

W3-011 East Lima-Fostoria Central (Arcadia I) 345kV

Generation Interconnection

Network Impacts

Queue project W3-011 was studied as a(n) 300.0 MW (39.0 MW of which was Capacity) injection into AEP's system at the 50.0% tap between Fostoria Central and Findlay 138.0 kV line. Project W3-011 was evaluated for compliance with reliability criteria for summer peak conditions in 2014.

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, Line with Failed Breaker and Bus Fault contingencies for the full energy output)

No problems identified

Short Circuit

(Summary form of Cost allocation for breakers will be inserted here if any)

No problems identified

System Reinforcements

None required

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.)

1. (AEP) The Melmore-V1-010 Tap 138 kV line (from bus 243039 to bus 292059 ckt 1) loads from 120.77% to 122.67% (DC power flow) of its emergency rating (179 MVA) for the operational contingency '5243_B2_TOR4783C_MOAB'. This project contributes approximately 21.02 MW to the thermal violation.

2. (AEP) The Melmore-V1-010 Tap 138 kV line (from bus 243039 to bus 292059 ckt 1) loads from 143.43% to 144.78% (DC power flow) of its normal rating (138 MVA) for non contingency condition. This project contributes approximately 11.61 MW to the thermal violation.

3. (AEP) The V1-010 Tap-Howard 138 kV line (from bus 292059 to bus 243024 ckt 2) loads from 137.18% to 139.28% (DC power flow) of its emergency rating (179 MVA) for the operational contingency '5147_B2_TOR707_V1-010B'. This project contributes approximately 23.24 MW to the thermal violation.

4. (AEP) The V1-010 Tap-Howard 138 kV line (from bus 292059 to bus 243024 ckt 2) loads from 101.24% to 102.88% (DC power flow) of its normal rating (138 MVA) for non contingency condition. This project contributes approximately 13.94 MW to the thermal violation.

5. (AEP) The V1-010 Tap-Howard 138 kV line (from bus 292059 to bus 243024 ckt 1) loads from 85.22% to 86.53% (DC power flow) of its emergency rating (179 MVA) for the operational contingency '911_B2'. This project contributes approximately 14.58 MW to the thermal violation.

6. (AEP) The V1-010 Tap-Howard 138 kV line (from bus 292059 to bus 243024 ckt 1) loads from 97.04% to 98.65% (DC power flow) of its normal rating (138 MVA) for non contingency condition. This project contributes approximately 13.79 MW to the thermal violation.

7. (AEP/FE) The Howard-Brookside 138 kV line (from bus 243024 to bus 238586 ckt 1) loads from 157.08% to 158.04% (DC power flow) of its emergency rating (173 MVA) for the operational contingency '911_B2'. This project contributes approximately 15.02 MW to the thermal violation.

8. (AEP/FE) The Howard-Brookside 138 kV line (from bus 243024 to bus 238586 ckt 1) loads from 171.76% to 173.43% (DC power flow) of its normal rating (133 MVA) for non contingency condition. This project contributes approximately 13.68 MW to the thermal violation.

9. The Maple Grove - Riverview 69 kV Line ckt 1 rated 31 MVA loads from 99.5 % to 110.4% with an impact of 10.88% for contingency 517

10. The East Lima – New Liberty 138 kV Line ckt 1 rated 150 MVA loads from 91.5% to 100% MVA with an impact of 8.55% for contingency W3-012_B2_2.

11. The Convoy - Robison Park 345 kV Line ckt 1 rated 897 MVA loads from 98.3% to 104.1% with an impact of 5.8% for contingency W3-012_B2_2.

12. The Lynn - U1-060 138 kV Line ckt 1 rated 184 MVA loads from 97% to 100.7% with an impact of 3.77% for contingency W3-012_B2_2.

13. The Holran – Maple Grove 69 kV Line ckt 1 rated 31 MVA loads from 99.2% to 102.6% with an impact of 3.4 for contingency 5150_B2_TOR7