

#V4-015 Fostoria Central (Hancock) 138kV
Generation Interconnection

Local AEP Impacts

Unlike PJM, AEP performs AC analysis for interconnection projects in the feasibility stage. In analyzing the V2-019A Merchant Transmission Project with all other Wind Interconnection Projects in the AEP footprint at 13-20% (based on the queue position) of their total capacity, AEP identified numerous (>100) new overloads on the AEP bulk (100 kV and above) system. Furthermore, a number of other contingencies did not converge, and the project contributed to increased flows on several existing overload conditions on the AEP system. The less complete PJM analysis only recognized 3 new overloads on the AEP system for the V2-019A project. Considering the extensive differences between AEP and PJM analyses and methodologies, until these differences are addressed, AEP will be unable to verify the results of the PJM analyses for V2-019A and subsequent projects, including the subject of this report; V4-015.

While not validating the PJM results by performing any powerflow studies, AEP is complying with the PJM request to provide information for the V4-015 interconnection project regarding attachment facilities and transmission improvements that address system conditions identified by PJM. Please note that these transmission improvements are based on the information shared by PJM, were determined without the benefit of detailed engineering studies, and are therefore preliminary in nature. The extent of improvements needed for the interconnection may vary by type of project and its position in the queue. AEP will work with PJM to resolve the differences in results during the Impact Study stage.

Network Impacts

The queue V4-015 project was studied as a 66.6MW (8.6MW of which was capacity) injection into AEP's system at the Fostoria 138kV substation. Project V4-015 was evaluated for compliance with reliability criteria for summer peak conditions in 2014. Potential network impacts were as follows:

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

Stability

Not required because the project is less than 30 MW.

System Reinforcements

None.

Potential Congestion due to Local Energy Deliverability

(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 below. There is no guarantee of full deliverability 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 identified overloaded element(s). As a result of the aggregate energy resources in the area, the following violations were identified:

No problems identified.