



**Generation Interconnection
System Impact Study Report
for
Queue Project AF2-157
CHALK POINT CT1 69 KV
2 MW Capacity / 2 MW Energy**

February 2021

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1 Introduction

This System Impact Study has been prepared in accordance with the PJM Open Access Transmission Tariff, 205, as well as the System Impact Study Agreement between the Interconnection Customer (IC), and PJM Interconnection, LLC (PJM), Transmission Provider (TP). The Interconnected Transmission Owner (ITO) is PEPCO.

2 Preface

The intent of the 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.

The System Impact 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.

3 General

The Interconnection Customer (IC), **GenOn Chalk Point, LLC**, has proposed an uprate to an existing Natural Gas generating facility located in Prince George's County, Maryland. This project is an increase to the Interconnection Customer's F08 queue request and will share the same point(s) of interconnection. The AF2-157 queue position is a 2 MW energy (2 MW Capacity) uprate to the existing Chalk Point combustion turbine, CT1. The total installed facilities will have a capability of 22 MW with 20 MW of this output being recognized by PJM as Capacity.

The project capability is summarized in the table below:

Description	Maximum Facility Output (MW)	Capacity Interconnection Rights (MW)
Existing (CT1)	20	18
Requested Increase	2	2
Total	22	20

The proposed in-service date for this uprate project is February 28, 2021. This study does not imply a TO commitment to this in-service date.

Queue Number	AF2-157
Project Name	CHALK POINT CT1 69 KV
State	Maryland
County	Prince George's
Transmission Owner	PEPCO
MFO	22
MWE	2
MWC	2
Fuel	Natural Gas
Basecase Study Year	2023

Any new service customers who can feasibly be commercially operable prior to June 1st of the basecase study year are required to request interim deliverability analysis.

4 Point of Interconnection

AF2-157 will interconnect with the PEPCO on transmission system as an uprate to the Chalk Point Generating Facility at the Chalk Point 69 kV substation.

5 Cost Summary

The AF2-157 project will be responsible for the following costs:

Description	Total Cost
Total Physical Interconnection Costs	\$0
Allocation towards System Network Upgrade Costs	\$0
Total Costs	\$0

This cost excludes a Federal Income Tax Gross Up charges. This tax may or may not be charged based on whether this project meets the eligibility requirements of IRS Notice 88-129. If at a future date it is determined that the Federal Income Tax Gross charge is required, the Transmission Owner shall be reimbursed by the Interconnection Customer for such taxes.

6 Transmission Owner Scope of Work

The existing Transmission Owner Facilities are adequate to support this queue request.

7 Interconnection Customer Requirements

The IC will be required to comply with all Interconnected Transmission Owner's revenue applicable technical standards for generation interconnection customers located at the following link:

<http://www.pjm.com/planning/design-engineering/to-tech-standards/>

8 Revenue Metering and SCADA Requirements

8.1 PJM Requirements

The Interconnection Customer will be required to install equipment necessary to provide Revenue Metering (KWH, KVARH) and real time data (KW, KVAR) for IC's generating Resource. See PJM Manuals M-01 and M-14D, and PJM Tariff Section 8 of Attachment O.

8.2 Interconnected Transmission Owner Requirements

The IC will be required to comply with all Interconnected Transmission Owner's revenue metering requirements for generation interconnection customers located at the following link:

<http://www.pjm.com/planning/design-engineering/to-tech-standards/>

9 Summer Peak Analysis

The Queue Project AF2-157 was evaluated as a 2.0 MW (Capacity 2.0 MW) uprate to the Chalk Point Generating Facility at the Chalk Point 69 kV substation in the PEPCO area. Project AF2-157 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF2-157 was studied with a commercial probability of 100.0 %. Potential network impacts were as follows:

9.1 Generation Deliverability

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

None

9.2 Multiple Facility Contingency

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

None

9.3 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

9.4 Steady-State Voltage Requirements

None

9.5 Potential Congestion due to Local Energy Deliverability

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.

Note: Only the most severely overloaded conditions are listed below. 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 shall study all overload conditions associated with the overloaded element(s) identified.

None

9.6 System Reinforcements

None

10 Light Load Analysis

The Queue Project AF2-157 was evaluated as a 2.0 MW injection as an uprate to the Chalk Point Generating Facility at the Chalk Point 69 kV substation in the PEPCO area. Project AF2-157 was evaluated for compliance with applicable reliability planning criteria (PJM, NERC, NERC Regional Reliability Councils, and Transmission Owners). Project AF2-157 was studied with a commercial probability of 100.0 %. Potential network impacts were as follows:

10.1 Light Load Deliverability

(Single or N-1 contingencies)

None

10.2 Multiple Facility Contingency

(Double Circuit Tower Line, Fault with a Stuck Breaker, and Bus Fault contingencies)

None

10.3 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

10.4 Potential Congestion due to Local Energy Deliverability

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.

Note: Only the most severely overloaded conditions are listed below. 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 shall study all overload conditions associated with the overloaded element(s) identified.

None

10.5 System Reinforcements

None

11 Short Circuit Analysis

Not Required

11.1 System Reinforcements - Short Circuit

None

12 Stability and Reactive Power

Not Required

13 Affected Systems

None

14 Attachment 1: One Line Diagram

AF2-155/AF2-156/AF2-157/AF2-158/AF2-159 Chalk Point Upgrades

Queue : Uprate Unit(s)

AF2-155 : CT3-CT6
 AF2-156 : CT1
 AF2-157 : CT2
 AF2-158 : Steam Unit 4
 AF2-159 : Steam Unit 3

