#O73 - Benson 345kV

Generator Interconnection

Network Impacts

Network Impacts

The **#O73 project was studied as a total injection of 100 MW (20 MW of Capacity) at TSS 996 Benson Wind Farm.** Project #O73 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

No problems were identified

Contribution to Previously Identified Overloads

1. It contributes 60 MW to the overload of the Dresden to #O23 345 kV line 1202. This violation was first caused by the #O27 project for the tower outage of lines16101 and 97503. The loading on the line increases from 113% to 118% of its load-dump rating (1320 MVA).
2. It contributes 39 MW to the thermal violation of the Powerton to Tazewell 345kV line 0304. This condition was first caused by the #O27 project for the tower outage of lines 16101 and 97503. The loading on the line increases from 108% to 111% of its load-dump rating (1374 MVA).

New System Reinforcements

To be determined

Contribution to Previously Identified System Reinforcements

To be determined

Short Circuit

The O73 project caused two circuit breakers at BT 4-6 and BT 6-1 at Sta. 3 Powerton to become overdutied at 99.0% of the circuit breaker rating.

Potential Issues

Note: Impact on the MISO member transmission Systems is not included in this analysis, but will be in the Impact Study, which possibly may reveal upgrades needed in the MISO system not identified in this Feasibility Study.

During certain maintenance outages the O73 project will be required to be taken off-line.

The O73 project may impact the Powerton Stability Schemes due to the interconnection point on line 0302 Powerton to Dresden.

New System Reinforcements

Cost estimate:

Qty	Item Description	Estimated Cost
2	345kV Breaker Bay position, includes breaker,CCVT, Relay and Controls at (Powerton Station)	$ 3,960,000
	Total	**$ 3,960,000**

System Reinforcement Schedule:
Estimated timeframe to complete engineering, procurement, and construction for this reinforcement is approximately 18 – 24 months, after the Interconnection Services Agreement and Construction Services Agreement are executed.