Queue #O09 Normandy 138kV
Generation Interconnection

Network Impacts

The **#O09 project was studied as a total injection of 212 MW (42.4 MW of Capacity) into a tap of the Kewanee to Rock Falls 138 kV circuit (#7411)**. Project #O09 was evaluated for compliance with reliability criteria for summer peak conditions in 2009. Potential network impacts were as follows:

Generator Deliverability
No problems were identified

Multiple Facility Contingency
The Rock Falls to O09 138kV line (#13311) loads to 100% of its load dump rating (212 MVA) for the Kewanee to O09 and Nelson to Kewanee/Dixon 138kV tower line outage (#7411 & #15508). The #O09 project contributes approximately 212 MW to the contingency overloaded facility.

Contribution to Previously Identified Overloads
There is a potential overload on the Byron to Wempletown 345 kV circuit (#0624), for which project #O09 contributes 24 MW to the loading on the facility. PJM and ComEd are continuing to review the cause of and solution to the overload. The Impact Study for this project will define the cost allocation, if any, for this generation project. Rough estimates to eliminate the overload are around $20 million; Order of magnitude estimate of O09 cost allocation responsibility for this potential overload is 50%.

MISO Impact
Impact on the MISO member transmission systems is not included in this analysis but will be in the Impact Study, which possibly may reveal upgrade need in the MISO system not identified in this Feasibility Study.

New System Reinforcements

Cost estimate:

Qty	Item Description	Material	Labor	Total
TSS133 Rock Falls				
1	Review and upgrade substation equipment for Line 13311 as necessary to meet or exceed the thermal capability of the 138kV conductor. Review includes line and CB disconnects, leads, CT's, metering, relays, etc.	$ 300,000	$ 200,000	$ 500,000

System Reinforcement Schedule:
Estimated timeframe to complete engineering, procurement, and construction for this reinforcement is approximately 18 – 24 months, and can be done concurrently with the Direct Connection schedule.

Contribution to Previously Identified System Reinforcements
To be determined

Short Circuit
No problems were identified.

Potential Issues
The output of these units will be limited depending on system conditions if attempted to operate at full output (212 MW). This is due to the fact that line 7411 is rated for less than the full capability of the units. If no upgrades are made to line 7411, real time operations will continually limit these units to approximately 191 MVA due to N-1 concerns. The upgrades required to mitigate these overloads may be limited to station equipment at Kewanee.

During certain maintenance outages the O09 project will be required to be taken off line.