Generation Interconnection
Revised Feasibility Study Report
Queue Position V4-072

General

The Interconnection Customer (IC), has proposed a 4.8 MW energy (4.8 MW capacity) methane fueled generating facility to be located at the Blue Ridge Landfill in Chambersburg, PA. The project will consist of three (3) reciprocating engine drive generators. PJM studied the V4-072 project as a 4.8 MW injection into the Allegheny Power System at the Grand Point 138kV substation and evaluated it for compliance with reliability criteria for summer peak conditions in 2014. The in-service date, as stated in the Attachment N, is January 31, 2011.

Point of Interconnection

V4-072 will interconnect with the Allegheny Power (AP) distribution system at the Grand Point 12kV substation (see Attachment 1).

Direct Connection Requirements

Transmission Owner Scope of Direct Connection Work

The Transmission Owner's (AP) scope of work includes:

Attachment Facilities
Grand Point 12kV substation

- Extend the 12.5kV bus, install one (1) 2000A 12.5kV bus section switch, one (1) 1200A 12.5kV breaker, six (6) 600A 12.5kV hookstick disconnect switches, three (3) 12.5kV metering CT's, one (1) 12.5kV VT, one (1) 12.5kV UG terminal rack, control panels, cables, grounding, foundations, and associated equipment. The IC shall construct their circuit from the AP 12.5kV underground terminal rack to their facility.

  Note: Any property required to provide for this interconnection must be obtained by the IC at no cost to AP and conveyed to AP via a perpetual lease or deed. All rights-of-way must be obtained by the IC and transferred at no cost to AP.

  The estimated cost to perform this work is **$256,875** in 2010 dollars.

Local Upgrades

- Due to increased fault currents resulting from the interconnection of V4-072, the following reinforcements must be made on the 12.5kV circuits at the Grand Point substation.

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1. replace 26 fuses
2. install 1 new fuse
3. remove 3 fuses
4. replace 3 reclosers
5. install 3 new reclosers

The estimated cost to perform this work is **$26,290** in 2010 dollars.

Allegheny Power reserves the right to review the electrical protection design and relay settings for the Interconnecting Customer facilities to ensure that the protective relaying equipment will be compatible with that installed at the new switching station. The relaying package will likely include both primary and backup protection. Allegheny Power personnel must be present at the time of commissioning to witness proper function of the protection scheme and related coordination. The estimated cost to perform this engineering review and field test effort is **$5,000 in 2010 dollars**.

Note: The purchase and installation of protective relaying and associated equipment at the generation site is the responsibility of the interconnecting customer and is not included in this scope of work.

Interconnection Customer Scope of Direct Connection Work

The Interconnection Customer will interconnect V4-072 with the APS system at the 12.5kV underground terminal rack via an overhead customer owned 12kV circuit from their generating site (approximately 4 miles) to the Grand Point 12kV switching station. The above cost estimates do not include construction of that line or bus work. Route selection, line design, right-of-way acquisition and construction of such lines will be entirely the responsibility of the Interconnection Customer. It's assumed that the Interconnection Customer's main step up transformer will conform to the AP standard with delta on the low side and grounded wye on the high side as illustrated in the AP Engineering Manual:

http://www.alleghenypower.com/PowerQuality/Attachments/e1936_00.pdf.

The IC will be required to install metering and telemetry equipment to provide revenue metering and real-time telemetry data to PJM. The requirements for this equipment are listed in Appendix 2, Section 8 of Attachment O to the PJM Tariff, as well as PJM Manuals 01 and 14D. Protective relaying and metering design and installation must comply with the Allegheny Power Applicable Standards.

Cost and Timing Summary

While the information in this transmittal is reasonable for the scope of work defined, it should be noted however, that the cost figures are conceptual in nature at this stage, and that an engineering team has not yet been assigned to the project. Any change to the scope of work will require that the estimates be revisited. The costs are a best estimate, but the developer will be charged for actual costs. Any under-runs or over-runs will be reconciled at the conclusion of the project. The cost estimates in this report **do not** include tax gross-up.

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The estimated time to provide for the interconnection of this project is **15 months** after the receipt of a fully executed Interconnection Service Agreement and Interconnection Construction Service Agreement.

Network Impacts

Potential 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

No problems identified.

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.

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None

Stability Analysis

Not required.

Other Supporting Facilities Charge

The Other Supporting Facilities Charge (OSFC) may include non-transmission facilities directly assigned and/or a general (rolled-in) facilities charge. The guidelines apply to all wholesale customers and all generators selling into or through the PJM market, regardless of capacity, not connected directly to the AP Transmission System.

The OSFC for the V4-072 project has been estimated to be **$973/month** in 2010 dollars. This estimate is based on direct assignment to the Grand Point 138/12kV distribution transformer.

Attachment 1

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