



March 2018. The Board having reviewed: 1) Staff's report and recommendations; 2) written comments submitted to the Board; and 3) public comments received at various public hearings throughout the state, herein orders the adoption of certain recommendations.

## **BACKGROUND**

In March 2018, New Jersey was struck by a series of severe weather events that impacted over 1.2 million electric utility customers and caused millions of dollars in property damage. These weather events were not without precedent. In recent years, the northeast region has experienced a number of storms comparable to the three March 2018 nor'easters that left customers in some areas without power for up to 11 days.

Winter Storm Riley, the first of three storms, arrived on March 2, 2018. Riley developed into a low-pressure system in the eastern Great Lakes on the morning of March 1, 2018, bringing a mix of rain, snow and high winds across the northeast region. On March 2, 2018, Riley intensified and became a powerful nor'easter with strong wind gusts reaching 50 to 70 mph. The intense weather event was strengthened by a weather phenomenon known as "bombogenesis," which describes a rapidly developing storm that results from a drop in atmospheric pressure of at least 24 millibars in a 24 hour period.<sup>2</sup>

In addition to high winds, snowfall amounts of 12 to 18 inches were reported in Sussex County and other parts of northwest New Jersey. By 9:00 p.m. on Friday, March 2, 2018, electric utility outages peaked at over 230,000, most of which were due to downed power lines from tree damage caused by high winds in areas of heavy canopy tree cover. All of New Jersey's 21 counties experienced power outages, with Morris, Hunterdon and Sussex experiencing the most damage.

Five days later, on March 7, 2018, a second nor'easter, Winter Storm Quinn, which developed in late February near the West Coast and made its multi-day voyage through the Rockies, brought up to 3 feet of heavy, wet snow and wind gusts over 50 mph to the northeast. Quinn's impact was much different than Riley, bringing heavier snow farther south and east along Interstate 95 with significant accumulating snow just west and northwest of Philadelphia and the New York City area.

Winter Storm Quinn brought additional power outages to the northeast. Just before snow began to fall on the morning of Wednesday, March 7, 2018, over 29,000 customers were still without power from Winter Storm Riley, most in JCP&L's Northern Region. By Wednesday night, March 7, the combination of remaining customers without power from Winter Storm Riley, and new outages from Winter Storm Quinn reached a new peak of over 342,000 customers without power. As a result of the severe wind and snow damage caused by the two nor'easters, power was not fully restored to all customers until Tuesday afternoon, March 13, 2018, a full 11 days from the time Riley first made its impact on March 2, 2018.

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<sup>2</sup> According to the National Oceanic and Atmospheric Administration ("NOAA"), bombogenesis is a term used by meteorologists to describe what occurs when a mid-latitude cyclone rapidly intensifies, dropping at least 24 millibars over 24 hours. This can happen when a cold air mass collides with a warm air mass, such as air over warm ocean waters. The formation of this rapidly strengthening weather system is a process called bombogenesis, which creates what is known as a bomb cyclone.

After experiencing nearly two weeks of service interruptions, on March 21, 2018, New Jersey and much of the northeast was once again hit with heavy snow, coastal flooding and high winds. Although not as severe as the previous two storms, the third nor'easter, winter storm Toby, caused significant damage to the electric infrastructure of ACE and JCP&L's Central Region. Over 90,000 customers in central and southern New Jersey lost power, and in some areas customers were without service for several days. JCP&L was able to restore most customers within 24 hours. ACE, however, took four and a half days to fully restore all customers.

During the overlapping restoration process following winter storms Riley and Quinn, a number of questions were raised by electric utility customers, as well as elected officials, as to the effectiveness of the EDCs' response to the storm-related outages. Questions were also raised about the effectiveness of the post Hurricane Irene and Superstorm Sandy infrastructure resiliency improvements and pre-storm preparedness measures implemented by the EDCs. In the aftermath of the storms, Governor Murphy directed the Board to conduct an investigation of the EDCs' pre-storm preparedness and response measures.

As part of the investigation, the Board held five public hearings throughout the State beginning on April 5, 2018. At the public hearings, the Board heard comments from 30 members of the public as well as 37 elected and public officials. In addition, a total of 60 written comments were also received, some of which were general in nature while others addressed specific concerns. The key topics and issues raised during the public hearings and in the written comments to the Board are summarized below.

#### **Public Hearing Comments:**

- **Workforce Deployment:** JCP&L customers and public officials in JCP&L territories expressed frustration with the lack of coordination and effective management of storm response work crews. A significant majority of the commenters from many different townships shared first-hand observations of utility crews that were parked for several hours apparently awaiting instructions while large swaths of communities waited to have power restored. Crews were seen leaving a work site prior to completing the job at hand only to return to the same location several hours later to finish. Commenters expressed concerns about an apparent lack of adequate supervision and management of the workforce by the utilities, particularly with regard to workers in the JCP&L Northern Region.

Several public officials and utility customers in RECO's service territory also expressed frustration in not seeing any repair crews in the Bergen County area for up to five days. The perception among RECO customers and elected officials was that there was no effort to deploy work crews in their communities following the March 2018 storms. Others commented that the mobilization efforts were clearly deficient.

**Response:** Failure to properly coordinate and efficiently manage out-of-State work crews continues to be a problem for utilities despite the fact that this issue was a concern raised during the Board's investigation of prior storm events. The Board attempted to address this issue by requiring EDCs to take steps to identify, train and assign additional personnel to fill leadership level positions in their storm restoration organization. While those requirements have shown improvement, all EDCs must further improve their efforts to better manage and coordinate large storm-response workforces. JCP&L in particular exhibited significant

workforce management inefficiencies. Board staff addresses this issue once again in the current investigation and report to the Board and recommends that all EDCs, and JCP&L in particular, improve its span of control to better manage mutual assistance workers in its system.

With regard to RECO's workforce deployment issues, Staff understands the frustration expressed by RECO customers. RECO relies on Orange & Rockland Utilities (RECO's parent company) to perform all work activities in New Jersey. When conducting storm response and restoration, Orange & Rockland Utilities does not track crew deployments into New Jersey and Staff was therefore unable to assess RECO's performance regarding crew deployments in the State. This deployment scheme and the lack of New Jersey specific information is unacceptable, and is discussed in Staff's report which includes a recommendation that the Board require RECO to track all crew activities in New Jersey and provide that information to Board Staff.

- **Resource Acquisitions and Mutual Assistance:** Several public officials expressed confusion as to why JCP&L did not reach out to the Borough of Madison's electric utility for assistance during the storms. Commenters noted that the Borough of Madison's electric utility attempted to assist JCP&L but were initially denied. Also, once permission was granted, Madison's electric utility was able to successfully provide assistance to several communities in Morris County.

**Response:** Deciding when to acquire external assistance, and the level of aid necessary, is a complex issue for all EDCs during a major storm event like the March 2018 nor'easters, and requires a wide range of factors be considered within a very narrow timeframe. Nonetheless, use of locally available mutual aid and cross training is vital to rapid storm responses. The issue of resource acquisition and mutual assistance is discussed in greater detail in Staff's report, and the report includes a recommendation for all EDCs to formalize a mutual assistance compact among the state's electric utilities including municipal and cooperative utilities.

- **Tree Trimming and Vegetation Management:** Many commenters, particularly in the JCP&L Northern Region and RECO service territory, were frustrated over the extensive tree-related damage to power lines and utility poles. The general consensus among many commenters was that more aggressive tree trimming is needed by the EDCs. Public officials also commented that there needs to be a better balance between the homeowners' and communities' desire to maintain aesthetics and the need for a more aggressive tree trimming program. Some commenters suggested that tree trimming/vegetation management guidelines should be thoroughly reviewed to allow crews to trim trees and limbs more effectively and preventatively rather than to be limited to trim only vegetation that encroaches power lines to the point of near contact.

**Response:** Overhead utility damage from fallen trees and broken tree branches continues to be the number one cause of power outages during severe storms like the March 2018 nor'easters. Following Hurricane Irene and Superstorm Sandy, the Board held stakeholder meetings and revised the Board's vegetation management rules in an attempt to mitigate tree-related power outages. However, the Board's rules on vegetation management do not extend beyond the utility right-of-way ("ROW"), and recent data provided by the EDCs continues to show that the majority of tree-related damage to overhead utilities during a major

storm is from uprooted healthy trees outside the utility ROW. Board Staff believes that while the existing vegetation management rules do improve long term reliability indices, additional review of vegetation management procedures may be necessary. Staff's report addresses the issue of tree-related damage and has provided recommendations designed to specifically mitigate storm related-tree damage to overhead utilities.

- **Estimated Time of Restoration (ETR)**: Virtually all commenters were frustrated by the lack of reliable information that they received while their power was out. At every public hearing, BPU representatives heard multiple comments that information or restoration times was either difficult to obtain or the information was clearly erroneous. Many commenters received automated calls that their power had been restored while it was not. Other commenters were notified that power would be restored within a few hours and relied on that information to leave the safety and warmth of a hotel or a family member's house to return home, only to be subjected to several more days without electricity. This was particularly irritating for JCP&L customers who were receiving continuous robo calls every few hours stating that their service was back on when in fact, service continued to be out for many days.

**Response:** Board Staff investigated this issue and found that the complaints about inaccurate ETRs and robo calls, while related, were two separate issues. The accuracy of ETRs continues to be a challenge for all EDCs who experience widespread outages across a large geographic area that requires an extensive assessment of damage to the infrastructure. As discussed in greater detail in Staff's report, this is especially challenging for JCP&L which has a combined service territory of over 3,100 square miles. Staff believes, however, that the EDCs can do a better job when issuing an initial global ETR by compartmentalizing the global ETR at the district, division or regional level rather than system-wide. EDCs should further recognize that giving overly optimistic ETRs during or immediately following a storm event is not productive, when the reality of the damage will not likely support expeditious restoration.

With respect to the robo calls, based on information received from JCP&L and further discussions on this issue, it was determined that during the restoration process the company failed to recognize that the ETR callback feature in the Outage Management System ("OMS") was incorrectly set in its normal non-storm mode and was sending messages every few hours. As discussed in Staff's report, under normal "blue sky" conditions the OMS issues a calculated ETR to customers based on historical estimates of similar outages. Under storm conditions, this OMS feature for reporting ETRs to customers using the callback option is suppressed and ETRs are not issued until the actual damage assessment is completed by personnel in the field. JCP&L acknowledged that this was a misstep on the company's part and has taken corrective action which includes an upgrade of the company's OMS.

- **Utility Infrastructure**: Customers and public officials both commented that the utility infrastructure, particularly in the RECO service area and JCP&L Northern Region, is in need of upgrades. Some commenters complained specifically about the condition and age of the wooden pole infrastructure, citing several examples of poor pole maintenance, pre-existing damaged poles and older poles in apparent need of replacement. Some commenters also suggested that the EDCs should consider placing utility lines underground as a means of mitigating future damage from severe storms.

**Response:** This issue was also investigated by Board Staff with particular attention given to the structural integrity of joint-use utility poles. Although EDCs have reported that they include pole maintenance in their routine maintenance schedule, it is unclear from a review of available information to what extent poles are inspected for compliance with the most recent National Electrical Safety Code pole strength and wind/ice loading requirements. In its report, Staff addressed this concern and has made a specific recommendation for all pole-owning utilities to conduct a pole safety audit of their wooden poles.

On the issue of placing overhead utility lines underground, Staff has reviewed numerous reports and studies on this topic and had discussions with utilities concerning the potential cost of converting overhead lines to underground. All reports and studies concluded that too many variables exist for a reliable cost estimate concerning the conversion to underground utilities lines. Even the most comprehensive studies put the cost at a median average of over \$3 million per mile. Since these costs would be borne by rate payers, Staff believes that, to the extent conversion of overhead lines would have any meaningful impact on reducing outages, it would be cost prohibitive at this time.

- **Customer Call Center:** A number of complaints were also heard from customers about their experience with customer service representatives, particularly with RECO's Call Center. The general consensus among customers was that there was either a lack of knowledge about ongoing work activities in their area, particularly in Bergen County, or indifference on the part of RECO's customer service employees about the length of outages in RECO's New Jersey territory.

While commenters were not as critical about customer service representatives for JCP&L, they did state that JCP&L representatives appeared to lack knowledge about the severity of the storm conditions in New Jersey and lacked an awareness of crew deployments and ongoing work activities in their area.

**Response:** Board Staff appreciates the comments from customers and public officials and understands concerns that RECO's Call Center operations, which are managed by Orange & Rockland Utilities in New York State, may not be as responsive as they should be to RECO customers in New Jersey. Staff has addressed this issue in its report and included a recommendation requiring RECO to train its customer service representatives to be more professional and knowledgeable about ongoing work activities in New Jersey.

Similar to RECO, all of JCP&L's Call Centers are located out-of-state with Call Centers in Ohio, West Virginia, and Pennsylvania. Staff has also recommended in its report that the Board direct JCP&L to ensure that its Call Centers have the capability to track where utility crews are working during the restoration process, and that accurate and up-to-date information is provided to customers about ongoing repairs.

- **Utility Municipal Franchise:** During the Mahwah public hearing, many commenters expressed frustration over RECO's overall performance during the restoration of both winter storms Riley and Quinn. The complaints were many and included a wide range of issues. As previously discussed, complaints included, for example: the slow pace of restoration, poor communication with the company, and insufficient number of crews working in New Jersey during the storm restoration process.

One commenter suggested that the Board should work on creating necessary protections to prevent this type of deficient response from happening again, including allowing towns to revoke a utility's franchise.

**Response:** Revocation of a municipal franchise is a complicated issue involving cost allocations of an EDC and the legal rights of multiple parties. While each of the EDCs had difficulties in certain areas of their storm response, Board Staff feels that improvement of EDCs processes, not revocation discussions, is the most prudent analysis at this time. As noted in its report, Staff has recommended several changes which it anticipates will improve EDCs storm responsiveness.

### **Written Comments**

- Comments submitted in writing to the Board raised similar issues and expressed similar concerns about utility performance as those voiced during the public hearings. Specific complaints were raised about JCP&L's inaccurate ETRs, the need to upgrade its infrastructure, better coordination of mutual assistance, and the need to improve vegetation management practices. Commenters were also critical of RECO's performance during the restoration process. The Township Committee of Wyckoff, for example, adopted a resolution expressing No-Confidence in RECO and asked that the Board remove RECO as the EDC for one half of the town and award the franchise to PSE&G. Finally, comments were submitted expressing frustration over the restoration prioritization given to customers, especially in rural communities in Hunterdon and Sussex counties.

Other specific recommendations sent on behalf of townships that were significantly affected by the storms included: 1) Conduct utility pole condition studies to assess the integrity of aging poles; 2) Provide generators for traffic signals at key intersections to ensure safety at intersections during outages; 3) Institute a program for electronic reporting for residents and observers to report outages that are witnessed, even if not related to the observer's own home or business; and 4) Consider the installations of SmartFuse boxes in rural areas to eliminate the need for a technician to physically reset a fuse by hand when it is tripped.

**Response:** With regard to prioritizing restoration, this issue was investigated and discussed by Board Staff in its report. As with past storms, utilities strive to follow established priorities which include public safety hazards first and then progressing to the needs of emergency services and eventually transitioning to the largest number of customers and finally to individual homes. Conditions that exist in real time, however, may require utility crews to be diverted to restore new priority outages that require more immediate attention.

As a result of the extensive tree-related damage from these storms, clearing roads of downed trees and broken tree limbs entangled with potentially energized wires became a top priority early on in the restoration process. During the first 24 to 48 hours following the March 2018 nor'easters, the EDCs dedicated considerable resources to clearing roads of downed wires, as this became a high priority for the Department of Transportation ("DOT") and local public officials who raised concerns about the need to expedite the removal of downed wires on roadways.

With regard to the remaining issues raised in the written comments, Staff believes that the report to the Board addresses the key concerns of customers and public officials, and where appropriate, makes recommendations designed to improve future performance by the EDCs and mitigate long-duration customer outages.

Based on a review of the EDCs' overall response, as well as the issues raised in the public hearings and the written comments summarized above, Board Staff has identified a number of areas for improvement which are discussed in greater detail in a Staff report dated July 12, 2018: Report and Recommendations on Utility Response and Restoration to Power Outages During the Winter Storms of March 2018 (A copy of the report is attached to this Order).

## **DISCUSSION AND FINDINGS**

The Board strives to ensure that all utilities are equipped with the resources to handle major storm events, to adequately assist customers during these events, and to communicate effectively with regulators, elected officials as well as the public throughout the event. The storm report submitted to the Board serves to address areas of concern some of which have been discussed in previous orders yet require subsequent review and modification based upon lessons learned during the March storms that significantly impacted the State and its residents.

It is imperative, that all regulated entities that serve New Jersey evaluate serious weather events carefully and develop a keen understanding of the magnitude of impending events. This requires organized managed planning. Board staff undertook a review of the operations of the EDC's who serve the state and have summarized observations made while the storms were actively ongoing, reviewed the emergency plans submitted by EDCs required by the Board, and analyzed responses to requested information sought following the storms, in an effort to devise solutions to identified deficiencies in current storm practices.

Prediction measures, utility staff controls, accuracy of the messages put forward, in addition to infrastructure issues related to pole maintenance and tree care are at the forefront of staff's concerns. Managing emergency plans is a complex undertaking. The recommendations in the report submitted to the Board combine an evaluation of recommendations from previous weather events, namely Super Storm Sandy and Hurricane Irene combined with observations and experiences shared from the trio of March storms.

After examining the adequacy of the responses of EDCs and other regulated entities who serve the state, Staff is recommending that numerous additional measures must be implemented. These additional requirements are vital to address future weather events in light of what was experienced throughout the March storms that resulted in considerable damage to the state.

During its investigation, Staff made a number of findings including analyzing whether the EDCs complied with the Hurricane Irene and Superstorm Sandy Orders. As discussed in Staff's report, the storm preparedness and response measures undertaken by the EDCs prior to, during, and after the March 2018 nor'easters were generally consistent with the 100 plus recommendations in the Hurricane Irene and Superstorm Sandy Orders. Nonetheless, not all actions were as the Board would have expected given a major storm event, and improvements are necessary. The unpredictable nature and severity of the March 2018 nor'easters, especially winter storm Riley, exposed weaknesses and created challenges for the EDCs resulting in prolonged outages lasting up to 11 days for some customers. The information extrapolated from the submissions of the EDC's and

other regulated entity responses coupled with a review of the existing practices have led to the conclusion that changes are needed to the current practices employed in order to enhance future performance.

Specifically, the areas identified in the EDCs' and other regulated entity responses to the winter storms as needing improvement include: weather forecasting and outage prediction modeling; pre-storm resource acquisition; damage assessment; workforce deployment; vegetation management; pole-line infrastructure; technology automation; customer outreach; customer call center performance; and Estimated Time of Restoration ("ETRs"). The above is not an exhaustive list, as additional areas needing improvement may arise upon staff's review of the submissions ordered herein.

A summary of key topics and accompanying recommendations addressing these areas which are discussed in the report are enumerated below:

- **Event Level Classification and Outage Prediction Modeling**
  1. EDC participation in the Board's collaborative initiative with the National Weather Service with the goal of refining outage prediction modeling capabilities.
  2. EDC updates to their event level or severity level matrix used to determine pre-storm resource needs.
  3. JCP&L refining its outage prediction model to account for local, regional and division level differences.
- **Pre-Storm Resource Acquisition and Mutual Assistance**
  4. Creation of an Intra-state Mutual Assistance Agreement amongst the EDCs (and municipal electric utilities in New Jersey) that reflects a commitment to share internal company employees and contractors when out-of-state resources are likely to be unavailable through the Regional Mutual Assist Group process.
- **Damage Assessment**
  5. Leveraging JCP&L's non-contiguous Northern and Central Region employees and train as many employees as practical to perform second role damage assessment activities.
- **Workforce Deployment**
  6. Reevaluation of JCP&L's span of control to ensure that all aspects of restoration work is considered, including: the size and terrain of its system; the type of work being performed; and the capabilities and expectation of non-company foreign workers.
  7. RECO tracking, documenting and providing, for all Major Events, a complete breakdown of all workforce FTEs deployed to New Jersey in the company's Major Event Report.

- **Storm Impact, Outage Response and Restoration Timeline**

8. The Board should initiate a stakeholder process to revisit the 2015 Vegetation Management (“VM”) rules with the primary objective of revising the existing four year cycle based VM program with a more resiliency based program.
9. The Board should consider: (1) a review of the current VM rules that address vegetation management in the public ROW where utilities have overhead facilities; (2) clarification of the rights of EDC’s and the oversight agency concerning the trimming or removal of the off-ROW trees identified by the EDC as a potential hazard or a danger to overhead powerlines; and (3) if necessary, pursue legislation that preserves agency authority in this area, to ensure the provision of safe, adequate and proper service.
10. All New Jersey pole-owning utilities, including telecommunications providers, must conduct a Pole Safety Audit of their wooden utility poles consistent with the most recent NESC pole safety requirements on pole strength and pole loading.
11. The development of a formal joint-use storm coordination plan for all EDCs and pole owning telecommunications providers that defines roles and responsibilities for the coordination of repairs and/or replacements of joint-use utilities poles during a major storm event.
12. Directing JCP&L, PSE&G and ACE to each submit a plan and cost benefit analysis for the implementation of Advanced Metering Infrastructure (“AMI”).

- **Pre-Storm Notification and Customer Outreach**

13. Maintaining direct and live contact with critical care customers before, during, and after any outage event.

- **Customer Call Center Performance**

14. Additional training for RECO Customer Service Representatives (“CSRs”) that, at a minimum, ensures that calls are handled in a professional and courteous manner and that equal prioritization is given to New Jersey customers.

- **Estimated Time of Restoration (ETR)**

15. Within 24 hours after weather event or other major event has exited the service territory, each EDC must provide a global ETR separately at the operating districts, divisions or regions level instead of a system-wide global ETR.

After careful review of the "Report and Recommendations on Utility Response and Restoration to Power Outages During the Winter Storms of March 2018" dated July 12, 2018, the Board **HEREBY ACCEPTS** the report, **HEREBY AUTHORIZES** release of the report and **HEREBY FINDS** that the implementation of the Staff recommendations at this time is essential to facilitate the continued provision of safe, proper and adequate service, to help mitigate future outages, and to help develop more effective responses and coordination of resources among the EDCs and all

utilities during such events. The requirements adopted herein supplement those requirements set forth in previous Board Orders cited throughout and are in addition to existing rules and regulations found in the New Jersey Administrative Code and applicable statutes.

The Board **HEREBY ORDERS** that the EDCs and all other pole-owning utilities including telecommunications providers shall implement Staff's recommendations as set forth below:

**Recommendation # 1 (ACE, JCP&L, PSE&G, RECO)**

RQ-EDC-1: The EDCs shall participate in the Board's collaborative initiative with the National Weather Service for the purpose of exchanging information about storm prediction modeling and weather impacts on electric infrastructure with the goal of refining EDCs' outage prediction modeling capabilities.

**Recommendation # 2 (ACE, JCP&L, PSE&G, RECO)**

RQ-EDC-2: The EDCs shall update their event level classification matrices to reflect data points and insights gained from all weather-related events for which a Major Storm Report was required by the Board since Hurricane Sandy in 2012, including the most recent March 2018 nor'easters. The updated matrices shall explicitly account for locational differences such as tree canopy, surface terrain, and elevation. EDCs shall revise their Emergency Operations Plans to include these updated matrices. Revised plans should be filed with the Board within 45 days. Each EDC shall also submit to the Board a description of the process it will follow to ensure storm-specific pre-storm planning and post-storm recovery lessons learned are routinely incorporated into these matrices going forward.

**Recommendation # 3 (JCP&L)**

RQ-JCP&L-1: JCP&L shall refine its outage prediction model to account for local, regional and division level differences. Specifically, JCP&L's prediction model should account for variations in weather patterns across its service territory as dictated by geographic locale. It also should include situational and locational variables that, at a minimum, include: (1) type and density of existing tree canopy; (2) the underlying soil conditions in heavily treed areas; (3) topology; (4) coastal and shoreline flooding and wind conditions; (5) distribution infrastructure configuration and resiliency; and (6) age and structural integrity of the overhead pole-line distribution system. JCP&L shall detail its revised outage prediction modeling process including the specific inputs and outputs in a report to the Board within sixty days.

**Recommendation # 4 (ACE, JCP&L, PSE&G, and RECO)**

RQ-EDC-3: The EDCs shall work together to create an Intra-state Mutual Assistance Agreement that reflects a commitment to share internal company employees and contractors when out-of-state resources are likely to be unavailable through the RMAG process or when significant numbers of outages are predicted to affect New Jersey residents across the state. The EDCs also shall seek participation from the state's nine municipal utilities and one cooperative utility and include those utilities in the development of the Intrastate Mutual Assistance Agreement. EDCs shall submit the plan for Staff review within 60 days from the state's nine municipal utilities and one

cooperative utility and include those utilities in the development of the Intrastate Mutual Assistance Agreement. EDCs shall submit the plan for Staff review within 60 days.

**Recommendation # 5 (JCP&L)**

RQ-JCPL-2: JCP&L shall train as many employees as practical to perform second role damage assessment activities. A training plan describing how this training is to be accomplished and a timeline for putting it into practice shall be submitted to the Board.

JCP&L shall also improve its capability to rapidly mobilize trained third-party damage assessors within each of its service regions and to introduce solutions to maximize their efficiency. JCP&L shall submit an improvement plan that addresses this capability to the Board.

Both plans shall be submitted to the Board within 120 days.

**Recommendation # 6 (JCP&L)**

RQ-JCP&L-3: JCP&L shall reevaluate its span of control to ensure that all aspects of restoration work is effectively managed considering the size and terrain of its system, the type of work that must be performed and its expectations of non-company FTEs as well as their capabilities. To improve storm restoration efficiency, the Board directs JCPL to hire or contract with additional personnel to increase the number of workers with specialized skill sets to effectively manage and direct the resources required to recover from a major weather event.

A plan of action to effectuate this increase in staffing a skilled workforce shall be submitted to Board Staff within 60 days.

**Recommendation # 7 (RECO)**

RQ-RECO-1: RECO shall track, document and provide for all Major Events, a complete breakdown of all workforce FTEs deployed to New Jersey in the company's Major Event Report. Further, RECO shall provide to BPU emergency management staff its pre-event resource FTE requests specifically for New Jersey and daily FTEs dedicated to New Jersey until all customers are restored.

**Recommendation # 8 (BPU)**

RQ-BPU-1: The Board's Division of Energy shall initiate a stakeholder process to revisit the 2015 Vegetation Management rules with the primary objective of revising the existing four year cycle based program with a more resiliency-focused program that emphasizes a targeted, risk and circuit-based tree trimming and removal, including the removal of overhanging tree branches beyond the distribution lock out zone.

**Recommendation # 9 (BPU)**

RQ-NJ-1: The Board staff should: (1) review the current VM rules that address vegetation management in the public ROW where utilities have overhead facilities; (2) pursue clarification of the rights of EDC's and the oversight agency concerning the

trimming or removal of the off-ROW trees identified by the EDC as a potential hazard or a danger to overhead powerlines; and (3) if necessary, pursue legislation that preserves agency authority in this area, to ensure the provision of safe, adequate and proper service.

**Recommendation # 10 (NJ Pole-owning Utilities)**

RQ-U-1 All New Jersey pole-owning utilities, including telecommunications providers, shall conduct a Pole Safety Audit of their wooden utility poles consistent with the most recent NESC pole safety requirements on pole strength and pole loading. The pole-owning utilities shall conduct a randomly sampled assessment of pole-line compliance with NESC strength and loading rules using the appropriate construction grade and environmental loading factors (wind and/or ice).

At a minimum, the Pole Safety Audit shall take into account parameters that contribute to the structural integrity of the pole-line infrastructure during a major weather event (e.g., class of pole, age of the pole, span length, geographic loading zone, etc.). The Pole Safety Audit shall be completed within 180 days, at which time the pole-owning utilities shall submit a report to the Board. The Board shall then determine, based on the results of the audit, if further action is needed, including a pole replacement initiative, to ensure structural integrity of the state's wooden poles and overhead facilities.

**Recommendation # 11 (NJ Pole-owning Utilities)**

RQ-U-2: The EDCs and pole-owning telecommunications providers shall develop a formal joint-use storm coordination plan detailing roles and responsibility for the coordination of repairs or replacements of joint-use utility poles during a major storm event. Furthermore, the plan shall provide for the rapid response with all the necessary equipment and materials needed to perform the repairs or replacements within an agreed upon prescribed timeframe. The joint-use storm coordination plan shall be completed and submitted to the Board for review and approval within 90 days. Once reviewed and approved by the Board, the joint-use storm coordination plan shall be incorporated into the Emergency Operations Plans of all pole-owning utilities

**Recommendation # 12 (JCP&L, PSE&G and ACE)**

RQ-BPU-2: JCP&L, PSE&G and ACE shall each submit a plan and cost benefit analysis for the implementation of Advanced Metering Infrastructure (AMI). The EDCs' plans should focus on the use and benefits of AMI for the purpose of reducing customer outages and outage durations during a major storm event. Plans shall be submitted to the Board within 180 days.

**Recommendation # 13 (ACE, JCP&L, PSE&G, RECO)**

RQ-EDC-4: The EDC shall maintain direct and live contact with critical care customers before, during, and after any outage event. In the event an EDC has not been able to reach the critical care customer (or their designee) within a 24-hour period via live phone call, the EDC shall make referrals to local or county Emergency Operations Centers, first responders or other health and human service organizations for further direct contact attempts.

**Recommendation # 14 (RECO, JCP&L)**

RQ-RECO-2: RECO shall develop a training program for its Customer Service Representatives (CSRs) that, at a minimum, ensures that calls are handled in a professional and courteous manner. Furthermore, RECO shall ensure that its Call Centers have the capability of tracking when utility crews are working in New Jersey and that customers are provided accurate information about ongoing repair work in their area including regular updates on social media.

RQ-JCP&L-4: JCP&L shall ensure that its Call Centers have the capability of tracking where utility crews are working at any time during the restoration process and that accurate and up-to-date information is provided to customers about ongoing repair work in their area.

**Recommendation #15 (ACE, JCP&L, PSE&G, RECO)**

RQ-ACE-1: ACE shall provide a global ETR separately for each of its four operating districts (Cape May, Glassboro, Pleasantville and Winslow) within 24 hours after a weather event or other major event has exited the service territory. Further, in issuing a district level global ETR, ACE shall ensure that the area for which the global ETR is intended be clearly defined through the issuance of a press release and other appropriate media outlets.

RQ-JCP&L-5: JCP&L shall provide a global ETR separately for each of its 2 regions (Northern Region and Central Region) within 24 hours after a weather event or other major event has exited the service territory. Further, in issuing a region level global ETR, JCP&L shall ensure that the area for which the global ETR is intended be clearly defined through the issuance of a press release and other appropriate media outlets.

RQ-PSE&G-1: PSE&G shall provide a global ETR separately for each of its 4 operation divisions (Central, Metropolitan, Palisades and Southern) within 24 hours after a weather event or other major event has exited the service territory. Further, in issuing a division level global ETR, PSE&G shall ensure that the area for which the global ETR is intended be clearly defined through the issuance of a press release and other appropriate media outlets.

RQ-RECO-3: RECO shall provide a system wide global ETR for the entire service territory within 24 hours after a weather event or other major event has exited the service territory. Further, in issuing a global ETR, RECO shall ensure that the area for which the global ETR is intended be clearly defined through the issuance of a press release and other appropriate media outlets.

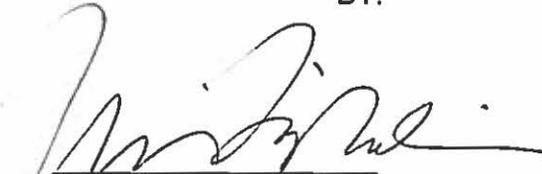
The Board **FURTHER ORDERS** that the time periods for submission for any report may be extended by the Board's Director of Reliability and Security for up to 30 days upon the request of the applicable party.

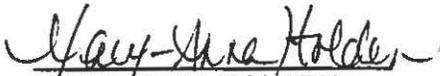
To the extent any information that is required to be submitted pursuant to this Order is claimed to be confidential, proprietary or raises a security concern, it should be submitted pursuant to the Board's regulations at N.J.A.C.14:1-12.1 through 12.18.

This Order shall be effective on August 4, 2018.

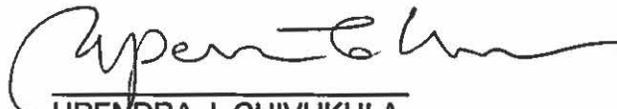
DATED: 7/25/18

BOARD OF PUBLIC UTILITIES  
BY:

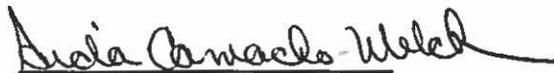
  
JOSEPH L. FIORDALISO  
PRESIDENT

  
MARY-ANNA HOLDEN  
COMMISSIONER

  
DIANNE SOLOMON  
COMMISSIONER

  
UPENDRA J. CHIVUKULA  
COMMISSIONER

ATTEST:

  
AIDA CAMACHO-WELCH  
SECRETARY

**I HEREBY CERTIFY that the within document is a true copy of the original in the files of the Board of Public Utilities.**

IN THE MATTER OF THE BOARD'S REVIEW OF MAJOR STORM EVENTS OF MARCH 2018  
DOCKET NO. EO18030255

SERVICE LIST

**JCP&L**

Jersey Central Power & Light  
300 Madison Avenue  
PO Box 1911  
Morristown, NJ 07962

Mark Jones  
[jonesm@firstenergycorp.com](mailto:jonesm@firstenergycorp.com)

Kevin Connelly  
[kconnelly@firstenergycorp.com](mailto:kconnelly@firstenergycorp.com)

Kimberly Contos  
[kcontos@firstenergycorp.com](mailto:kcontos@firstenergycorp.com)

Thomas R Donadio  
[tdonadio@firstenergycorp.com](mailto:tdonadio@firstenergycorp.com)

Shannon R Quade  
[squade@firstenergycorp.com](mailto:squade@firstenergycorp.com)

Gregory Eisenstark, Esq.,  
Windels Marx Lane & Mittendorf, LLP,  
Jersey Central Power & Light Company  
104 Carnegie Center  
New Brunswick, NJ 08540-6232

**PSE&G**

PSEG  
80 Park Plaza, T5G  
PO Box 570  
Newark, NJ 07102

Matthew M. Weissman  
[Matthew.Weissman@pseg.com](mailto:Matthew.Weissman@pseg.com)

Caitlyn White  
[Caitlyn.White@pseg.com](mailto:Caitlyn.White@pseg.com)

Danielle Lopez  
[Danielle.Lopez@pseg.com](mailto:Danielle.Lopez@pseg.com)

Donald Weyant  
[Donald.Weyant@pseg.com](mailto:Donald.Weyant@pseg.com)

**Deputy Attorneys General**

124 Halsey Street  
Post Office Box 45029  
Newark, NJ 07101-45029

Geoffrey Gersten, DAG  
[geoffery.gersten@lae.njoag.gov](mailto:geoffery.gersten@lae.njoag.gov)

**Board of Public Utilities**

44 South Clinton Avenue, 3<sup>rd</sup> Floor, Suite 314  
Post Office Box 350  
Trenton, NJ 08625-0350

Aida Camacho-Welch  
Secretary of the Board  
[Aida.camacho@bpu.nj.gov](mailto:Aida.camacho@bpu.nj.gov)

**Counsel's Office**

Carol Artale, Esq.  
Deputy Chief Counsel  
[Carol.Artale@bpu.nj.gov](mailto:Carol.Artale@bpu.nj.gov)

James Boyd, Esq.  
[James.Boyd@bpu.nj.gov](mailto:James.Boyd@bpu.nj.gov)

**Office of Cable Television and Telecommunications**

Harold Bond, Chief  
[Harold.Bond@bpu.nj.gov](mailto:Harold.Bond@bpu.nj.gov)

William Furlong  
[William.Furlong@bpu.nj.gov](mailto:William.Furlong@bpu.nj.gov)

Lawanda Gilbert, Esq., Director  
[Lawanda.Gilbert@bpu.nj.gov](mailto:Lawanda.Gilbert@bpu.nj.gov)

Alan Molner  
[Alan.Molner@bpu.nj.gov](mailto:Alan.Molner@bpu.nj.gov)

**Division of Reliability and Security**

James Giuliano  
[James.Giuliano@bpu.nj.gov](mailto:James.Giuliano@bpu.nj.gov)

Michele Falcao  
[Michele.Falcao@pseg.com](mailto:Michele.Falcao@pseg.com)

Bernard Smalls  
[Bernard.Smalls@pseg.com](mailto:Bernard.Smalls@pseg.com)

**ACE**

Atlantic City Electric Company  
5100 Harding Highway  
Mays Landing, NJ 08330

Roger E. Pedersen  
[roger.pedersen@pepcoholdings.com](mailto:roger.pedersen@pepcoholdings.com)

Thomas M. Hahn  
[thomas.hahn@pepcoholdings.com](mailto:thomas.hahn@pepcoholdings.com)

Susan Coan  
[Susan.Coan@atlanticcityelectric.com](mailto:Susan.Coan@atlanticcityelectric.com)

Andrew Sykes  
[andrew.sykes@pepcoholdings.com](mailto:andrew.sykes@pepcoholdings.com)

Clark Stalker  
[Clark.Stalker@exeloncorp.com](mailto:Clark.Stalker@exeloncorp.com)

Susan Devito  
[susan.devito@pepcoholdings.com](mailto:susan.devito@pepcoholdings.com)

Philip J. Passanante,  
Assistant General Counsel  
Atlantic City Electric Co. - 89KS42  
800 King Street, 5th Floor  
PO Box 231  
Wilmington, DE 19899-0231  
[philip.passanante@pepcoholdings.com](mailto:philip.passanante@pepcoholdings.com)

**RECO**

Rockland Electric Company  
4 Irving Place  
New York, NY 10003

Michelle Gionta  
[giontam@oru.com](mailto:giontam@oru.com)

Ted Sikora  
[sikorat@oru.com](mailto:sikorat@oru.com)

Brian Nugent  
[bnugent@oru.com](mailto:bnugent@oru.com)

Joseph Costa  
[Joseph.Costa@bpu.nj.gov](mailto:Joseph.Costa@bpu.nj.gov)

Lynn Costantini  
[Lynn.Costantini@bpu.nj.gov](mailto:Lynn.Costantini@bpu.nj.gov)

Brian Beam  
[Brian.Beam@bpu.nj.gov](mailto:Brian.Beam@bpu.nj.gov)

Dean Taklif  
[Dean.Taklif@bpu.nj.gov](mailto:Dean.Taklif@bpu.nj.gov)

**Charter Communications**

Michael A. Chowaniec  
VP-State Regulatory Affairs  
Charter Communications  
400 Atlantic Street  
Stamford, CT 06901  
[Michael.chowaniec@charter.com](mailto:Michael.chowaniec@charter.com)

**Verizon New Jersey Inc.**

Ava-Marie Madeam, Esq.  
Vice President-State Gov't Relations  
172 W State Street  
Trenton, NJ 08608-1104  
[Avamarie.p.madeam@verizon.com](mailto:Avamarie.p.madeam@verizon.com)

**Verizon New Jersey Inc.**

Priscilla G. Henson  
Consultant - Gov't Relations  
9 Gates Avenue, 2nd Floor  
Montclair, NJ 07042  
[priscilla.g.henson@verizon.com](mailto:priscilla.g.henson@verizon.com)

Sylvia Del Vecchio, Manager  
State Government Relations  
9 Gates Avenue, 2nd Floor  
Montclair, NJ 07042-3399  
[sylvia.l.del.vecchio@verizon.com](mailto:sylvia.l.del.vecchio@verizon.com)

**CenturyLink**

Tom Bailey  
240 North Third Street  
Suite 300  
Harrisburg, Pa 17101  
[Thomas.A.Bailey@centurylink.com](mailto:Thomas.A.Bailey@centurylink.com)

Zsuzsanna E. Benedek, Esq.  
[sue.benedek@centurylink.com](mailto:sue.benedek@centurylink.com)

John L. Carley, Esq.  
Consolidated Edison Co. of NY  
Law Dept., Room 1815-S  
4 Irving Place  
New York, NY 10003  
[carleyj@coned.com](mailto:carleyj@coned.com)

**Comcast**

Dennis C. Linken, Esq.  
Scarinci Hollenbeck, LLC  
Post Office Box 790  
Lyndhurst, NJ 07071-0790  
[dlinken@scarincihollenbeck.com](mailto:dlinken@scarincihollenbeck.com)

Elizabeth Murray  
Senior Director Regulatory Affairs  
Comcast  
50 Randolph Road  
Somerset, NJ 08873  
[Elizabeth.murray@comcast.com](mailto:Elizabeth.murray@comcast.com)

**Momentum Telecom**

Alteva of Warwick L.L.C.  
Virginia O'Hanlon  
47-49 Main Street  
P.O. Box 592  
Warwick, NY 10990-0592  
[vohanlon@momentumtelecom.com](mailto:vohanlon@momentumtelecom.com)

Bradford M. Stern, Esq.  
Rothfelder Stern, L.L.C.  
407 Greenwood Avenue, Unit 301  
Trenton, NJ 08609  
[bstern@rothfelderstern.com](mailto:bstern@rothfelderstern.com)

**Altice USA**

Marilyn D. Davis  
Area Director, Government Affairs  
Altice USA  
494 Broad Street, Newark, New Jersey 07102  
[Marilyn.Davis16@AlticeUSA.com](mailto:Marilyn.Davis16@AlticeUSA.com)

**Division of Customer Assistance**

Eric Hartsfield  
[Eric.Hartsfield@bpu.nj.gov](mailto:Eric.Hartsfield@bpu.nj.gov)

Julie Ford  
[Julie.Ford@bpu.nj.gov](mailto:Julie.Ford@bpu.nj.gov)

**Division of Energy**

Stacy Peterson  
[Stacy.Peterson@bpu.nj.gov](mailto:Stacy.Peterson@bpu.nj.gov)

Christopher Oprysk  
[Christopher.Oprysk@bpu.nj.gov](mailto:Christopher.Oprysk@bpu.nj.gov)

**Service Electric Cable TV of Hunterdon, Inc.**

John Capparell  
General Manager  
Service Electric Cable TV of Hunterdon, Inc.  
2260 Avenue A, LVIP #1  
Bethlehem, Pennsylvania 18017  
[icapparell@sectv.com](mailto:icapparell@sectv.com)

Jennifer Brown  
Regulatory Affairs Director  
Service Electric Cable TV of Hunterdon, Inc.  
2260 Avenue A, LVIP #1  
Bethlehem, Pennsylvania 18017  
[brownj@sectv.com](mailto:brownj@sectv.com)

**Service Electric of Cable TV New Jersey, Inc.**

Robert H. Williams, Esq.  
General Manager  
Service Electric of Cable TV New Jersey, Inc.  
320 Sparta Avenue  
Sparta, New Jersey 07871  
[bobw@secable.com](mailto:bobw@secable.com)

Robbin Blessing., Assistant Manager  
Service Electric Cable TV of New Jersey, Inc.  
320 Sparta Avenue  
Sparta, New Jersey 07871  
[robbin@secable.com](mailto:robbin@secable.com)