

Annual Report to the LIPA Board of Trustees on T&D Reliability

MAY 19, 2021

PSEG Long Island

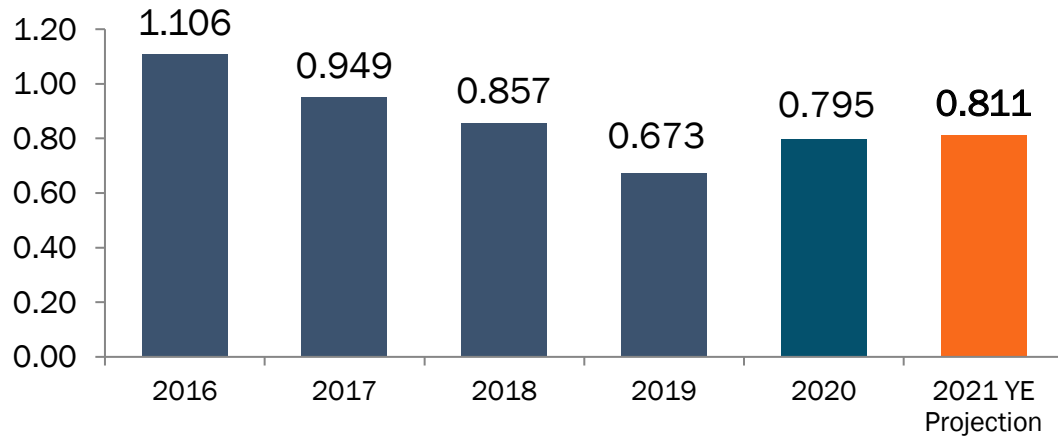
Agenda

- Reliability Metrics
- Reliability Improvement Programs
- Power Quality and Reliability
- NERC Compliance

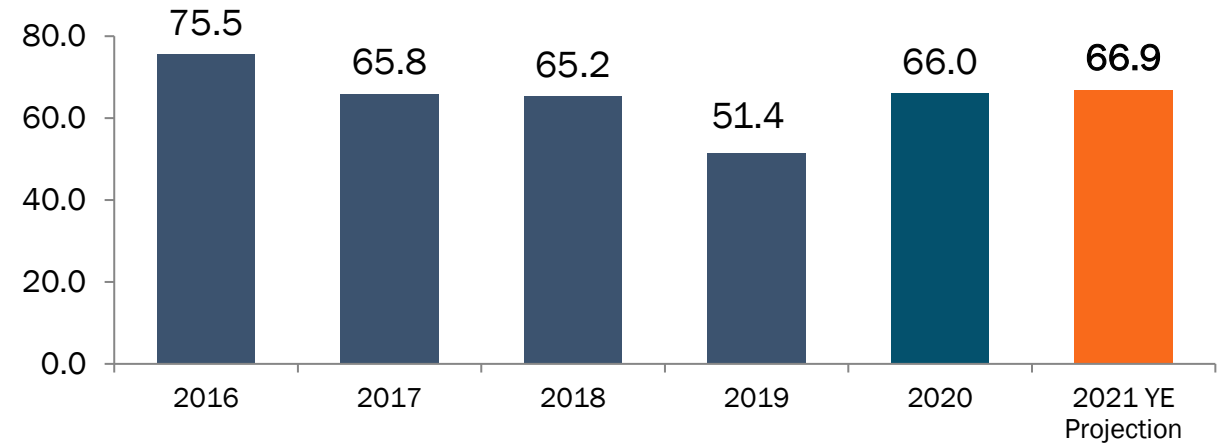
Reliability Improvements

2016 to 2021 YE Forecasted

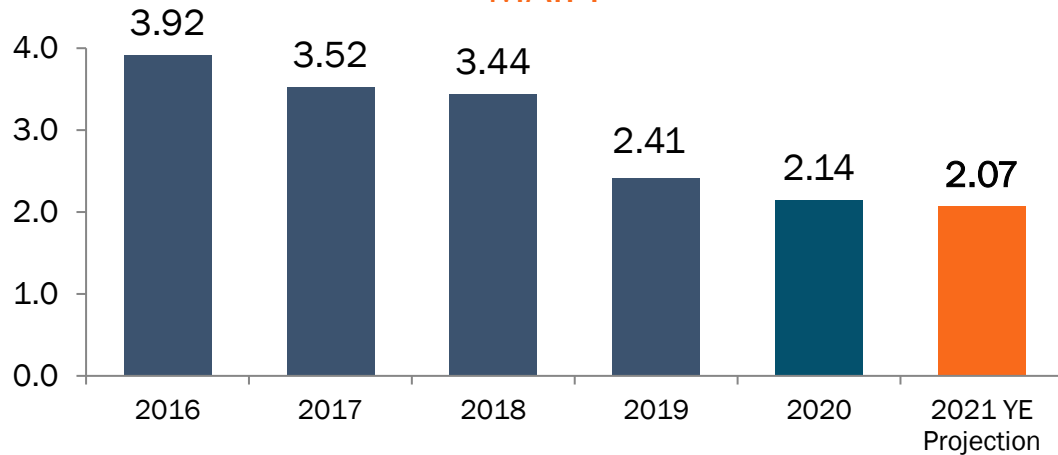
SAIFI



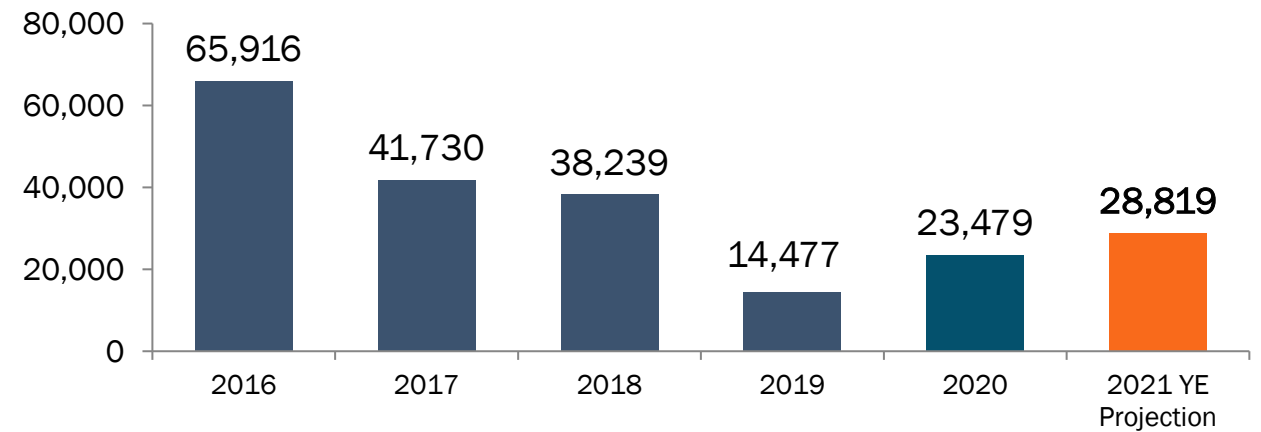
SAIDI



MAIFI



Sustained Multiple Customer Outages



Improvements to Reliability Since 2016

Performance Metric	Improvement Since 2016
SAIFI	↑ 27%
SAIDI	↑ 11%
MAIFI	↑ 47%
MCO	↑ 56%
MMCO	↑ 65%

- 2016 Year End versus 2021 Year End Projections*
- MMCO based on 2020 Year End Actual

Reliability Improvement Programs

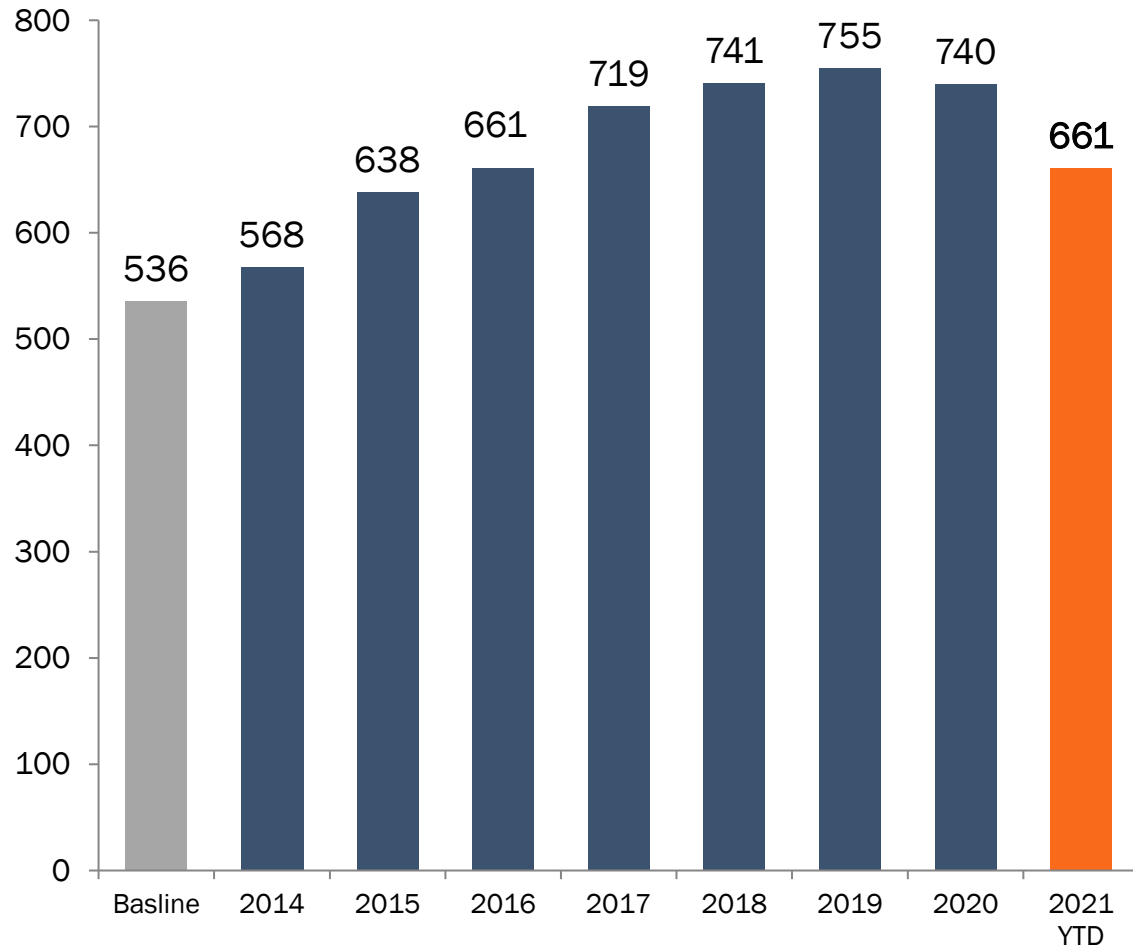
Reliability Programs	Program Effectiveness
FEMA Hardening	46% reduction in number of customer outages 1 year before versus 1 year after work completion
Power On!	Continuation of FEMA mainline hardening on targeted circuits 2020 program to directly benefit 70,531 customers
Less Than 500 Customers (LT5H)	3% Annual SAIFI Improvement through 2023. 15% total program benefit.
CIP/NOP	29% reduction in the number of preventable customer outages (overhead equipment and tree) 1 year before versus 1 year after work completion
Smart Grid Initiatives	AMI meter integration with GIS/OMS to proactively identify overloaded fuses and transformers Machine learning (AI) to identify vine conditions
Non-Reclose Assurance (NRA) Automation	59% decrease in NRA outages versus 2016
Vegetation Management Program	32% reduction in the number of vegetation related customer outages 1 year before versus 1 year after trim
MAIFI Improvement Program	68% reduction in the number of momentary customer interruptions 1 year before versus 1 year after work completion

Power Quality and Reliability

J.D. Power - Residential and Business Results

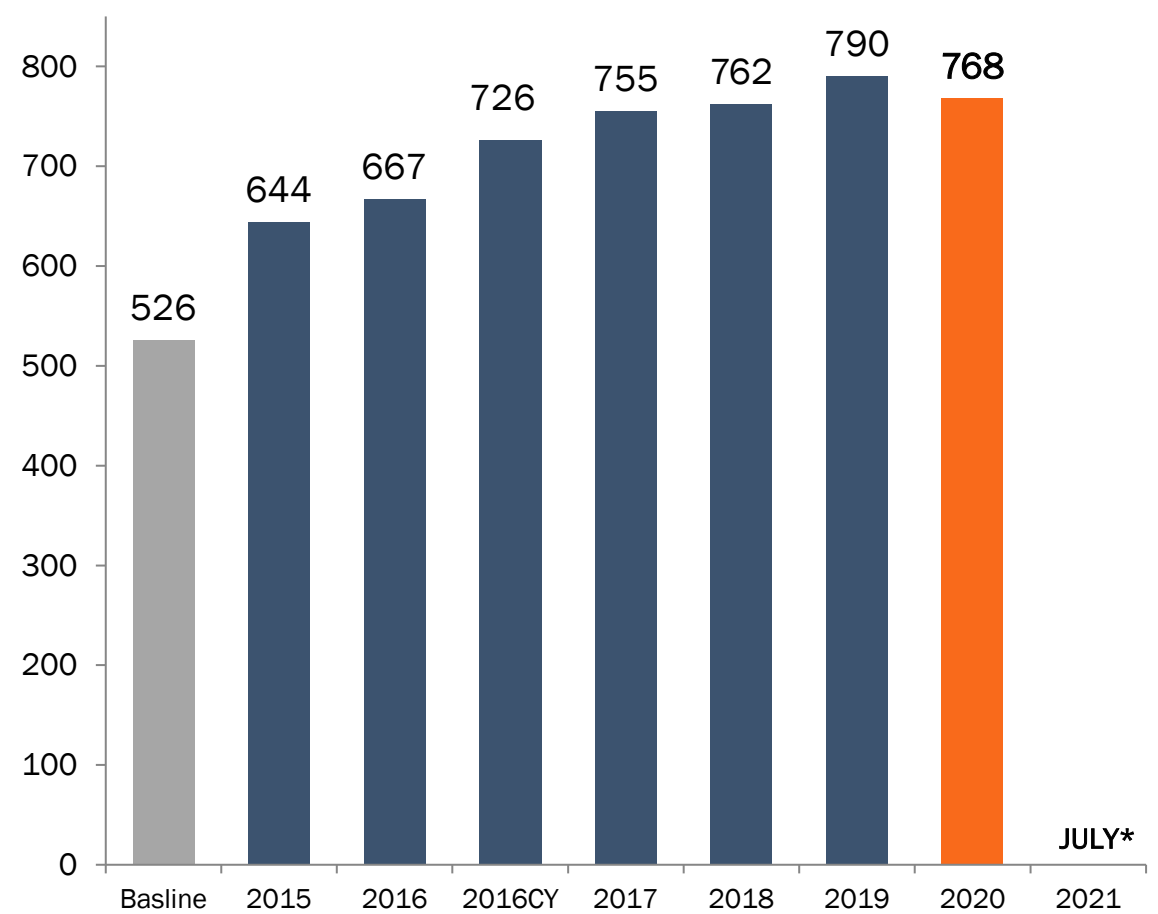
J.D. Power Residential

Power Quality and Reliability Results



J.D. Power Business

Power Quality and Reliability Results



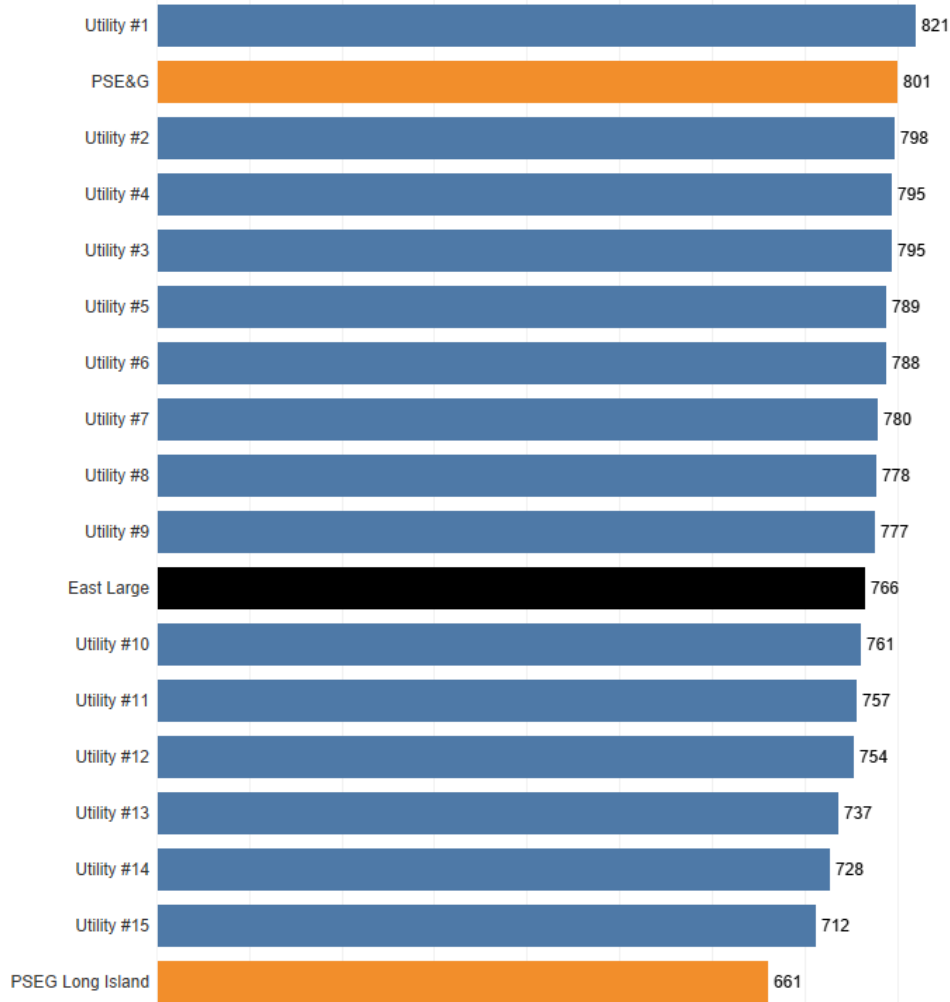
2021 1st Wave releases July 2021*

Power Quality and Reliability

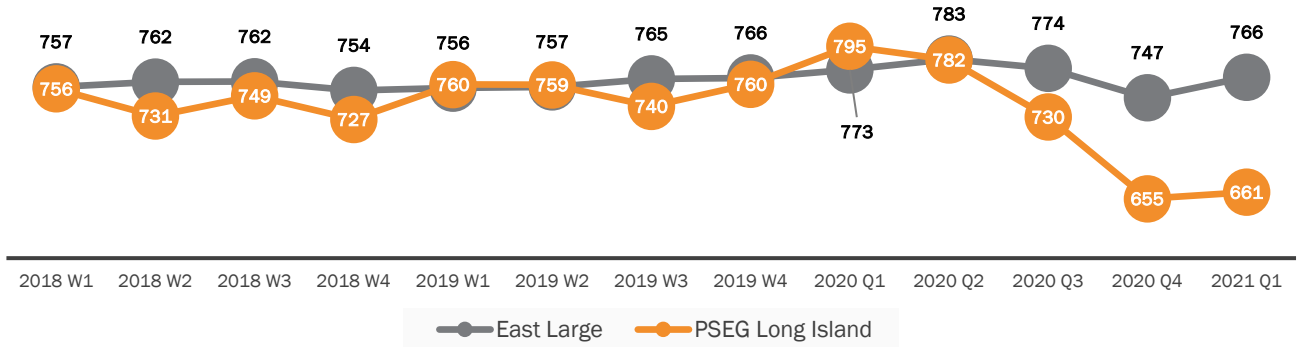
JD Power – 2021 W1 Residential Results

Power Quality and Reliability Satisfaction

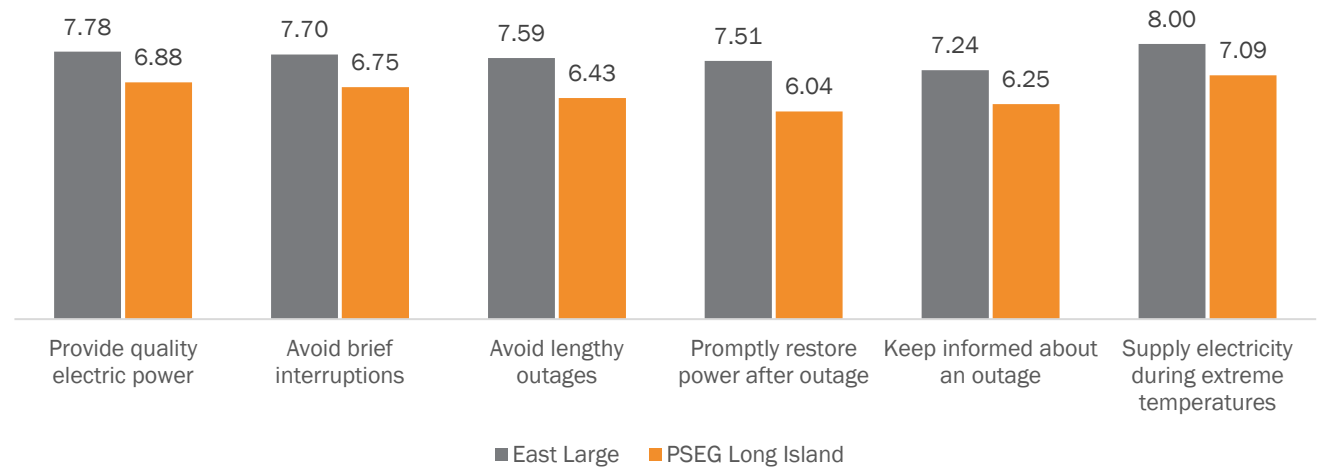
J.D. Power Residential 2021 W1 Results



Power Quality & Reliability Trend



Power Quality & Reliability Attributes



T&D System Reliability – Compliance

- NERC Compliance
 - Completed 2021 NPCC Operations and Planning (O&P) / CIP Audit
 - Pre-Audit data request, RSAWs, and evidence: Submitted 3 Gb of data representing over 1000 files, 356 data requests for 15 Standards, 46 Requirements
 - Results: 3 Potential Noncompliance's (PNC's), 3 Areas of Concern (AOC's), 27 Recommendations, 4 Positive Observations
 - Status: 2 PNC's Pending review by NPCC and NERC, 1 PNC pending field change. AOC's and Recommendations assessments in progress
 - FAC-008:
 - Completed an End to End review and reevaluation of facility ratings for the BES elements (Including review of: Drawings, Databases, As-built field conditions and field inspections)
 - Conducting Facility Ratings Organization Structure efficiency review in 2021 (Six Sigma)
 - NERC Evaluations of Internal Controls
 - 2020 - Completed FAC-008, TPL-007, and FAC-014
 - 2021 – Planned EICs - FAC-008 and one standard to be determined
 - 2021 Alternate Control Center (ACC) Drill completed. Operators and CNI tested the system throw-over and system operations
 - NERC Alerts addressed: CIP-0013 Supply Chain and COVID-19 awareness
- Completed annual transmission system operating studies including: Summer and Winter Studies, and G3 – Loss of Gas Study
- Environmental
 - No major incidents recorded

FOR CONSIDERATION

May 19, 2021

TO: The Board of Trustees

FROM: Thomas Falcone

REQUEST: Approval of the Annual Report on the Board’s Policy on Transmission and Distribution System Reliability

Requested Action

The Board of Trustees (the “Board”) of the Long Island Power Authority (“LIPA”) is requested to adopt a resolution: (i) approving the annual report on the Board Policy on Transmission and Distribution (“T&D”) System Reliability (the “Policy”); and (ii) finding that LIPA has complied with the Policy, which resolution is attached hereto as **Exhibit “A.”**

Background

By Resolution No. 1371, dated July 26, 2017, the Board adopted the Policy with the purpose of maintaining a reliable and resilient T&D system at an affordable cost. The Policy was last reviewed and amended by the Board pursuant to Resolution No. 1552, dated July 22, 2020.

The Policy provides that the “Chief Executive Officer will report annually to the Board on the key provisions of the Policy.”

Compliance with the Policy

The Service Provider’s performance for 2020 has been overshadowed by poor storm performance. Details on the performance, findings, and recommendations are discussed in LIPA’s 30 and 90-Day Reports on Tropical Storm Isaias.

Nevertheless, LIPA Staff recommends that for the reasons set forth below, the Board find that LIPA has complied with the Policy since the review of the Policy last year. Compliance with each element of the Policy is discussed in detail below.

As set forth in the Policy, LIPA shall:

- “comply with the applicable standards of the North American Electric Reliability Corporation [NERC], the Northeast Power Coordinating Council [NPCC], the New York State Reliability Council, the New York Independent System Operator, and environmental regulations.”
 - From March 29 to April 1, 2021, NPCC conducted an onsite (virtual due to the pandemic) NERC Operational Audit and Critical Infrastructure Protection (CIP) Audit. Exit comments from the NPCC Auditors included several findings as well

as procedural recommendations that would further strengthen our CIP and Operational compliance.

- “fund cost-effective programs to provide a level of reliability, as measured by system average outage duration (known as System Average Interruption Duration Index or SAIDI), within the first quartile as compared to peer utilities, excluding major events.”
 - For 2020, the System Average Interruption Duration Index (SAIDI) was 65.95 minutes, which continues to rank within the first quartile of peer utilities
 - Vegetation Management – Reportable customer outages due to vegetation were 5.85% lower than 2019 and 22.1% lower than the previous five-year average.
- “fund cost-effective programs to provide a level of reliability for each customer that is within a reasonable variance from system average conditions (excluding major events) including: programs to track and improve circuit conditions that cause a customer to experience four or more sustained outages (i.e., greater than five minutes in duration) in any 12-month period; and programs to track and improve circuit conditions that cause a customer to experience multiple momentary outages (i.e., outages less than five minutes in duration).”
 - Multiple Sustained Customer Outages – PSEG Long Island targeted areas with a higher level of sustained (i.e. greater than five minutes) customer outages. The number of customers with four or more sustained outages in any 12-month period was 23,484 in 2020, which continues to rank within the first quartile of peer utilities, but higher than 2019. A major reason for the increase is due to higher branch line outages, and to reduce such outages, the 2021 Circuit Improvement Program will focus on the worst performing branch line circuits.
 - Multiple Momentary Outages – Continuing with the program to reduce customer momentary outages, PSEG Long Island reported a 65.7% improvement in 2020 due to changes it made to relay settings.
- “fund cost-effective approaches for resiliency, thereby enhancing the safe and timely restoration of electrical service after severe weather or adverse events.”
 - Completed storm hardening of 1,025 miles of distribution main line, funded by FEMA.
 - As part of the approved Phase II storm hardening program that began in 2020 (the “Power On” program), approximately 81 miles of distribution mainline were storm hardened in 2020.
 - Continuing to develop the dynamic model for the prediction of storm intensity and impact with 2020 weather events and system outages. The model is currently being used for predicting customer outages, the number of crews needed, and deployment.
- “use smart grid technologies to minimize outages, monitor system conditions, and facilitate the interconnection of renewable and distributed resources.”

- As part of the Circuit Improvement Program, 148 automated distribution switches were installed in 2020 and 150 switches are scheduled to be installed in 2021.
- Approximately 319,210 Smart Meters were installed in 2020, with a year-end cumulative total of approximately 753,214 since the program began. For 2021, the goal is to install an additional 345,000, of which 104,993 have been installed in the first quarter. It is anticipated that 95% of all AMI installations in the service territory will be complete by September 2021. Smart meters help detect power outages and monitor power quality.

Annual Review of the Policy

LIPA Staff has reviewed the Policy and proposes no changes at this time.

Recommendation

Based upon the foregoing, I recommend approval of the above requested action by adoption of a resolution in the form attached hereto.

Attachments

Exhibit "A" Resolution

RESOLUTION APPROVING THE REPORT TO THE BOARD OF TRUSTEES ON THE BOARD POLICY ON TRANSMISSION & DISTRIBUTION SYSTEM RELIABILITY

WHEREAS, the Board Policy on Transmission and Distribution System Reliability (the “Policy”) was originally approved by the Board of Trustees by Resolution No. 1371, dated July 26, 2017; and

WHEREAS, the Policy was last reviewed and amended by the Board pursuant to Resolution No. 1552, dated July 22, 2020; and

WHEREAS, the Board has conducted an annual review of the Policy and affirms that the Policy has been complied with.

NOW, THEREFORE, BE IT RESOLVED, that consistent with the accompanying memorandum, the Board hereby finds that the Long Island Power Authority has complied with the Transmission and Distribution System Reliability Policy for the period since the last annual review and approves the annual report to the Board.

Dated: May 19, 2021