

Y2-112 Keystone (Battery) 345kV

Generation Interconnection

Local Network Impacts

The impact of the proposed generating facility on the AEP System was assessed for adherence with applicable reliability criteria. AEP planning criteria require that the transmission system meet performance parameters prescribed in the AEP FERC Form 715¹ and Connection Requirements for AEP Transmission System². Therefore, these criteria were used to assess the impact of the proposed facility on the AEP System. Y2-112 was studied as a 12 MW (0 MW capacity) storage facility consistent with the interconnection application. Project #Y2-112 was evaluated for compliance with reliability criteria for summer peak conditions in 2016.

Potential network impacts were as follows:

Normal System (2016 Summer Conditions Capacity Level)

- No problem identified

Single Contingency (2016 Summer Conditions Capacity Level)

- No problem identified

Multiple Contingency (2016 Summer Conditions Capacity Level)

- No problem identified

Contribution to Previously Identified Overloads (2016 Summer Conditions Capacity Level)

- No problem identified

Normal System (2016 Summer Conditions Full Output)

- No problem identified

Single Contingency (2016 Summer Conditions Full Output)

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https://www.aep.com/about/codeofconduct/oasis/transmissionstudies/GuideLines/2012%20AEP%20PJM%20FERC%20715_Final_Part%204.pdf

2

https://www.aep.com/about/codeofconduct/OASIS/TransmissionStudies/Requirements/AEP_Interconnection_Requirements_rev0.pdf

- No problem identified

Multiple Contingency (2016 Summer Conditions Full Output)

- No problem identified

Contribution to Previously Identified Overloads (2016 Summer Conditions Full Output)

- No problem identified

Voltage Analysis

- No problem identified

Short Circuit Analysis

- No problem identified

Stability Analysis

- Will be conducted in the Impact Study.

Additional Limitations of Concern

- No known additional limitation of concern.

Local/Network Upgrades

- None

Network Impacts

The Queue Project #Y2-112 was studied as a 12.0MW (Capacity 0.0MW) injection at the Keystone 345 kV substation in the AEP area. Project #Y2-112 was evaluated for compliance with reliability criteria for summer peak conditions in 2016. Potential network impacts were as follows:

Generator Deliverability

(Single or N-1 contingencies for the Capacity portion only of the interconnection)

No problems were 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)

No problems were identified.

Short Circuit

No problems 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.

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

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. 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 will study all overload conditions associated with the overloaded element(s) identified.)

None