PSEG Long Island

Storm Resiliency Strategy

JUNE 2020

PSEG LONG ISLAND
We make things work for you.

FEMA Program

Program Highlights

- Grant of $729.7M
- Substation Program
  - 7 Substations Raised Above Flood Level
  - 2 Substations Decommissioned
  - 96,323 customers protected from station flooding
- Transmission
  - 5 transmission crossings upgraded
- Circuit Hardening Program
  - 319 Circuits (35% of 3 Phase OH Mainline Circuits)
  - 1,025 Miles Mainline (40% of 3 Phase OH Mainline Mileage)
  - 894 ASUV (Automated Switches)
    - ✓ Reduces the number of customers impacted
    - ✓ Allowing for faster restoration through switching
  - 569,442 customers benefiting directly from circuit hardening
  - 200 OH Contractor FTE's available during construction phase
- Physical construction (with the exception of final punch list items) expected to be completed end of June 2020. 205 switches are in manual mode and will be commissioned as the Substation Repeaters come online and the communication system is completed.

....By reducing flooding, hardening damage locations, and increasing remote switching all PSEG Long Island customers benefit from less future storm damage and faster restoration

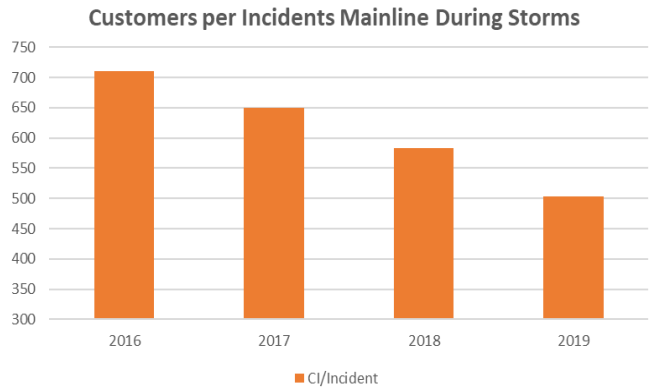
FEMA Program – Effectiveness

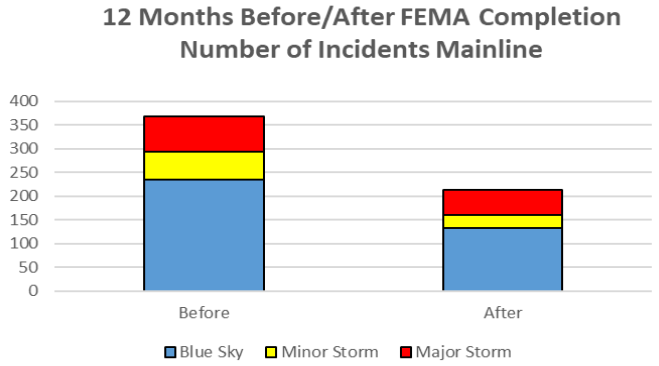
Program Effectiveness Measured by FEMA vs. Non-FEMA Circuit

- 62% Improvement in SAIFI
- 60% Improvement in SAIDI
- 33% Decrease in Incidents per Mile

Program Effectiveness Measured by Hardened vs. Non-Hardened zones of circuits during storm events

- 79% Improvement in SAIFI
- 91% Improvement in SAIDI
- 75% Decrease in Incidents per Mile





Overall program has proven effective, particularly when comparing Hardened vs. Non-Hardened zones of circuits…

Storm Hardening – Post FEMA

Power On! Program

- Program reduces damage locations on circuits through hardening
- Continuation of FEMA Mainline Hardening program on targeted circuits
- Current scope is approximately 60 miles per year but could be expanded
- Mitigation Zones Selected Based on 3 Year Damage/Mile Analysis
    - ➢ 2020 Program expected to directly benefit 57,000 customers
- Ongoing review of mainline vs. branch line hardening for future years
- Current Program plan is for $250M over 5-year period

LT5H (Less Than Five Hundred) Program Scope

- Program reduces the number of customers impacted by circuit damage
- Circuits identified and funded through Circuit Improvement (CIP) Program
    - Provides both reportable and Storm related benefits
- Strategic Installation of ASUV's for 500 max customers per event
    - Reduce customers affected by any single event
    - 556 in program, 275 installed through June 2020 with 281 remaining
    - Improve restoration efforts by increasing back feed paths
    - Improve Resiliency for all Outage Causes
- Expected to be completed in 2023

....Power On! and LT5H Program will provide FEMA like effectiveness

Power On! Expected Benefits

Improved Reliability During Storm Events due to Hardened Circuits

- 75% Decrease in Incidents per Mile
- System wide annual (and cumulative) improvements in:
  - Storm SAIFI: 1.5 to 2.0% per year
  - Storm SAIDI: 1.0 to 1.5% per year

Improved Storm Response & Reduced Mutual Aid due to resource availability

- OH Contractor Resources available for immediate storm response
- Annual Mutual aid savings of $4M to $5M
- Average 10% Storm CAIDI Improvement

Improved Blue Sky (Reportable Reliability)

- 42% Decrease in Incidents per Mile
- System wide annual (and cumulative) improvements in:
  - SAIFI: 1.5 to 2% per year
  - SAIDI: 1.0 to 1.5% per year

....Long term benefits in Reliability and immediate benefits for storm response