

## **Load Interconnection - Interconnection System Impact Study Scope**

### **Queue #1713: Project Sycamore Orangeburg Project**

#### **1. Purpose**

The purpose of this Interconnection System Impact Study (“SIS” or “Study”) is to evaluate the impact of the proposed interconnection of Project Sycamore Orangeburg (“Project”), which is being developed by Project Sycamore - Orangeburg (“Eligible Customer”), 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 is located in Rockland County, New York. The existing Point of Interconnection (“POI”) is the Oak Street 138kV substation. The Connecting Transmission Owner (“CTO”) is Orange and Rockland Utilities Inc (“O&R”).

The Project is an expansion of an existing data center with a total interconnection load of 25.3 MW from the existing load at the site. The new load will be an expansion of the existing operating data center and will utilize a total of 31.8 MW of power on a continuous basis when fully built out in 2040. The facility is classified as critical infrastructure and registered with US homeland security.

Note: the site’s original application to Orange and Rockland (CTO) in 2017 was for a total site load of 22.6 MW. This new application is an update to the original application to expand the facility from 22.6 MW to 31.8 MW.

The Project proposes an In-Service Date of **January 2026**.

#### **Project Details**

Nature of Load: miscellaneous data center IT equipment and associated mechanical equipment for HVAC, lighting, office and other loads

Consumption Pattern: 24/7 with estimated load factor of 90% or 650 full load hours

Proposed Load In-Service Phase(s):

Estimated load schedule:

Jan 2026 = 12 MW  
Jan 2027 = 13 MW  
Jan 2028 = 14 MW  
Jan 2029 = 15 MW  
Jan 2039 = 31.8 MW

Note 1: Approximately 1 MW load growth per year till Jan 2039 for a total load of 31.8MW.

Note 2: This is an updated application to the original load schedule submitted in April 2017.

Note 3: Commissioning loads of approximately 4 MW will occur Jan 2026, Jan 2029, Jan 2031, Jan 2034, Jan 2036. Commission loads will be in addition to the current site loads.

Alternate sources of power: N/A

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**

<b>Existing System Modeling Updates in the Base Case</b>			
<b>Transmission Owner</b>	<b>Element Name</b>	<b>Zone</b>	<b>Update</b>
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**

<b>Queue Position</b>	<b>Owner / Project Name</b>	<b>Zone</b>	<b>MW (S   W)</b>	
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