PJM Generator Interconnection
W2-014 Richmond- 2 MW
Feasibility/Impact Study

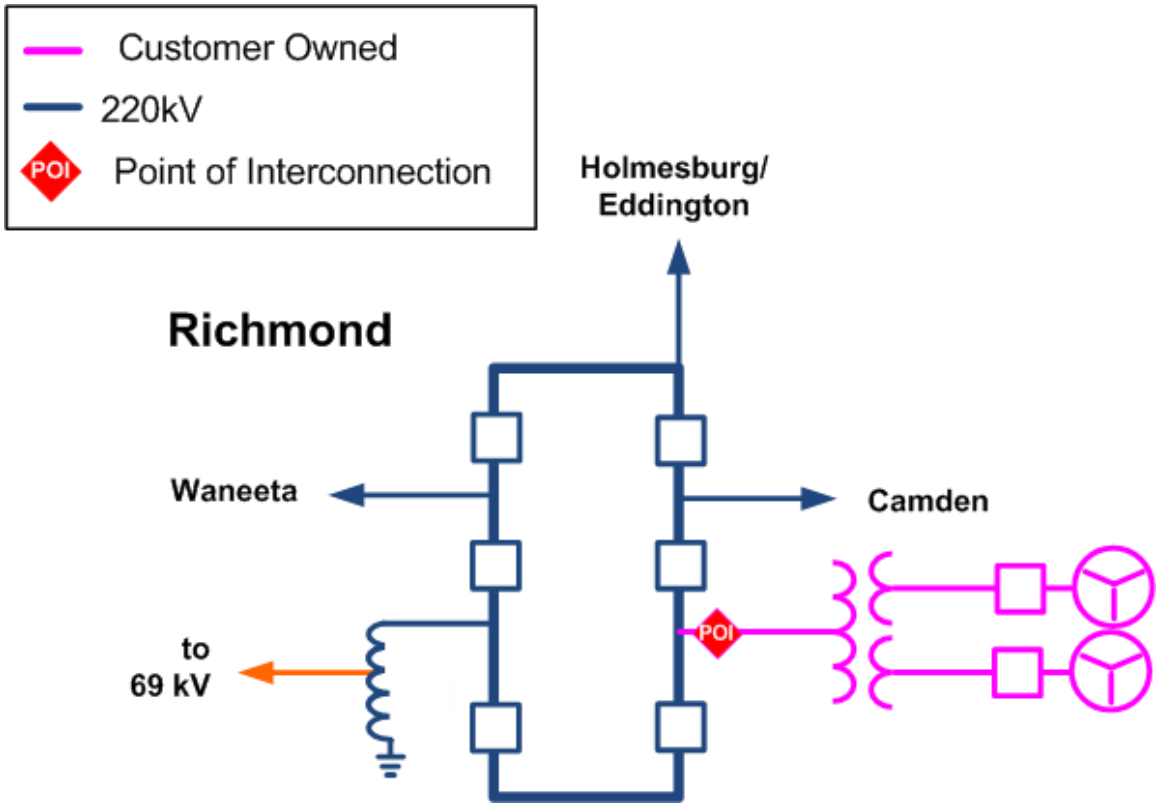
October 29, 2010
Revised May 28, 2014
Docs #618097

General

Project W2-014 is an Exelon Generation Company, LLC request to increase the Capacity of Richmond Station by 2 MW (Summer net). W2-014 Capacity Interconnection Rights will increase from 96 MW to 98 MW (49 MW for each of 2 units). Richmond Station is located at 3901 N. Delaware Ave., Philadelphia, PA. W2-014 Capacity increase is currently available.

Direct Connection Requirements

Queue W2-014 is connected as shown on the one line diagram below (for clarity, not all facilities have been indicated).



Interconnection Customer Scope of Direct Connection Work

Queue W2-014 Interconnection Customer is responsible for all work on the W2-014 side of the POI (Point of Interconnection).

PECO Energy Scope of Direct Connection work

No PECO Energy Direct Connection work is required.

Network Impacts

Queue project W2-014 was studied as a(n) 2.0MW (2.0MW of which was Capacity) injection into the Richmond 230kV Substation bus. The project was studied on a combined feasibility-impact basis which utilizes an AC analysis, and incorporates all contingency types. Project W2-014 was evaluated for compliance with reliability criteria for summer peak conditions in 2014. Potential network impacts were as follows:

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

No problems were identified

Multiple Facility Contingency
(Double Circuit Tower Line, Stuck breaker and Bus Fault for the full energy output)

No problems were identified

Short Circuit Analysis

Not required for the uprate, there are no changes to the Queue W2-014 generator or generator step-up transformer impedance.

Power Factor and Reactive Requirements

The generator meets PJM tariff requirements for reactive power capabilities.

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 identified.

NETWORK UPGRADE REQUIREMENTS

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

None identified.

Contribution to Previously Identified System Reinforcements

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

None identified.

ATTACHMENT 1

(Generator Reactive Capability Curve)