of the Huntingdon-OC1 Tap 46 kV, the WRH Tap-OC1 Tap 46 kV line and the Warrior Ridge-WRH Tap 46 kV line. It contributes 2% (or 0.84 MW) to the overload condition for the loss of the Altoona-Raystown 230 kV line. This was previously identified in PJM Queues N39 and O38. If this 46 kV line is not upgraded because the N39 and O38 projects fail to go forward, this P01 project will require the replacement/upgrade of the 46 kV line conductor.

Summary

A conceptual estimate was provided for the assumption that the point of interconnection would be a 3-breaker ring bus at some remote point adjacent to the existing right-of-way.