Generation Interconnection
Combined
Feasibility/System Impact Study Report

For

PJM Generation Interconnection Request
Queue Position W4-063

Huron 69kV

April 2011

Preface

The intent of the Combined Feasibility/ System Impact Study is to determine a plan, with approximate cost and construction time estimates, to connect the subject generation interconnection project to the PJM network at a location specified by the Interconnection Customer. As a requirement for interconnection, the Interconnection Customer may be responsible for the cost of constructing: Network Upgrades, which are facility additions, or upgrades to existing facilities, that are needed to maintain the reliability of the PJM system. All facilities required for interconnection of a generation interconnection project must be designed to meet the technical specifications (on PJM web site) for the appropriate transmission owner.

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 or merchant transmission upgrade, 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 System Impact Study is performed.

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 may be 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.

General

Fishermen's Energy of New Jersey, LLC, the Interconnection Customer (IC), has proposed a 5 MWE (0.65 MWC) wind powered generating facility to be located in the Atlantic Ocean approximately 3 miles from Atlantic City, New Jersey. W3-063 is a 5 MW upgrade request to the IC's prior queue project U2-045. PJM studied W4-063 as a 5 MW injection into the Atlantic City Electric (ACE) system at the Huron 69kV substation. The project was evaluated for compliance with reliability criteria for summer peak conditions in 2014. The proposed in-service date is September 27, 2012.

Point of Interconnection

W4-063 will interconnect with the Atlantic City Electric transmission system at the Huron 69kV substation along with prior queue project U2-045 (see Attachment 1).

Direct Connection Requirements

Transmission Owner Scope of Direct Connection Work

The scope of work and estimated costs for the direct connection facilities is as follows:

The Transmission Owner scope of work to connect W4-063 is covered by the scope of work for U2-045. Therefore, no additional work or costs for W4-063 are required.

Interconnection Customer Scope of Direct Connection Work

The Interconnection Customer (IC) is responsible for all design and construction related to activities on their side of the point of Interconnection. IC will interconnect W4-063 with the ACE system via a 69kV direct connection circuit from their facility to Huron 69kV substation. Site preparation, including grading and an access road, as necessary, is assumed to be by the IC. Route selection, line design, right-of-way acquisition, and construction of the direct connection circuit will be entirely the responsibility of the Interconnection Customer. The Interconnection Customer may be responsible for contributing to future O&M costs.

Protective relaying and metering design and installation must comply with ACE's applicable standards. The IC is also required to provide revenue metering and real-time telemetering data to PJM in conformance with the requirements contained in PJM Manuals M-01 and M-14 and the PJM Tariff. ACE will require the capability to remotely trip the generator from its System Operations facility. The interconnected customer will grant its permission for PJM to send ACE all telemetry that the Interconnection Customer sends to PJM.

Transmission Network Impacts

Potential transmission network impacts are as follows:

Generator Deliverability

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

None

Multiple Facility Contingency

*(Double Circuit Tower Line, Line with Failed Breaker and, Bus Fault contingencies for the **Full** energy output.*

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

Short Circuit

None

Stability Analysis

Not required due to project size.

New System Reinforcements

(Upgrades required to mitigate reliability criteria violations, i.e. "Network Impacts," initially caused by the addition of this project's generation)

None

Contribution to Previously Identified System Reinforcements

(Overloads initially caused by prior Queue positions with additional contribution to overloading by this project.

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:

These are ***not*** required reliability upgrades.

None

Attachment 1

Huron 69 kV