#U2-015 Harwood – E. Palmerton 100 MW

Generator Interconnection

This analysis was completed to assess the reliability impact for a new generator interconnecting to the PJM System as a Capacity Resource.

Network Impacts

Queue U2-015 was studied as a 100 MW (energy) / 13 MW (Capacity) Injection into the Harwood 230 kV bus (Option #1) and Harwood - Susquehanna 230 kV line (Option #2). Project U2-015 was evaluated for compliance with reliability criteria for summer peak conditions in 2012. Network impacts were as follows:

Generator Deliverability

(Normal System with all facilities in-service and Single, or N-1, contingencies for the Capacity portion only of the interconnection)

None Identified.

Multiple Facility Contingency

(Double Circuit Tower Line contingencies only for the full energy output. Stuck breaker and bus fault contingencies will be performed for the Impact Study)

None identified.

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 identified.

Short Circuit

No problems identified.

Stability and Low Voltage Ride-Through Analysis

Will be performed for the Impact Study

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 identified.

POTENTIAL ISSUES

Delivery of the Energy Portion of Interconnection Request

PJM also studied the delivery of the energy portion of this interconnection request with all earlier queues at their energy output. Any problems identified below may result in operational restrictions to the project under study or other PJM generation. The developer can proceed with network upgrades to eliminate the potential congestion at their discretion by submitting a Merchant Transmission Interconnection request now or in the future. **These are not required reliability upgrades.**

As a result of the aggregate energy resources in the area, the following potential congestion was identified:

1. **(PPL/PENELEC)** The LACKAWNA-OXBOW 230kV line loads from 122.2% to 123.5% of its emergency rating (617MVA) for the single line contingency outage (PJM JEFF-LACK 500). This project contributes approximately 7.9MW to the thermal congestion.

2. **(PENELEC)** The OXBOW-N.MESHPN 230kV line loads from 116.4% to 117.6% of its emergency rating (617MVA) for the single line contingency outage (PJM JEFF-LACK 500). This project contributes approximately 7.8MW to the thermal congestion.

3. **(PPL/PENELEC)** The LACKAWNA-OXBOW 230kV line loads from 170.1% to 171.5% of its normal rating (499MVA) for non-contingency condition. This project contributes approximately 7.0MW to the thermal congestion.

4. **(PENELEC)** The OXBOW-N.MESHPN 230kV line loads from 164.5% to 165.9% of its normal rating (499MVA) for non-contingency condition. This project contributes approximately 6.9MW to the thermal congestion.

5. **(PPL/JCPL)** The MTN CRK-MO PARK 230kV line loads from 101.8% to 102.5% of its emergency rating (1394MVA) for the single line contingency outage (PJM28A). This project contributes approximately 9.0MW to the thermal congestion.