



PSEG LONG
ISLAND

Mutual
Assistance
Guidebook for
*Storm
Restoration*





**IF IT'S NOT GROUNDED
IT'S NOT DEAD**

SAFETY MESSAGE

Thank you for your assistance during this system wide emergency. Even though electric service restoration is important, your safety and well-being are of the utmost importance. While assisting in this effort you will be required to adhere to all safety practices, which will ensure a successful restoration effort.

If you have any questions related to safety, work methods, or security concerns please reach out to the appropriate number located in the back cover of this guide book.



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INTRODUCTION

This guidebook will provide you with some important information regarding PSEG Long Island's emergency operation, including:

- Safety / Personal Protective Equipment (PPE)
- System Voltages Overview
- Work Practices
- General Information

The book's intent is to provide mutual assistance crews with the information necessary to safely and efficiently support restoration efforts

**IF AT ANY TIME YOU BELIEVE
AN UNSAFE CONDITION EXISTS
OR YOU ARE UNCERTAIN ABOUT
HOW TO PROCEED**



AND ASK.

OSHA JOB BRIEFING

A daily job briefing is required by OSHA standard 1910.269. The crew leader shall hold a job briefing with the crew at every job site, identifying the hazards associated with the job, work procedures involved, special precautions, energy sources, and control, along with PPE. Additional job briefings shall be held if significant changes occur that may affect the safety of the crews during restoration. Below are sample questions that maybe asked include, but not limited to:

- What types of PPE are required for the job (i.e. hard hat, gloves, etc.)?
- Is proper work area protection set up to protect the job site from traffic and also pedestrians (i.e. traffic cones, signage, etc.)?
- What are the potential hazards and safety risks on this job?
- What are some of the common causes of injuries on this job and how can they be prevented?

Other details specific to the particular task must also be reviewed. **Job briefing must be in writing and maintained at the job site with signatures.**



SAFETY

Outside crews unfamiliar with Long Island's electrical system must exercise caution while working around energized equipment and performing switching. While assisting in this restoration effort, you must follow both the safety practices of your own company, as well, as those of PSEG Long Island. Proper precaution must be taken while performing restoration of the electrical system.

CREW TYPES

PSEG Long Island has multiple types of crews. Crew Guides who are familiar with the local area will be assigned to the mutual assistance crews. Your Crew Guide will direct you to your job assignments and assist in obtaining information, materials, and equipment. The Crew Guide will also act as the liaison between your assigned crew and the Dispatch Area Lead Coordinator or the local Storm Console.

Types of Crews

1. High Voltage
2. Low Voltage
3. Tree Trim (Vegetation)
4. Wire Watcher
5. Damage Assessors





Rubber Gloves (Class II) – Rubber Gloves are to be worn when working on any circuit over 50 volts.

- Rubber Gloves will be inspected and air tested prior to use.
- Rubber Sleeves - Must be worn whenever rubber gloves are worn.

RUBBER GLOVE REQUIREMENTS

Rubber Gloves of the appropriate electrical protection rating are required whenever exposure to live electric circuits is possible.

“Cradle to Cradle” - Rubber gloves and sleeves are required from the time the bucket leaves the cradle until it returns to the cradle during overhead line operations whenever there is exposure to all live electrical circuits.

- Class II Rubber Gloves with protectors and Rubber Sleeves are required within 2 feet 3 inches of the furthest reach on any energized conductor up to 15kv.
- Class II Rubber Gloves with protectors and Rubber Sleeves are also required for all ground line personnel pulling wire, setting poles or any other operation where the potential for electrical contact exists.

BACKFEED CONDITIONS

Use extreme caution and make sure that all POTENTIAL backfeed situations are identified. These sources include:

Customer Auxiliary Generators

Customers may have auxiliary generators or equipment that can backfeed power. Use extreme caution and make sure that all backfeed situations are identified.

Induced Voltage

When one or two phases of a three-phase pad-mount transformer are energized the associated primary and secondary coils are energized at full voltage. As a result, the voltage induced on the common core also energizes the other primary and secondary coils, along with any associated cables, conductors and equipment, at a reduced voltage.

DELTA Transformer Banks

When any voltage is present on the primary or secondary side of an overhead transformer bank with two or three separate transformers connected Delta (either Primary or Secondary) the interconnected primary taps and/or secondary harness will energize the other transformers; creating primary and secondary voltage on all primary phases and secondary legs.



WORK AREA PROTECTION

When you are setting up a job site alongside or in traffic lanes, proper work area protection must be set up prior to beginning the associated work. Be sure to set up an adequate number of cones and other warning devices at sufficient distances to warn oncoming traffic.

- When working on an incline or when work is to be performed from an aerial lift device, the rear wheels of the vehicle must be chocked.
- Vehicles such as sedans and pickups must have beacons and traffic cones.

SYSTEM VOLTAGES OVERVIEW

The service territory operated by PSEG Long Island is a rectangular area approximately 15 miles wide by 100 miles long; excluding three small municipal electric companies (Rockville Centre Light & Power, Freeport Light & Power Company, and Greenport Light & Power).





The primary distribution circuits supplying the Long Island system consist of the following:

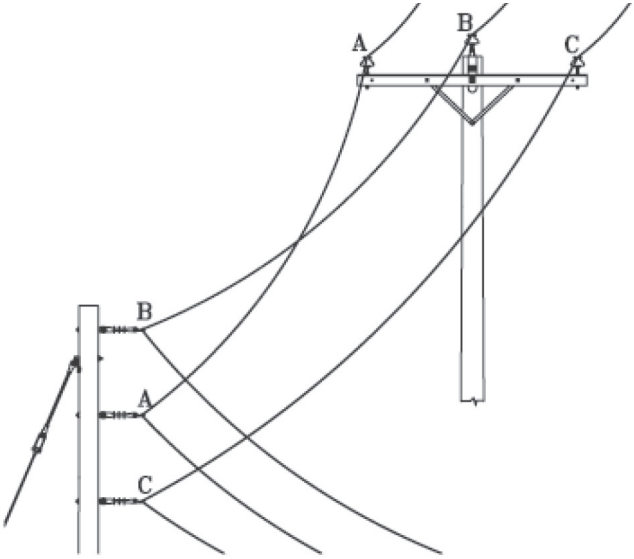
Primary Distribution Voltages

13kV (7620/13200 wye) & 4kV
(2400/4160 wye)

About 92.4% of the area is supplied by 13kV;
the balance is 4kV.

PRIMARY PHASING

For horizontal construction, typical phasing is A-B-C north to south, or east to west. For vertical construction, typical phasing is B-A-C top to bottom. Remember to always check for exceptions to typical phasing.



Secondary Voltages

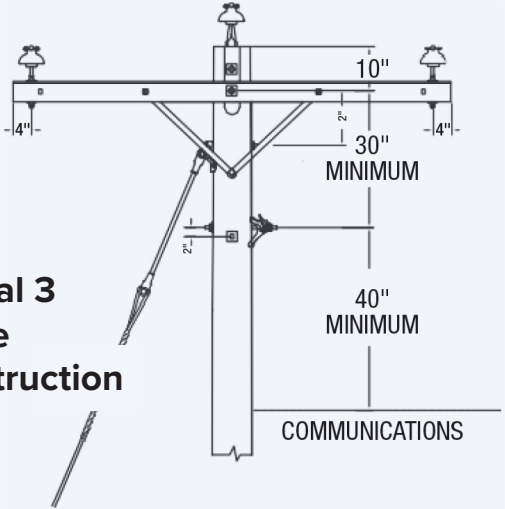
The secondary system contains both open wire, triplex and quadruplex secondary and services. The following are a listing of the various types:

Standard	1 Ø-3W-120/240V 3 Ø -4W-240V-delta 3 Ø -4W-120/208V-wye 1 Ø -3W-120/208V-from wye
Non-Standard	1 Ø-2W-120V 2 Ø -3W-240V 2 Ø -5W-120/240V 3 Ø -4W- 255/440V
Special	3 Ø -4W-277/480v

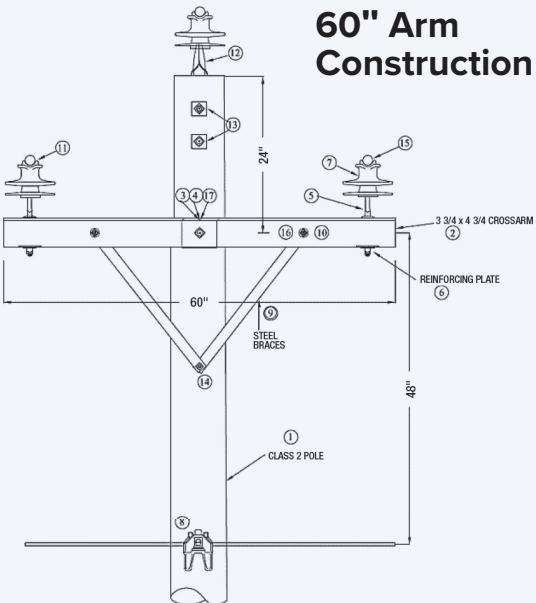
FREQUENTLY USED OVERHEAD CONSTRUCTION STANDARDS

To maintain the PSEG Long Island Storm Hardening Standards, 3-Phase Poles installed on main roads are to be installed 1 foot deeper than standard depth (i.e. 10% of pole length plus 3 feet)

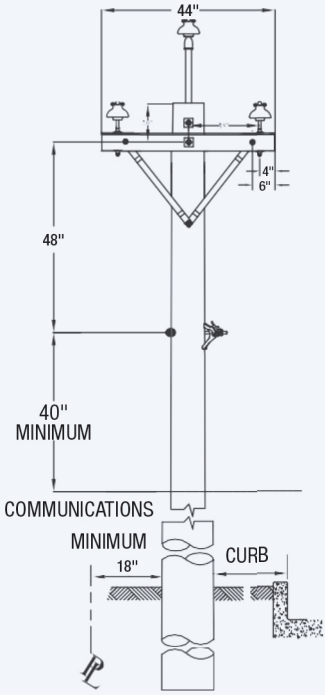
Typical 3 Phase Construction



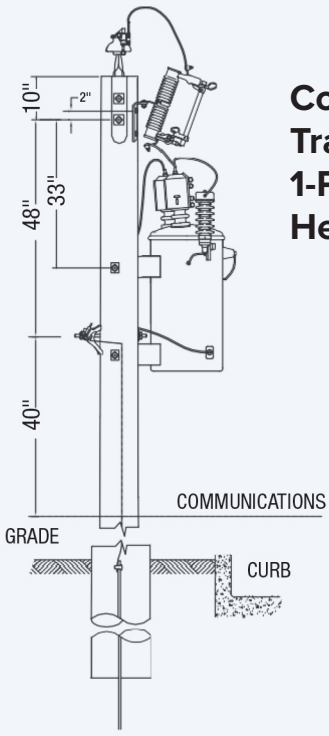
Typical 60" Arm Construction



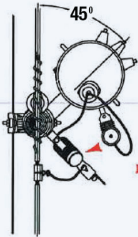
44" Arm Construction with PTP Insulator



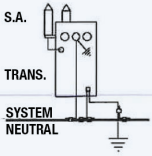
Conventional Transformer 1-Phase Pole Head



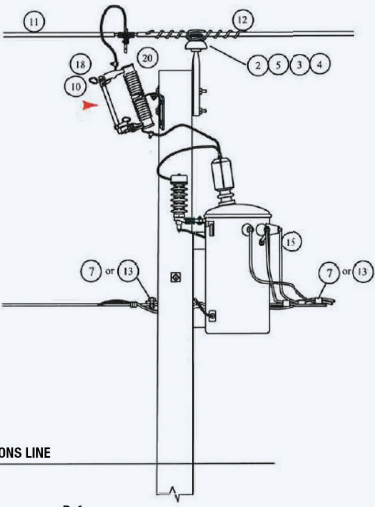
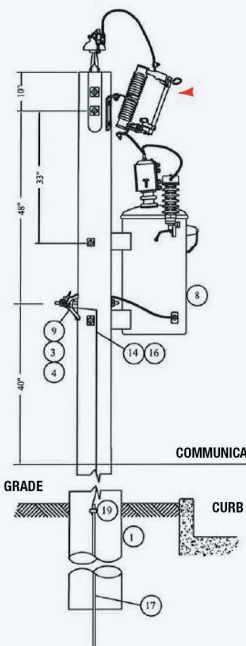
CSP Transformer 1 Phase Pole Head



Note: Cutout installed in rear property or inaccessible location shall be a loadbreak type, as per Bulletin 13-04.



GROUNDING DIAGRAM



Reference:
 CS-3501: Typical grounding practices.
 CS-3510: Down lead grounds on distribution poles.
 CS-4001: Primary & secondary leads connector for 1Ø and 3Ø Transformer.



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WORK PRACTICES

Electric

All lines shall be considered energized unless they have been tested and protective grounds applied to each side of the work area!!!

PLEASE NOTE: When working from a bucket appropriate fall arrest / harness is required at all times.

In Insulated Aerial Lifts, only one specific section of each boom (Upper & Lower) and the bucket liner are insulated. The remaining portions of the boom (Upper & Lower) and the bucket itself are **NOT INSULATED** and **DO NOT** provide protection upon contact with energized conductors.

Purpose of Grounding

When working on electric lines or equipment managed and maintained by PSEG Long Island for the purpose of doing de-energized work, protective grounds SHALL be applied at all times for worker protection regardless of voltage. The purpose of personal protective grounds is to prevent accidental injury or death from electric



shock. This protection falls into four basic areas:

- Protection in case the line or equipment being worked is accidentally energized from any possible source.
- Protection against induced voltage from adjacent lines or equipment.
- Awareness to ensure that protective devices, such as relays, circuit breakers or fuses operate as required to disconnect the energizing source within a given time/current relationship.
- Protection from capacitively charged wires, cables, and capacitors.

De-Energizing and Grounding

- Test de-energized lines to be sure they are absent of normal voltage before installing grounds or performing work on lines or equipment.
- Before working on de-energized lines, install temporary protective “personal” grounds at the work location.
- In case lines or equipment are unexpectedly energized, the grounds must have an impedance to ground low enough to permit the prompt operation of protective devices and must be capable of conducting the maximum ground fault current at the point of grounding for the time necessary to clear the fault.

- On the Long Island distribution system 2/0 protective grounds should be installed.
- On the Long Island transmission system, 4/0 grounds or a double set of 2/0 grounds should be installed depending on voltage.
- Attach the ground-end connection first, and then attach the other end to the de-energized conductor using Live-Line tools.
- Where facilities are 600 volts or less, grounds may be applied using personal protective equipment rated at the voltage to be worked on.
- Upon completion of work remove the grounding devices from the line or equipment first using Live-Line tools or insulated devices; remove grounding point last.



- Rubber Gloves and Rubber Sleeves are required when handling live electric circuits in the air or on the ground.

CONDUCTING WORK DE-ENERGIZED AND GROUNDED

All lines are to be treated as energized until the work area has been properly cleared, tested de-energized, and grounded. All mutual assistance crews must follow PSEG Long Island's process for clearing lines prior to testing and installing protective grounding.

Before opening or closing any branch line or 3-phase main line device, the Storm Console or Dispatch Area Coordinator to which you are assigned must be notified. All tagging must be legible, and in ink. All data must be complete including: date, time, tag holders name, and equipment number.

3-phase Main Distribution Feeders

All switching and Non-Reclose Assurances must be coordinated through the Distribution System Operator. All 3-phase main distribution feeders

must be cleared through the Distribution System Operator. The Distribution System Operator will direct that all known sources of electrical energy supplying power to a work area are opened, and that Hold Off/Do Not Operate tags are applied prior to authorizing work to commence. Only after receiving authorization from the Distribution System Operator to proceed with work may lines and/or equipment be tested de-energized and protective grounds installed. All switching and tagging must be directed by the Distribution System Operator in accordance with the distribution system switching procedure.

Branch Line Distribution

The crew lead will be responsible for ensuring the work area has been properly cleared, tested de-energized, and grounded prior to authorizing personnel to treat the area as de-energized.

When necessary, the work area shall be cleared as follows:

- Open or verify open all known sources of energy (cutouts) and apply a Hold Off/Do Not Operate Tag(s). This includes normally open devices.
- Remove the cutout door from its holder and take it to the job site if practical.
- Direct that the work area is tested de-energized
- Direct the application of protective grounding. When these steps have been completed, the crew lead may authorize personnel to treat the work area as de-energized.

Working 13kV and 4kV Energized

- The 4kV circuits can be worked in hooks from a pole while wearing rubber gloves and sleeves and must be properly rubbered up.
- The 13kV circuits must be worked from either an insulated bucket while wearing rubber gloves and sleeves or by approved “hot stick” work methods.

- Bucket type man-lift with insulated bucket insert(s);
- 20kV Class II Rubber Gloves and Sleeves for the employee, and
- High Voltage Boom Certification for the vehicle.

Work Permits

- Clearance
- Permission to work
- Permission to operate
- Non Reclose Assurance
- Self-Directed Clearance (issued by Crew Leader)

PSEG LONG ISLAND DISTRIBUTION DEVICES

Below you will find a list of PSEG Long Island's equipment you may encounter when working on the system. For further detail on description and operations, please scan the QR Code on the back of this guidebook and select Applicable Documents tab and find *"PSEG Long Island Mutual Aid Crew Distribution Device Guide"*

- G&W Electric Viper Recloser
- S&C Electric Scadamate Automatic Sectionalizing Unit
- DC NOVA Automatic Circuit Recloser
- Cooper Kyle Form 5 & Form 6 Recloser Controllers
- General Electric Capacitor Banks
- Switched Capacitor Bank
- S&C TripSaver II

CLEARANCE & CONTROL

Hold-Off Do Not Operate Tag/RED

Tagged device shall not be closed until tag is removed by the authorized individual noted on the tag.

Caution Tag/YELLOW

Tagged device shall not be operated by anyone other than the person listed on the tag.

NON-RECLOSE ASSURANCE

Non-Reclose Assurance is a work permit where the distribution breaker or reclosing device has had its automatic reclosing capabilities disabled to prevent re-energizing a work area should a fault occur.

Prior to conducting energized work that may involve handling energized primary conductors without the use of live line tools a Non-Reclose Assurance (NRA) must be issued. Non-Reclose Assurance must be coordinated through the appropriate storm console or dispatch coordinator.

Non- Reclose Assurance must be returned immediately upon completion of work or upon the request of the Distribution System Operator.

STANDARD PSEG LONG ISLAND PRACTICES

- Use of 8 foot and 5 foot cross arms
- Ensure that a Cutout is installed on all transformers
- It is imperative to verify fuse size and coordination with Crew Leader.
- Please note that PSEG Long Island ONLY uses "T" Fuses

TREE CREW GUIDELINES

- Tree trim crews will consider all lines energized unless a particular line has been confirmed de-energized and grounds are installed on both sides of the damage location to prevent back feeding.
- Tree Trim debris during storm restoration are the responsibility of the Customer, Town, Village, State or County. Exceptions are made for Emergency situations, but require approval by the PSEG Long Island Tree Trim Supervisor.

- If any Long Island Rail Road facility or access to tracks is needed you must contact the Tree Trim Supervisor to obtain Railroad flaggers.
- When working on Public or Private Property take into consideration any obstacles or objects in the damage area and remove those items before performing any work.
- Cotton Long Sleeve tee shirts are required at all times along with Gloves, Jeans and Non steel toe boots. All other PPE is also required while on the job site.

ENVIRONMENTAL COMPLIANCE

Spill Management and Response during Storm Restorations

Take these steps in the event you encounter a leaking transformer or other piece of oil-filled electric equipment that has leaked, spilled, or that shows signs of leaking (i.e. oil on the ground/pavement, stained soil, sheen on pavement/puddles, etc.). A spill is defined as any oil or chemical released into the environment. For Electric T&D this is primarily mineral oil from pole top/pad mount/below-grade transformers or any other piece of oil-filled electrical equipment. The New York State Department of Environmental Conservation requires the reporting of all spills (and their prompt clean-up).



For your safety, work only to your level of training. Do not attempt to contain a spill if there is any concern for your personal safety.

Minimize/Contain Spill

- Minimize spill by up-righting tipped transformers, bagging transformers, closing valves, or performing any other task (within your ability) to stop the leak.
- Contain spill by using Speedy-Dry (if available) or soil. If possible try encircling the damaged/leaking equipment with these materials.
- Isolate nearby storm drains using Speedy-Dry (if available), soil, or covering.
- Make sure that the affected area is safe until the spill clean-up contractor arrives.
- Avoid driving through oil or spreading oil contamination.

Report Spill Incident

- You must notify your Supervisor or Crew Guide regarding the spill. They will contact the System Operator to report the spill. If under local control, Dispatch Area Lead Coordinator can contact the **Environmental Compliance Spill Pager 516-824-2485**.
- Provide the nearest street address, description of the spill, type of transformer, date and time of spill (if known), location (front or back of property), and approximate quantity spilled (if known).

Document for Tracking

- When completing the Out-of-Service Tag (provided in your kit), include the street address given to System Operator, the word "SPILL," and the date the equipment was encountered.
- At a minimum, write, "SPILL," "Hold for Environmental," the street address, and the date the equipment was encountered on the transformer bag/transformer body in permanent marker.



If an accident or medical emergency occurs that requires local emergency services to respond, dial 911 and alert your Crew Guide

REPORTING ACCIDENTS

- Each crew and individual should know their work location at all times.
- If an accident occurs, you must report it immediately to your Crew Guide so that the appropriate PSEG Long Island personnel can be notified. Accidents can include, but not limited to:
 - Motor Vehicle Accidents
 - Spills
 - Injury or Sickness of any kind
 - Property Damage
- Contact Safety personnel if Crew Guide is not immediately available. Safety number is:
516-949-2002

GENERAL INFORMATION

Work Hours

PSEG Long Island's work schedule during storm events is typically 16 hours on and 8 hours off. At PSEG Long Island's discretion, work hours & schedules may be changed or reduced. You will be notified through your Crew Guide in advance of any changes.



Worker Conduct

The following policies must be adhered to during storm restoration. Any violation of these policies shall result in dismissal from PSEG Long Island's restoration effort.

- No consumption of alcoholic beverages during regular work hours, overtime, emergency or at meals.
- No person shall enter PSEG Long Island property while in possession of a firearm/ weapon of any description, loaded or unloaded.
- The unlawful use, possession, sale or purchase of "controlled substances" is prohibited.
- Room accommodations will be treated respectfully.
- Personnel who are sick, injured or otherwise unable to report to work shall inform their immediate supervisor, who shall inform their Crew Guide.
- Communication with the media is prohibited.
- All vehicles must be operated in an appropriate manner.
- All items in truck must be protected at all times.



BEHAVIORAL EXPECTATIONS

- Please review PSEG Long Island's Standards of Conduct (*can be found under The "Documents & Links tab after scanning QR Code on the back of the guidebook*)
- Please report any violation of PSEG Long Island's Standards of Conduct immediately to any of our speak up resources (*can be found under The "Documents & Links tab after scanning QR Code on the back of the guidebook*)
- PSEG Long Island strives to maintain a work environment free of inappropriate or unprofessional behavior, as well as sexual harassment and other discriminatory harassment.
- Such prohibited behaviors include, but are not limited to, foul and offensive language, comments of a sexual nature, unwelcome advances and/or physical contact, as well as comments that are derogatory based on an individual's protected characteristic.
- Our rules banning such behaviors extend to interactions with third parties while performing work for the Company, including customers, contractors, vendors, and suppliers.
- By agreeing to provide mutual assistance, you are representing PSEG Long Island and are expected to abide by these behavioral guidelines. Failure to adhere to the guidelines



may result in being removed from our mutual assistance program and prohibited from future mutual assistance opportunities.

- PSEG Long Island does not tolerate possessing, or being under the influence of, alcohol or any drug (legal or illegal) that may influence your ability to perform your job. This includes cannabis products – regardless of how they are consumed (i.e., smoked, digested).

NEWS MEDIA POLICY

Communication with the media is prohibited. If news media representatives approach field workers and start asking questions during restoration activities, the reporter should be referred to your Crew Guide. Only authorized PSEG Long Island personnel shall provide information or speak with the media.

SECURITY

- All PSEG Long Island buildings are staffed with security personnel who adhere to strict security procedures. You must have identification to gain access to any PSEG Long Island facility or temporary staging area.
- Vehicles and equipment being used by mutual assistance crews will be provided with security when staged off PSEG Long Island property or at staging areas.
- All equipment must be secured at all times on a job site or in your vehicle.



- For all security questions/concerns. Please contact the **Security Command Center** at: **855-212-4668**.

THREATS MADE TO MUTUAL ASSISTANCE CREWS

Situational Awareness

- Know the street address of your location at all times and be prepared to communicate it when calling for assistance.
- Observe the whole picture as you approach.
- Observe the neighborhood not just the electric lines
- If applicable, inform the customer the reason for being on their premise to avoid a possible hostile incident.
- Be prepared with an escape route if necessary.
- Leave the job site after completing the assigned work.

Personal Safety

- Avoid and diffuse situations that could compromise your personal security.
- Keep a personal buffer (reasonable amount of space) between you and the customer.
- Protect your body if a customer becomes physical
- Observe the customer's reactions and emotions and act accordingly



- Trust your gut, the situation does not feel right, remove yourself from the scene
- If the scene gets violent, call 911, contact your Crew Guide and the **Security Command Center 855-212-4668**

LODGING

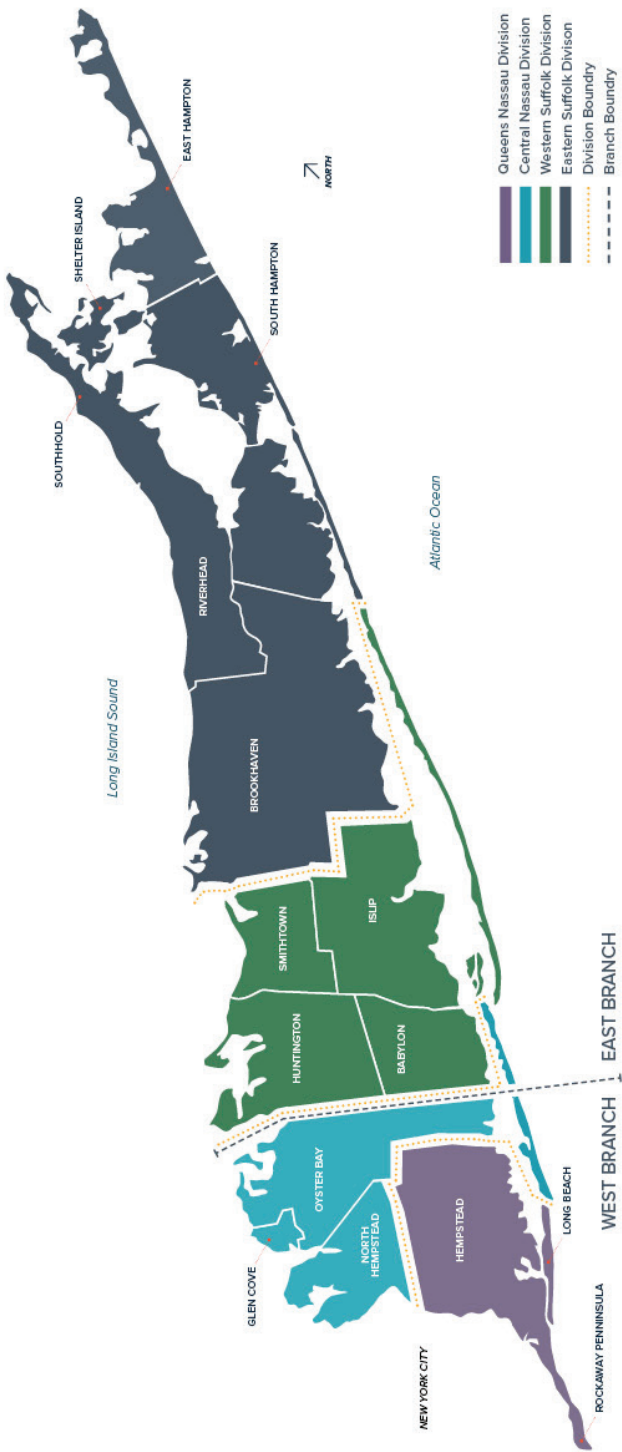
PSEG Long Island will make every attempt to provide the best possible lodging facilities for mutual assistance crews. Whenever possible, PSEG Long Island will lodge crews closest to their assigned work areas.

EXPENSES

- PSEG Long Island will not pay for in-room movies.
- PSEG Long Island will not pay for alcoholic beverages.
- All mutual assistance field personnel will be lodged two to a room; supervision will be lodged one per room when applicable.
- All personnel lodged at PSEG Long Island's expense are liable for any hotel damages.

FUELING

All vehicles and equipment, including mutual assistance crews, will be typically fueled at hotels and staging areas.



OPERATING DIVISION LOCATIONS

Queens-Nassau

455 Mill Road,
Hewlett, NY 11757

Central Nassau

175 East Old Country Road,
Hicksville, NY 11801

Western Suffolk

1650 Islip Avenue,
Brentwood, NY 11717

Eastern Suffolk

117 Doctors Path,
Riverhead, NY 11901

IMPORTANT CONTACT INFORMATION

**All numbers listed below are
available 24/7**

Security Command Center
855-212-4668

Spill Pager (reporting a spill)
516-824-2485

Safety/Health/Environmental Team
516-949-2002
PSEGLI-SHE-TEAM@pseg.com

For more information on
Mutual Assistance and Safety,
please scan QR Code



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psegliny.com



**In the event of an accident, medical
emergency, or security incident dial
911 and alert your Crew Guide**



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