

Load Interconnection - Interconnection System Impact Study Scope

Queue #1715: 1547 CSR - Orangeburg LLC Project

1. Purpose

The purpose of this Interconnection System Impact Study (“SIS” or “Study”) is to evaluate the impact of the proposed interconnection of 1547 CSR - Orangeburg LLC (“Project”), which is being developed by Jerry Martin (“Developer”), on the reliability of the New York State Transmission System (“NYSTS”). The Study will be performed in accordance with Section 3.9 of the NYISO Open Access Transmission Tariff (“OATT”) and the NYISO Transmission Expansion and Interconnection Manual.

The Project will be located in Rockland County, New York. The proposed Point of Interconnection (“POI”) will be at 138kV Line 703 between Corporate Drive and Harings Corner. The POI will be 0.34 miles from the Corporate Drive 138 kV substation and 2.94 miles from the Harings Corner 138kV substation. The Connecting Transmission Owner (“CTO”) is Orange & Rockland Utilities Inc's (“O&R”).

The Project, as proposed, is a 60 MW load interconnection consisting of data center loads. The proposed load will utilize 60 MW of power on a continuous basis.

The Project proposes an In-Service Date of **January 2027**.

Project Details

Nature of Load: Data center - data processing will primarily utilize resistive loads, while the mechanical/HVAC systems will utilize power factor corrected, inductive load.

Consumption Pattern: Once power is utilized, it will be a Consistent Load, approximately 70% resistive and 30% inductive. This power consumption will ramp up, from low to high over a 5 year period.

Proposed Load In-Service Phase(s):

2025 = 10.8 MW

2027 = 16.4 MW

2028 = 25.7 MW

2029 = 47.4 MW

2030 = 58.6 MW

Alternate sources of power: The facility will have standby/backup generation in an N+1 configuration to support the load during loss of commercial utility power, the UPS

systems will carry the critical load through the duration of commercial power loss by utilizing battery storage. Generators will start automatically upon loss of utility and provide power to the UPS system. The UPS will transfer from battery backup to normal operating condition.

The Study will assess the impact of the Project on the base case power system including Consolidated Edison Inc. (“ConEd”) and Central Hudson Gas and Electric (“CHG&E”) as Affected Transmission Owners and PJM Interconnection LLC (“PJM”) as an Affected System. As applicable, the Study will evaluate alternatives that would eliminate adverse reliability impacts, if any, resulting from the proposed interconnection.

The Study will be conducted in accordance with Applicable Reliability Requirements.

2. Interconnection Plan

The Study will include a description of the proposed Project and the conceptual design of the interconnection to the system representation. The description will include a breaker one-line diagram depicting the proposed Project facilities and its integration with existing facilities. The Study will also identify potential issues with the feasibility/constructability of the conceptual design of the proposed interconnection to the extent known based on the Study assumptions.

3. Study Period

The Study will be based on NYISO 2025 Quarter 1 Short-Term Assessment of Reliability (STAR) base cases (“Base Cases”) that have the 2024 FERC 715 2029 system representation with updates noted in Appendix A. The Study will be conducted using the steady state, and stability Base Cases provided by the NYISO.

4. Study Area

The Study will identify and evaluate the impact of the Project on the 138kV and above portions of the NYSTS in the following New York load zones: Zone **G** (Hudson Valley) that are most likely to be affected by the Project. The Study will also evaluate the impact of the Project on the local 138kV and below system in the electrical proximity to the POI.

5. Base Case Conditions

The impact of the proposed Project will be evaluated for **summer peak** cases for the following base case conditions, and as specified under the subsequent sections of this Scope:

Case 1- Base Case without the Project. The Base Cases will include the baseline system generation that will be dispatched in accordance with the NYISO Minimum Interconnection Standard.

Case 2- Case 1 with the Project modeled as in-service at the rated load and with nearby proposed projects listed in Appendix B for this scope modeled as in-service and at the rated load. Generation will be re-dispatched in the steady state case, as needed, in accordance with the NYISO Minimum Interconnection Standard.

6. Analysis

Thermal, voltage, and stability analyses will be conducted to assess the performance of the base system conditions within the Study Area, with and without the Project, in accordance with Applicable Reliability Requirements, guidelines and study practices. Modifications to Base Cases, during analyses, will be documented in the Study Report. If the analyses identify violations of Applicable Reliability Requirements, the Study will identify the Project's individual contribution to the violation(s).

6.1 Steady State Analyses: N-0 and N-1

Thermal and voltage steady state analyses, using PSS/E v35 and PowerGEM's TARA or a comparable load flow program, will be conducted for **summer peak** load cases, pre-contingency and also for relevant Design Criteria Contingencies conditions, and will be limited to the Study Area.

Thermal limits will be assessed under both Normal Criteria and Emergency Criteria, using normal ratings pre-contingency and applicable post-contingency ratings (*e.g.*, Long-Term-Emergency, LTE, ratings or Short-Term-Emergency, STE, ratings).

Voltage limits will be assessed, pre- and post-contingency, using the applicable voltage limits.

6.2 Steady State Analyses: N-1-1

The Study will evaluate a limited selection of N-1-1 contingencies around the POI. Steady state analyses (**summer peak**) will be performed based on the N-1-1 contingency descriptions provided by the CTO(s) and/or the NYISO.

6.3 Transfer Assessments

The transfer assessment will determine the incremental impact of the Project on the Normal and Emergency transfer limits of the Total East, UPNY-SENY, and UPNY-CONED interfaces in accordance with Applicable Reliability Requirements. The transfer limits will be evaluated in the predominant north-to-south direction, unless otherwise specified. Sufficient analyses will be conducted to determine the most limiting of the thermal, voltage, or stability limits under **summer peak** load conditions, as applicable.

6.4 Stability Analysis

Stability analysis, using PSS/E v34, will be performed for **summer peak** and **light load** conditions to determine the impact of the Project on system performance within the Study Area, as applicable.

7. Modeling Assumptions

7.1 Phase angle regulators (“PARs”), switched shunts, and LTC transformers will be modeled as regulating pre-contingency and non-regulating post-contingency. The Study will use PAR schedules established by the NYISO in coordination with the neighboring ISOs through the NERC and NPCC base case development processes. PARs may be adjusted as necessary to relieve pre-contingency overloads.

7.2 SVC and FACTS devices will be set to zero pre-contingency and allowed to operate to full range post-contingency.

8. Evaluation and Identification of Upgrades

If the Study results indicate that the Project, as proposed, would result in violations of Applicable Reliability Requirements, analyses will be performed to identify potential Network Upgrades that may mitigate violations of Applicable Reliability Requirements under the NYISO Transmission Interconnection Standard. If such upgrades are identified, re-assessments will be performed, as applicable, to ensure that the upgrades do not cause any adverse reliability impacts on the Study Area.

9. Report

The Study Report will document the summary of the results relevant to the project impacts, project description, project modeling, study assumptions, criteria and methodology, mitigation solutions and their impact assessment, and conclusions, for each of the analyses identified in this scope.

Appendix A

**List of Base Case Updates to
2025 Quarter 1 Short-Term Assessment of Reliability (STAR): 2029 Summer 5050 Peak**

| Existing System Modeling Updates in the Base Case | | | |
|--|---------------------|-------------|----------------------------|
| Transmission Owner | Element Name | Zone | Update |
| Orange & Rockland | Oak Street 138 kV | G | Existing 6.5 MW load added |

Appendix B

List of Other Proposed Load Projects to be Modeled in Case 2

| Queue Position | Owner / Project Name | Zone | MW (S W) | |
|-----------------------|------------------------------|-------------|-----------------------|------|
| 1713 | Project Sycamore Orangeburg | G | 25.3 | 25.3 |
| 1714 | Hudson Valley Data Center | G | 50 | 50 |
| 1715 | 1547 CSR - Orangeburg LLC | G | 60 | 60 |
| 1716 | Orangeburg Expansion Phase 2 | G | 60 | 60 |