

***Generation Interconnection
Feasibility Study Report
Web Version
For***

***PJM Generation Interconnection Request
Queue Position W2-018***

**PJM DOCS No. 617649v1
October, 2010
Updated March 2011**

Preface

The intent of the Feasibility/Impact 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.

Feasibility Study Report

General

The Interconnection Customer has proposed the installation of an additional 3 generators totaling 4.8 MW (4.8 MW Capacity). The existing generation is 6.4 MW (6MW Capacity), bringing the total generation capability to 11.2 MW (10.8 MW Capacity). The generating unit site is approximately 5.0 miles north of Shippensburg, PA, off Vaughn Road. This is in the PJM queue as W2-018. The project is proposed to be in service by the 3rd quarter of 2011.

Direct Connection

The proposed project was studied as an interconnection into the Carlisle Pike Substation #1 23kV bus via the 23kV CCLF line (existing customer owned line).

Interconnection Customer is responsible for constructing all of the facilities on its side of the point of interconnection at the generating plant. FirstEnergy has determined that no additional work at the Carlisle Pike substation is required to support the additional 4.8 MW generation at the project site. Interconnection Customer will also be responsible for review of remote relay and control work required by First Energy at Carlisle Pike substation that is required due to connecting the facility.

The proposed interconnection facilities must be designed in accordance with the FirstEnergy "Requirements for Transmission Connected Facilities" document and must meet IEEE 1547.

Because there are no FirstEnergy required upgrades associated with the additional 4.8 MW of generation, there are no conceptual estimates for engineering/construction associated with the Direct Connection of this project. The costs for engineering review and field activities/commissioning of the developer's facilities are therefore not included in this report.

The attached Figure 1 provides a conceptual one-line of the existing direct connection facilities. Figure 2 shows the additional generation facilities to be added.

Network Impacts

The #W2-018 project was studied as an additional total injection of 4.8 MW (4.8 MW Capacity) into the Carlisle Pike #1 23 kV bus. Project #W2-018 was evaluated for compliance with reliability criteria for summer peak conditions in 2014. Potential network impacts were as follows:

Generator Deliverability

None

Multiple Facility Contingency

None

Contribution to Previously Identified Overloads

None

New System Reinforcements

None

Contribution to Previously Identified System Reinforcements

None

Short Circuit

No identified problems

Cost Allocation

None

Summary

There no conceptual estimates provided for based on the assumption that the point of interconnection is at the existing interconnection point at Carlisle Pike substation and that the customer interconnection substation would be at the existing site approximately 5.0 miles north of Shippensburg, PA.

Figure #1
Penelec 23 kV Transmission Facilities - Existing Configuration

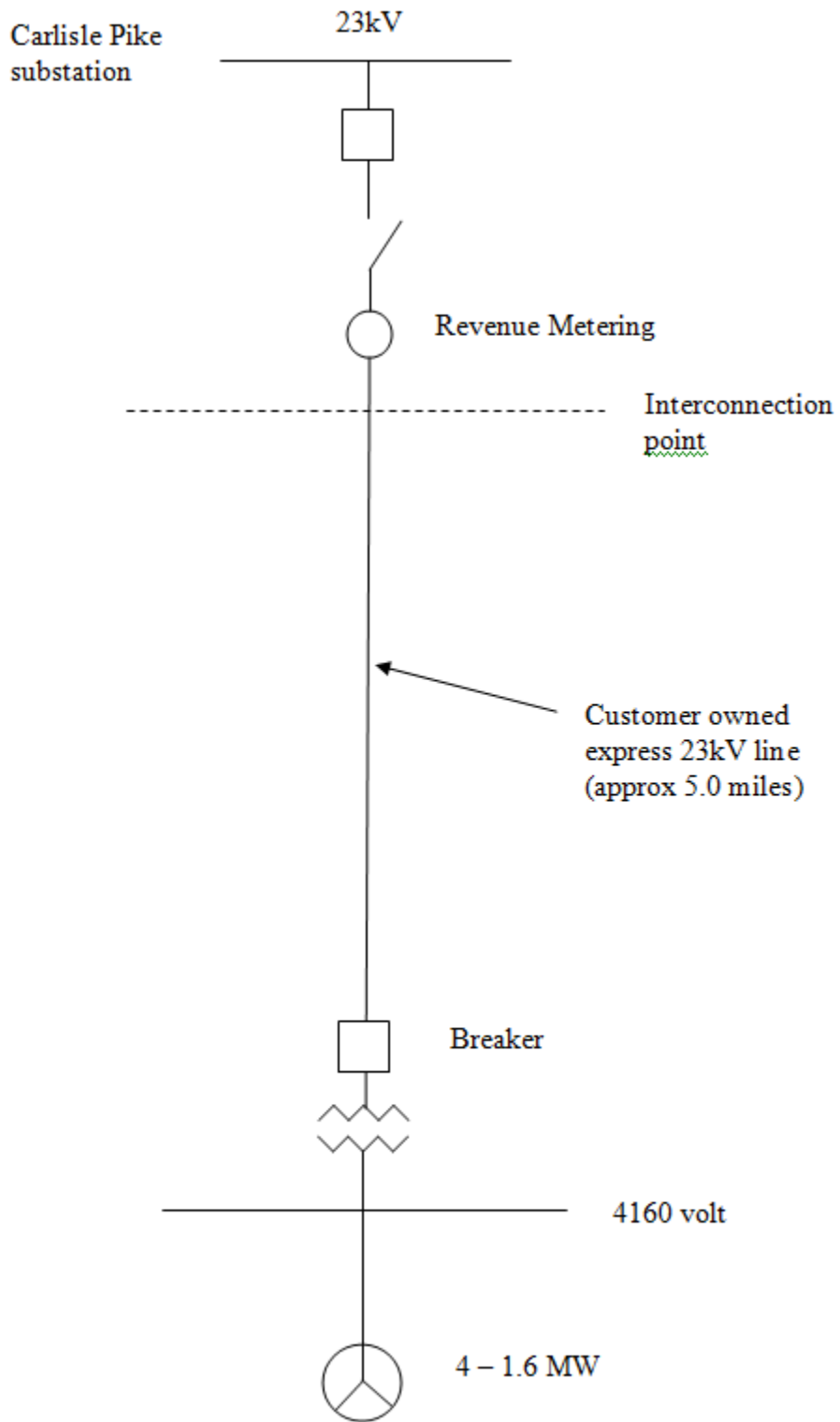
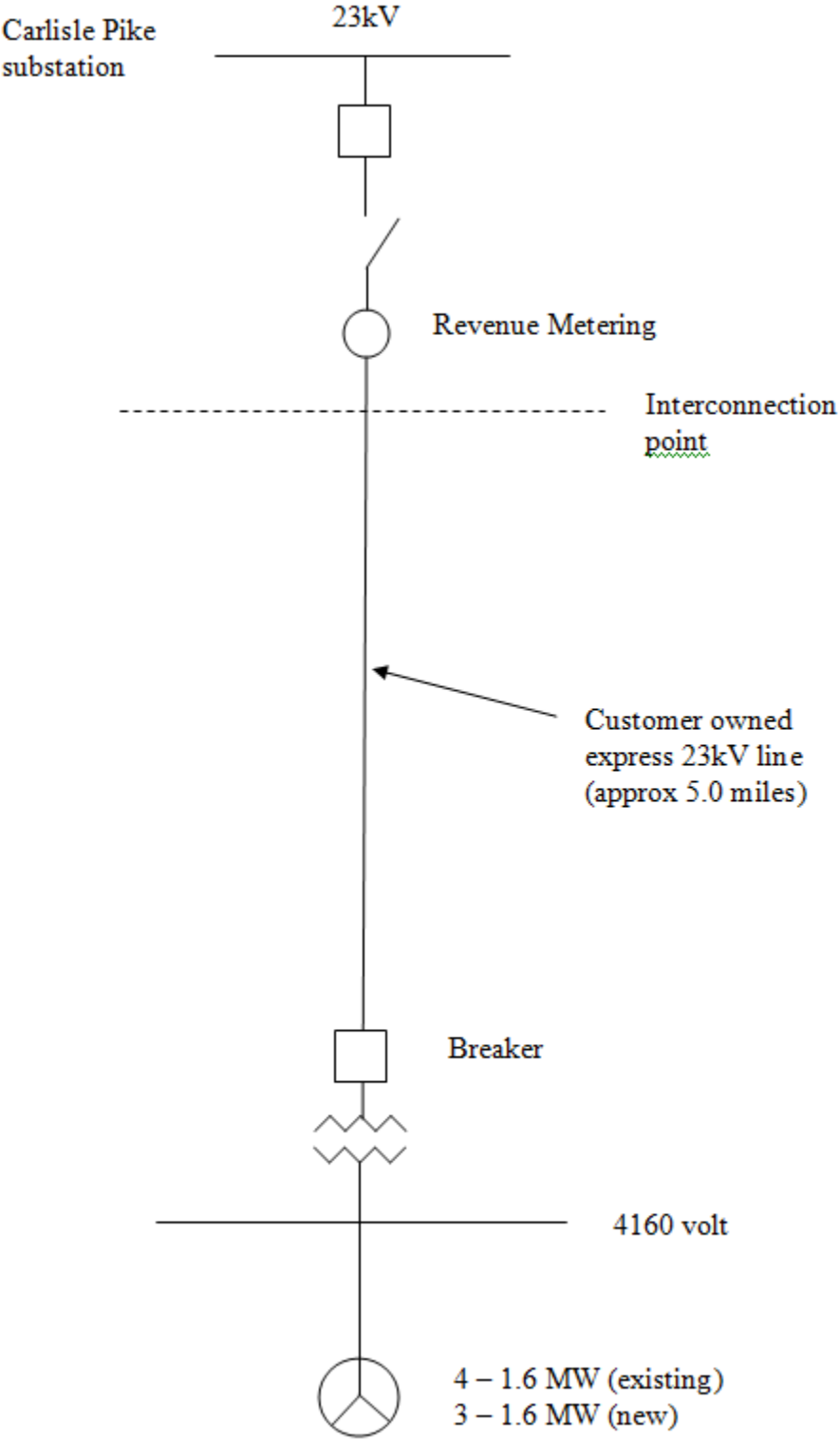


Figure #2
Proposed Interconnection addition



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Feasibility Study Report

General

Interconnection Customer has proposed the installation of an additional 3 generators totaling 4.8 MW and 4.8 MW (capacity). The existing generation is 6.4 MW, bringing the total generation capability to 11.2 MW /11.2 MW (energy / capacity). The generating unit site is approximately 5.0 miles north of Shippensburg, PA, off Vaughn Road. This is in the PJM queue as W2-018. The project is proposed to be in service by the 3rd quarter of 2011.

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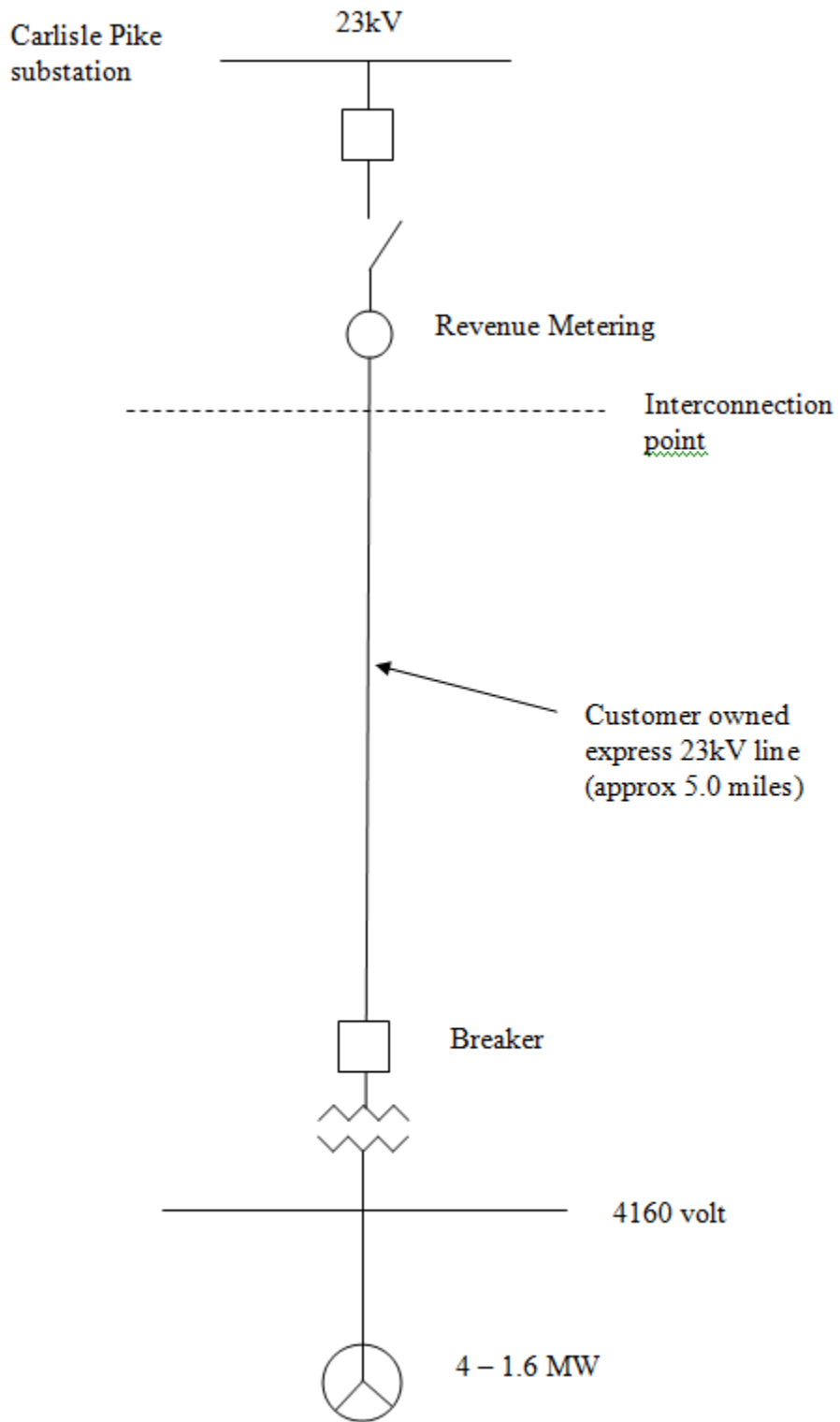


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