P58 – Canaan - Seneca 138kV

Generation 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

The #P58 project was studied as a 150 MW (30 MW of Capacity) injection at a tap of the Canaan-Seneca 138 kV line. Project #P58 was evaluated for compliance with reliability criteria for summer peak conditions in 2010. Potential network impacts were as follows:

Generator Deliverability

No problems were identified (for the capacity portion [30MW] of the project).

Multiple Facility Contingency

No problems were identified.

Contribution to Previously Identified Overloads

No problems were identified.

New System Reinforcements

None required for capacity deliverability.

Contribution to Previously Identified System Reinforcements

To be determined at the System Impact Study.

Short Circuit

No breaker replacements were identified for the limited study.

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.

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

1. Contribution of 93 MW to further overload the Albright-P52 from 157% to 203% of its emergency rating (202 MVA) for the outage of the N.Peters-N.Frank-Seneca 138 kV line.
2. Contribution of 11 MW to further overload the Albright-Brandon 138 kV line from 100% to 108% of its emergency rating (143 MVA) for the outage of the G51_W60-Yukon 500 kV line.

3. The N32-Necessity Tap 138 kV line loads from 97% to 104% of its emergency rating (173 MVA) for the outage of the G51_W60-Yukon 500 kV line. The #P58 contributes 11 MW to cause this violation.
4. The Canaan-William 138 kV line loads from 91% to 164% of its emergency rating (207 MVA) for the outage of the N.Peters-N.Frank-Seneca 138 kV line. The #P58 contributes 150 MW to cause this violation.
5. Contribution of 57 MW to further overload the Parsons-Loughs Lane 138 kV line from 127% to 172% of its emergency rating (126 MVA) for the outage of the N.Peters-N.Frank-Seneca 138 kV line.
6. Contribution of 57 MW to further overload the William-Parsons 138 kV line from 136% to 181% of its emergency rating (126 MVA) for the outage of the N.Peters-N.Frank-Seneca 138 kV line.
7. Contribution of 93 MW to further overload the William-Mettiki 138 kV line from 122% to 168% of its emergency rating (202 MVA) for the outage of the N.Peters-N.Frank-Seneca 138 kV line.
8. The Hardy-Junction 138 kV line loads from 56% to 131% of its emergency rating (201 MVA) for the outage of the N.Peters-N.Frank-Seneca 138 kV line. The #P58 contributes 150 MW to cause this violation.
9. The Hardy-N.Petersburg 138 kV line loads from 53% to 104% of its emergency rating (297 MVA) for the outage of the Seneca-Canaan-William 138 kV line. The #P58 contributes 150 MW to cause this violation.
10. Contribution of 93 MW to further overload the Mettiki-P52 138 kV line from 126% to 172% of its emergency rating (202 MVA) for the N.Peters-N.Frank-Seneca 138 kV line.
11. The N. Petersburg-N. Franklin 138 kV line loads from 62% to 112% of its emergency rating (297 MVA) for the outage of the Seneca-Canaan-William 138 line. The #P58 contributes 150 MW to cause this violation.