Generation Interconnection Feasibility Study Report-Web Version

For

PJM Generation Interconnection Request Queue Position Y3-073

W.H. Zimmer Project

April 2014

Feasibility Study Report

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Introduction

This Feasibility Study report provides the documentation of an assessment that has been performed in response to a request made by the interconnection customer (IC) for a 50 MW increase of Capacity and the W. H. Zimmer station.

The intent of the Feasibility study is to determine a plan, with estimated costs and construction time estimates, to connect the subject generation to the PJM network at a location specified by the Interconnection Customer. The Interconnection Customer may request the interconnection of generation as a capacity resource or as an energy-only resource. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: (1) Direct Connections, which are new facilities and/or facilities upgrades needed to connect the generator to the PJM network, and (2) Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system.

In some instances an Interconnection Customer may not be responsible for 100% of the identified network upgrade cost because other transmission network uses, e.g. another generation interconnection, may also contribute to the need for the same network reinforcement. The possibility of sharing the reinforcement costs with other projects may be identified in the feasibility study, but the actual allocation will be deferred until the impact study is performed.

The study estimates do not include the feasibility, cost, or time required to obtain property rights and permits for construction of the required facilities. The project developer is responsible for the right of way, real estate, and construction permit issues. For properties currently owned by Transmission Owners, the costs may be included in the study.

PJM Interconnection Study Results

The following are the results of the analysis performed by PJM engineers with respect to the transmission system impacts. This section also includes the reinforcements, their costs and schedules for upgrades on the Interconnected Transmission Owner and the affected Transmission Owner(s).

Network Impacts

The Queue Project #Y3-073 was studied as a 50.0MW (Capacity50.0MW) injection at the 08ZIMERG 345 kV substation in the DEOK area. Project #Y3-073 was evaluated for compliance with reliability criteria for summer peak conditions in 2017. Potential network impacts were as follows:

Generator Deliverability

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

None

Light Load Analysis

Light Load Studies to be conducted during later study phases (applicable to wind, coal, nuclear, and pumped storage projects).

Multiple Facility Contingency

(Double Circuit Tower Line, Failed Breaker and Bus Fault contingencies for the full energy output)

None

Short Circuit

(Summary form of Cost allocation for breakers will be inserted here if any)

None

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

Steady-State Voltage Requirements
(Results of the steady-state voltage studies should be inserted here)

To be determined

Stability and Reactive Power Requirement
(Results of the dynamic studies should be inserted here)

To be determined

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)
(Summary form of Cost allocation for transmission lines and transformers will be inserted here if any)

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

Interconnected Transmission Owner's Analysis Results

The following was generated by Duke Energy Ohio/Kentucky, the Interconnected Transmission Owner, based upon its analysis, as well as that of PJM, for mitigation of the project's impacts on the transmission and lower voltage system as applicable. It includes the costs and schedules for any system upgrades.

Power Flow Analysis

No reinforcements to the Duke Energy Ohio/Kentucky system will be required for the Y3-073 project.

Project Location

Drawing not provided