#N21_N22_O3 Sublette 29 MW

Generation Interconnection

This analysis was completed to assess the reliability impact for a new generator interconnecting to the PJM system as a Capacity / Energy Wind TurbineGenerating Resource.

Network Impacts

The system, as planned, was evaluated for compliance with reliability criteria. **The Sublette N21_N22_O3 project was studied as a 29 MW generating resource (5.8 MW Capacity) interconnection to the 34.5 kV line L10761 from Mendota SS 311 to Dixon TSS 107.** The results are summarized below.

Generator Deliverability

No problem identified.

Local System Impacts- (Normal conditions, all facilities in service)

With minimum load on L311XX (former L10761), Zapco cogen at max net allowable output (approx 3 MW) and **assuming 6 MW stand-alone Sublette project Queues M18 (1.65 MW) and N21 (3.35 MW) is built by FPC Services:**

- Sublette generation at >23 MW net injection into L1076 causes total load flow on circuit L10761 to exceed the circuit breaker current transformer (or distance relays if current transformer tap change is sufficient) rating on 34.5 kV at Dixon TSS 107.
- Sublette generation at >25 MW net injection causes total load flow on circuit L311XX (former L10761) to exceed the circuit breaker current transformer (or distance relays if current transformer tap change is sufficient) rating on 34.5 kV at Mendota SS 311.
- Sublette generation in excess of 26MW net injection causes the loading of L10761/L311XX to exceed the thermal capability of the line which will require conductor replacement (approx. 18 miles) or a new dedicated line for the Sublette generation.

Stability Analysis

Not applicable for small generators connected to the distribution system.

Short Circuit Analysis

No problems identified.

Network Upgrade Requirements

None.

Local Upgrade Requirements

Assuming 6 MW stand-alone Sublette project Queues M18 (1.65 MW) and N21 (4.35 MW) is built by the same Interconnection Customer, the following upgrades are required for Sublette Queues N21 (7.65 MW), N22 (11 MW) and O3 (11 MW):

- **<u>At >23 MW net output</u>** L10761 current transformers / relays at Dixon TSS 107 require replacement.
- **<u>At >25 MW net output</u>** L10761 current transformers / relays at Mendota SS 311 require replacement.

The estimated cost for current transformer / relay replacement is $25,000 at each location or **$50,000** total. Current transformer / relay replacement is not a critical path item for overall project schedule.