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**PSEG LONG ISLAND LLC**

**On Behalf of and as Agent for the**

**LONG ISLAND LIGHTING COMPANY d/b/a LIPA**

**Southampton to Deerfield Transmission Project**

**EXHIBIT E-2 — OTHER FACILITIES**

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## **EXHIBIT E-2: OTHER FACILITIES**

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The proposed circuit will be connected to termination structures at the existing Southampton Substation and Deerfield Substation. The Project<sup>1</sup> requires alterations at the two substations to accommodate bus support structures, potential transformers, circuit breakers, switches, and cable termination structures.

The following sections describe in detail these required substation modifications.

### **E-2.1 Southampton Substation**

#### ***E-2.1.1 Existing Substation***

An aerial depiction of the existing Southampton Substation is provided in Figure E-2-1, and a plot plan of the existing substation is shown in Figure E-2-2. The substation consists of an open air 69 kV bus.

The substation has four 69 kV terminal positions:

- 69-893 (138 kV line operating at 69 kV) (Canal)
- 69-886 (Bridgehampton)
- 69-971 (Canal)
- Spare position

The existing control building houses the system protection, communication, and alternating current/direct current (“AC/DC”) system equipment.

The one-line diagram in Figure E-2-3 depicts the existing configuration of the Southampton Substation.

#### ***E-2.1.2 Proposed Modifications***

The proposed modifications at the Southampton Substation include the construction of a new terminal to connect the Facility as depicted in the plot plan in Figure E-2-4. An elevation depiction of the modified Southampton Substation is provided in Figure E-2-5.

Based on a preliminary assessment, the following is the major equipment to be installed at the substation:

- One 69 kV, gang operated 3 phase grounding switch, with associated structure and foundations

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<sup>1</sup> For clarity and consistency, the Application includes a Master Glossary of Terms that defines terms and acronyms used throughout the Application.

- One 69 kV, 2000 ampere (“A”), 43 kiloampere gas circuit breaker, with associated foundation
- Grounding, conduit and control cables
- One 138 kV underground termination structure and associated foundations

Final design may require the relocation of existing equipment, modification to the existing bus, and the installation of additional bus support structures. The anticipated modified open air 69 kV bus is shown in Figure E-2-6. The anticipated modified bus plan elevation is shown in Figure E-2-7.

Other required equipment and activities include the following:

- Grounding, conduits, and control cables
- Primary and secondary line protective relaying systems for the Facility

No fence line expansion is anticipated at the Southampton Substation to accommodate the Project.

A one-line diagram depicting these changes is included as Figure E-2-8.

## **E-2.2 Deerfield Substation**

### ***E-2.2.1 Existing Substation***

An aerial depiction of the existing Deerfield Substation is provided in Figure E-2-9, and a plot plan of the existing substation is shown in Figure E-2-10. The substation consists of an open air 69 kV ring bus connected to a 69 kV straight bus.

The substation’s 69 kV ring bus has four 69 kV terminal positions:

- 69-965 (Bridgehampton)
- 69-972 (Canal)
- 69-974 (Canal)
- 69-975 (Bridgehampton)

The existing control buildings house the system protection, communication, and AC/DC system equipment.

The one-line diagram in Figure E-2-11 depict the existing configuration of the Deerfield Substation.

### ***E-2.2.2 Proposed Modifications***

The required work associated with the proposed modifications at the Deerfield Substation includes the construction of a new terminal to connect the Facility to the spare terminal location as depicted in the plot and bus plan in Figure E-2-12. An elevation depiction of the modified Deerfield Substation is provided in Figure E-2-13.

Based on a preliminary assessment, the following is the major equipment to be installed at the substation:

- One 69 kV, 2000 A, 43 kiloampere gas circuit breaker, with associated foundation
- One 69 kV, 2000 A gang operated disconnect switch, with associated structure and foundation
- Three 69 kV potential transformers, with associated structure and foundations
- One 69 kV, gang operated 3 phase grounding switch, with associated structure and foundations
- One 138 kV underground termination structure and foundations
- Grounding, conduit, and control cables

Final design may require the relocation of existing equipment, modification to the existing bus and the installation of additional bus support structures.

Other required equipment and activities include the following:

- Grounding, conduits, and control cables
- Primary and secondary line protective relaying systems for the Facility

No fence line expansion is anticipated at the Deerfield Substation to accommodate the Project.

A one-line diagram depicting these changes is included as Figure E-2-14.

All Exhibit E-2 Figures have been  
redacted because they are  
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**Exhibit E-2 Figures**

**Figure E-2-1  
to  
Figure E-2-14**

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## **FIGURE E-2-1**

**Southampton Substation – Aerial View**

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## **FIGURE E-2-2**

### **Southampton Substation Plot Plan: Existing Conditions**



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### **FIGURE E-2-3**

## **Southampton Substation One-Line: Existing Conditions**

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## **FIGURE E-2-4**

### **Southampton Substation Plot Plan: Proposed Modifications**

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## **FIGURE E-2-5**

# **Southampton Substation Plot Plan Elevation: Proposed Modifications**

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## **FIGURE E-2-6**

### **Southampton Substation Bus Plan: Proposed Modifications**

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**FIGURE E-2-7**

**Southampton Substation Bus Plan Elevation: Proposed  
Modifications**

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## **FIGURE E-2-8**

### **Southampton Substation One-Line: Proposed Modifications**

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**FIGURE E-2-9**

**Deerfield Substation – Aerial View**

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## **FIGURE E-2-10**

### **Deerfield Substation Plot Plan: Existing Conditions**



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## **FIGURE E-2-11**

### **Deerfield Substation One-Line: Existing Conditions**

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## **FIGURE E-2-12**

### **Deerfield Substation Plot and Bus Plan: Proposed Modifications**

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## **FIGURE E-2-13**

# **Deerfield Substation Plot and Bus Plan Elevation: Proposed Modifications**

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## **FIGURE E-2-14**

### **Deerfield Substation One-Line: Proposed Modifications**