

**#U2-101 – 138kV
Generation Interconnection**

Network Impacts

The queue project U2-101 was studied as a 20MW (capacity) injection into the ComEd system at the Rock Falls TSS 133 138kV substation. U2-101 was evaluated for compliance with reliability criteria for summer peak conditions in 2012. 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 contingencies only for the full energy output. Stuck breaker and bus fault contingencies will be performed for the Impact Study)

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)

No problems identified.

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.

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:

1. The ComEd-owned Rockfalls to Nelson 138kV line 15509 loads from 238.03% to 243.88% of its load dump rating (265MVA) for the tower outage of 138kV line 15507 and L15508. This project contributes approximately 15.5MW to this thermal violation.
2. The ComEd owned Transformer 82 at TSS 155 Nelson loads from 112.70% to 115.47% of its applicable load dump rating (559MVA) for the tower outage of 138kV line 15507 and 15508. This project contributes approximately 15.5MW to this thermal violation.

Short Circuit

To be determined in the System Impact Study.

Potential Issues

The Byron/Nelson area of the ComEd transmission system has historically been limited by transient and dynamic stability concerns and previous studies for new generator interconnections have identified severe limitations. Stability studies for this project will be performed during the System Impact Study. It is possible that significant cost contributions may be required of this project for new or previously identified stability upgrades.