

O59 - Gold 115 kV

Generation Interconnection

Network Impacts

The #O59 project was studied as an addition of 99 MW (19.8 MW of Capacity) into a tap of the Gold 115 kV substation. Project #O59 was evaluated for compliance with reliability criteria for summer peak conditions in 2009. Potential network impacts were as follows:

Generator Deliverability

No problems were identified

Multiple Facility Contingency

No problems were identified

New System Reinforcements

Gaines-Ansonia 34.5 kV line overloads to 108% for the loss of the Sabinsville-Niles Valley 34.5 kV line. Project O59 contributes approximately 1.4 MW to cause this overload condition. To mitigate this overload would require reconductor of 5.37 miles of the 5.87 mile line.

Ansonia-Wellsboro 34.5 kV line overloads to 103% for the loss of the Sabinsville-Niles Valley 34.5 kV line. Project O59 contributes approximately 1.4 MW to this overload condition. To mitigate this overload would require reconductor of 9.47 miles of the 10.49 mile line.

Relay changes are required at both Niles Valley and Potter substation unless they were done previously on either N36 or O52. Communication equipment changes required at a remote terminal to facilitate communication if either N36 or O52 were constructed. .

A communication channel, possibly fiber optic cable, is required to be obtained and maintained by the developer from both Niles Valley and Potter (APS) Substations. If N36 and/or O52 is constructed then the communication channel would be required from either N36/Niles Valley and O52/Potter (APS) substations. This would be at the Interconnection Customer's expense.

Contribution to Previously Identified System Reinforcements

The #O59 project contributes to previously identified upgrades. The project does not have a cost allocation to the upgrades, but may be responsible if the initial project causing the need for the upgrade withdraws from the queue.

1. #O59 contributes approximately 0.7 MW to the overload of the Sabinsville 115-34.5 kV transformer #1 for the outage of the Sabinsville-Niles Valley 115 kV line, which was originally caused by N36.
2. #O59 contributes approximately 0.7 MW to the overload of the Sabinsville 115-34.5 kV transformer #2 for the outage of the Sabinsville-Niles Valley 115 kV line to cause an overload to 117% which was originally caused by O52.

Short Circuit

No problems were identified.

Delivery of Energy Portion of interconnection Request

PJM also studied the delivery of the energy portion of this interconnection request. Any problems identified below may result in operational restrictions to the project under study. The Interconnection Customer 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. O59 contributes 44 MW to the normal overload at the Sabinsville-N36 115 kV line, which was originally caused by the #O52 project.
2. The Niles Valley -Mansfield 115 kV line loads to 126% of its emergency rating (119 MVA) for the outage of the Grover-E. Towanda and Grover-K02 tower line outage. The #O59 project contributes approximately 42 MW to the contingency overloaded facility.
3. The Gold-N36 115 kV line loads to 117% of its normal rating (130 MVA). The #O59 contributes approximately 44 MW to this condition.
4. The Sabinsville to Niles Valley 115 kV line loads to 143% of its emergency rating (159 MVA) for the outage of the O52-Potter 115 circuit. The #O59 project contributes approximately 97 MW to this condition.
5. The Mansfield to South Troy 115 kV line loads to 126% of its emergency rating (119 MVA) for the outage of the O52-Potter 115 circuit. The #O59 project contributes approximately 92 MW to this condition.
6. The South Tr. To Towanda 115 kV line loads to 109% of its emergency rating (119 MVA) for the outage of the O52-Potter 115 circuit. The #O59 project contributes approximately 87 MW to this condition.
7. #O59 contributes approximately 16 MW to the overload of the Homer Ct to Shelocta 230 kV line for the outage of the Erie W to Wayne 115 kV circuit, which was first identified for the #O56 project.
8. #O59 contributes 15 MW to the overload of the Lewistown to Juniata 230 kV line for the outage of the Juniata to Keystone 500 kV line, which was first cause by the #O38 project.
9. Sabinsville-Gaines 34.5 kV line loads to 102% of its rating (23 MVA) for the outage of the Sabinsville-Niles Valley 115 kV line outage. The #O59 contributes approximately 1.5 MW to cause this thermal violation. The energy portion of #O59 contributes 0.5 MW to the overload.
10. The #O59 contributes approximately 0.7 MW to the overload of the Sabinsville 115-34.5 kV transformer #2 for the outage of the Sabinsville-Niles Valley 115 kV line to cause an overload to 117% which was originally caused by O52.