PSEG LONG ISLAND LLC

On Behalf of and as Agent for the

LONG ISLAND LIGHTING COMPANY d/b/a LIPA

Syosset to Oakwood Project

EXHIBIT E-2

OTHER FACILITIES

Exhibit E-2 Other Facilities

The substation facilities design will be in accordance with all of the Applicant's[1] applicable transmission design criteria and applicable industry standards. Those industry standards are produced by the following organizations: ANSI, ASTM, ASCE, AEIC, IEEE, ICEA, IEC, NEMA, NESC, OSHA, and NFPA. Design standards shall be in compliance with the Applicant's storm hardening requirements for a National Oceanic and Atmospheric Administration Category III Hurricane.

Final design will be described in the EM&CP.

E-2.1 Woodbury Tap

The only structure type used on this Project will be single circuit galvanized or Natina Rustic Brown finish steel monopole structures. Dead-end structures will utilize polymer insulators in a vertical configuration.

The structure design will be consistent with applicable national and state codes, including the most current edition of the NESC, as well as any more stringent criteria imposed by the Applicant. The NESC specifies both the minimum structural load criteria to determine the required structural capacity and clearances for energized hardware and wires. Typical clearance requirements defined by the NESC include clearances to ground, adjacent transmission lines, railroads, buildings, and other facilities. The minimum structure load required by NESC or the Applicant is as follows:

- NESC Heavy Loading (250B): ½-inch radial ice at 0° F with a 40 mph wind;
- NESC Extreme Wind Loading (250C): no radial ice at 60°F with a 120 mph wind;
- NESC Extreme Ice with Concurrent Wind Loading (250D): 0.75 inch radial ice at 15°F with a 50 mph wind; and
- PSEG Long Island Extreme Wind Loading: no radial ice at 60°F with a 130 mph wind.

In addition to the NESC, there are several published standards that will be followed, depending on the type of structure and material used. Some of the common standards include:

- United States Department of Agriculture Rural Utilities Service Bulletin 1724E-200 "Design Manual for High Voltage Transmission Lines," December 2015;
- American Society of Civil Engineers Manual and Reports on Engineering Practice 74: Guidelines for Electrical Transmission Line Structural Loading, 4th Edition, 2020;
- American Concrete Institute 318 – Building Code Requirements for Structural Concrete and Commentary, 2019; and
- American Concrete Institute 336.3R – Design and Construction of Drilled Piers, 2014.

The Applicant proposes employing self-supporting structures set on reinforced concrete caissons or direct embedded foundation for the Project's transmission line structures. These foundations may range from five to eight feet in diameter and set to a depth of 15 to 40 feet depending upon structure loading and soil

[1] For clarity and consistency, the Application includes a Glossary that defines terms and acronyms used throughout the Application.

conditions. However, should existing soil conditions, structure loading, and costs dictate the need, alternate foundation types, such as vibratory caisson will be used. This will be detailed in the EM&CP.

E-2.2 Oakwood Substation

E-2.2.1 Current Site Conditions at the Oakwood Substation

The existing Oakwood Substation consists of an open air 138kV ring bus that feeds three 13kV switchgears. It is located on a LIPA-owned parcel, in a fenced in area with a gravel surface. The Project will utilize an unused portion on the northern part of the same parcel that is currently a roughly graded area with some vegetation and trees.

Further details on grading and vegetation management is included in Exhibit 4 – Environmental Impacts.

E-2.2.2 Proposed Modifications at the Oakwood Substation

The Project will replace two existing bus supports at Oakwood Substation with underground terminals to tie together existing Lines 138-675 and 138-676. The Project includes the construction of a new overhead-to-underground transition for new Line 138-676, including installation of underground termination structures, a ground switch, a lightning mast, and an overhead takeoff structure in the unused portion on the northern part of the Oakwood Substation property, as depicted in Figure E-2-1 Oakwood Substation Proposed Plot Plan.

The existing Line 138-676 span from structure SP-64 into the takeoff structure will be replaced with similar material and hardware to the new overhead takeoff structure as depicted in Figure E-2-1.

Based on a preliminary assessment, the following is the major equipment to be installed within the expansion area:

One 138kV takeoff structure, with associated foundations;

- One 138kV gang operated three-phase grounding switch, with associated structure and foundations;

Three 138kV single phase surge arrestors, with associated structure and foundations;

One lightning mast, with associated foundation; and

- Four 138kV underground termination structures and associated foundations (see Figure E-1-1).

Other required equipment and activities include the following:

- Clearing and grading;
- Crushed rock installation;
- Grounding, conduits, and control cables;
- Primary and secondary line protective relaying systems for the line; and
- Fence expansion.

A one-line diagram depicting these changes is included as Figure E-2-2 Oakwood Substation Proposed One-Line.

CONFIDENTIAL CRITICAL ENERGY INFRASTRUCTURE INFORMATION (CEII) HAS BEEN REDACTED FROM THIS DOCUMENT

Figure E-2-1

Oakwood Substation Proposed Plot Plan

CONFIDENTIAL CRITICAL ENERGY INFRASTRUCTURE INFORMATION (CEII) HAS BEEN REDACTED FROM THIS DOCUMENT

Figure E-2-2

Oakwood Substation Proposed One Line