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2018 WINTER AND SPRING STORMS INVESTIGATION

Case 19-M-0285 - In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms

New York State Department of Public Service

Image source: https://www.nesdis.noaa.gov/content/powerful-march-noreaster-seen-goes-east

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1. EXECUTIVE SUMMARY

On March 6, 2018, Governor Andrew M. Cuomo directed the Department of Public Service (Department or DPS) to conduct a comprehensive investigation of New York State's major electric utilities (utilities) following the slow and inadequate response of certain electric utilities to Winter Storm Riley.[1,2] Winter Storm Riley occurred on March 2, 2018, significantly impacting Westchester, Putnam, and Sullivan counties in the lower Hudson Valley, resulting in peak outages of nearly 500,000 statewide. Shortly thereafter, on March 7, 2018 another significant event, Winter Storm Quinn, hit many of the same areas causing further peak outages of 162,000. The State of New York subsequently experienced further weather events that led to significant outages – these events also became part of the investigation. There were two windstorms, one on April 4, 2018, which caused substantial damage in Western New York resulting in peak outages of 126,000, and another on May 4, 2018, heavily impacting Plattsburg, New York in the North Country resulting in peak outages of 160,000. The final event was a severe thunderstorm system with a confirmed tornado on May 15, 2018 that affected Putnam and Orange counties causing peak outages of 188,000.[3]

The Public Service Commission (Commission) is responsible for ensuring utilities meet their statutory obligation to provide electric, natural gas, and telecommunications services in a safe, adequate and reliable manner.[4] The Department's oversight of emergency response occurs in three phases: storm preparation, active monitoring of utility impacts and system restoration, and post-storm analysis. To

[1] The major electric utilities consist of Consolidated Edison Company of New York, Inc. (Con Edison), Central Hudson Gas & Electric Corporation (Central Hudson), New York State Electric & Gas Corporation (NYSEG), Niagara Mohawk Power Corporation d/b/a National Grid (National Grid), Rochester Gas and Electric Corporation (RGE), Orange & Rockland Utilities, Inc. (Orange & Rockland) and PSEG Long Island (PSEG LI). Appendix A shows each utility's service territory.

[2] The Department of Public Service is the staff arm of the Public Service Commission.

[3] Winter Storms Riley (March 3, 2018) and Quinn (March 7, 2018), the April (April 4, 2018) and May (May 4, 2018) Windstorms, and the May Thunderstorm (May 15, 2018) (collectively these storm events will be referred to as the "2018 Winter and Spring Storms").

[4] Public Service Law (PSL) § 65(1).

ensure that electric utilities are fully prepared, PSL §66(21)(a), Part 105 of Title 16 in the New York Codes, Rules, and Regulations (Part 105), and the Long Island Power Authority (LIPA) Reform Act, require each major electric utility to submit a comprehensive Emergency Response Plan (ERP) to the Commission, or, in the case of PSEG LI (LIPA's service provider), the Department. The ERPs detail procedures and define roles, responsibilities, and required training to reduce confusion and promote a common understanding of the restoration process. The ERPs are annually reviewed by Department Staff (Staff) and approved by the Commission or the LIPA Board of Trustees.[5] Under Part 105 utilities are required to perform restoration efforts in compliance with its ERP and are expected to update its plan after a major event to capture all lessons learned and incorporate all best practices. Utilities are further required to file self-assessment reports of their restoration efforts if they experience an outage with a restoration period exceeding three days.[6]

As part of the 2018 Winter and Spring Storms' investigation, Staff performed its own assessment of the utilities' storm recovery efforts. To that end, Staff observed and documented utility restoration and communications activities in the field during the event, and, after the event, conducted twenty public statement hearings across the State where numerous customers and public officials provided both written and oral comments; conducted interviews with numerous officials including county, city, and town officials; held meetings with and received comments from customers and other stakeholders, and, facilitated substantial public outreach to better understand issues and problems experienced during the 2018 Winter and Spring Storms. The Department reviewed the utilities' operational and communication activities; assessed compliance with all aspects of the utilities' approved ERPs; evaluated their performance under the PSC's Emergency Response Scorecard; and analyzed utilities'

[5] PSEG LI, as LIPA's service provider, files their ERPs with the Department and the Department provides recommendations for approval or modifications to the LIPA Board of Trustees.

[6] 16 N.Y.C.R.R., Part 105.4 (c) requires utilities to submit a self-assessment report if customer outages last longer than 72 hours.

self-assessment reports.[7,8] Additionally, Staff issued over 700 document requests; evaluated complaint data filed with the Department's Office of Consumer Services; and, reviewed other salient information, such as the United Westchester March 2018 Storm Response Report.[9]

This report presents the findings and recommendations resulting from the Department Staff's extensive and in-depth investigation. In total, 94 recommendations are included, detailing actions to be taken by the utilities to improve future storm preparation and restoration performance. Of these recommendations, the most significant relate to road clearing, damage assessment, estimated times of restoration (ETRs), and utility communications with customers, county and local officials, as well as the public.[10] Most of the deficiencies identified in this report relate to NYSEG, Con Edison, and Orange & Rockland. Certain aspects of NYSEG's, Con Edison's, and Orange & Rockland's performance were inadequate and fell short of the reasonable expectations the public, the Department, and the Commission have regarding providing timely and efficient restoration, and the accurate, detailed and timely dissemination of information during outage events.

For a restoration effort to be successful, each specific area detailed in the ERPs must be performed as designed. If a utility falters in one area, there may likely be both a negative and cascading effect on the entire restoration process. The ERPs also articulate activities like road clearing to remove hazardous conditions so that municipal departments can clear trees and debris to open critical roadways providing access for emergency services and restoration crews. Staff found that Con Edison, NYSEG and

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7 Case 13-E-0140, Proceeding on Motion of the Commission to Consider Utility Emergency Performance Metrics, Order Approving the Scorecard for Use by The Commission as A Guidance Document to Assess Electric Utility Response to Significant Outage (issued December 23, 2013).

8 The utilities' self-assessment reports, while offering useful information and recommendations, do not adequately recognize or address problems identified during this investigation, including some instances where certain utilities did not follow their own ERP.

9 Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, United Westchester March 2018 Storm Response Report, (filed May 21, 2018). United Westchester is a group of local, Westchester County, New York State, and Federal officials working together to offer solutions to prevent storm damage and better respond to storms.

10 The Department recognizes that certain utilities have undertaken or may be undertaking measures to address areas in need of improvement, including some of the recommended measures herein.

Orange & Rockland did not adequately address road closures and need to coordinate more effectively with counties and localities as this effort involves multiple organizations.

NYSEG failed to conduct preliminary damage assessment in the early days of Winter Storm Riley. NYSEG did not send an adequate number of damage assessors out into the field initially, leading to insufficient visibility of field conditions which, in turn, led to direct and negative impacts on ETRs throughout the event and on the utility's restoration performance generally. Following the 2017 Windstorm, Staff directed NYSEG to modify its ERP in order to improve the damage assessment process by capturing more data in a timelier manner.[11] Despite these improvements to the ERP, however, this report documents that NYSEG did not follow its own protocol and, as a result, lagged behind all other utilities in completing timely and accurate damage assessments. NYSEG also failed to mobilize the resources needed to complete preliminary damage assessment during the May 15, 2018 event. The lack of sufficient, properly trained resources led to NYSEG's inability to do proper damage assessment during Winter Storms Riley and Quinn. NYSEG violated Section 5.1 of its ERP because it did not effectively move available damage assessors from other nearby divisions to support the Brewster division. As a result, given the utility's failure to effectively move damage assessors from one region to another, NYSEG should re-evaluate and increase where necessary the number of damage assessors required in each division and ensure trained damage assessors are available in each division to be readily dispatched. In addition, NYSEG should improve its procedures to effectively secure additional damage assessors from contractors for large storm events.

The ETR is the approximate date and time an electric utility predicts is necessary to restore service after a power outage. Customers and municipalities depend on ETRs to make informed decisions for their families or constituents' welfare. ETRs are vital to all customers who must rely on this information for planning purposes during outage events, and today's customers expect the most up to date

[11] Case 17-E-0594, Investigation into March 2017 Windstorm Related Power Outages, Staff Report on NYSEG and RGE Electric Restoration and Communication Efforts (issued November 16, 2017) (2017 Windstorm Report).

information to be provided to them through a variety of communication outlets. NYSEG and Con Edison not only struggled with providing accurate ETRs, but also did not make optimal use of social media or their websites to keep customers and public officials well informed during Winter Storms Riley and Quinn. In fact, all communication tools used by NYSEG and Con Edison - press releases, municipal calls and, most importantly, customer service call center operations – lacked consistent and accurate updates on restoration efforts and ETRs.

While Staff found each of the utilities published ETRs, the quality of the ETRs provided varied by storm and by utility. Customers expressed frustration and confusion over inaccurate and frequently changing ETRs. Because ETRs can vary based on whether they apply to a specific location or more generally, such as companywide, the utilities need to identify the type of ETR posted on their outage map and clearly show what the ETR represents. In addition, utilities use various utility operating areas to represent regional and local ETRs. The communication of ETR information by a utility operating area, division, or load area does not provide clear information that is helpful or understood by the public. Therefore, utilities should use known municipal geographic areas, by county, city or town when presenting their regional and local ETR information.

The utilities must also do a better job setting and meeting customer expectations of when more detailed and reliable ETRs should be expected based on the magnitude of the storm damage. To improve communications with customers, the utilities should also establish predetermined daily timeframes when ETRs will be reviewed for accuracy and revised as necessary. All revised ETRs should be published, at minimum, prior to the day the ETR will expire. In addition, if outage maps are not operating properly, ETRs should be communicated through website banners, while the outage map functions are restored. Additionally, as the utilities provide county or local ETRs, they need to make the ETRs applicable to 95 percent of customers impacted rather than the current practice of 90 percent.

Dissemination of storm and restoration information is imperative during outage events. Press releases are one of the tools utilities use, therefore, the press releases need to be timely if they are

to be informative and useful to customers; too few can tie up the utilities' call center while too many can become repetitive and ignored. Press releases should coincide with local news cycles, something that NYSEG did not do, and focus on significant changes in information. Utilities also need to limit stale or repetitive information, which was a problem with Orange & Rockland during Winter Storms Riley and Quinn. Municipal liaisons serve as the point of contact between the utility and the respective municipality during an emergency event. Liaisons facilitate information sharing and assist in resolving municipal issues. Common complaints from municipalities were that utility liaisons, particularly those from Con Edison and NYSEG, did not have the necessary information available, training on the electric system, and authority to make decisions on crewing and job assignments. Staff recommends that liaisons have adequate training, access to locational information, including critical facility and LSE customer lists, as well as have the capability to interact with utility decision makers to resolve municipal issues. In addition, electric utilities should continuously work with counties to develop a structured time schedule when municipal priorities will be shared with the utility to allow these jobs to be included in work packages for the next day. Finally, during general municipal calls electric utilities should discuss, at a high-level, the hardest-hit areas, what has been accomplished since the last call, and the workplan for the following day. Municipal calls should serve as brief updates for the affected areas as a whole - individual issues should be addressed through municipal liaisons or other communication channels.

Maintaining appropriately updated and accurate records of calls to Life Support Equipment (LSE) customers is essential to ensuring that all LSE-related issues are tracked to resolution, minimizing the risk to an LSE customer. Staff found utilities did not keep adequate records, or consistently track, LSE customer-initiated calls.[12] Also, during the storms the quality of information callers received through the Interactive Voice Response (IVR) system was often inaccurate and/or incomplete. Accordingly, all utilities should ensure that the most up-to-date and accurate information is being provided via the IVR

[12] LSE customers are defined as those customers who require electrically operated equipment to sustain basic life functions, and, therefore, receive a specialized level of communication during a power outage.

system. The information provided should be complete and timely and be updated within one hour of any press release. In addition, all utilities should ensure customers reporting outages or emergencies have clear options to speak with a live representative.

Staff identified the need for NYSEG, Con Edison, and Orange & Rockland to make improvements to their road clearing and wire down procedures since these utilities were not prepared to handle the high volume of wire down reports that came into their control centers. Coordination with municipalities was severely lacking to the point where State officials stepped in to direct NYSEG, Con Edison, and Orange & Rockland to work with the municipalities to mitigate public safety hazards and facilitate opening roadways.

During Winter Storm Riley, very little progress clearing roads was made in the first two days of the storm. County and local officials requested State assistance and it was determined the best solution was for the electric utilities to support county-led efforts. The county or local officials then prioritized locations and directed joint teams consisting of electric utility and National Guard make-safe and tree and road crews. These joint road clearing teams were used in multiple locations and were able to clear the roads quicker and more effectively during the 2018 Winter and Spring Storms. Protocols, procedures, and a written plan should be established between the counties and the utilities to effectively continue similar road clearing efforts in the future and be formalized as Road Clearing Task Forces. Telecommunications providers should also be included in the creation, planning and activities of the joint Road Clearing Task Force activities.

There were many aspects of response and restoration where certain utilities performed admirably under difficult and extreme conditions; however, in other aspects utility performance was and has been consistently lacking. Utilities must be held accountable to provide the quality of service expected by their customers, the Department and the Commission. Where opportunities to improve have been indicated, the utilities should not hesitate to implement any resulting recommendations that will enhance response and restoration performance. Emergency response and restoration performance during the

2018 Winter and Spring Storms was not acceptable. Best practices must be adopted in utility ERPs, utilities must ensure they are actually implemented in the field. Therefore, Staff believes the utilities should implement all recommendations and provide a status report by April 26, 2019 detailing their implementation progress. By May 15, 2019, each utility will refile its ERP reflecting applicable recommendations incorporated to the extent possible. The filing should also indicate an implementation plan for any outstanding recommendations.

2. BACKGROUND

Electric utilities are responsible for the safety and reliability of their systems and planning for the future power needs of their customers. Because the construction of the grid began in the early 1900s, the system has a wide age variance of transmission lines, substations, transformers, and distribution lines. Electric utilities need to have the resources to properly maintain the system, including performing vegetation management activities, and must seek to harden infrastructure to make it less susceptible to storm damage. However, when an electric utility receives a severe weather forecast, it must transition from its daily operations mode such that it is prepared to respond to the event.

There are several expectations of utilities that customers, municipalities, emergency responders, and the public share when extended and/or widespread power outages occur in the State. These include, but are not limited to, ensuring public safety and judicious road clearing; the establishment of accurate ETRs; timely restoration of service; thoughtful prioritization of critical facilities; and interaction with vulnerable customers. Perhaps one of the most vital components is the utilities' ability to effectively communicate with their customers and external stakeholders who rely heavily on the information provided by their utilities in planning daily activities. Communications need to be accurate and forthcoming; otherwise, frustration and distrust may ensue, potentially leading to dissatisfaction with and criticism of the utilities.

To execute efficient and coordinated restoration efforts, utilities must have in place a robust and well-trained organization with clearly identified roles, responsibilities, and processes, as well as the systems necessary to prepare for and restore service to customers following outages caused by major storms. The utilities must dedicate adequate resources to perform the multiple supporting tasks. This includes not only crews required to repair its infrastructure, but also utility employees assigned storm related tasks such as performing damage assessment, guarding downed wires, effectively communicating and coordinating with affected local governments, distributing dry ice to affected customers, and arranging for meals and hotel rooms for crews.

ETRs are essential for customers and other stakeholders to allow informed decision-making and planning during extended outage periods. Crucial actions, such as relocation until power is restored, depend on the early public release of ETRs that are accurate and consistently adhered to; frequent missed ETRs calls into question utility performance. Utilities have a limited amount of time to develop and report estimates for when power will be restored under their ERPs and are expected to follow that process.[13] The utilities also need to provide well-timed, informative and clear notifications when ETRs will not be met. Lastly, the utilities need to share key restoration information, such as circuit maps, with county and local officials. By not doing so, resentment and criticism of the utilities may occur both during and after outage events.

Ensuring the public's safety is paramount during storm events. The utilities need to remove electric hazards from roadways quickly and in coordination with municipalities to allow for requisite debris removal to open roadways for traffic and, perhaps more importantly, to allow emergency responders access to residents in need. Strong and collaborative communications between utilities and municipalities is critical when coordinating these dangerous efforts since the two must work together to identify and prioritize roadways when developing daily work plans.

Restoration is not just about getting the power restored, but also determining restoration priority. Utilities need to evaluate the status of pre-determined critical facilities and vulnerable customers and incorporate their needs when executing daily restoration plans and achieving set goals. These select groups must be taken into consideration during restoration planning and the utilities must coordinate with municipalities, who assist in the integration of critical facilities and vulnerable customers into the utilities' daily work plans. It is imperative that utilities maintain consistent and open communications with these customers in order to manage their needs and expectations during outage events.

The utilities' planning section play a critical role in developing daily work plans by analyzing known system damage obtained through the damage assessment process. It also evaluates whether the

[13] All of the utilities use a common protocol for when ETRs are to be developed and issued.

number of available resources is sufficient to meet expected restoration times. Properly executing damage assessment is key because it provides the utilities situational awareness that is used to muster the adequate number of crews and materials to ensure resources can be used as effectively as possible. Daily work plans, prepared by the planning section, need to incorporate several factors including the repair of transmission system first and prioritization of critical facilities. The work plans allow the utilities to manage repair activities, ensure that crews have proper assignments, and track the progress of restoration work.

In order to execute the daily work plans during major storm events when internal resources are insufficient to perform the necessary work, utilities must supplement their resources through mutual assistance groups and other external contractors that supply line and tree resources, equipment or other skilled workers, such as damage assessors, to support restoration efforts. The utilities need to successfully execute pre-established processes in place to secure and manage the supplemental resources; including specifically identifying processing locations where safety briefings are conducted, materials are distributed, and crew deployments occur.

Utilities must employ various information technology systems, such as voice and data connectivity, key software applications (e.g., OMS, SCADA, etc.), websites, programs, and support equipment to meet the demands of all types of restoration events. All hardware and software/ applications must be reviewed regularly to ensure optimal performance, readiness and availability during major storm events. Further, utilities must keep abreast of emerging technologies and software/applications to make prudent and continuous investments in these key areas.

It is imperative that customers, regulators, state, county, and municipal officials, and emergency response organizations be kept fully informed as to the severity and impact of each major storm event, as well as the utilities' response efforts, progress, and restoration times. All New York electric utilities employ liaisons who are responsible for establishing and maintaining contact with elected officials throughout a major storm event. To be effective, these liaisons must have familiarity with the area to

which they are assigned, provide timely and accurate status updates, facilitate coordination of issues with the appropriate internal utility departments on behalf of the municipality, raise awareness of escalated issues, and effectively communicate with internal utility employees.

Utilities must routinely incorporate lessons learned identified from self-assessments and external feedback after major storm events to continuously improve their overall response to outage events. As such, utilities must undertake efforts throughout the year to ensure appropriate resources available, both overall and role-specific, and properly balance whether the resources are internal or scalable through contractors. Utilities should also be committed to timely update their emergency response plans and procedures, as well as ensure that any changes are appropriately communicated to all those affected. Lastly, utilities are required to continuously review and revise, particularly after large outage events, their emergency response plans to make certain restoration of service is done effectively and efficiently in the shortest amount of time possible based on lessons-learned and industry best practices. The public entrusts utilities to fully and consistently execute these plans to deliver swift and satisfactory power restoration to impacted customers and communities.

3. INTRODUCTION AND STORM OVERVIEW

Between March 2 and May 20, 2018, several major storm events swept through New York State causing widespread damage to overhead electric infrastructure, homes and businesses, leaving tens of thousands of customers without power for an unreasonable length of time. The first storm event, Winter Storm Riley, impacted most of the State on March 2, 2018 and included heavy, wet snow, particularly the lower Hudson Valley area. Winter Storm Riley dumped seven to 20 inches of snow in NYSEG's Brewster Division and Central Hudson indicated total snowfall ranged from a trace in Kingston to 21 inches in parts of Greene County. Orange & Rockland received up to 16 inches of snow and Con Edison indicated Westchester County received two to five inches of wet snow. Additionally, Con Edison reported that Winter Storm Riley produced sustained winds approaching 50 mph, even though forecasts were only up to 35 mph. Winter Storm Riley also impacted Western New York more than expected as National Grid received snow accumulations up to 22 inches when forecasts called for approximately 12 inches. As a result, electric utilities incurred peak outages of approximately 131,000 for NYSEG, 93,000 for Con Edison,

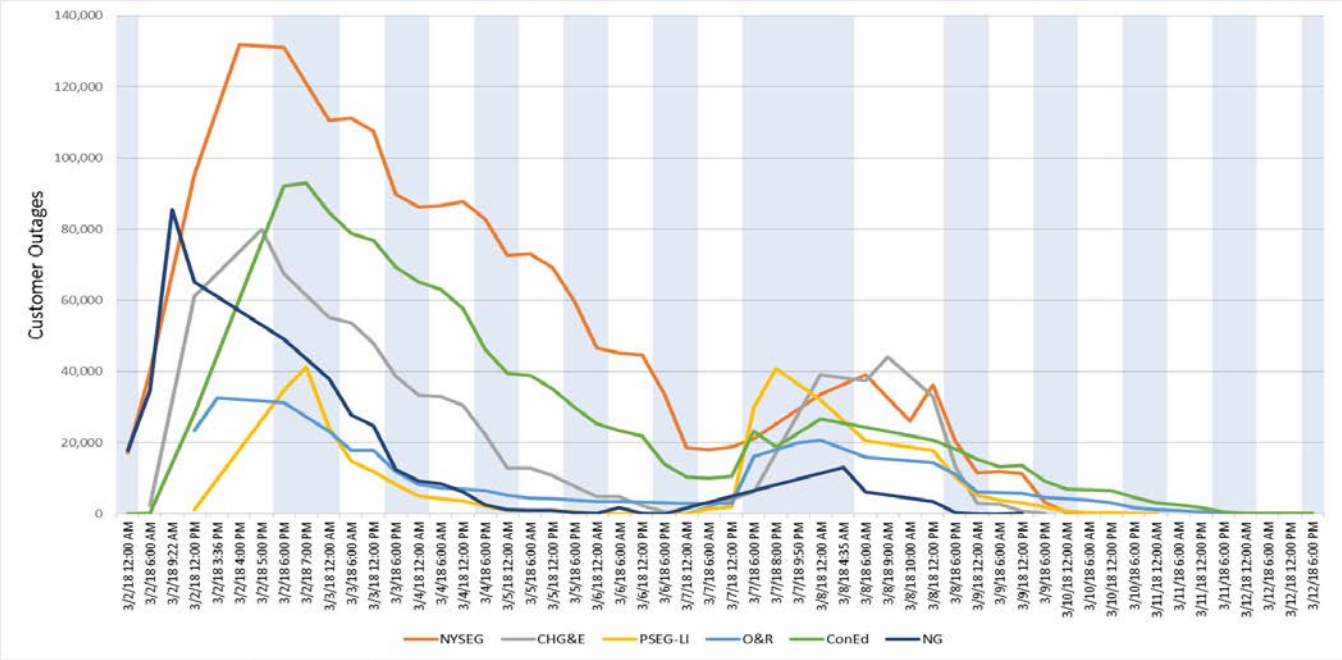

Figure 1: The Restoration curves for Winter Storm Riley and Quinn (All utilities)

85,000 for National Grid, 80,000 for Central Hudson, 41,000 for PSEG LI, 32,000 for Orange & Rockland, and 14,000 for RGE.

Figure 1 shows the restoration curves for Winter Storms Riley and Quinn for all six major utilities greatly affected by the storms. Approximately 90 percent of customers in the PSEG LI and National Grid service territories were restored on March 4, 2018. PSEG LI restored all customers around midnight on March 5, 2018 and National Grid restored all customers on March 6, 2018. Central Hudson and Orange & Rockland restored 90 percent of its customers on March 5, 2018. Central Hudson had fully restored all customers impacted by Winter Storm Riley on March 6, 2018. By March 7, 2018, more than 90 percent of customers in the Con Edison and NYSEG service territories were restored. However, that same day, a second powerful weather system, Winter Storm Quinn, proceeded to hit many of the same areas in the lower Hudson Valley, with predictions ranging from 12 to 18 inches of additional snow, as shown in Figure 2. Winter Storm Quinn caused more outages and hindered on-going restoration efforts by Con Edison, NYSEG, and Orange & Rockland.

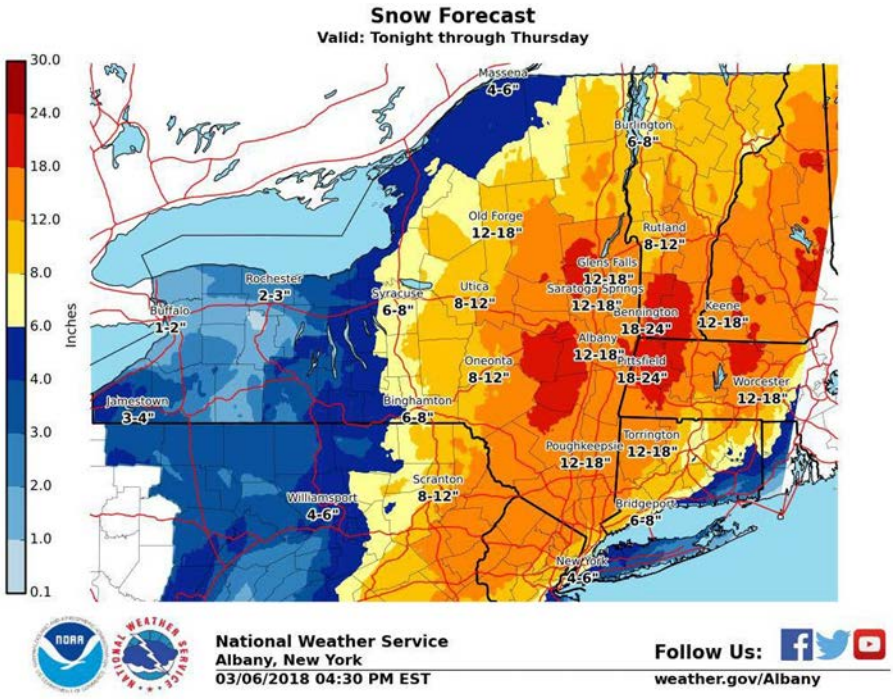

Figure 2. Forecasted Snow Totals for Winter Storm Quinn

During Winter Storm Quinn, there were 44,000 peak outages for Central Hudson, 40,000 for PSEG LI, 26,000 for NYSEG, 20,000 for Orange & Rockland, 19,000 for Con Edison, and 13,000 for National Grid. Central Hudson and National Grid restored all customers from Winter Storm Quinn on March 9, 2018. Ninety percent of customers from PSEG LI and NYSEG were restored on March 9, 2018, while full restoration of services for each utility occurred on March 10, 2018. Customers in the Orange & Rockland and Con Edison territories were not fully restored until March 12, 2018. The impact and restoration of counties that experienced more than 5,000 peak outages during Winter Storm Riley and Quinn are shown in Figure 3.

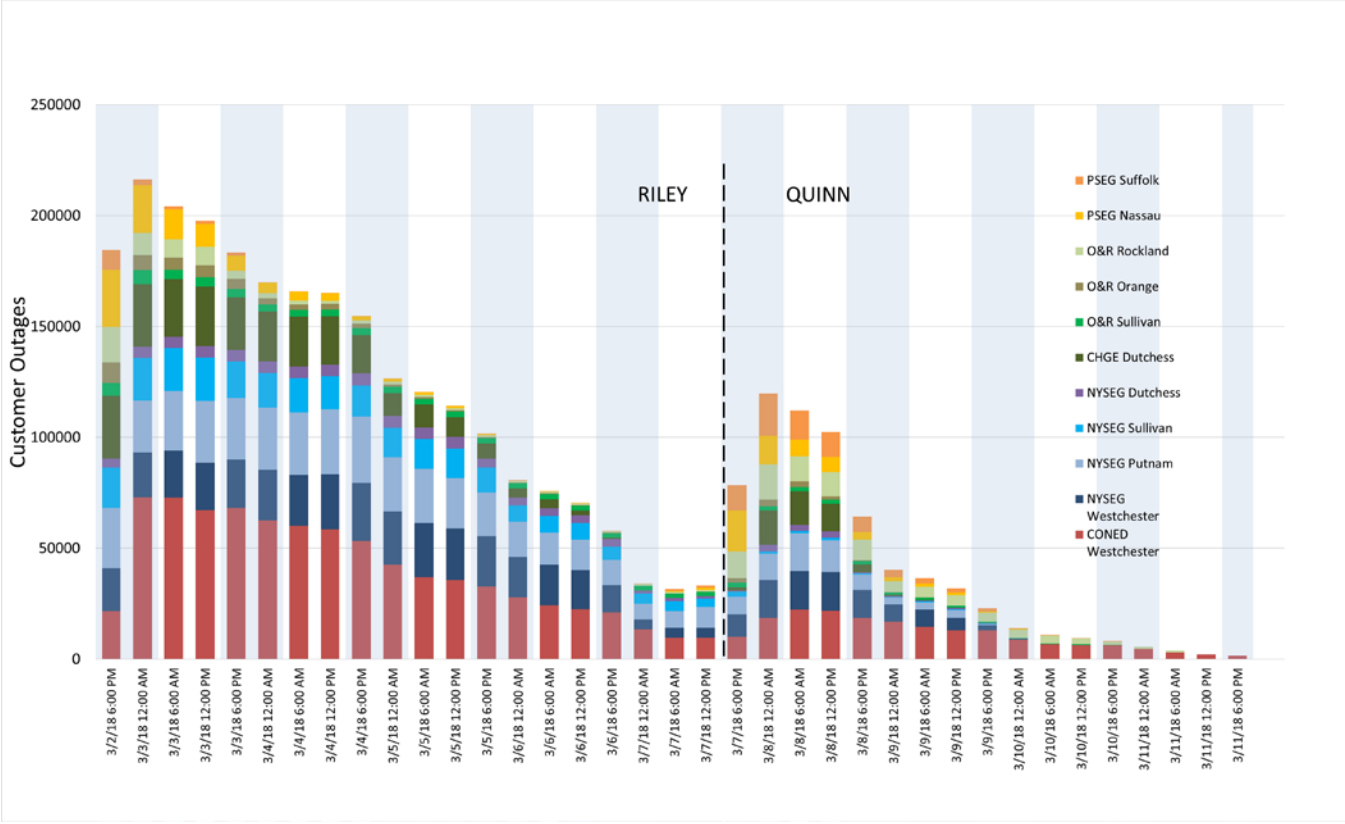

Figure 3: Counties that experienced more than 5,000 peak outages during Winter Storm Riley and Quinn

On April 4, 2018, a windstorm, the April Windstorm, hit New York. The April Windstorm brought damaging winds and widespread rain to many areas of the State including Western New York, Finger Lakes, Central New York, Mohawk Valley, Southern Tier, North Country, Capital Region, and Mid-

Hudson regions. Heavy wind gusts caused major damage to overhead electric distribution systems and caused thousands of outages throughout all utility territories. NYSEG/RGE indicated that wind speeds were greater than 55 mph in many areas, with gusts above 70 mph reported in Rochester. The April Windstorm caused peak outages of approximately 84,000 for National Grid and approximately 42,000 for NYSEG/RGE. On April 6, 2018, ninety percent of the customers were restored for all utilities, with full restoration occurring on April 7, 2018. Customers served by the other electric utilities were not significantly impacted by this event.

On May 4, 2018, another windstorm, the May Windstorm, swept through New York across the North Country, Mohawk Valley, Capital Region, as well as areas along Lakes Erie and Ontario. The storm toppled trees and damaged power lines and other electric infrastructures due wind gusts in excess of 55 mph. The May Windstorm caused approximately 125,500 outages in National Grid's service territory and approximately 35,000 customer outages in NYSEG's service territory. Both National Grid and NYSEG fully restored all customers by May 7, 2018. Customers within the other utility service territories were not significantly affected by this event.

The last major event included in our investigation is a thunderstorm that occurred on May 15, 2018, the May Thunderstorm. As shown in Figure 4, thunderstorms were predicted to occur in the

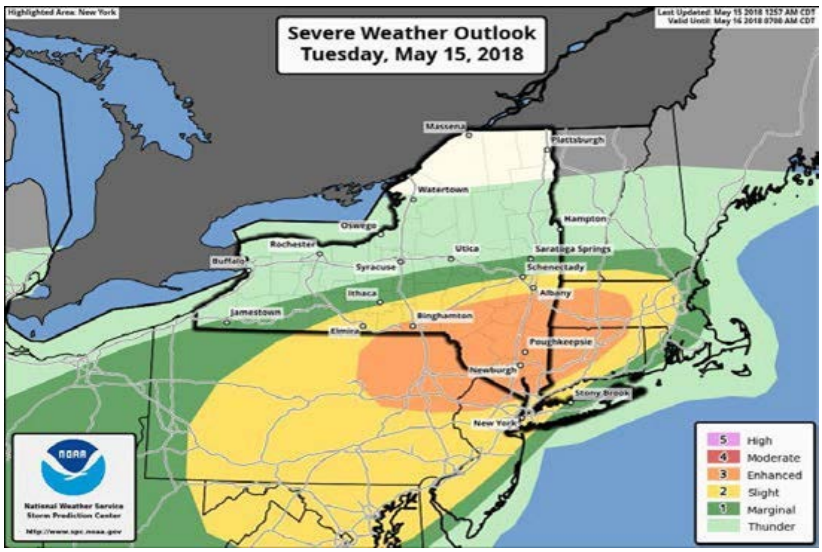

Figure 4. Severe Weather Outlook for May 15, 2018 Thunderstorm

Mid- to Lower-Hudson Valley area of the State. Unlike other thunderstorms that may affect most of the State as they move West to East, this system was more geographically focused and was not expected to have impacts on Upstate New York and Long Island. During the May Thunderstorm event, three tornados touched down in Putnam and Orange Counties, with peak winds estimated at over 100 miles per hour.

The May Thunderstorm caused approximately 73,000 peak outages for Central Hudson, 69,000 for NYSEG and 46,000 for Orange & Rockland customers. This event impacted many of the same communities previously affected by Winter Storms Riley and Quinn. Approximately 90 percent of Orange & Rockland customers were restored by May 17, 2018, while 90 percent of Central Hudson customers were restored by May 18, 2018. Both Central Hudson and Orange & Rockland completed their restoration by May 19, 2018. NYSEG did not achieve 90% restoration for affected customers until May 19, 2018. Full restoration for NYSEG occurred on May 20, 2018. Figure 5 shows customer outages by county for the May Thunderstorm for utilities that experienced more than 5,000 peak outages.

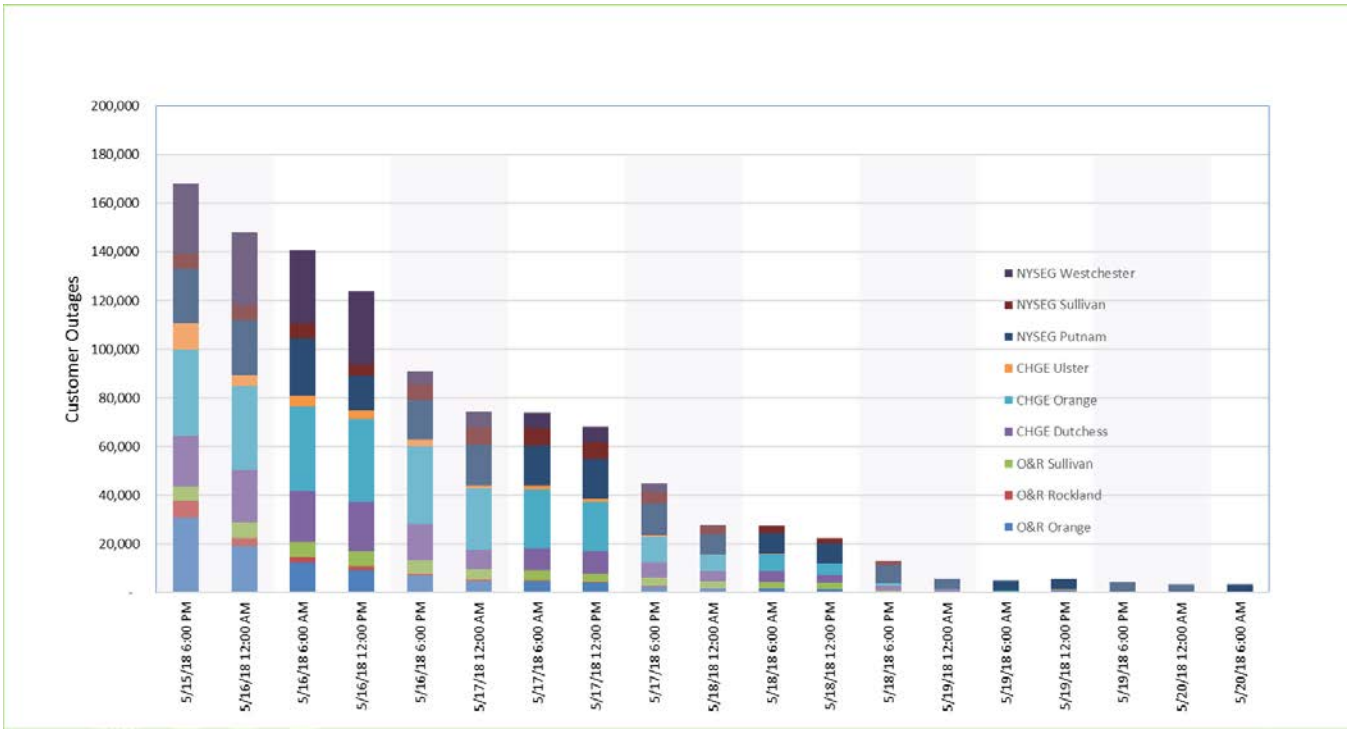

Figure 5: May 15, 2018 Severe Thunderstorm Event
(Outages by county greater than 5000)

4. ELECTRIC OPERATIONS

4.1. ROAD CLEARANCE & DOWNED WIRES

Following any storm, all utilities have a make-safe period that focuses on the elimination of hazards to the public. [14] The make-safe period takes precedence during emergencies and includes plans to promptly protect the public from downed wires by remediating or having wire guards at the damage location as soon as practicable. Pursuant to the Public Service Law, downed wires reported by municipal emergency officials must be made safe within 36 hours of notification.[15] Addressing a down line is best accomplished having a qualified make-safe crew remove the hazard. When there are more wires down than make-safe crews available, electric utilities use wire guards to watch the areas and prevent members of the public from getting near the downed line. For safety reasons, these areas are guarded until a make-safe crew can be assigned to and arrive at the location. Following large, damaging storms, the volume of wires down may exceed the internal utility resources trained as wire guards. Initial support may be received from first responders dispatched to events reported through 911, or by other means. Utilities, however, are expected to replace the first responders by dispatching a make-safe crew or wire guard as soon as possible. It is the responsibility of utilities to have sufficient make safe and wire guard personnel and it is not an appropriate for utilities to rely on first responders for this function.

4.1.1. Road Clearing Efforts

Severe weather events cause trees to break and fall into utility poles bringing electric, telephone, and cable wires down and blocking roadways. Once utility poles and wires are on the ground, or hanging low, a public hazard is created for local residents and first responders. Public hazard dangers include, among other things, exposure to potential shock hazards, trapping residents in their homes, and

[14] Make safe efforts involve the classification and clearing of wires and other hazards that may occur during storm events.

[15] PSL §66(21)(a)(xi).

impeding emergency resources from responding to requests for assistance or fires. Downed wires blocking roads are problematic in any storm; however, in larger events, such as Winter Storms Riley and Quinn, blocked roads were more of a concern given the number of roads fully or partially closed, resulting in traffic rerouting and the use of more local resources to effectively and safely direct traffic. Road clearing efforts are critical early in the storm restoration process to eliminate hazards and ensure first responders can gain entry to an area when needed and residents are able to travel, including possibly relocating until power is restored.

During the 2018 Winter and Spring Storms, electric facilities damaged by uprooted and fallen trees created safety hazards to residents and emergency responders. To address facilities impacted by trees, utilities dispatched tree crews to cut and clear trees from the electrical equipment. This work is required to facilitate access and allow line workers to perform necessary repairs to damaged facilities. As noted in the utilities' ERPs, pre-established guidelines are maintained to ease the integration of tree crews into restoration efforts.

To safely remove downed wires, electric utilities dispatch make-safe crews to test and remove the downed wires on roadways. An electric make-safe crew is typically made up of one or two-line crews in a bucket truck. Additionally, in many cases, tree crews travel with the make-safe crews to clear any tree debris away from the wires; these crews are only responsible for clearing the road of any tree debris affecting the power lines. Once the downed wire is removed and the area is safe, the electric utility notifies the county and/or municipality to allow the local Department of Transportation (DOT) or municipal road crews to remove any tree debris that is left behind. When clearance is completed, the road can be opened for safe travel. This process, while simple in concept, can become more challenging during sizable events and will not work as intended if there are lapses in communication, improper road clearance prioritization, and/or dispatching delays that prolong the process.

During Winter Storm Riley, there was a large number of wires down and substantial debris blocking roads, especially in the Lower and Mid-Hudson Valley regions. The sheer volume of separate

damage locations blocking roads was a factor in the time it took utilities to fully clear the roads. However, in some instances, there were also utility failures that exacerbated the challenge, and many roads remained blocked two days after the start of Winter Storm Riley. There were numerous instances where road closures blocked emergency responders from some areas and customers were not able to leave their neighborhoods. Restricted access, however, was not limited to dead end streets. In certain instances, the inability of emergency responders to access a neighborhood was the result of multiple down wire locations that prevented vehicles from entering or leaving through alternate paths. Therefore, electric utilities need to create a procedural code within their OMS to highlight the issue and location. This code should not only be used during storm events, but also worked into its daily process (i.e., Blue Sky events). This will be a code that both the reporting entity and the utility will use to highlight the severity of the situation. The counties should also provide the utility with information concerning road clearance priority. With this code and the road priority information, each utility can expedite and eliminate concerns of residents more effectively when an emergency occurs.

As the lack of progress continued, county and local officials started requesting State assistance and it was determined that the best way to resolve this issue in the hardest hit counties was for the electric utilities to support county led efforts by providing make-safe crews and tree crews to county governments for project assignments. Through an ad hoc road clearing team, utility crews were partnered with DOT crews and, in some cases, National Guard resources, to form joint road clearing teams. The county or local officials then prioritized locations and directed the joint teams. These joint road clearing teams worked roughly two days in some areas, with the electric crews testing and clearing the downed wires and the DOT and National Guard clearing the debris once the electric crews made the area safe. During Winter Storm Quinn, these joint road clearing efforts were duplicated earlier during the storm because many of the electric utilities and counties were similarly affected by Winter Storm Riley.

Staff's investigation revealed numerous comments and complaints that related to road clearing efforts by Con Edison, NYSEG, and Orange & Rockland. Some county and local officials reported

crews did not arrive on time or arrived at the wrong locations. There were also instances where crews had the wrong equipment or vehicles to properly test and clear the downed wires. Our investigation found that during Winter Storm Quinn, communication and the assigning of work was a much smoother process, with both the county crews and electric utilities crews reporting a more efficient process than during Winter Storm Riley. The counties and local officials also commented on how downed telecommunications wires were not promptly addressed because telephone and cable TV providers (collectively, telecommunications providers) were not included in the joint road clearing efforts. In many instances, communications wires were still blocking roads 4 to 5 days after Winter Storm Riley first hit. The electric utilities also noted instances where crews were not timely released by the entity that requested their assistance once road clearing efforts were finished. In some instances, electric crews had to wait for more than an hour to before receiving work assignments.

Following Winter Storms Riley and Quinn, many of the same areas affected faced a third storm event, the May Thunderstorm. Once again, the road clearing teams were used in multiple locations. Using lessons learned from Winter Storms Riley and Quinn, the electric utilities and counties were able to clear the roads quicker and more effectively for this event. In particular, Staff's investigation found that NYSEG and Orange & Rockland communicated with the counties earlier in the storm and dedicated electric make-safe and tree crews to the counties quickly once the storm had passed.

Staff's investigation identified value to continuing the joint road clearing teams' activities between the utilities and the counties when significant storm damage is incurred. Many of the electric utilities have reported that the road clearing joint efforts with the counties from Winter Storms Riley and Quinn were a success. However, protocols, procedures and a written plan to establish "Road Clearing Task Forces" between the counties and the utilities are needed to effectively continue similar road clearing efforts in the future. Many of the electric utilities have already reached out to several counties affected by the 2018 Winter and Spring Storms; Staff recommends the electric utilities continue to engage the counties and expand discussions to all counties statewide.

It is important that telecommunications providers participate in these discussions to understand how their facilities will be handled and that the incumbent[16] telecommunications providers need to be included in the joint Road Clearing Task Force activities. Staff found instances where previous joint road clearing efforts were slowed without the incumbent telephone and cable providers' participation.

Based on Staff's investigation, the counties are in the best position during these events to know which areas and roads within their territories are critical and should be prioritized. Therefore, the most efficient process would be for the county to request that the Road Clearing Task Force protocol be activated and be the responsible party for prioritizing and coordinating the task forces' activities to open roads it deems most appropriate. All parties shall provide the necessary resources to support the Road Clearing Task Force effort and follow the direction provided by the county. A Utility Field Coordinator, assigned by the electric utility, who may be either an employee of the electric utility or telecommunication provider, will ensure work flow between the electric utility, telecommunication providers, and county is continuous and that communication between the parties eliminates duplicative work efforts. At a minimum, the electric utility should assign a coordinator in the event another party does not agree fulfill the Utility Field Coordinator role.

Each utility must provide each county's Emergency Operations Center (EOC) with a matrix indicating the road clearing crewing to be used based on the severity of a storm and the potential number of road closures due to downed wires. The matrix shall include, at a minimum, the number of necessary Utility Field Coordinators, the number of electric make-safe crews, the number of electric tree crews, and number of communications providers within the area. When a county requests for the Road Clearing Task Force to be activated but does not want to be the lead coordinator of the joint activities, the electric utility shall establish a lead coordinator. However, Staff strongly encourages the counties to work with the

[16] An incumbent telephone provider is a company that provided monopoly wireline telephone service before the market was opened to competition. Incumbent cable TV providers are those that have franchises to operate in a given area.

utilities to strengthen this process and develop appropriate tools, including but not limited to, the following:

- For each county, a Road Clearing Task Force contact list should be developed and supplied to all parties involved. The contact list should include primary contact information and secondary backup contact information for all parties involved. It should include, but not be limited to, name, title, email and primary phone number. Each electric utility and telecommunication provider with facilities in the county shall provide contact information to the Utility Field Coordinator(s), who will oversee the Road Clearing Task Force crews upon activation.
- The county should be the entity that requests the activation of the Road Clearing Task Force, based on the number of local road closures.
- The county, as the lead for the Road Clearing Task Force, will have the knowledge and ability to prioritize the road closures and create a work plan to ensure that critical road issues get addressed. This work plan needs to include meeting time and location information. Staff found that during Winter Storms Riley and Quinn the county DPW or local DOT locations work well for meeting locations, if nearby, because they are situated to handle large vehicles. The work plan should be provided to the Utility Field Coordinator(s) the evening before the task force crews are expected to report. This will give the Utility Field Coordinator time to pass the work plan along and to ameliorate duplicate efforts.
- Once work has been completed or the county demobilizes the Road Clearing Task Force activities for the day, the county needs to coordinate with the Utility Field Coordinators in a timely manner to release the crews and to provide a new work plan for the following day. This will eliminate any unnecessary down time for the crews involved and will allow them to return to regular restoration efforts if their services are no longer needed.
- The Road Clearing Task Force should seek to move utility crews to new locations as soon as possible by having the county, local DOT and National Guard, if available, continue to cut and remove debris once the electric line crews and electric tree crews have made the area safe. Counties and towns should have sufficient work forces available for debris removal to keep the electric crews advancing forward quickly and efficiently; if not, they should request State assistance.
- A new emergency code number should be created that indicates a road is blocked in both directions. This will stress the severity of the situation to the utilities when notified by the county. This code should be used whether the Road Clearing Task Force is activated or not.

Through lessons learned from Winter Storms Riley and Quinn, it is evident that a written plan needs to be established between the electric utilities, telecommunication providers, and the counties, laying out procedures and protocols for the Road Clearing Task Force. All resources assigned to a Road Clearing Task Force assignment should be required to be trained to know their role(s) during

activation and who are their direct reports. All electric crews assigned to the Road Clearing Task Force should be make safe crews or tree trimming crews and are required to have ample tools, equipment and trucks to test and remove downed cables and tree debris.

Because crews will be led by the Utility Field Coordinator(s) and the local county and DOT crews, outside contractor crews that do not know the area should be used on the Road Clearing Task Force provided they have sufficient equipment. This will then leave the local utility crews, who are familiar with the area, available for regular storm restoration. Therefore, the procedures should also include when to use local internal crews for the Road Clearing Task Force or outside contractor crews, and how to account for travel times of contractor crews to be able to timely support a Road Clearing Task Force when activated.

The telecommunications providers need to be represented on the Task Force; however, it would be too cumbersome to have a representative from each communications entity be involved. Because they are the most capable entities for efficient restoration, Staff recommends that the procedures should define the incumbent telephone and cable providers as the point entity for all telecommunications facilities that are down when the Road Clearing Task Force is activated. The incumbent telephone provider shall determine when it is proper to bring in the other communications providers based on the circumstance in the field. There must be a section in the procedures on how downed telecommunication cables owned by other entities will be addressed and how respective telecommunications providers owners will be contacted. For a more efficient process, however, the incumbent telephone providers should seek to enter into contracts that permits them to relocate other provider's facilities. By doing so, roadways could be cleared faster and the entities involved in the task force will be minimized.

Establishing the process used for the Road Clearing Task Force should be conducted in a collaborative fashion between all parties. In order to be effective, the resulting plan should be routinely

exercised through tabletop drills or other mechanisms. Staff recommends the exercises occur on an annual basis and contact information should be maintained throughout the year.

Recommendation 1	All electric utilities create a new code for their OMS that indicates a road(s) closure with no ingress or egress.
Recommendation 2	All electric utilities and telecommunication providers establish a joint written plan of procedures and protocols with counties to establish a Road Clearing Task Force. The written plan should include a contact list and be exercised annually through tabletop drills or other mechanisms.
Recommendation 3	All electric utilities assign at least one Utility Field Coordinator to the Road Clearing Task Force.
Recommendation 4	All electric utilities establish a Road Clearing crewing level matrix based on the severity of a storm. The matrix shall be shared with DPS Staff, the counties and be included in ERPs.
Recommendation 5	All electric make-safe crews and tree crews assigned to the Road Clearing Task Force are required to have sufficient tools, to test and remove downed cables and tree debris.
Recommendation 6	All electric utilities should make every effort to use make-safe contractor crews for the Road Clearing Task Force.
Recommendation 7	The incumbent telephone providers will be the point entity for all telecommunications providers on the Road Clearing Task Force and should seek to establish contracts allowing for the relocation of other providers facilities during emergencies to expedite the opening of roadways.

4.1.2. Wire Guarding

The electric utilities reported responding to roughly 31,800 downed wires, collectively, for Winter Storms Riley and Quinn. In these instances, the electric utilities either supplement their wire guarding resources through contractors or perform just-in-time training to utility resources not already

assigned to be a wire guard.[17] The electric utilities reported that collectively they have roughly 3,700 internally trained wire guards. The infrastructure was so damaged, however, that the State coordinated the use of the National Guard to supplement the resources in Orange & Rockland's and NYSEG's service territories. Our investigation found that with the vast number of downed wires during Winter Storms Riley and Quinn, the electric utilities covered the downed wire hazards within a reasonable amount of time.

Among the affected utilities, Con Edison has done a better job of training resources to serve as wire guards to support restoration efforts during storm events. For the past three years, Con Edison has provided training to approximately 615 Full Time Equivalent (FTE) workers (also referred to as resources) annually.[18] Additionally, Con Edison has four contracts in place to secure more wire guards from outside vendors. Con Edison initially underestimated the number of wire guards that would be needed in response to Winter Storm Riley. On March 2, 2018, Con Edison had dispatched only 53 wire guards in the Bronx/Westchester division. Con Edison took appropriate steps to increase its workforce and had 441 wire guards dispatched on March 3, 2018. By March 5, 2018, Con Edison had increased the number to about 1,000 wire guards in the Bronx/Westchester division.

In contrast, NYSEG/RGE has not sufficiently trained internal resources to serve as wire guards in each division. NYSEG/RGE has provided wire guard training to approximately 460 internal resources companywide each year.[19] However, in NYSEG's Brewster division, the most affected area during Winter Storms Riley and Quinn, Staff found that NYSEG had a disproportionately low number (an average of 18) trained wire guards.[20] Perhaps more concerning to Staff is the fact that NYSEG/RGE had no contracts in place to specifically secure additional wire guards from contractors to supplement its lack

[17] The utilities or contractors will hold training sessions shortly before deploying resources into the field as wire guards.

[18] Con Edison's response to DPS-63.

[19] NYSEG/RGE's response to DPS-54, Attachment 1.

[20] NYSEG/RGE's response to DPS-54.

of trained resources. For the April Windstorm that impacted the Plattsburgh and Glens Falls areas, Staff found that NYSEG had only trained approximately 20 resources each year as wire guards.[21] Staff's investigation found that NYSEG failed to mobilize and dispatch the appropriate number of wire guards into the impacted areas during the April Windstorm and NYSEG lacks the necessary resources. Staff finds that NYSEG/RGE must conduct adequate training for its internal resources to serve as wire guards in each division, particularly in the Brewster and Plattsburg divisions given the nature of their non-contiguous service territory. In addition, NYSEG/RGE must put contracts in place to secure wire guards from outside resources in future events.

Orange & Rockland has contracts in place for securing approximately 800 additional wire guards from outside resources, in addition to the Resource Allocation Agreement Orange & Rockland has with Con Edison, which allows them to share/allocate resources with each other to support restoration efforts in a large storm event. However, Staff found that Orange & Rockland's wire guard program needs to be improved to identify additional internal resources for training. Orange & Rockland has trained an average of 90 wire guard resources per year for the past three years. Having additional internal resources will enable Orange & Rockland to guard more facilities early in an event as external resources are mobilized.

Recommendation 8	NYSEG re-evaluate the appropriate level of wire guards needed in each division and provide a strategic plan to Staff that trains more internal resources, obtains external resources through established third- party contracts, and provides the ability to effectively move resources across its service territory. The strategic plan must outline how NYSEG/RGE will incorporate its findings into its ERP.
Recommendation 9	NYSEG/RGE's ERP needs to include a minimum staffing matrix and a process that defines the adequate number of trained wire guards needed in each division/region in order to comply with its matrix.

[21] Id.

Recommendation 10	NYSEG/RGE identify and train, at a minimum, 100 additional internal resources that may be used as wire guards.

4.2. Resource Acquisition and Mutual Assistance

The ability to effectively restore power in a timely manner after any storm event depends on how quickly poles and wires struck down by wind, snow, ice, and/or fallen trees can be repaired. The time it takes to repair the electric infrastructure is largely dependent on the number of line workers, both internal and external, a utility has available. To expedite the restoration process, utilities supplement their internal line workers with contractors and other mutual assistance resources.[22] When an electric utility has service outages from a minor storm event, it normally relies on its own resources, such as internal line workers and on-property contractors to restore service. However, during larger storm events, the utility typically will secure external contractors that supply line workers and equipment or other skilled workers such as tree crews, damage assessors, and wire down resources. Full-Time Equivalents, or FTEs, is the standard method to track and report on resources.

On-property resources are normally the quickest option for a utility to increase its workforce pre-storm.[23] When, prior to the storm event, it is determined that additional resources will be needed to achieve the estimated resources required, the utility will hold or retain all on-property contractor line and tree resources until the storm passes. When a utility's total internal resources and on-property contractor resources do not meet the estimated resources needed, the utility will then contact external contractors. Utilities have agreements with multiple contractor resources and contact

[22] Mutual assistance is an inter-utility pool of resources such as line workers and equipment that can be deployed as an event grows beyond the capability of internal resources.

[23] On-property resources include internal resources and contractors that are actively being used by the utility for construction or maintenance work.

lists to expedite securing third-party contractor line, service, and tree resources.[24] Discussions with external contractors determine whether the contractor has sufficient available resource levels. There are no formal processes to ensure appropriate allocations when multiple utilities within the same geographical region are trying to secure limited external resources. Staff's investigation determined this unstructured process may not result in the best allocation of resources.

Con Edison, National Grid, PSEG LI, Orange & Rockland, and NYSEG/RGE have additional access to resources through their affiliated or sister utilities. Sister utilities, especially those in other states, can potentially provide many resources to help restore service to customers in their New York affiliates' service territories. During Winter Storms Riley and Quinn, resources from affiliated utilities were limited because the storms brought a mix of rain, snow, and heavy winds from North Carolina to Maine. For the most part, available resources within a reasonable proximity during these multi-state weather events did not exist because of the great regional resource demand.

Utilities can also request resources through their Regional Mutual Assistance Group (RMAG).[25] The regional mutual assistance approach provides an organized process to request and secure resources from an entire geographic area in the shortest time possible. RMAGs are a voluntary partnership of electric utilities across the country where utilities impacted by a major storm event can increase the size of their workforce by using restoration workers and equipment from other utilities. In theory, RMAGs allow multiple electric utilities to pool available resources and equitably allocate them to meet their shared needs. RMAGs expedite the process of identifying available resources and help electric

[24] A service crew repairs the low-voltage overhead electric lines running from a utility pole/transformer to a customer's building.

[25] RMAGs are organized geographically to efficiently meet the needs of electric utilities in its region and the mutual assistance agreements, which define responsibilities and payment procedures are managed by seven RMAGs: North Atlantic Mutual Assistance Group, Great Lakes Mutual Assistance Group, Wisconsin Utilities Mutual Assistance Group, Midwest Mutual Assistance Group, Western Region Mutual Assistance Group, Texas Mutual Assistance Group, and Southeastern Electric Exchange.

utilities coordinate the logistics. The North Atlantic Mutual Assistance Group (NAMAG) is the RMAG serving New York and is the initial point of contact for utilities.[26]

When seeking resources through mutual assistance, a utility will indicate this need to the NAMAG leaders, who initiate a conference call with all other member utilities. Before the call, each member utility identifies the resources they are requesting or the resources they have available along with estimated travel times to the affected area. During the conference call, the weather and system impact are summarized; the resource requests are discussed; the available resources are allocated to requesting utilities; logistics information is discussed; and the date and time of the next conference call is determined. When necessary, NAMAG will contact the other RMAGs to obtain the resources.[27] Staff's investigation found the NAMAG calls typically occurred in the morning hours and did not allow for efficient dispatching of crews committed during the call. Therefore, the NAMAG calls should occur at night after determining resource needs for the next day, which was typically done in the early evening.

Another potential source for additional mutual assistance may come from municipalities through the New York State Public/Private Utility Mutual Assistance Protocol (NYP/PUMA). This process works similar to the NAMAG process in that a requesting utility contacts NYP/PUMA, who then initiates a conference call with its members to determine what resources may be offered for assistance.

When a utility accepts mutual assistance resources, either through NAMAG, NYP/PUMA, or another RMAG, it is responsible for the resources financially. This financial responsibility includes labor, cost of equipment, safety, lodging, and meals from the time the resources leave until the time they return or are released to another utility.[28] Travel to the requesting utility can involve overcoming transportation

[26] NAMAG consists of 26 electric utilities from across northeast Canada and the United States that assist each other during large scale restorations. Geographically NAMAG covers 13 U.S. states and 4 Canadian provinces.

[27] Some information provided on mutual assistance process gathered from Regional Mutual Assistance Groups: A Primer by Miles Keogh and Sharon Thomas with support from the U.S. Department of Energy. https://pubs.naruc.org/pub/536E475E-2354-D714-5130-C13478337428.

[28] https://pubs.naruc.org/pub/536E475E-2354-D714-5130-C13478337428%20page%205, p. 12.

and permitting issues such as coordination at border crossings and delays due to size or weight restrictions when crossing state lines.

The Commission and New York Power Authority were instrumental in creating the NYP/PUMA protocol.[29] Experience has shown that the mutual assistance process is not perfect and there have been ongoing efforts to improve it. For example, each utility is statutorily required to include a copy of all written Mutual Assistance Agreements in its ERPs filed in December of each year. ERPs must also include procedures for deploying internal and mutual assistance resources.

When viewed as one event, Winter Storms Riley and Quinn were the largest-scale multi-state event to test the mutual assistance processes in New York since Superstorm Sandy. Obtaining mutual assistance crews ahead of storms can be difficult when weather forecasts are highly variable and/or there is a large potential for wide-spread regional damage. Because utilities were unwilling to release their resources to other utilities before the full effects of the storm were realized within their own service territory or affiliated or sister utility territories, the mutual assistance process did not work as designed and utilities could not depend on the process to provide a sufficient number of resources to meet their restoration goals.

NYSEG's experience acquiring resources is a typical example of the challenges faced during the 2018 Winter and Spring Storms. Even though NYSEG requested resources in accordance with their ERP, available FTEs within a reasonable proximity during these large or major storm events did not exist because of high demand elsewhere. As can be seen in Figure 6, between February 28, 2018 and March 10, 2018, NYSEG had, at peak, approximately 990 external line FTEs on-property. This occurred on March 6, 2018, four days after the arrival of Winter Storm Riley.

[29] The New York Power Authority, the state's investor-owned utilities, PSEG LI, and municipal and cooperative electric providers, have created a plan that details how these utilities can help each other during emergencies or weather events that lead to widespread outages.

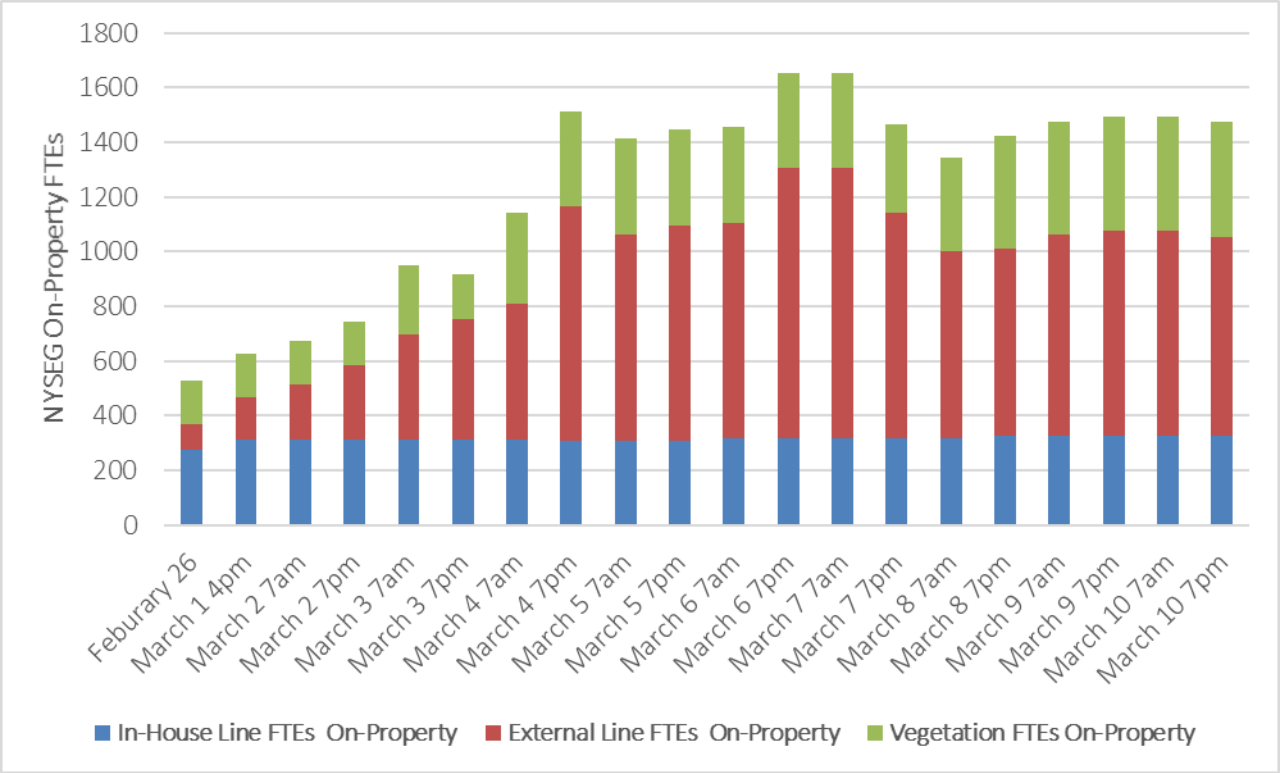

Figure 6: NYSEG's On-Property FTEs[30]

On February 28, 2018, NYSEG initiated contact with the administrator of the NYP/PUMA, however, resources were not available during the initial NYP/PUMA call.[31] The first NAMAG call took place on February 28, 2018 at 9:00 PM and all member utilities were holding resources except Hydro Quebec, which offered 120 FTEs. In addition, on February 28, 2018, NYSEG/RGE requested 74 contractor FTEs outside of the NAMAG process. All 74 FTEs were received by March 1, 2018.[32] Prior to the second NAMAG call, scheduled for March 1, 2018, NYSEG/RGE's contract meteorologist's forecast increased the storm's potential impact; indicating the storm would result in substantial damage in parts of NYSEG's

[30] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, New York State Electric & Gas and Rochester Gas & Electric Emergency Response Performance Assessment Part 105 Report March 1 and March 7, 2018 Nor'easters (filed May 11, 2018) Appendix C: Resources.

[31] Id., p. 44.

[32] NYSEG/RGE's response to DPS-119.

service territory. As a result, Avangrid, parent company of NYSEG/RGE, requested 100 FTEs through NAMAG and were allocated six FTEs.[33] During the March 2, 2018 NAMAG call, 200 FTEs were requested by NYSEG. No resources were available at that time. In addition, neighboring RMAGs, the Southeastern Electric Exchange and Great Lakes Mutual Assistance Group, were also involved in active storm events, which also greatly decreased the availability of resources. Generally, NAMAG utilities were holding resources since they too anticipated being impacted by the storm covering much of the mid-Atlantic and New England areas.[34] This delayed NYSEG's ability to receive support and to restore service. However, once the weather impacts became known, some NAMAG utilities released resources. NYSEG/RGE continued to request 200 FTEs but only secured 10 FTEs through NAMAG on March 4, 2018. National Grid and PSEG LI were able to send additional resources on March 5, 2018 to support NYSEG, Con Edison, and Central Hudson's restoration efforts. Central Hudson was able to release 70 FTEs to the NYSEG on March 6, 2018. NYSEG increased its NAMAG request to 350 FTEs on March 8, 2018 and an additional 70 FTEs were received. Towards the beginning of Winter Storm Riley, the majority of external line FTEs were obtained through third-party contractors and other New York utilities once restoration was complete in their service territories. Only 120 FTEs were obtained through mutual assistance; 86 through NAMAG and 34 through NYP/PUMA.

Further, coordinating the arrival of crews that are traveling from numerous locations was challenging. NYSEG found that once external crews were allocated, expected arrival times and actual arrival times differed. The onset of Winter Storm Quinn made for dangerous travel conditions that delayed arrivals and some crews had to travel through areas of the state with limited cell phone coverage making it difficult to communicate delays to the host utility. Improved real time resource tracking will facilitate better arrival times, work plans, and on-boarding logistics.[35] The timing of mutual assistance

[33] Due to travel time associated with available resources for the New England area the request was reduced to 50 FTEs.

[34] More than 2 million customers lost power in 13 states due to Winter Storm Riley.

[35] NYSEG/RGE's response to DPS-45.

calls can also affect arrival times, which ultimately affect restoration times. Utilities should request NAMAG calls during the evening to allow for better planning and faster arrival of crews.

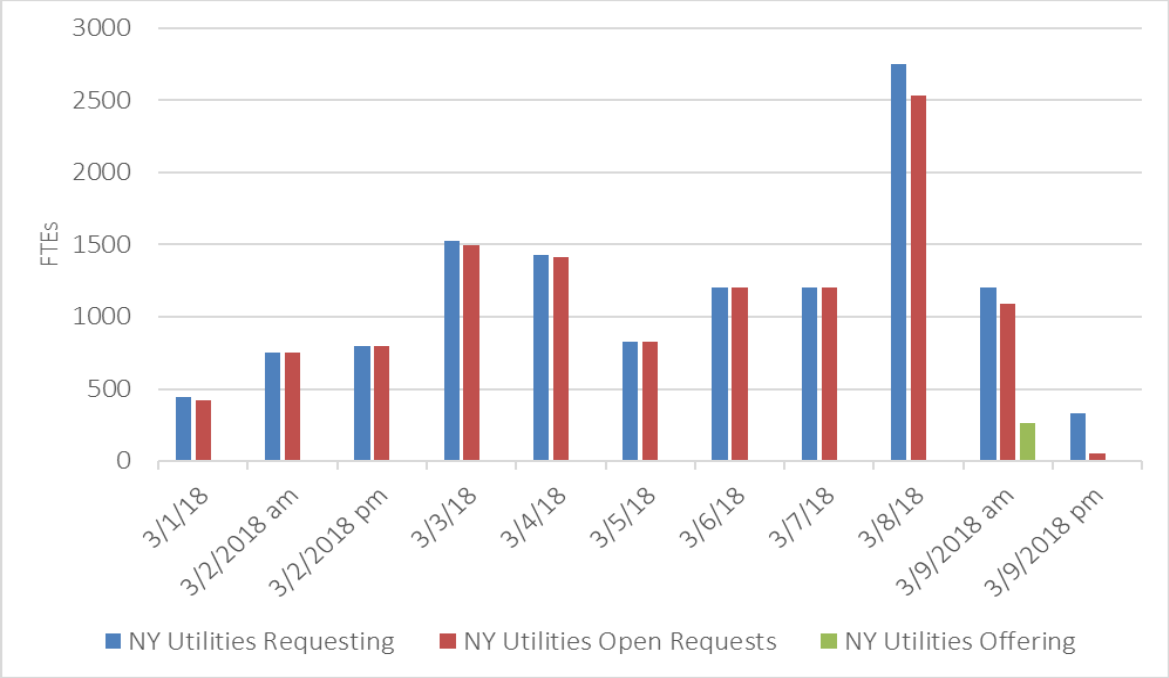

Figure 7: Summary of FTEs Discussed on NAMAG Calls[36, 37]

As can be seen in Figure 7, despite efforts to obtain additional line resources once the forecasted severity of Winter Storm Riley increased, New York utilities secured a very small percentage of the requested resources through NAMAG. NAMAG was inoperative early on, because member utilities were unwilling to offer their FTEs until the storm's impact on their electric system was known and/or restored. While mutual assistance is effective in addressing resource needs caused by smaller storms, the process did not adequately address the outages caused by Winter Storm Riley and Winter Storm Quinn. Unfortunately, the majority of allocations, 602 line FTEs or just over 91 percent of the 659 line FTEs sent

[36] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, PSEG Long Island's Emergency Response Performance Assessment – Winter Storm Riley and Quinn (filed May 11, 2018) Appendix A.

[37] Case 19-M-0285, supra, New York State Electric & Gas and Rochester Gas & Electric Emergency Response Performance Assessment Part 105 Report March 1 and March 7, 2018 Nor'easters (filed May 11, 2018) Appendix I: NAMAG Conference Call Notes.

to New York, were made on March 8 and March 9, 2018, six to seven days after Winter Storm Riley and one to two days after Winter Storm Quinn impacted New York State on March 7, 2018. This further shows that when major storms affect large geographic areas, available mutual assistance resources are significantly insufficient. As a result, the utilities were primarily dependent on contractors that were required to travel longer distances. Recognizing that NAMAG cannot be the relied upon to be the primary method of securing necessary resources in advance of a large-scale event, Staff finds that the utilities need identify alternative strategies to secure external resources and not rely on the NAMAG process to the extent they have previously.

The mutual assistance process and its limitations need to be addressed for storms that impact large multi-state regions. This seems to be an opportunity to improve NAMAG. Staff believes NAMAG should be more transparent with regulators on how it allocates resources. Transparency is integral for stakeholders to better plan and protect the state's electric customers. A more transparent NAMAG process would benefit all stakeholders since transparency builds relationships, increases trust, and improves problem solving. By sharing information, NAMAG would get new opinions and better insights, resulting in problems being solved faster and more efficiently. Additionally, stakeholders would understand the issues and be able to help, offer ideas to improve NAMAG, or develop alternative plans.

Consequently, the utilities should file a joint report recommending proposals to improve NAMAG processes as well as other strategies to secure external contractors. Proposals to improve NAMAG shall consider, but not be limited to: 1) Relocating crews to utilities requesting resources pre-storm, instead of holding for affiliated or sister utilities where weather and damage forecasts are less certain; 2) Determining whether external contractors should be submitting as available resources to be recognized in the NAMAG or an organized allocation process; 3) Improve communications regarding the locations of mutual assistance crews while traveling to the host utility; 4) Requesting mutual assistance as a statewide group during large multi-state events to minimize the risk to individual utilities; 5) Incorporating innovative response strategies such as those contained in the United Westchester Report

that complement the mutual assistance process; and, 6) Developing metrics to evaluate the effectiveness of the mutual assistance process.

Approximately 25 percent of commenters discussed mutual assistance or the closely related topic of slow restoration pace due to the lack of crews. Most of these comments came from frustrated municipal officials and some offered suggestions for improvements. United Westchester commented that the mutual assistance system and its shortcomings need to be addressed for storms that impact large regions.[38] As mentioned earlier, Westchester elected officials are open to innovative ways of thinking about how to respond to an emergency beyond mutual assistance. For example, Mount Kisco, Tarrytown, and New Rochelle suggested considering local electricians/contractors be certified by the electric utility as emergency crews or wire down resources. The report also suggested pre-positioning equipment so mutual assistance crews need only fly into impacted areas.

Staff agrees that employing resources as soon as possible is an integral part of restoration. Therefore, Staff's investigation pursued not only considering how to obtain additional line resources, but also on how to get line resources into the state and engaged more quickly. One idea that has been discussed in various forums is to have a supply of utility vehicles available, such that resources from distant states could fly to New York rather than drive. By doing so, the time to engage additional resources would be reduced by days, depending on their originating destination. Staff's investigation determined that utility vehicles could be obtained either through direct ownership, leasing, or rental arrangements.

This idea may also allow for quicker responses following less extensive events. For example, if a utility believes it will complete restoration in three days using internal line workers and on-property contractors; it would not pursue external contractors or mutual assistance that would not arrive and be ready to work until the third day. However, having the ability to engage crews that could be flown in and available much sooner in the process would result in shorter customer outage durations.

[38] United Westchester comments dated May 21, 2018, pp. 26-28.

While flying resources into the State has positive attributes, there are several aspects of implementation to consider, including, but not limited to, vehicular ownership and maintenance requirements, how best to activate and engage these resources, learning curves associated with unfamiliar equipment, and the dependability of rental arrangements to acquire vehicles suitable to safely work on or around electric facilities. As a result, a pilot program would be a sensible means to determine unanswered considerations before deploying such a program statewide. Therefore, it is recommended that Con Edison design the pilot program after analyzing the idea with the other utilities. The analysis should also consider other possible options to eliminate drive time for mutual assistance crews such as staggering shifts instead of obtaining additional vehicles. Con Edison should then obtain 30 vehicles to support future restoration efforts. The vehicles should be a combination of utility-owned assets to be rotated through Con Edison's existing fleet and vehicles obtained through rental arrangements. It is expected this form of response will be used to support either Con Edison's or Orange & Rockland's restoration efforts. Con Edison will also provide updates based on its learnings to the Department and other utilities after each occurrence where resources are flown in to support its restoration or as requested by the Department.

Con Edison and Orange & Rockland are sister utilities that share several storm related functions, such as weather reporting, resource acquisition, and the on-going re-allocation of external resources. Beginning February 27, 2018, Con Edison held Inter-Company Regional Operations calls with Orange & Rockland to discuss the approaching weather system, mutual assistance requests, and storm plans. Due to the storm's uncertainty, Con Edison's Bronx/Westchester division requested bringing in 20 contractor FTEs, which was fulfilled.[39] On February 28, 2018, Con Edison's Shared Services Group

[39] Con Edison's response to DPS-106.

requested the first mutual assistance call for Winter Storm Riley.[40] Con Edison requested 40 line FTEs for Orange & Rockland.[41] This request for 40 FTEs was fulfilled. Again, on March 1, 2018, Con Edison requested 100 FTEs for Orange & Rockland due to the increased potential for greater than six inches of heavy wet snow.[42] Ten FTEs were secured through NAMAG and 50 FTEs were secured through external contractors. Con Edison eventually requested an additional 100 FTEs through NYP/PUMA and 100 FTEs through NAMAG for itself the morning of March 2, 2018; by the 7:30 PM call Con Edison increased its NAMAG request to 470 FTEs. In parallel, Con Edison contacted contractors from across the country to secure additional resources to bridge the mutual assistance shortfall.[43] As a result, significant numbers of FTEs from mutual assistance and contractors did not began to arrive in Con Edison's territory until the evening of March 4, 2018.[44] Consequently, Con Edison had to build required rest periods into its restoration plans.

Based on the lack of resource requests prior to March 2, 2018, Staff believes Con Edison waited too long to request mutual assistance FTEs once the forecasted severity of Winter Storm Riley increased. In addition to monitoring weather forecasts, Con Edison should have been monitoring outages in other states and reactions of neighboring utilities when determining the optimum time to secure external line and tree FTEs for Winter Storm Riley. This should be a best practice used by Con Edison for all future "potential" large-scale weather events.

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[40] The Con Edison Shared Services Group oversees the operations of the following functions for both Con Edison and Orange & Rockland: emergency management, information technology, purchasing, transportation, inventory, energy management, facilities, security, research and development, energy policy, and regulatory affairs.

[41] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Orange & Rockland Report on Preparation and System Restoration Performance Winter Storms Riley and Quinn March 2018 (filed May 11, 2018), p. 24.

[42] Id.

[43] Case 19-M-0285, supra, Consolidated Edison Company of New York, Inc. Report on Preparation and System Restoration Performance Winter Storms Riley and Quinn March 2018 (May 11, 2018) p. 26.

[44] Con Edison's response to DPS-50-2

In addition to requesting resources for Orange & Rockland, Con Edison's Shared Services Group is responsible for fairly allocating outside resources between Con Edison and Orange & Rockland. On March 3, 2018, 49 FTEs were re-directed from Orange & Rockland to Con Edison due to the severity of the weather impact to Con Edison's Westchester system; an additional six FTEs were re-directed on March 4, 2018.[45] In the end, of the 140 FTEs Orange & Rockland requested, Con Edison's Shared Services Group secured 100 FTEs, but only 45 FTEs worked restoring power to Orange & Rockland's customers due to the 55 FTEs being redirected to Bronx/Westchester division. This redirection of resources questions the appropriateness of how Con Edison's Shared Services Group allocates resources to Orange & Rockland.

Con Edison's Shared Services Group used its *Acquisition and Allocation of Mutual Assistance and External Resources Guid*e (Guide) to provide direction on resource assessment, resource acquisition, and on-going re-allocation of mutual assistance and external contractor resources.[46] Staff's investigation determined the Guide outlines an effective process during the resource assessment and resource acquisition phases but does not provide well-defined direction on post-storm resource allocation. When the number of resources secured is not adequate to meet the combined pre-storm needs of Con Edison and Orange & Rockland, the Guide clearly states the initial distribution ratio will be 60/40, respectively. Staff finds this reasonable since it is based on an equal storm impact to both electric systems and the number of overhead customers, poles, and transformers; a disproportionate storm impact would appropriately change the distribution ratio. In contrast, the post-storm resource allocation section states the allocation is based on the two most significant variables: the number of customers out of service and the number of trouble cases. The Guide vaguely asserts consideration should be given to other factors such as the type of damage and number of down wires.

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[45] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Orange & Rockland Report on Preparation and System Restoration Performance Winter Storms Riley and Quinn March 2018 (May 11, 2018) p. 42.

[46] Acquisition and Allocation of Mutual Assistance and External Resources revision date 10/5/2015.

Staff finds a careful analysis of all factors, including critical facilities affected, public safety, and travel conditions should be conducted, quantified, agreed upon, and documented in the Guide. The post-storm resource allocation section should be revised to provide a more detailed weighted analysis of how to allocate FTEs once the storm has passed and damage has been assessed to effectively provide resources to Orange & Rockland. The Guide should be reviewed by Con Edison's Vice President of Engineering and Planning, Orange & Rockland's Vice President of Operations, and the Vice President of Emergency Planning to ensure both utilities are properly represented.

Given the considerable additional resources required to restore customers following Winter Storms Riley and Quinn and the dependence on outside resources, Staff found it appropriate to review the existing staffing levels within each utility. Figure 8 shows the total number of line FTEs by utility between 2008 and 2018. This figure includes both the number of internal overhead line FTEs and an

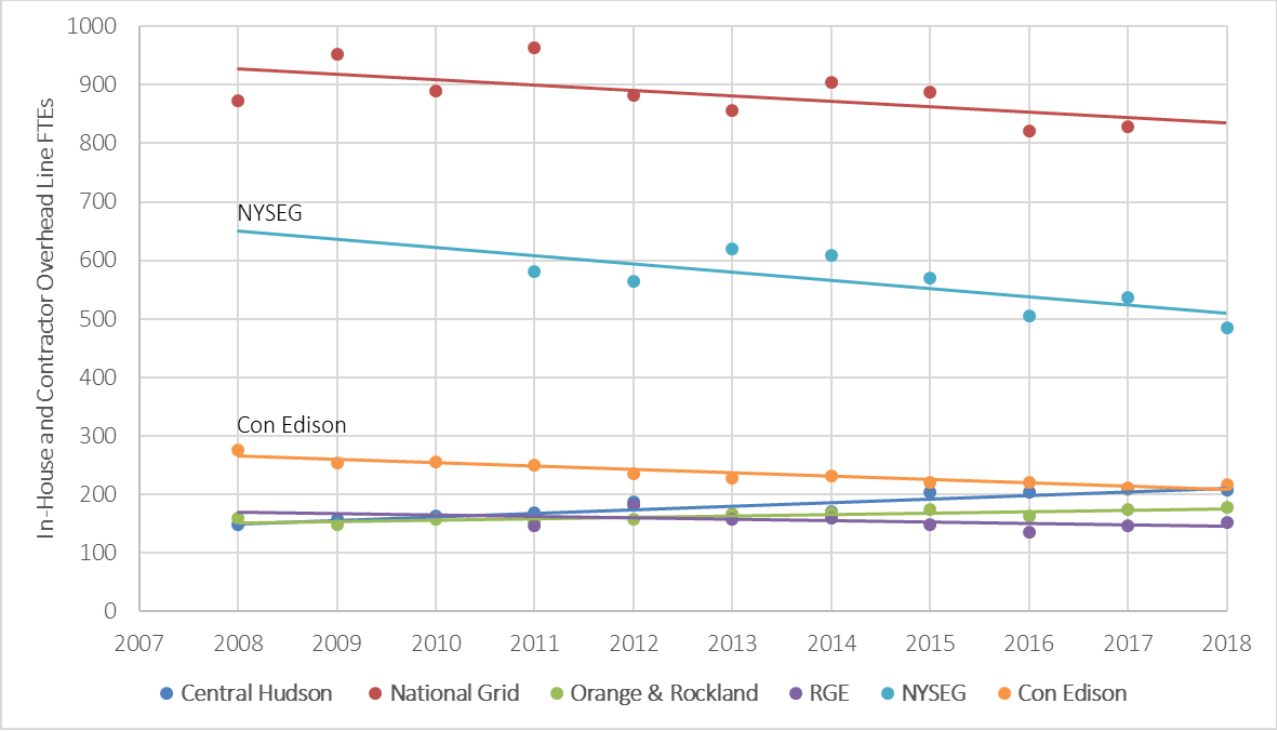

Figure 8: Total Number of Overhead Line FTEs by Utility Between 2008 and 2018[47]

[47] Central Hudson's response to DPS-27, Con Edison's response DPS-28, National Grid's response to DPS-27; NYSEG/RGE's response to DPS-114; and Orange & Rockland's response to DPS-28.

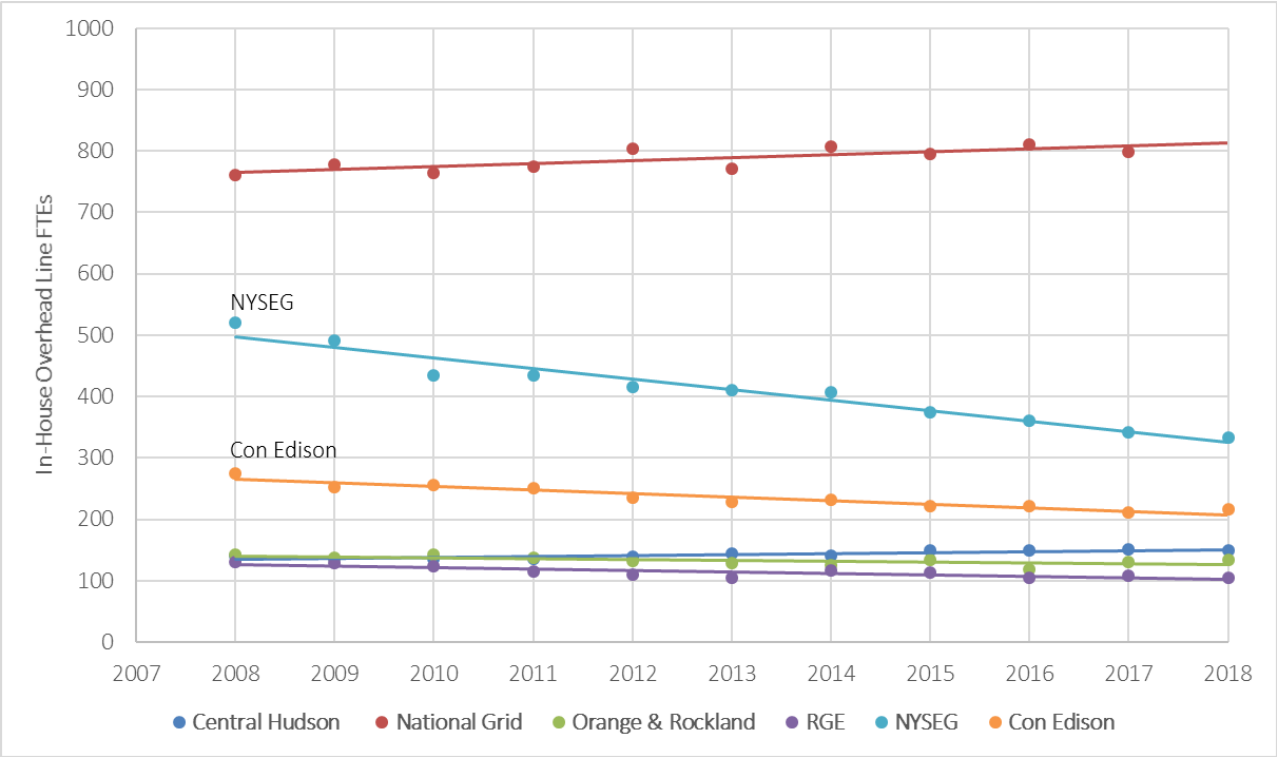

Figure 9: Number of Internal Overhead Line FTEs

average number of contractors used daily to perform construction or maintenance activities. Figure 9 represents the level of internal overhead line FTEs only. The blue and orange lines, in Figure 9, show a clear decline in the number of internal overhead line FTEs for both NYSEG and Con Edison, respectively. Conversely, Central Hudson (dark blue line) and National Grid show increases in internal overhead line FTEs over the same period. While NYSEG has offset the staffing reductions with contractors, that effort has placed the utility at a significant disadvantage regarding storm response, particularly in its more remote Brewster division.

In addition to the overall reduction of internal resources, the vast geographic area covered by NYSEG indicates that the level of internal resources across its service territory predicates the performance of routine activities effectively and its ability to provide a timely response during less sizable events. As can be seen in Table 1, the number of internal overhead line FTEs by division for NYSEG is extremely low compared to historical internal resource levels. NYSEG attempts to compensate for the

Division/Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Auburn	20	20	20	20	20	20	20	17	17	15	15
Binghamton	53	52	47	49	48	51	51	48	49	46	45
Brewster	52	49	43	44	41	36	33	35	33	36	35
Elmira	56	53	44	46	49	49	49	43	39	36	37
Geneva	40	40	40	39	34	34	32	29	26	25	25
Hornell	27	24	18	18	17	17	17	16	16	16	14
Ithaca	37	36	30	29	27	27	24	23	23	20	18
Lancaster	63	60	53	55	49	52	49	46	42	41	40
Liberty	30	29	26	24	23	24	23	19	20	20	19
Lockport	8	5	4	4	4	4	4	3	4	4	4
Mechanicville	25	18	18	17	16	16	20	18	16	14	15
Oneonta	64	62	53	52	52	47	49	43	41	36	36
Plattsburgh	45	44	38	38	35	34	36	34	34	32	30
Total	520	492	434	435	415	411	407	374	360	341	333

Table 1: NYSEG Internal Overhead Line FTEs by Division 2008-2018

low workforce numbers by centralizing certain operations out of state or relying on neighboring divisions for support. While this may be effective to some extent in areas with adjoining service areas, such as around Binghamton, NYSEG's Brewster, Plattsburgh, and Mechanicville operating divisions are not well positioned to respond and are extremely dependent on outside resources. Additionally, NYSEG's existing process for moving internal resources does not promote sizable FTE counts being mobilized into the Brewster or Plattsburgh Divisions; NYSEG instead is more dependent on resources from its sister utility, United Illuminating in Connecticut to support the Brewster area.

Corollary to our findings, Staff recommends that NYSEG and Con Edison increase their internal overhead line FTE resources to previous levels. For NYSEG, this would be increasing internal overhead line resources by 100 to 150 FTEs. These resources should be appropriately distributed across NYSEG's New York State service territory; however, initial resource increases should be made to the non-contiguous areas within its service territory. Con Edison should increase its internal overhead line resources by 30 to 50 FTEs. The addition of these resources should be viewed as incremental to current internal staffing numbers in the short term as each of the utilities should be performing additional storm hardening activities to mitigate the impact of future storms.

Recommendation 11	The electric utilities request NAMAG calls be held during the evening or early morning to allow for better planning and faster arrival of resources.
Recommendation 12	The electric utilities file a joint report with the Department within 90 days addressing proposals to improve the NAMAG process and securing external contractors considering, but not limited to: holding FTEs for sister utilities; allocating contractors through NAMAG or a separate organized process; requesting resources as a State versus individual utilities; better transparency into crew availability and allocation process; and improving communications with the host utility while traveling.
Recommendation 13	Con Edison establish a pilot program to fly line resources in and use local vehicles.
Recommendation 14	Con Edison and NYSEG file reports with the Department that includes a plan, budget, and timeline for increasing internal overhead line FTEs. Con Edison's plan needs to describe how it will increase its internal overhead line workforce by 30 to 50 FTEs and NYSEG's plan needs to describe how it will increase its internal overhead line workforce by 100 to 150 FTEs.

4.3. Damage Assessment

Effective damage assessment is necessary for efficient and logical power restoration. The accuracy, timeliness, and provision of sufficiently detailed damage assessment data are key elements for resource planning and executing a power restoration effort. Damage assessment not only provides

information related to the impact of an event on the electric system, it also provides an important data basis for utilities to develop an effective and efficient restoration plan, and to determine how many resources, equipment, and materials are needed for the restoration effort. It also supports the ability to provide accurate ETRs. A good damage assessment relies on robust planning, having sufficient damage assessor resources on property before the event, efficient and safe deployment of damage assessors after outages occur, and the effective use of available technology for collecting and reporting damage assessment data in a timely manner. Damage assessors are typically field inspectors, engineers, and utility resources who have field experience or knowledge of the construction and operation of the transmission and distribution system, and ideally, are also familiar with the area in which they are deployed. Utilities can also train resources from other departments who have field experiences to serve as a damage assessor during outage events.

In general, utilities use location and outage information from the OMS in combination with their Geographic Information System (GIS) mapping system, to identify storm-affected locations and determine which areas need damage assessment. There are two types of damage assessment during a storm event that are required by the utilities' ERPs. First, utilities perform a preliminary assessment to capture critical damage information as quickly as possible, such as identifying broken poles, downed wires locations, road obstructions, extreme tree damage, and leaking/damaged transformers.[48, 49, 50, 51] The preliminary assessment usually focuses on three phase sections of circuits, areas with significant damage, and areas with large numbers of customer outages. The data collected during the preliminary assessment is particularly important in supporting initial restoration planning, including resource requirements,

[48] Case 17-E-0758, In the Matter of the December 15, 2017 Electric Emergency Plan Review, Central Hudson Gas & Electric Emergency Plan (filed December 15, 2017) pp. 11-12.

[49] Case 17-E-0758, supra, NYSEG & RGE's Electric Utility Emergency Plan Updated (filed December 15, 2017) pp. 14-16.

[50] Case 17-E-0758, supra, Orange & Rockland Electric Emergency Response Plan (filed December 15, 2017) pp. 40-41.

[51] Case 17-E-0758, supra, Consolidated Edison 2018 Emergency Response Plan (filed December 15, 2017) pp. 28-30; p. 199; Attachment 8-Construction Response and Recovery Guide: Damage Assessment.

setting the Global ETR, and providing regional ETRs, where possible. Second, a detailed assessment usually begins following the completion of a preliminary assessment. The detailed assessment is a thorough survey that includes patrolling single-phase primary, service wires, and walking patrols to the areas that are inaccessible by car. The purpose of detailed assessment is to collect comprehensive data to support the development of accurate regional and local ETRs, obtain a clear picture on the extent of damage, and refine decisions on resource and material requirements for the restoration efforts. Preliminary assessment is expected to be completed as soon as practicable within 24 hours of the start of utility restoration and detailed assessment is expected to be completed as soon as practicable within 48 hours of the start of utility restoration.[52, 53] Transmission lines are usually assessed for damage by aerial patrols. During Winter Storms Riley and Quinn, some utilities also used drones to assist damage assessment efforts in affected areas.[54]

Damage assessment information is recorded either on paper maps, which are turned in at the end of the damage assessor's shift, or through an electronic device, such as a tablet, and transmitted electronically in real time as long as cellular service is available. Staff finds that the utilities should measure their damage assessment process against other utilities and use the information to incorporate best practices, including the use of automation where appropriate.

Comparing the utilities impacted by Winter Storms Riley and Quinn, Con Edison has done a better job in training a sizable number of internal resources to serve as damage assessors to be prepared for large storm events. Con Edison has 961 resources qualified to serve as damage assessors and eight contracts in place to secure an additional 1,600 damage assessors from outside vendors.[55] In contrast,

[52] 16 N.Y.C.R.R., Part 105.4 (7).

[53] Case 13-E-0140, Proceeding on Motion of the Commission to Consider Utility Emergency Performance Metrics, Order Approving the Scorecard for Use by The Commission as A Guidance Document to Assess Electric Utility Response to Significant Outage (issued December 23, 2013), p.31 and 39.

[54] Con Edison's response to DPS-3, NYSEG/RGE's responses to DPS-3.

[55] Con Edison's response to DPS-114.

NYSEG/RGE has done relatively little to train additional internal resources to serve as damage assessors. NYSEG has 240 and RGE has 94 damage assessors.[56] Moreover, NYSEG does not have contracts to specifically secure additional damage assessors from outside vendors, despite stating in its ERP, "The Companies have reached agreements with contractors to mobilize additional trained damage assessors."[57] As a result, Staff finds that NYSEG violated Section 5.1 of the ERP during Winter Storms Riley and Quinn and the Spring Storms. Although NYSEG/RGE has a total of 334 internal resources qualified to serve as damage assessors, this number is potentially deceptive given its widespread service territory and that many damage assessors may be used for other activities. For example, in the Brewster division, an area most affected during Winter Storm Riley, NYSEG has only 14 qualified damage assessors, yet only one internal resource had training to perform the damage assessment role in the past three years.[58] Staff finds this unacceptable given the difficulties experienced in past emergency response and restoration efforts and the inability to mobilize and deploy support resources into the impacted areas during the 2018 Winter and Spring Storms. Orange & Rockland has 48 resources qualified to serve as assessors and has three contracts in place to secure additional assessors from outside resources.[59] Orange & Rockland should seek to increase its current trained damage assessors to have a more appropriate level available for future events. Furthermore, Con Edison and Orange & Rockland should include the use of contracted damage assessors within the Resource Allocation Agreement with Con Edison to support each other in a large storm event.

[56] NYSEG/RGE's response to DPS-94, the reported numbers above are the total numbers of the utilities' employees that can serve as damage assessors. These numbers included their blue-sky employees who are qualified to perform damage assessment.

[57] NYSEG/RGE's response to DPS-54.

[58] NYSEG/RGE's response to DPS-54 and DPS-94.

[59] Orange & Rockland's responses to DPS-52 and DPS-101.

Utilities		Storm Riley						Storm Quinn				
		3/2	3/3	3/4	3/5	3/6	3/7	3/8	3/9	3/10	3/11	3/12
Central Hudson	Total	61	67	56	62	46	0	64				
Con Edison	Total	62	275	256	289	208	157	298	272	185	121	159
	B/W	35	215	187	269	208	119	251	247	185	121	159
NYSEG/ RGE	Total	38	59	110	66	55	53	73	47	4	4	
	Brewster	4	4	59	2	4	0	32	35	0	0	
	Liberty	0	7	11	31	24	18	16	0	0	0	
Orange & Rockland	Total	62	69	72	70	57	146	146	147	160	78	69

Table 2: Winter Storm Riley and Winter Storm Quinn – Damage Assessment Staffing Level

Staff's investigation found that despite having more than 900 internal trained damage assessors available to dispatch, Con Edison's preliminary assessment on the first day of Winter Storm Riley was not effective. On March 2, 2018, Con Edison dispatched only 35 damage assessors in the Bronx/Westchester division to perform preliminary assessments even though the customer outages reached over 80,000 customers in that area.[60] Con Edison should have deployed more damage assessors to do preliminary damage assessment in Westchester, based on the storm's impact. Although Con Edison lost valuable time the first day, it did increase the number of damage assessors in the area to about 200 on March 3, 2018. Because of its increased commitment of resources to perform initial damage assessment, Con Edison was able to complete preliminary damage assessment in a more timely manner.[61] Orange & Rockland dispatched a total of 62 assessors on March 2, 2018 when outages peaked at

[60] Con Edison's Overhead Emergency Response Procedure indicates when customer outages are projected more than 40,000, the storm should be declared as a Full Scale 3B ICS level and adjust the resources including increase the number of damage assessors to a corresponding level.

[61] Id.

approximately 31,100 customers, surpassing the minimum staffing requirement in its ERP for the ICS level Serious-3B. Staff finds that Orange & Rockland was also able to complete preliminary damage assessment appropriately.

NYSEG/RGE's ERP indicates that each division should deploy necessary resources to complete preliminary damage assessment for the impacted areas during the first daylight opportunity.[62] Although NYSEG claimed that they had enough resources to perform damage assessment, Staff's investigation determines that NYSEG performance was inadequate implementing and executing preliminary damage assessment in the worst impacted areas. Staff found that NYSEG did not have enough damage assessors available, either through internal or external resources, particularly in the heavily damaged areas. On March 2, 2018, NYSEG ineptly dispatched only four of the 14 qualified assessors available in the Brewster division to perform the initial assessment in that division. NYSEG remained at only four damage assessors dispatched in the first two days to support the entire restoration efforts in the Brewster division, even though there were about 2,300 downed wires and 50,000 customer outages caused by Winter Storm Riley. Staff's investigation concludes that dispatching only four assessors to complete preliminary assessment within 24 hours in the Brewster division is inexcusable and was a gross disservice to the affected customers and communities. Staff also found that NYSEG inappropriately relied primarily on information provided to them by towns through its damage assessment application within the first two days following Winter Storm Riley. During the preliminary assessment after Winter Storm Riley, about 68 percent of broken poles in the Brewster area were reported by municipalities. Information provided by towns should be used to supplement, and not be used in lieu of, NYSEG's own damage assessment efforts.

[62] Case 17-E-0758, In the Matter of the December 15, 2017 Electric Emergency Plan Review, New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation Electric Utility Emergency Plan (filed December 15, 2017) p. 16. "Each Division will mobilize the resources necessary to conduct a preliminary damage assessment for the three-phase and/or impacted areas rapidly, while maintaining safety and being practical during the first daylight opportunity."

Despite modifications to its damage assessment process following the 2017 Windstorm, NYSEG continues to be incapable of mobilizing the resources needed to complete preliminary damage assessment following a large storm event. NYSEG's planning section manager did not dispatch more assessors that were available from other nearby divisions to support the Brewster division's initial assessment activities. Rather than using resources available from other nearby divisions, NYSEG brought additional damage assessors from locations as far away as Maine.[63] NYSEG's ERP states "The area command planning section has the ability to move resources between areas or to engage additional resources to support the damage assessment functions."[64] There is no rational basis for NYSEG's failure to provide adequate support to perform damage assessment during Winter Storm Riley and NYSEG, and this failure was in violation of section 5.1 of the ERP. The lack of sufficient properly trained resources led to NYSEG's inability to do proper damage assessment in a large outage event like Winter Storm Riley. NYSEG further violated its ERP because it did not effectively move more damage assessors that were available from other nearby divisions to support the Brewster division, nor did it deploy the necessary damage assessors in the Brewster division to complete the preliminary damage assessment. These ERP violations were also repeated in the April Windstorm and the May Thunderstorm.

As shown in Table 3, NYSEG again dispatched an insufficient number of damage assessors to perform damage assessment in the severely affected areas (Brewster and Liberty divisions) during the May Thunderstorm. In contrast, Orange & Rockland had over 60 percent fewer peak outages than NYSEG yet dispatched nearly twice as many damage assessors over the course of the May Thunderstorm. Additionally, while Central Hudson's peak outage number was comparable to NYSEG's during the May Thunderstorm, it dispatched more damage assessors than NYSEG over the same time period.

[63] NYSEG's response to DPS-3.

[64] Case 17-E-0758, In the Matter of the December 15, 2017 Electric Emergency Plan Review, New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation Electric Utility Emergency Plan (filed December 15, 2017) p. 17.

Utilities (Divisions Affected)	May 16	May 17	May 18	May 19	Peak Customer Outages
Central Hudson (Fishkill and Newburgh)	68	64	56	39	73,311
NYSEG (Brewster and Liberty)	37	51	43	26	69,024
Orange and Rockland	84	79	75	65	45,916

Table 3: May Thunderstorm – Damage Assessment Staffing Level[65]

An effective and timely restoration of power outages begins with proper damage assessment and that requires having significant resources. For public safety reasons, damage assessors are required to guard downed lines until they are relieved by another trained resource, such as a wire guard or line crew. In the beginning of large storm events, utilities' damage assessors often stopped to guard downed wires for extended periods of time waiting to be relieved, thereby delaying the damage assessment process. During Winter Storm Riley, about 54 percent of Con Edison's damage assessors had to stop to guard the wires on March 2, 2018. Lack of sufficient wire guards the first day resulted in the damage assessors waiting an average of 31 hours to be relieved so that their damage assessment activities could continue. Staff finds this to be an intolerable amount of time. Even when dispatching an average of 200 damage assessors the following days, 37 percent of the damage assessors also had to guard downed wires. Such long delays had a significantly negative impact to damage assessment activities and delayed the preliminary assessment process. Therefore, Staff finds that the utilities should improve the

[65] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Orange & Rockland Preparation and System Restoration Performance Report May 15 Thunderstorm (filed July 21, 2018) p. 33; New York State Electric & Gas Emergency Response Performance Assessment Part 105 Report Thunderstorm May 15, 2018 (filed July 20, 2018), p. 36; and Central Hudson Gas & Electric Storm Scorecard Thunderstorms, Tornados, and Macroburst May 15, 2018 through May 19, 2018 (filed July 23, 2018) p. 7.

procedures to prioritize and dispatch wire guards to timely relieve damage assessors guarding downed wires to minimize the adverse impacts on the damage assessment activity.

Recommendation 15	NYSEG improve the procedures to effectively dispatch damage assessors from other divisions and shall have contracts in place with outside resource to particularly secure additional damage assessors needed for large storm events. NYSEG/RGE's ERP will reflect these improvements.
Recommendation 16	NYSEG re-evaluate the appropriate number of damage assessors needed in each division and provide a strategic plan to the Department that details how NYSEG will increase the number of damage assessors to an appropriate level for large storm events and revise its ERP accordingly.
Recommendation 17	All electric utilities improve the procedures to prioritize and dispatch wire guards to timely relieve damage assessors guarding downed wires to minimize the adverse impacts on the damage assessment activity.
Recommendation 18	All electric utilities develop a minimum staffing matrix and have adequate numbers of trained damage assessors available in each division/region that are ready to be dispatched if needed. The ERPs will reflect these improvements.

4.4. Outage Management Systems

Information technology (IT) and other advancements in power systems have become more prevalent allowing utilities to better manage the electric grid and connect with customers more efficiently. Utilities are now able to monitor for, and in some cases, remotely respond to, abnormal load conditions and equipment failures in near real-time through technological developments, such as supervisory control and data acquisition (SCADA) systems or smart meters. OMS systems are core applications behind how a utility manages outage events. OMS systems process reported customer outage information; predict outages to capture the full extent of customers impacted; create, prioritize, and manage jobs; and interface with various applications to provide consistent and updated outage information to utility resources and the public during normal and emergency operations.

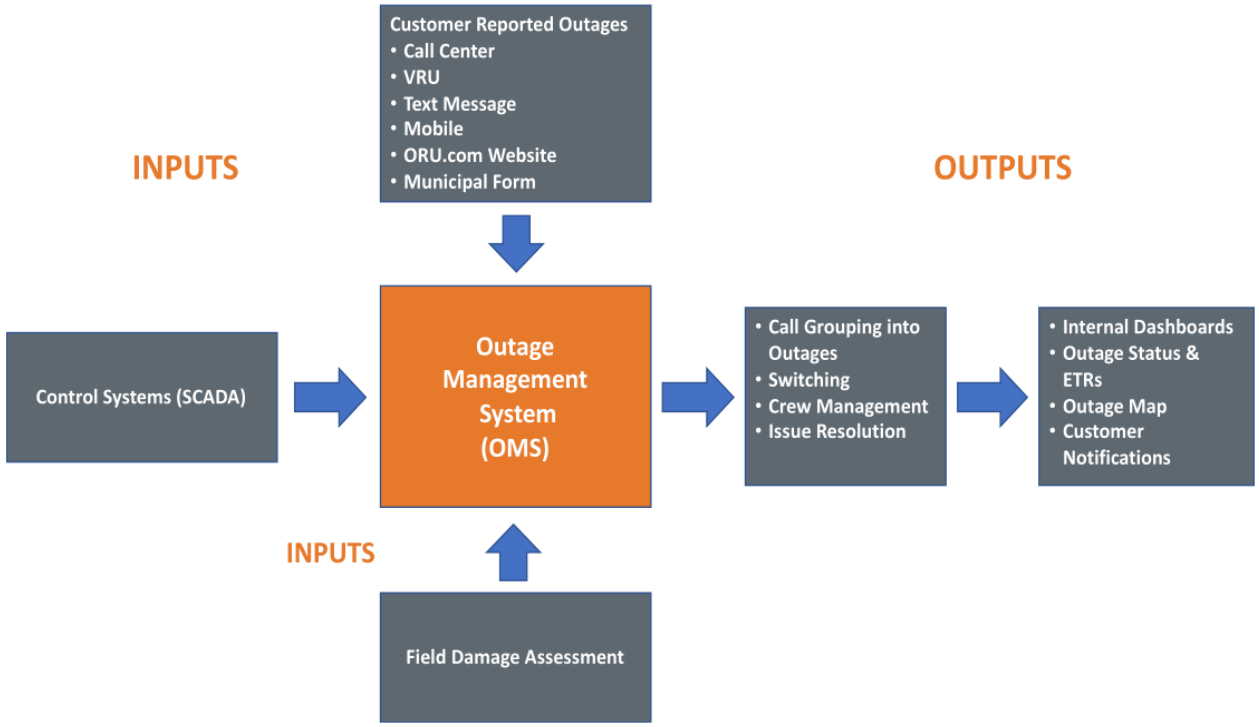

Figure 10: OMS Process Flow Diagram[66]

Figure 10 shows a process flow diagram from Orange & Rockland that depicts the typical flow of information through OMS between applications. Since OMS is connected to many independent functions and acts as a definitive source of information for many applications, it is imperative that the system processes accurate information and remains functional even when other applications are impacted.

Downstream of OMS, utility websites serve as a direct source of restoration information for customers. During an event, utilities are expected to keep their websites updated and accessible to the public around the clock to ensure customers can obtain crucial updates on the status of their outages, as well as utility contact information and dry ice/water distribution locations. Other IT systems also exist to help communicate and expedite restoration efforts. A well-functioning IT system requires testing and

[66] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Orange & Rockland Report on Preparation and System Restoration Performance Winter Storms Riley and Quinn March 2018 (filed May 11, 2018) p. 61.

maintenance for function, stability, and protection against vulnerabilities. It should be able to run smoothly especially during major storms, when there is increased activity on the system. Frequent and comprehensive testing is required during blue-sky days and after vendor security and software updates to ensure the functionality of IT systems during major outage events.

Winter Storms Riley and Quinn exposed a variety of errors and deficiencies in the OMS systems used that had otherwise been undetected on blue-sky days. All utilities, except National Grid, experienced an issue with their OMS system during Winter Storms Riley and Quinn. The utilities encountered logic configuration issues, system errors, and overloaded systems. Con Edison and Orange & Rockland's issues were associated with the configuration of their OMS logic, which impacted outage counts and triggered inaccurate customer notifications. In some cases, the errors caused it to show that customers had power when they were still without power. NYSEG/RGE's system was slow because the system operated beyond its capacity and overloaded, impacting data transmitted through the system and provided on the outage maps. Finally, Central Hudson, NYSEG, RGE, and PSEG LI experienced system lockups and other system errors that affected customer notifications and messaging, online outage reporting, outage maps, IVR, and municipal portals. Central Hudson also experienced an issue with its OMS during the May Thunderstorm, while NYSEG/RGE identified an additional OMS-related issue during the April Windstorm.

Con Edison and Orange & Rockland's OMS logic configurations significantly impacted information provided to customers. Con Edison stated that the increased complexity of the secondary distribution system model in place since Superstorm Sandy and the increased volume of customer outage reports exposed a software error that created multiple outages and, in some cases, changed ETRs.[67] In addition, after Superstorm Sandy, Con Edison initiated a process to contact all customers predicted to be out of service by its OMS system's algorithm, and again when they were restored, regardless of whether

[67] Con Edison's response to DPS-46, Q-5.

they had contacted the utility.[68] During Winter Storms Riley and Quinn, there was an error in the OMS setting for sectionalizing devices which broke down existing outages into multiple outages and removed and repopulated ETRs in some cases. As a result, thousands of customers received multiple automated ETR and restoration notifications. On March 2, 2018, approximately 15,500 customers received duplicate ETR notifications and approximately 49,000 customers received incorrect restore notifications.[69] Con Edison was not aware of the issue until March 5, 2018 and decided not to disable notifications because it was difficult to do so without stopping all outbound communications. A dedicated team manually adjusted the outages during the event, and a software patch was applied after the event.[70] Con Edison has since added the functionality to enable or disable automatic calls to customers. The error also led to different outage numbers being reported on internal dashboards, which reflected operator changes to the system, and external outage maps that did not reflect the operator changes. Con Edison manually replaced the outage counts on their municipal dashboard on March 6, 2018, issued a press release stating that the outages on the public outage map may be outdated on March 7, 2018, and corrected the integration between the OMS and outage maps on March 8, 2018.[71]

Orange & Rockland indicated that its outage predictive logic rules (designed to identify power outages on its system) were aggressive, leading to overpredictions in customer outages at the start of Winter Storm Riley. Before Winter Storm Quinn, Orange & Rockland modified its predictive logic rules to more accurately identify customer outages.[72] In addition, there were incorrect outage numbers shown on the outage map during Winter Storm Riley and Quinn when a customer was part of multiple outage

[68] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Consolidated Edison Company of New York, Inc. Report on Preparation and System Restoration Performance Winter Storms Riley and Quinn March 2018 (May 11, 2018) p. 78.

[69] Id.

[70] Id., pp. 75-76.

[71] Con Edison's response to DPS-46, Q-5.

[72] Orange & Rockland's response to DPS-40, Q-5.

jobs and one of those jobs was completed, resulting in the restoration of some customers. Orange & Rockland took down the outage map for six hours on March 9, 2018 to determine the cause and implemented a temporary fix, which consisted of manual processes to keep the map synced with OMS.[73] After improvements to the predictive logic rules, Orange & Rockland's map remained synced during the May Thunderstorm.[74] Like Con Edison, Orange & Rockland also indicated that its customers may have received text messages with incorrect ETR information and restore notifications during Winter Storms Riley and Quinn.[75] However, unlike Con Edison, outbound communications were sent only to customers who had signed up to receive messaging, which was a total of 7,500 customers.[76] Orange & Rockland did not stop the messages at the time but has since developed the ability to turn off automatic notifications.[77] A utility's OMS is the informational backbone for response and service restoration, Con Edison and Orange & Rockland's OMS systems were not operational during extended periods of time when the functionality of such systems were necessary and vital to restoration efforts. These OMS issues cannot be glossed over or accepted given the length of time each remained inoperable. Therefore, the failure of the Con Edison's and Orange & Rockland's OMS systems to reasonably and properly function during Winter Storms Riley and Quinn violates each utility's ERP, sections 1(C)(t) and 5.11, respectively.

In addition to implementing enhancements to improve the accuracy of predicted customer outages and avoid sending inaccurate notifications, Con Edison and Orange & Rockland retained a consultant to conduct an end-to-end technology architecture assessment to identify ways to improve the

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[73] Id.

[74] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Orange & Rockland Preparation and System Restoration Performance Report May 15 Thunderstorm (filed July 21, 2018) pp. 46 – 47.

[75] Case 19-M-0285, supra, Orange & Rockland Report on Preparation and System Restoration Performance Winter Storms Riley and Quinn March 2018 (filed May 11, 2018) pp. 62 – 63.

[76] Con Edison and Orange & Rockland 5/11 Interview.

[77] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Orange & Rockland Report on Preparation and System Restoration Performance Winter Storms Riley and Quinn March 2018 (filed May 11, 2018) p. 67.

reliability and performance of the OMS. One of the major recommendations included using a more comprehensive approach to testing whenever there is a significant change introduced to the OMS or OMS-related applications. Instead of testing functions separately, a comprehensive testing process should be done because it looks at how the feature impacts upstream or downstream functions and tests for data accuracy and processing times.[78]

NYSEG/RGE's OMS, which was newly implemented in February 2018 for NYSEG and December 2017 for RGE, did not perform well during Winter Storms Riley and Quinn because they operated beyond their capacity and became overloaded. At the start of Winter Storm Riley, on March 2, 2018, the OMS database server was at 100 percent utilization, with over 100 employees on the system and no idle time.[79] Users reported slow OMS response time or were unable to log onto the system, and the database connection to the server was lost for five minutes.[80] Because of the system slowdown, in two separate instances, NYSEG discovered that their outage maps did not update for up to four hours and redirected customers looking to access the outage map to an alternate webpage with a message that the outage map was undergoing maintenance.[81] NYSEG immediately implemented several measures to improve system performance, including requesting only essential storm duty users to be logged on, requesting for the users to turn off auto refresh, relocating two non-OMS databases to an alternate server, and adding additional indices to the OMS database tables to allow for more efficient processing in the system.[82]

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[78] Orange & Rockland's response to DPS-87, Q-6.

[79] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, New York State Electric & Gas and Rochester Gas & Electric Emergency Response Performance Assessment Part 105 Report March 1 and March 7, 2018 Nor'easters (filed May 11, 2018) Appendix D, p. 3.

[80] NYSEG/RGE response to DPS-40, Q-9.

[81] Id., Q-5.

[82] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, New York State Electric & Gas and Rochester Gas & Electric Emergency Response Performance Assessment Part 105 Report March 1 and March 7, 2018 Nor'easters (filed May 11, 2018) Appendix D, pp. 3-4.

Latency issues were present again on March 4, 2018 when NYSEG discovered that there were delays in map updates and data processing from GIS due to a setting that was processing data real-time, when only processing every two minutes was necessary.[83] NYSEG monitored GIS updates and modified the setting in the interface to correct the issue. Starting on March 3, 2018, the system slowdown also impacted NYSEG's circuit map printing, which took longer than usual.[84]

After Winter Storms Riley and Quinn, NYSEG/RGE increased the OMS Database Service Capacity threefold,[85] kept the OMS database on its own dedicated server, added 50 OMS users in the test environment to emulate production, and conducted a full end-to-end performance test simulation with 2018 storm data.[86, 87, 88] Increasing the capacity was crucial in alleviating the latency issue. For three hours on March 2, 2018, NYSEG's system prevented customers from creating outage tickets online because the location was part of known outages without an ETR.[89] Instead, customers received an error message when attempting to report an outage. This issue was due to the ticketing system being only configured to process zeroes for ETRs that hadn't been populated, rather than a blank in the field.[90] The issue was resolved through a coding fix, and NYSEG/RGE have since implemented corrective measures to reduce instances of systems misinterpreting incorrect values in the form fields.[91]

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83 NYSEG/RGE's response to DPS-40, Q-5; NYSEG/RGE 7/30 meeting.

84 NYSEG/RGE's response to DPS-34, Q-3.

85 Follow-up Responses from 7/30 OMS storm meeting (August 16 email).

86 Id.

87 NYSEG/RGE's response to DPS-108, Q-6.

88 Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, New York State Electric & Gas and Rochester Gas & Electric Emergency Response Performance Assessment Part 105 Report March 1 and March 7, 2018 Nor'easters (filed May 11, 2018) Appendix D, p. 4.

89 NYSEG/RGE' response to DPS-40, Q-5; Follow-up Responses from 7/30 OMS storm meeting (August 16 e-mail).

90 NYSEG/RGE Follow-up Responses from 7/30 OMS storm meeting (August 16 e-mail).

91 NYSEG/RGE's response to DPS-40, Q-5; DPS-108, Q-6.

At the start of Winter Storm Quinn on March 7, 2018, Central Hudson's OMS Call Processor delayed the OMS for 90 minutes and prevented customers from receiving updated outage information or reporting new outages via the website or IVR. [92, 93] While the Call Processor was postponed, customers reporting new outages received an erroneous message that displayed: "Our records currently indicate no outages have been reported in your area, or the previous outage in your area has been restored."[94] According to Central Hudson, the correct message should have been, "At this time we are aware of your outage, and are investigating it; however, restoration information is not yet available."[95] Central Hudson repaired the call processor issue and processed the backlog of trouble calls within 90 minutes. Central Hudson has also corrected its messaging; however, its IT and vendor support were unable to identify a root cause for the faulty record that caused the call processor to fail.[96]

During Winter Storm Riley, Central Hudson also incurred problems with the software used to prioritize and dispatch wires down orders, which is separate from OMS. That system overloaded, and Central Hudson had to resort to manually tracking wires down orders in the Poughkeepsie division, which was a cumbersome process, but did not appear to hamper assignments to wire responders and wire guards.[97] Central Hudson increased the server capacity and indicated that it will include higher-level stress tests, as well as sync tests in future testing of the wires down system. [98, 99]

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92 The Call Processor analyzes phone, web, mobile, and text messaging outages reported through the utility's Customer Information System (CIS) to determine whether the outages could be grouped or assigned a new case.

93 Central Hudson's response to DPS-17, Q-3; DPS-36, Q-5.

94 Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Central Hudson Riley/Quinn Part 105 Report (filed May 11, 2018) p. 22.

95 Id.

96 Central Hudson's response to DPS-36, Q-5.

97 Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Central Hudson Riley/Quinn Part 105 Report (filed May 11, 2018) p. 10.

98 Id., p. 12.

99 Central Hudson's response to DPS-83, Q-7.

During the May Thunderstorms, Central Hudson experienced an issue with its OMS ETR publishing tool that prevented it from publishing regional ETRs.[100] Regional ETRs usually default to the longest individual case ETR within the municipality during blue-sky days and would show up as "pending" if an outage job does not have an ETR assigned. The tool to overwrite the default values during storm mode did not function at the start of the event due to an OMS upgrade, which was addressing a separate issue, deployed two weeks earlier that impacted the overwrite tool.[101] Central Hudson worked with the vendor to repair the ETR override feature late in the evening on May 16, 2018.[102] In addition to remediating errors as they arise, Central Hudson plans to create a new position in the utility with responsibility to monitor and resolve issues with the outage map and webpage.[103] Other utilities should consider adding a similar position, if not already in existence.

PSEG LI experienced a lockup in its automated outage reporting system on March 2, 2018 from 3:00 PM to 7:30 PM that prevented outages reported through IVR, texts, emails, and websites from being processed.[104] The lockup, not experienced in the past, occurred because the OMS in-bound web service was configured as a single threaded service.[105] PSEG LI worked with the vendor to reconfigure settings and restart its outage reporting services. On March 7, 2018 between 6:00 PM to midnight, a missing field in a ticket filed in the municipal portal locked up the portal and municipal officials were unable to report make-safe to clear issues until the ticket was identified and cancelled.[106] Permanent

[100] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Central Hudson Gas & Electric Storm Scorecard Thunderstorms, Tornados, and Macroburst May 15, 2018 through May 19, 2018 (filed July 23, 2018) p. 13.

[101] Central Hudson's response to DPS-97.

[102] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Central Hudson Gas & Electric Storm Scorecard Thunderstorms, Tornados, and Macroburst May 15, 2018 through May 19, 2018 (filed July 23, 2018) p. 31.

[103] Id., p. 13.

[104] PSEG LI's response to DPS-37, Q-6.

[105] PSEG LI's response to DPS-89, Q-1.

[106] PSEG LI's response to DPS-37, Q-6.

repairs were made two days later. Finally, PSEG LI discovered that there were less than ten outages that were closed earlier that remained visible on the public outage map until March 13, 2018, because they were not properly linked.[107] This is an ongoing issue with the OMS and PSEG LI stated that it would have to continue manually relinking the records until the OMS vendor is able to fully fix the issue.

While the utilities experienced a range of issues that may be unique to their IT systems and are often difficult to predict, all utilities should be better prepared to react to errors that arise and work on responding more quickly in these instances. First, since the use of OMS is most critical during major outage events, all utilities should include or reference emergency procedures and preparations for OMS and OMS-related applications in their ERPs. From a review of utility ERPs, Central Hudson and PSEG LI were the only utilities that included an OMS section in their ERPs. At the same time, Con Edison has a process similar to Central Hudson to have heightened monitoring of OMS and associated infrastructure during emergencies; however, such a process was not mentioned in their ERP.[108]

Staff recommends the utilities increase preparation, monitoring, and different types of testing of OMS and related applications to identify issues before they occur to alleviate impacts in the future. The utilities should include pre-storm procedures to prepare and test their IT systems for an event and be ready to display appropriate error messages on their websites and direct customers to alternate ways to report outages or view information when there are issues with the OMS or OMS-related applications.

In addition to monitoring during a storm, Staff finds that the utilities should explore incorporating checks in their IT systems to prevent the issues described earlier from occurring including the feasibility of using automatic alerts to system operators. The utilities need to have the ability to isolate problem applications to avoid impacts on the OMS and other processes. The utilities should also have backup systems to avoid disruption in services while the utility is identifying or performing a repair.

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[107] Id., Q-5.

[108] Con Edison's response to DPS-46, Q-3.

All electric utilities should regularly perform rigorous stress testing for their OMS systems to ensure continued functionality, accuracy, and robustness under changing system conditions. The utilities should be continuously refining OMS predictive logic rules and conduct testing to incorporate the increasing complexity of the system model. Since the OMS model is never completely accurate, the utilities should ensure that they are adequately staffed with trained OMS operators during emergencies to make any necessary manual changes as quickly as possible. However, even changes or updates to the OMS software would warrant comprehensive testing and additional training before a major event occurs, as NYSEG/RGE discovered during the April Windstorm, when the Incident Command teams encountered difficulty in identifying and prioritizing single outages later in the event when factoring in outage duration due to inexperience managing the recently implemented OMS.[109]

The utilities' OMS systems must account for the increasing complexity of their electric system and system models through testing, system reviews, staffing, and training, and the utilities' IT systems must be able to support increased activity during major storms and data flow from smart meters and other automated monitoring devices as they are fully or partially deployed. Since electric utilities will be continually expanding their IT systems and preparing for storms of increasing magnitudes and complexity, all the electric utilities should perform more vigorous, comprehensive testing on their OMS systems to ensure their systems are ready for different storm conditions.

At the end of February 2018, NYSEG/RGE had performed three Exceed on Demand (EOD) tests with 80 users logged on simultaneously, which was not enough to support the number of users on the system during the Winter Storms Riley and Quinn.[110] While capable of simulating a larger event using Superstorm Sandy and the 2017 Windstorm data, NYSEG/RGE did not do so.[111] Staff recommends that the utilities should investigate and implement different kinds of tests or storm simulations on OMS and

[109] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, NYSEG/RGE April 4, 2018 Windstorm Part 105 Report (filed June 6, 2018) p. 74.

[110] NYSEG/RGE response to DPS-108, Q-4.

[111] Id., Q-1.

revise system stress tests to incorporate the maximum allowed users and account for the increased data flow between OMS and smart meters, SCADA system, and all other applications and databases simultaneously. Otherwise, IT systems would be ineffective and may even be rendered useless if they are unable to support the volume of data exchange taking place during major storm events. The simulations should not only recreate previous storm scenarios, but also, be developed based on new data impacting various portions of their service territory.

Recommendation 19	All electric utilities develop appropriate error messages that will inform customers when there is an issue due to its OMS or other IT applications and direct them to alternate ways to report an outage or obtain additional information. The ERPs will incorporate this change.
Recommendation 20	All electric utilities establish a mechanism—which will include additional monitoring resources and, if feasible, automatic error flagging—to alert operators of lockups or other anomalies and validate data between various systems during a storm event.
Recommendation 21	All electric utilities run diagnostic testing and stress tests of their OMS and create backup procedures to check that OMS is accurately providing updated information. The stress tests shall incorporate the maximum allowed users and account for the increased data flow between OMS and smart meters, SCADA system, and all other applications and databases simultaneously.
Recommendation 22	All electric utilities modify their ERPs to require, on a semi-annual basis, a stress test be performed, the OMS logic rules are reviewed, and training requirements for OMS users occurred.

4.5. Estimated Time of Restoration

Estimated Time of Restoration (ETR) is the approximate date and time an electric utility expects service will be restored after a power outage. Customers depend on ETRs to make health and safety decisions. This includes determining the need for alternative accommodations, ensuring adequate resources and supplies are available during extended outages, and addressing any medical needs. Municipalities rely on ETRs to plan properly for the care and safety of people and protection of property.

The State Emergency Operations teams need accurate ETRs to inform the deployment of assets that may be needed, such as generators for critical infrastructure. The main factors considered when determining an ETR include the number and type of resources available to make repairs; the type and extent of the damage; weather conditions; the ability to access the area damaged; priority of the work; and the type of repair that will be made.[112] To be informative, the ETRs must be timely, accurate, and made widely accessible. To ensure accessibility, the utilities communicate ETRs through their websites, call centers, press releases, municipal calls, emails and text messages, automated calls, municipal liaisons, and through other customer touch points.

Staff found that for the 2018 Winter and Spring Storms, all the utilities published ETRs timely; however, the accuracy of the ETRs provided varied by storm and by utility, diminishing the usefulness of issuing the ETRs. Customers expressed frustration and confusion over inaccurate and frequently changing ETRs. Since power outages can mean no heat, customers also were exposed to an unsafe situation when electric utilities missed their published ETRs. Municipalities stated that not knowing the duration of the power outage stalled their capability to provide warming stations, water, ice, and other emergency services to its residents, many reporting they lost trust in the ETRs provided by Con Edison and NYSEG. Telecommunications providers also indicted that their response was delayed due to the quality of ETR information from electric utilities; however, Staff did not find the telecommunications providers proactively trying to obtain more information to facilitate their restoration efforts given the lack of accurate ETRs.

Following Superstorm Sandy, the Commission adopted ETR Protocols that are activated when more than 5,000 customers are out of service in a division or more than 20,000 customers are out

[112] In limited circumstances, utilities may use temporary repairs to quickly restore service, however, these are not considered long term solutions and require permanent repairs following full restoration.

of service companywide for more than 30 minutes.[113] As the restoration progresses, and additional information is known, it is expected that ETRs will be refined to provide restoration times for smaller and smaller geographic areas. The ETR Protocols include minimum requirements for when, and at what level of detail (global, regional, or local) an ETR should be communicated to the public, based on the forecasted outage duration.[114] A global ETR is often the first ETR provided to the public and represents when 90 percent of the customers will be restored across the utility's service territory. It is based on an initial and quick assessment of the work needed to restore service to customers and the number of resources immediately available and those expected to arrive. Regional ETRs are used to distinguish harder impacted areas from those geographic areas that will be restored earlier than the global ETR. Local ETRs are even more refined and reflect restoration at the town level. The local ETRs are often based on detailed damage assessment information in a locality and the priority level of the restoration work identified. As the ETRs become more granular, towns and counties can refine their response plans needed to support residents accordingly. Utilities also develop and place job-specific ETRs on their websites when crews are on location or scheduled to be on location at a known time.[115]

[113] Case 13-E-0198, In the Matter of 2013 Electric Emergency Plan Review, Order Approving Electric Emergency Plans (issued August 16, 2013) Appendix 1, pp.14-15. Prior to Superstorm Sandy, the protocol was a guideline that utilities followed.

[114] For events expected to last 48 hours or less, the electric utility is to provide within the first 6 hours of restoration any available information to the public; within the first 12 hours of restoration provide a global ETR and available regional ETRs; and within the first 18 hours of restoration establish and communicate ETRs for each locality affected. For events expected to last more than 48 hours, the electric utility is to communicate ETRs within the first 24 hours of restoration, where known, on a general geographic basis; within the first 36 hours of restoration for storms with expected restoration periods five days or less, provide a global ETR and establish regional/county ETRs for areas expected to be restored in five days, even if the companywide restoration period is expected to be more than five days; within the first 48 hours of restoration for storms with expected restoration periods five days or less, provide global ETR and municipality level ETRs, provide regional and county ETRs for heavily damaged areas where large numbers of customers are expected to remain without service for five or more days; and beyond the first 48 hours of restoration for storms with expected restoration periods more than five days, provide ETR for each locality affected.

[115] Job-specific ETRs apply to all customers who lost electricity due to the same root cause. For example, all customers who lost electricity due to damage to one device are all captured under one job and provided one job-specific ETR.

One of Staff's findings centers around the public's confusion regarding the meaning of global, regional, and local ETRs. One reason for this confusion is the utilities' neglect to clearly indicate whether ETRs populating their outage maps were global, regional, local, or job-specific. In addition, utilities use various geographic areas to represent regional and local ETRs. Typically, the ETR information aligns with the impacted area and the sequence in which the utility's restoration efforts are being managed, such as by operating area, division, or load area.[116] However, a utility's operating area or division may include multiple counties or parts of a county and the utility load area may include multiple towns or parts of a town. As a result, the communication of ETR information by the utility operating area, division, or load area does not provide clear information to the public. By doing this, the utilities incorrectly assume the public has a full understanding of the geographic boundaries of the utilities' operating areas, divisions, and load areas. This method of presenting ETRs also hinders the ability of municipal officials to have an overall view of the ETRs for their municipalities. Therefore, utilities should use municipal geographic areas when presenting their regional, and local ETR information.

Recommendation 23	All electric utilities develop procedures to have prominent language displayed on its outage map website that explains to customers what is meant by a global, regional, local, and job-specific ETR.
Recommendation 24	The electric utilities update ERPs to provide regional ETR information on a county basis and provide local ETR information on a town/municipality basis.

4.5.1. Customers Represented within an ETR

According to the current protocols, ETRs should be applicable to at least 90 percent of the affected customers and provided on a global, regional, and local level. For significant outage events, like those being investigated, the utilities are required to determine and make global ETRs available as soon

[116] For example, during Winter Storm Riley, the regional ETR communicated for Westchester covered both the Bronx and Westchester portions of Con Edison's service territory.

as practicable and within the first 36 hours of the restoration period. During the White Plains Public Statement Hearing, it was stated that the Commission provides too much leeway by allowing electric utilities to provide ETRs for 90 percent of customers.[117] While utilities may have communicated that the ETRs do not account for all customers that lost power in their press releases, customers not restored by the global ETR target expressed frustration and confusion regarding the purpose of communicating an ETR. Staff agrees that this is a problem and it must be addressed.

The electric utilities indicated it would be difficult to adhere to the timeframes discussed in the ETR Protocol if they had to develop an ETR that represents more than 90 percent of customers restored and would meet our expected accuracy levels.[118] This is mainly due to the limited damage assessment information available at the time of ETR publication. The utilities also stated providing ETRs based on a percentage greater than 90 percent of customers restored may result in many customers receiving longer estimated outage durations than what may occur.[119] NYSEG/RGE added that for events lasting longer than five days, ETR targets become increasingly more difficult to accurately calculate.[120]

While it is true that damage assessment plays a key role in refining restoration times and issuing accurate ETRs, utilities should be able to obtain sufficient information by the time regional and local ETRs need to be issued to allow for a greater percentage of customers to be covered by the ETRs. Communicating regional and local ETRs based on 90 percent of customers impacted means that a sizable number of customers are not being represented. For example, during Winter Storm Riley, approximately 73,000 Con Edison customers lost service in Westchester County; ten percent of this equates to not providing ETR information for potentially 7,300 customers. The electric utilities are expected to refine

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[117] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Public Statement Hearing Transcript April 24, 2018 6PM - White Plains (filed May 3, 2018) p. 35.

[118] PSEG LI's response to DPS-87, NYSEG RGE's response to DPS-125, Central Hudson's response to DPS-94, and National Grid's response to DPS-90.

[119] NYSEG/RGE's response to DPS-125, Central Hudson's response to DPS-94, Con Edison's response to DPS-112, Orange & Rockland's response to DPS-99, and National Grid's response to DPS-90.

[120] NYSEG/RGE's response to DPS-125.

their ETR process and assessment processes to identify and incorporate information that will enable the utilities to issue accurate ETRs for nearly all customers. Therefore, going forward, the regional and local ETRs should be applicable to approximately 95 percent of the affected customers in the reported level. Given detailed damage assessment is not performed initially, we feel it is appropriate to issue the Global ETR using the 90 percent factor. Utilities may need to refine the regional and local ETRs based on changing weather conditions, unexpected problems that may arise, the availability of crews, and/or specialty crews or equipment needed for repairs. Additionally, once all regional ETRs have been provided, the global ETR is no longer necessary, and utilities should be referring to their longest regional ETRs to describe when customer restoration on a companywide level will occur when issuing press releases or other communications regarding ETRs.

Recommendation 25	For outages expected to last longer than 48 hours, all electric utilities will provide regional and local ETRs applicable to 95 percent or more of the affected customers and eliminate references to communicate the global ETR once all regional ETRs have been issued. The ERPs will reflect this modification.

4.5.2. Accuracy of Estimated Restoration Times

A common theme heard as part of Staff's investigation was that the ETRs provided were inaccurate and/or misleading. Comments during the Senate Hearing for the Hudson Valley Area, Public Statement Hearings, municipal interviews, and the United Westchester Report focused on NYSEG and Con Edison. [121, 122, 123, 124, 125, 126] A few concerns, mostly by municipalities in Sullivan County, related to the accuracy of ETRs published by Orange & Rockland. Staff found that municipalities were generally pleased

[121] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Public Statement Hearing Transcript April 25, 2018 2pm - Monticello, filed May 3, 2018, p. 28.

[122] Case 19-M-0285, supra, Public Statement Hearing Transcript April 25, 2018 6pm - Monticello, filed May 3, 2018, p. 11.

[123] Case 19-M-0285, supra, Public Statement Hearing Transcript April 25, 2018 6pm - Monticello, filed May 3, 2018, p. 16.

[124] Case 19-M-0285, supra, Public Statement Hearing Transcript April 26, 2018 2pm - Carmel, filed May 3, 2018, pp. 50-51.

[125] Case 19-M-0285, supra, Public Statement Hearing Transcript April 23, 2018 2pm - Larchmont, filed May 2, 2018, p. 33-34.

[126] Case 19-M-0285, supra, Public Statement Hearing Transcript April 23, 2018 6pm - Somers, filed May 2, 2018, p. 77.

with Central Hudson providing honest and accurate ETR information through an open communication line. Comments were either not provided or were very limited for National Grid, PSEG LI, and RGE. A municipality also stated there was an improvement in the accuracy of Orange & Rockland ETR information during the May Thunderstorm compared to Winter Storms Riley and Quinn.

At the Pound Ridge hearing, a municipal representative stated they told residents not to look at the NYSEG website and to instead reach out to the municipality for more accurate power restoration progress.[127] A similar example was heard at the Monticello hearing when a public official stated one of her most important and tedious jobs was to dispel incorrect information being shared with residents from their utility providers, especially regarding NYSEG's unrealistic ETRs. In addition, complaints were made about customers receiving ETRs that were repeatedly being extended. [128, 129] During other public forums such as the Senate Hearing for the Hudson Valley Area; the Con Edison Municipal Outreach Event; the public forum hosted by Senator Murphy and Assemblyman Byrne; and municipal interviews conducted by Staff, there were similar comments regarding ETRs. [130, 131, 132] In these forums and municipal interviews, it was stated that ETRs were unrealistic, inaccurate, and frequently changing; there is a need to review job-specific ETRs, and outdated ETRs frustrated customers and hindered municipalities' capability to meet the needs of residents during an extended outage. The United Westchester Report states that NYSEG's ETR algorithm does not work in a mass outage event and there

[127] Case 19-M-0285, supra, Public Statement Hearing Transcript April 24, 2018 2pm - Pound Ridge filed May 3, 2018, p. 65.

[128] Case 19-M-0285, supra, Barbara Pollack, Comment No. 58, Posted April 24, 2018.

[129] United Westchester March 2018 Storm Response Report, p. 41.

[130] See https://www.nysenate.gov/calendar/public-hearings/March-27-2018/joint-public-hearing-evaluate-reason-behind-widespread-1

[131] On April 12, 2018, Con Edison invited leaders from all Westchester municipalities and related elected representatives to its Rye Headquarters to participate in a Post Storm Review of Winter Storms Riley & Quinn.

[132] On April 19, 2018, Senator Terrence Murphy and Assemblyman Kevin Byrne hosted a public forum with Con Edison and NYSEG in Somers, New York for residents to speak to the utilities regarding their response to Riley and Quinn.

should be more transparency about the formulas used.[133] Westchester municipal officials stated in the report that it is better to state up front power will not be restored until a few days or to not provide an ETR, rather than establishing an inaccurate ETR and pushing it back in small increments. The United Westchester Report also stated that it would be helpful to understand what level of importance the Commission and the utilities put on local ETRs since many were not met. [134]

For Winter Storm Riley, NYSEG issued a global ETR for midnight, March 5, 2018, however, NYSEG extended this ETR by 24-hours on March 5, 2018 upon recognition of the severity of damage to its infrastructure and work required to complete repairs. Additionally, NYSEG missed its regional ETRs in Sullivan, Westchester, Yates, and Ulster Counties by as much as 24 to 32 hours after the published estimate. NYSEG also missed the regional ETRs in lesser impacted areas such as Broome, Tompkins, and Tioga Counties, although to a lesser extent than the previously listed counties. NYSEG and Con Edison had difficulties meeting both the local and job-specific ETRs during Winter Storms Riley and Quinn. Con Edison acknowledged in its Part 105 report that the accuracy of information provided to customers was an issue and stated that it plans to improve upon how it develops and issues job-specific ETRs by incorporating findings from its customer outage journey mapping initiative, improving the accuracy of its OMS model used to predict customer outages and restorations, integrating smart meter and feeder switch status information in its OMS, and doing an overall assessment of its OMS to find ways to improve its reliability and performance.[135] During the May Thunderstorm, NYSEG missed the regional ETR for Putnam County by approximately one and a half days and the regional ETR for Dutchess and Westchester Counties by approximately one day. Considering NYSEG's subpar performance associated with ETR accuracy and the amount of complaints received regarding its ETRs, it was surprising to see that NYSEG

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133 United Westchester March 2018 Storm Response Report, p. 42.

134 United Westchester March 2018 Storm Response Report, p. 43.

135 Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Consolidated Edison Company of New York, Inc. Report on Preparation and System Restoration Performance - Winter Storms Riley and Quinn March 2018, Part 105 Report (filed May 14, 2018) pp. 80-81.

did not indicate ETR development as an area needing improvement in its Winter Storms Riley and Quinn Part 105 report.[136] Staff also expected more emphasis placed on ETR accuracy within NYSEG's Part 105 report for the May Thunderstorm. NYSEG simply stated they will continue to review the internal and external ETR communication processes along with the ETR setting and resource deployment processes to determine ways to refine ETR management and review.[137] Because Con Edison and NYSEG were unable to provide accurate ETRs during Winter Storms Riley and Quinn, Staff found the utilities violated Sections VII(b) and 8.2.1 of their ERPs, respectively. NYSEG also committed the same violation during the May Thunderstorm.

Historical data from similar events should be used to help establish an expected average repair time that account for weather, travel delays, or site conditions. The average repair time is then used as a basis to determine ETRs along with other variables such as resource levels. PSEG LI indicated it uses its OMS to generate ETRs and also applies a multiplier to account for variances from blue sky conditions, including travel time. During Winter Storms Riley and Quinn, NYSEG/RGE did not account for variable conditions by considering its performance in historical events, nor did it follow its ERP that was modified following the 2017 Windstorm Report, which incorporated the use of a multiplier to help develop ETRs when damage assessment is not complete.[138] Instead, NYSEG/RGE depended on the experience of the personnel in charge to determine the repair time for its jobs despite changes made in its ERP.[139] The failure to use the multiplier is especially concerning considering one of the two employees typically used to fill the position of Area Commander was involved in the development of the modified procedures; the other Area Commander however, was on duty during Winter Storms Riley and Quinn.

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136 Case 19-M-0285, supra, New York State Electric & Gas and Rochester Gas & Electric Emergency Response Performance Assessment Part 105 Report March 1 and March 7, 2018 Nor'easters (filed May 11, 2018) pp. 108-109.

137 Case 19-M-0285, supra, New York State Electric & Gas Rochester Gas and Electric Emergency Response Performance Assessment Part 105 Report, May 15, 2018 Thunderstorm (filed June 21, 2018) p. 66.

138 NYSEG/RGE's response to DPS-103.

139 Interview of NYSEG and RGE on ETR, July 30, 2018.

While we found it appropriate to use historical data as a proxy, it was noted that many utilities do not have a set process for verifying, after a major outage event, if the assumptions used during the storm to determine ETRs were valid or if additional adjustments are needed. For example, Con Edison was not able to state if the assumed job completion time it used remains valid for all associated jobs during a major storm, or how it compared to its actual performance after Winter Storms Riley and Quinn.[140] NYSEG/RGE also did not have a process in place to compare the assumptions made in its ETR spreadsheet to its actual performance.[141] Insufficient historical analysis and failing to evaluate recent events prevent utilities from identifying problem areas and developing solutions. Going forward, a review of the effectiveness of the assumptions used should occur after storm events.

Another point of frustration raised because of inaccurate ETRs was that the utilities did not provide an updated ETR prior to the expiration of the published ETR or the ETR was updated slightly before it expired. During the Somers Public Statement Hearing, residents complained that Con Edison would not provide an updated ETR until hours after the original ETR passed.[142] Similarly, Carmel residents stated that it was frustrating to be told an ETR of 48 hours and then have the ETR change right before the deadline.[143]

Staff found that Con Edison and NYSEG/RGE can improve performance by establishing predetermined timeframes for ETRs to be reviewed for accuracy and updated as necessary, a practice done by Central Hudson.[144] The use of the predetermined timeframes supports customers being notified of a change in the ETR hours prior to its expiration and ensures there is an alignment between published ETRs and restoration work scheduled to be completed each day. Central Hudson specifically requires ETR

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140 Interview of Con Edison on ETR, July 31, 2018.

141 Interview of NYSEG and RGE on ETR, July 30, 2018.

142 Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Public Statement Hearing Transcript April 23, 2018 6pm - Somers, filed May 2, 2018, p. 47.

143 Case 19-M-0285, supra, Public Statement Hearing Transcript April 26, 2018 2pm - Carmel, filed May 3, 2018, pp. 33-34.

144 Case 17-E-0758, In the Matter of the December 15, 2017 Electric Emergency Plan Review, Central Hudson Gas & Electric Emergency Plan (filed December 15, 2017) pp. 38-40.

updates by 8:00 AM and 4:00 PM each day based on changes in restoration forecasts and having the managers of outage jobs communicating if jobs will likely exceed the published ETR. Staff found the morning and afternoon updates worked well to keep customers and municipalities informed and provided time for them to make any necessary arrangements based on the updated information.

Recommendation 26	All electric utilities develop a post restoration review process to assess the accuracy of ETRs provided and implement corrective measures that may result from the review.
Recommendation 27	NYSEG/RGE establish several conditioned-based expected repair times for incidents and broken poles based on historic performances for use in its ETR calculator spreadsheet going forward.
Recommendation 28	The electric utilities update their ERPs and procedures to denote the implementation of a daily predetermined timeframes for when ETRs will be reviewed and updated.

4.6. Restoration Process

4.6.1. Processing and Deployment Activities

During the restoration phase after a storm event, utilities use multiple types of crews to repair the electric infrastructure. While each utility has various names to describe its field crews they generally fall into three categories: line, service, and tree crews. Line crews repair overhead high voltage, primary, and secondary sections of distribution circuits. Their activities include repairs to equipment and clearing of downed wires and other electrical hazards. Service crews perform low voltage or secondary work, including repair of service equipment such as meters or service lateral and reconnection of power to individual customers. Tree crews cut or clear damaged trees from distribution lines to provide access for line crews to repair the infrastructure. To ensure effective and efficient restoration, each utility should optimize the use of these skilled workers and avoid using them in other storm roles that require other specialized skills such as flaggers, crew guides, and wire guard resources. Additionally, line, service, and

tree crews should be properly managed by operating supervisors to make sure that restoration work is assigned to crews with the appropriate skills.

The integration of external crews in response to a large or major storm event, typically referred to as on-boarding, is a common utility practice. This practice ensures that external crews gain the basic knowledge of the host utility's electric system and encourages a safe work environment during the restoration period. Effective on-boarding requires utilities to provide external crews with adequate materials, technical specifications, design practices, and safety briefings. The host utility also designates crew guides to lead and provide logistical support to external crews and aid in navigating the utility's service territory.

In response to Winter Storms Riley and Quinn and the subsequent storms investigated. Staff found that on-boarding external crews entailed processing and integrating the crews as they arrived at staging areas. The on-boarding processes were similar across the utilities and included an initial check-in of crews and safety briefings by the utilities' safety resources. The utilities had adequate staffing to give these briefings to external crews. Most of the briefings were done at staging areas, but there were instances when utilities dispatched safety representatives to specific locations, such as the hotel where line workers were staying, to expedite the on-boarding and/or restoration process. The initial on-boarding was done effectively by all the utilities.

In addition to the initial on-boarding of external crews, the utilities also ensure that internal and external crews complete pre-deployment activities as part of the daily morning dispatch. Due to the number of external crews a utility receives during an event, the utility's ability to process these crews daily may be challenging, and this might impact the timely deployment of crews from staging areas to field locations. Following Winter Storms Riley and Quinn, Westchester residents and local officials expressed their frustrations regarding the inefficient dispatching of Con Edison and NYSEG crews. There were

multiple reports of crews and vehicles parked and waiting instructions from Con Edison or NYSEG command centers at various locations in Westchester and Putnam Counties.[145]

During the daily morning dispatch, each utility used different processes for integrating crews into the restoration effort. Internal and external crews were not processed in the same way. In responses to Staff interrogatories, Con Edison indicated that all external crews were dispatched daily from the Playland Park in Rye (Rye Playland), which is in the southeastern part of Westchester County.[146] Even though Con Edison had the ability to establish more staging areas in Westchester, this was the only staging area Con Edison used. On average, it took approximately three hours for external crews to complete various pre-deployment activities from the time they left their hotels to the time they were dispatched to work locations.[147] This time seems excessive considering Con Edison's internal crews completed daily pre-deployment activities in about one and half hours. During Winter Storms Riley and Quinn, the external crews working in Central Hudson and PSEG LI's service territories generally arrived at the work locations within an hour of leaving their hotels. Central Hudson's and PSEG LI's internal crews spent approximately one hour each day performing pre-deployment activities, including loading materials, assigning work, and traveling to work locations.[148] Pre-deployment activities for Orange & Rockland's and NYSEG's external crews were completed between one and one and one-half hours.[149] National Grid did not provide a detailed timeline of activities but indicated that internal and external crews typically have similar activities and timelines, the only difference being the locations where crews are dispatched. A specific staging area was not activated by National Grid during any of the 2018 Winter and Spring Storms; crews were dispatched from their hotels.

[145] United Westchester March 2018 Storm Response Report, p. 9 & p. 23.

[146] Con Edison's response to DPS-41.

[147] These daily activities included travel time from hotels to Rye Playland, breakfast, job briefing, and material loading.

[148] PSEG LI's response to DPS-79, Central Hudson's response to DPS-85.

[149] Orange & Rockland's response to DPS-35, NYSEG/RGE's response to DPS-35.

In most cases, external and internal crews received daily work assignments from their crew leads at the work locations or staging areas; and picked up materials at staging areas, pre-established material laydown areas, or at other utility facilities. As previously stated, Con Edison dispatched all external crews from the Rye Playland in southern Westchester County. Staff found Con Edison realized efficiencies by having internal crews deployed from multiple locations, typically the operation centers where internal crews are stationed, and equipment is stored. Despite having the ability to activate more than one of its pre-identified staging areas after Winter Storms Riley and Quinn, Con Edison elected not to do so, resulting in longer processing times and slower morning deployment of external crews compared to its internal crews and other utilities' crews. Con Edison's internal crews and other utilities' crews were deployed faster because they were dispatched from multiple locations, which reduced waiting time and required less travel time to their work locations. Staff found that Con Edison should thoroughly analyze its processing of external crews at multiple staging areas and look for improvement opportunities that can streamline the morning deployment process. The analysis should include benchmarking against other New York utilities and industry best practices, that will facilitate a more expeditious and effective use of external crews. For events below a category 3A/full scale that do not require a substantial number of external crews, it is appropriate for Con Edison to activate one staging area. However, for category 3A/full scale and above, Con Edison should activate several staging areas throughout Westchester County. Depending on the size of the event, Con Edison should have a process to determine whether all locations should be fully equipped with materials to enable crew deployment out of these locations.

Westchester municipal officials observed a lack of coordination between restoration crews during Winter Storms Riley and Quinn and requested that Con Edison establish a staging area in Northern Westchester County to improve these coordination issues.[150] When interviewed, Westchester officials discussed a plan where Westchester County could be divided by major routes into quadrants. This is feasible considering Con Edison's practice of establishing restoration cells to manage crews and divide

[150] United Westchester March 2018 Storm Response Report, p. 28.

restoration work along specific circuits and boundaries in Westchester County. Con Edison's experience with the restoration cells will make it easier for Con Edison to divide its system and select key locations in each quadrant for optimal dispatching of external crews. Staff finds that Con Edison should coordinate with Westchester County to set up three additional staging locations, in addition to Rye Playland, in the other three established quadrants. This will facilitate faster processing of external crews from staging areas, more efficient morning deployment, and faster responses to impacted areas because the external crews will have shorter travel times.

Regarding NYSEG's pre-deployment activities of internal crews, Staff found that local internal crews were allowed to have breakfast after they received their job briefings in the Brewster and Liberty divisions. Staff observed this practice during field observations in Putnam County where internal crews went from dispatching centers to local restaurants after receiving assignments. This is not a best practice during emergency restoration. Although it is a common practice at NYSEG during storm and non-storm days, it is inefficient, likely slows down restoration activity, and gives the impression to the public that crews were not being dispatched and used effectively, and it should be stopped during emergency response. Internal crews should have breakfast prior to receiving job briefings and assignments to enable more efficient deployment.

Recommendation 29	Con Edison examine the way in which external crews are processed at staging areas and look for improvement opportunities that can streamline the pre-deployment activities during the daily morning dispatch. Con Edison's ERP will include all identified improvement opportunities.
Recommendation 30	In addition to the Rye Playland staging area, Con Edison, in consultation with Westchester County, establish three additional staging areas. The locations shall be geographically diverse to facilitate daily morning deployment of external crews in each of the four Westchester County quadrants and be included in Con Edison's ERP.
Recommendation 31	During emergency restoration all field crews report directly to their assigned work location after receiving their job briefings and assignments.

4.6.2. Resource Management

In response to large or major storm events, utilities rely on internal, contractor, and mutual assistance crews to repair damaged electric infrastructure and restore power to customers. The uncertainty in knowing when external crews will arrive in the impacted areas after secured is a key reason why utilities must efficiently and effectively use on property internal and contractor resources. Pre-established plans and guidelines can facilitate the management of these crews; on the other hand, the improper use of crews and the lack of careful planning can significantly delay the restoration process. In accordance with Part 105, utilities are required to identify in their emergency response plans, the procedures for deploying utility and mutual assistance resources to work assignment locations and monitoring crew activity.[151] These procedures are generally discussed in the utilities' ERPs filed annually with the Department. Therefore, Staff's investigation evaluated the utilities' dispatching, deployment, and crew management procedures.

Staff's review of NYSEG and Con Edison's on-property overhead line FTEs during Winter Storms Riley and Quinn shows that the utilities were highly dependent on external resources to perform emergency response activities. As discussed in the previous section, the majority of the line FTEs used by NYSEG were from outside resources. At the start of restoration on March 2, 2018, NYSEG had 516 line FTEs, which included 314 internal line FTEs and 202 external line FTEs. NYSEG peaked at 1,306 line FTEs on March 6, 2018; with 989 external line FTEs on-property. In the Brewster division, NYSEG had only 32 internal line FTEs and 32 external line FTEs available to work on March 2, 2018. The Brewster division peaked at 579 external line FTEs on March 7, 2018. Internal line FTEs peaked at 91, due to reallocation from other NYSEG Divisions on March 6, 2018. Similar to NYSEG, on March 2, 2018, Con Edison had 110 line FTEs available to restore power in Westchester County; including 76 internal line FTEs from the Bronx/Westchester division, 14 internal line FTEs from the Staten Island division, and 20 external line FTEs.

[151] 16 N.Y.C.R.R. Part 105.4(b)(7).

Con Edison peaked at 1,210 line FTEs on March 10, 2018; with 1,044 external line FTEs in Westchester County.

With the exception of Orange & Rockland, the other utilities fared better supplementing internal line FTEs with external FTEs. Orange & Rockland had 123 line FTEs system wide, which included 93 internal line FTEs and 30 external line FTEs. Orange & Rockland's FTE count peaked at 594 line FTEs system wide on March 12, 2018, five days after Winter Storm Quinn; with 458 external line FTEs on-property. On March 2, 2018, Central Hudson had 106 internal and 41 external line FTEs available. Central Hudson increased its line FTEs each day peaking on March 5, 2018 with 111 internal line FTEs and 409 external FTEs. Central Hudson had over half of the peak FTEs available within two days of the start of restoration. On March 6,2018, Central Hudson started releasing line FTEs to assist other utilities. At the start of restoration on March 2, 2018, PSEG LI had 526 line FTEs available and reached a peak of 609 line FTEs on March 3, 2018. Between Winter Storms Riley and Quinn, PSEG LI sent line FTEs to assist other New York utilities' restoration efforts. National Grid had 797 internal line FTEs available on March 2, 2018 and peaked at 848 line FTEs on March 4,2018 with 51 external line FTEs on-property. National Grid began to send FTEs to support NYSEG, Con Edison, and Central Hudson's restoration efforts on March 5, 2018. RGE's peak of 133 line FTEs was on March 2, 2018, the first day of restoration. Approximately 60 percent of these were internal FTEs.

In the first few days following Winter Storm Riley, both Con Edison and NYSEG could only address a limited number of the known issues because they did not have enough resources available in the impacted areas. It took days for Con Edison to have sufficient line FTEs that were needed to effectively perform repairs in Westchester County. NYSEG also had difficulty getting sizeable numbers of line FTEs in the Brewster division. While it is not reasonable to expect the utilities to have, as part of their daily workforce, the number of FTEs required at the peak of emergency response restoration, Staff finds that both utilities would have performed better at the start of restoration if they had more internal line FTEs available. With approximately 100 internal FTEs available at Con Edison and approximately 300 at NYSEG

on the first few days of restoration, it took time for the secured external resources to arrive at the utilities' locations, which ultimately resulted in delayed responses by the utilities in the impacted areas.

Each utility has a unique structure or name for the group responsible for dispatching crews to field locations and managing work activities. Con Edison used restoration cells, Orange & Rockland dispatched through its system emergency restoration team, NYSEG/RGE used circuit information coordinators and field circuit coordinators, and dispatchers from the storm room and control centers dispatched work at Central Hudson, National Grid, and PSEG LI. During emergency response when there are large contingents of internal and external crews working in a utility's service territory, effective communication between these field crews and the utilities' dispatching groups is paramount to minimize delays in restoring power to customers. As an example, a common industry practice is for the utilities' control centers to direct field crews to isolate damaged sections of a circuit and perform equipment switching to re-route power to impacted customers; thus, the utilities' control centers or dispatching groups must identify equipment switching appropriately and relay this information to field crews in a reasonable time.

Work assignments, commonly referred to as work packages, are developed by the utilities' planning sections and distributed to restoration crews each day. The utilities use work packages to prioritize the management of repair activities, ensure that crews have proper assignments, and track the progress of restoration work. In developing work packages, the utilities consider outages reported, damage assessment information provided by field resources, and critical facilities impacted. The work packages were developed during the night and distributed to crews during the next morning's operational period. Electric circuit maps, description and location of damages, and outage information were included in the packages. These packages were prioritized in accordance with the utilities' procedures.

Crew guides facilitated the distribution of work packages from the dispatch centers to external crews, acted as the conduit for communication between these centers and the crews, and procured materials for crews. The crew guides and external crew leads generally discussed job

assignments prior to dispatching crews to the field. The crew guides reported restoration information or progress made by external crews mainly by calling dispatchers. They remained in the field with the crews during an entire work shift and ensured that completed work packages were returned to the dispatch centers with the necessary updates. NYSEG's crew guides, also known as field circuit coordinators, were responsible for providing logistical support to external crews, navigating external crews through NYSEG's territory, and managing restoration activities. This added responsibility of managing restoration activities, is a good practice because, if done properly, it can facilitate effective coordination of work between the field crews and command centers. Additionally, having crew guides managing a circuit adds another degree of safety for crews working on the system because the crew guide has full control of the circuit and can coordinate switching moves with crews while on site. This can avoid delays and confusion that might occur when crews are dealing with the control center. Regarding the coordination of work assignments for internal crews, the utilities used line foremen and supervisors, and the processing of work packages was similar to the crew guide scenario.

During Staff's investigation, two common trends were identified across all the utilities regarding the distribution of work packages and the use of crew guides. The utilities created work packages during the night shift, and these packages were delivered to external crews the following morning by a crew guide. Staff found there were some delays because the crew guides had to travel to the dispatch centers to obtain work packages prior to traveling to where external crews were dispatched or actual work locations. During smaller events, this process is not a cause of concern but, in cases like Winter Storms Riley and Quinn, these delays are more significant and can have considerable impacts on restoration efforts. To the extent that other support resources can deliver work packages to external crew leads at their hotels first thing in the morning and crew guides can provide job briefings to crews at the work locations, the utilities should implement these practices to create efficiencies and minimize delays. The work packages should be delivered in this manner during major events to streamline the package distribution process.

Most of the utilities did not have enough local resources to perform crew guide duties and instead relied on internal resources from other regions to perform these duties during Winter Storms Riley and Quinn. As stated in responses to Staff interrogatories, Orange & Rockland was the only utility that exclusively used local crew guides during Winter Storms Riley and Quinn. [152] Con Edison indicated that most of the crew guides who were working in Westchester from March 5 to March 12, 2018 were from other operating divisions within the utility. NYSEG's response revealed that most of the crew guides were working in their local areas except for the Brewster division where several crew guides were from other NYSEG divisions. Compared to Con Edison, who is able to move crews effectively because its service territory is small and contiguous, NYSEG has a large service territory and its Brewster division is non-contiguous to the rest of NYSEG's territory. Given the additional responsibilities that crew guides have to perform, knowledge of the electrical system and local area is critical. Hence, having crew guides from other divisions performing work in the Brewster division was not effective.

Central Hudson could not provide the number of crew guides in each of their districts, stating that this information is no longer available. PSEG LI also did not provide this information, indicating that crew guides are not assigned by area but are based on external crew assignments. Because National Grid experienced a greater impact from the storms that occurred on April 3, April 14, and May 4, 2018, Staff's investigation focused on these events. Staff's investigation found that most of the crew guides used by National Grid were from outside areas during all three events. Even though crew guides' familiarity with their assigned area is not a requirement, local knowledge can be beneficial by minimizing delays when external crews are navigating during events with significant road closures.

Recommendation 32	To minimize delays in getting work packages to crews, all electric utilities use field support resources to deliver work packages to external crew foremen at their hotels in the early morning and crew guides provide job briefings to mutual assistance and contractor crews at the work locations.

[152] Con Edison's response to DPS-97, National Grid's response to DPS-75, PSEG LI's response to DPS-75, Central Hudson's response to DPS-80, Orange & Rockland's response to DPS-84, and NYSEG/RGE's response to DPS-104.

Recommendation 33	Con Edison, NYSEG, and Central Hudson identify more local resources with the necessary skills that can be used to perform crew guide duties.
Recommendation 34	All electric utilities identify the feasibility to contract with third parties that can perform crew guide functions and modify their ERPs on how to access these resources.

4.6.3. Utilization of Resources

Municipalities located in Westchester County were interested in knowing the number of crews that Con Edison and NYSEG assigned to each municipality, however, they stated that it was difficult for them to verify if the information provided was accurate.[153] Clarkstown and Columbia County officials had the same issue with Orange & Rockland and NYSEG, respectively. [154, 155] Most of the utilities could not provide meaningful data showing the total number of outage jobs assigned and whether those jobs were completed by utility, contractor, or mutual assistance resources during the restoration phase of Winter Storms Riley and Quinn as well as the May Thunderstorms. Only Central Hudson and Orange & Rockland provided a record of crew assignments completed by their field resources. Orange & Rockland also provided a record of outage jobs assigned to crews. Orange & Rockland attributed the discrepancy between the number of jobs assigned and completed to clerical issues and instances where outage jobs were combined in the field and completed as one large assignment.[156] As per Central Hudson's practice, the utility does not keep a record of all crew assignments, instead it only kept records of assignments completed.[157] Staff finds that the utilities should compile pertinent restoration information, including,

[153] United Westchester March 2018 Storm Response Report, pp. 27-30; Joint Letter of Westchester County Legislator Covill, p.1.

[154] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Public Statement Hearing Transcript April 24, 2018 2pm – Ramapo, filed May 8, 2018, p.20.

[155] Case 19-M-0285, supra, Public Statement Hearing Transcript April 17, 2018 2pm – Hudson, filed May 4, 2018, p. 11; p. 20.

[156] Orange & Rockland's follow up response to DPS-39.

[157] Central Hudson's response to DPS-35 and DPS-82.

but not limited to, the number of crews assigned on the town level to enable the utility's municipal liaisons to respond to questions.

Although most utilities could not provide detailed job assignment records, data provided by Con Edison, Central Hudson, National Grid and Orange & Rockland during Staff's investigation showed that these utilities maintained an orderly approach in responding to the most impacted areas immediately following Winter Storms Riley and Quinn and the May Thunderstorms. The utilities assigned crews to the impacted areas concurrently and whenever possible. The data also showed that Con Edison assigned crews to impacted areas faster after Winter Storm Quinn because the utility had more crews available as compared to the beginning of Winter Storm Riley. Comparatively, NYSEG could not provide the same level of granular information to Staff. NYSEG's inability to provide this information is a concern and an indication that it did not have good visibility of crew activities, nor did NYSEG maintain adequate records of work assignments during Winter Storms Riley and Quinn. NYSEG should consider using its OMS and crewing information to develop the tools that can facilitate the effective management and tracking of crewing activities during all events going forward.

The utilities claimed in interrogatory responses that it is challenging to provide meaningful data to Staff because there are circumstances during emergency response activities that make it difficult to credit each crew with completed assignments.[158] Particularly, in cases where smaller jobs are combined into a larger assignment in the field and completed as one job, when jobs are not associated with an OMS ticket, and when complex jobs are assigned and completed by multiple crew types during restoration. Staff also found that most of the utilities did not have adequate records of work assigned and completed by crew type after Winter Storms Riley and Quinn. Having comprehensive records of crewing activities would improve information sharing and coordination with local officials. Thus, each

[158] National Grid's response to DPS-35, PSEG LI's response to DPS-36, Orange & Rockland's response to DPS-39, NYSEG/RGE's response to DPS-39, Con Edison's response to DPS-45.

utility should maintain accurate records of crewing activities during an event for the circuits that are included in the restoration plan.

Recommendation 35	Using OMS and crewing information, NYSEG develop a process to automatically track crewing activities of internal, external, and contractor resources.
Recommendation 36	All electric utilities have readily available crewing information for all circuits being worked each day.
Recommendation 37	All electric utilities identify what work is occurring on a town/municipality basis to enable municipal liaisons to have better visibility on the restoration progress, which will improve communication and coordination with local officials and other stakeholders.

4.6.4. Coordination of Tree Crews

The electric utilities used various locations throughout their operating divisions to stage tree crews in areas that were impacted by the 2018 Winter and Spring Storms, and these crews were relocated as necessary. The procedure for dispatching tree crews was similar across all the utilities; at each utility, a utility tree management or line clearance supervisor coordinated tree-related assignments with the foremen of the tree crews. Progress updates were received via cell phone or through email communications. Central Hudson dispatched some tree crews to work directly with line crews and others were assigned to crew guides or dispatched to resolve tree conditions that did not necessitate line resources. Con Edison and NYSEG/RGE assigned some tree crews to work directly with line resources and others to resolve municipality or other tree related issues. National Grid, Orange & Rockland, and PSEG LI dispatched tree crews based on reported issues that necessitated tree resources. Work assignments were coordinated with line operations, and locations with damaged electric infrastructure were relayed to line resources. Additionally, the Orange & Rockland tree management group coordinated with the priority restoration group to address municipal issues. After the event restoration period, all the utilities directed tree crews to perform circuit sweeps or follow-up work on the circuits that were most impacted by tree-related issues.

During field observations in Putnam, Westchester, and Sullivan Counties following Winter Storms Riley and Quinn, Staff either observed or received complaints from residents regarding tree crews waiting extended time periods to receive work assignments from utilities. Thus, Staff finds that the electric utilities should ensure that consistent approaches are implemented by tree crew management and line operations to minimize delays in assigning tree crews.

Recommendation 38	All electric utilities develop best practices to ensure that tree crews are better aligned with line crews to minimize delays in clearing hazards prior to restoration activities.

4.6.5. Coordination with Telecommunications Providers

Utility poles that are damaged during storms typically have several types of attachments (electric wires and copper, coaxial, and/or fiber telecommunications lines). Because telecommunications providers are unable to work safely in an area with downed electric wires, unless those wires are confirmed to be de-energized by the electric utilities, coordination among these providers is necessary to restore all services safely and timely. After Superstorm Sandy, the electric utilities included information in their ERPs on communications and coordination with gas utilities and telecommunications providers.[159] Topics include the sharing of information such as critical facilities impacted, locations of crews, locations of outages, locations of wires down, generator locations, ETRs, crew progress, and corporate and local level contact information.

While each utility has a different system of managing coordination with other utilities, all of the utilities' ERPs include the process for information that can be shared. Central Hudson's ERP calls for the Public Information Officer and Liaison Officer to invite telecommunications providers to daily

[159] Case 13-E-0198, In the Matter of 2013 Electric Emergency Plan Review, Order Approving Electric Emergency Plans (issued August 16, 2013) p. 16-17.

Telecom Conference Calls, which are similar to its Municipal Calls.[160] Con Edison places the Utility Liaison with the responsibility of ensuring that information exchanges regarding restoration efforts, issues, or priorities, and sharing with other utilities damage assessment information, including wires down locations, based upon reports provided by Operations.[161, 162] National Grid and NYSEG/RGE state in their ERPs that the utilities should attempt to obtain assistance from telecommunications providers to install new poles and use various channels to exchange information, including crew locations and down wires. Orange & Rockland's ERP specifies that the Joint Use Group will coordinate installing new poles with telecommunications providers and use its OMS to identify locations of downed telecommunications wires and share the information with the appropriate provider.[163, 164, 165] PSEG LI's ERP stated that information, such as locations where electric and/or telecommunications facilities are interfering with other companies' restoration efforts, and joint efforts between electric utilities and telecommunications providers to install poles will be shared and coordinated through representatives at PSEG LI's operational centers.[166]

Staff's investigation determined that during Winter Storms Riley and Quinn, there was insufficient coordination and communication between the electric utilities and telecommunications providers regarding impact to the system, down wires, and pole installation activities. There were a few

[160] Case 17-E-0758, In the Matter of the December 15, 2017 Electric Emergency Plan Review, Central Hudson Gas & Electric Emergency Plan (filed December 15, 2017) p. 25.

[161] Case 17-E-0758, supra, Consolidated 2018 Emergency Response Plan (filed December 15, 2017) p. 73.

[162] Section 3.2 of "Attachment 2: Utility Liaison Program" in Case 17-E-0758, supra, Consolidated Edison 2018 Emergency Response Plan (filed December 15, 2017).

[163] Case 17-E-0758, supra, National Grid-New York Electric Emergency Response Plan (filed December 15, 2017) p. 265.

[164] Case 17-E-0758, supra, New York State Electric & Gas Corporation and Rochester Gas and Electric Corporation Electric Utility Emergency Plan (filed December 15, 2017) p. 27.

[165] Sections 2.1 and 2.5 of Attachment 11, "Joint Use Response and Recovery Guide," in Case 17-E-0758, supra, Orange & Rockland Electric Emergency Response Plan (filed December 15, 2017).

[166] Matter 17-02687, In the Matter of the 2018 Emergency Response Plan of the Long Island Power Authority and PSEG Long Island, PSEG Long Island 2018 Emergency Restoration Plan (filed December 15, 2017) p. 182.

specific instances where telecommunications providers demonstrated preparedness and willingness to share information or coordinate with each other. For example, during the Central Hudson Telecom Conference Call on March 3, 2018, Verizon offered to share instances of down wires that its crews encountered in the field and Central Hudson indicated that this information could be shared with district directors.[167] Altice provided access to its customer outage information to Central Hudson, which used this information to confirm outages reported by customers or predicted in OMS. [168, 169]

Staff found that the information shared from a central location, however, was not very detailed and the electric utilities did not consider using resources from telecommunications providers to assist with activities such as pole installations. Verizon and Comcast indicated that communications could be improved with both Con Edison and NYSEG. During Winter Storms Riley and Quinn, the electric utilities primarily responded to issues or questions that were brought up by the telecommunications providers, forwarded telecommunication issues from municipalities to the appropriate provider, and shared a limited amount of detailed information on a local level, at most. Verizon stated: "Restoration information provided by Con Edison tended to be at too high of a level to be useful for Verizon. Attempts to get more granular information were difficult."[170] Verizon attempted to coordinate by reaching out to its normal points of contact. However, those Con Edison representatives were assigned as crew guides during the event and Verizon was not aware that it should be contacting the Utility Liaison, let alone aware of all the responsibilities associated with the position.[171] The lack of clarity regarding who is the Verizon point of contact and the use of an alternate point of contact for Verizon added to the delay and insufficient coordination. Comcast stated that there is a "need for better communications with NYSEG to share

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[167] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Central Hudson Scorecard Report (filed April 11, 2018) Attachments Part 5, pp. 77-78.

[168] Altice's response to DPS-2, Q-2.

[169] Central Hudson's response to DPS-87, Q-2.

[170] Id.

[171] Con Edison Interview on August 17, 2018.

intelligence that would allow [Comcast] to more effectively plan for how many construction coordinators are needed to carry out [Comcast's] plant damage assessment and restoration"[172] and Verizon mentioned that it would like full cooperation by electric utilities in ensuring coordination between electric utilities and telecommunications providers.[173] Both Comcast and Verizon mentioned that they are reaching out to the electric utilities to further improve communications and coordination.

During Winter Storms Riley and Quinn, Con Edison sent daily emails to AT&T, Sprint, and Verizon with the total number of customers affected by operating region and global ETRs.[174] The emails did not contain information that would enable a better response, such as information regarding restoration priorities and locational ETRs.[175] Con Edison's liaisons only coordinated with Charter and Suez Water on specific jobs that they brought up regarding a location in Queens and a pumping station in Westchester, respectively.[176] Central Hudson's Telecom Conference Calls provided general outage numbers, areas where crews were working, number of poles and wires down, and locations with the most damage; but the summary was at such a high-level that it could not be used by the telecommunications providers to plan their restoration work Verizon noted it had to request a copy of broken pole locations from Central Hudson on the March 5, 2018 call so it could begin surveying the locations where they would need to transfer their equipment to a new pole.[177, 178] Frontier Communications requested this information on March 8, 2018, the last day calls were held.[179] The other electric utilities did not send

[172] Comcast's response to DPS-2, Q-8.

[173] Verizon's response to DPS-1, Q-3.

[174] Con Edison's response to DPS-67, Q-2.

[175] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Con Edison Riley Quinn Part 105 Scorecard Report (filed April 11, 2018) Appendix 9.

[176] Id.

[177] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Central Hudson Scorecard Report (filed April 11, 2018) Attachments Part 5, pp. 72-83.

[178] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Central Hudson Scorecard Report (filed April 11, 2018) Attachments Part 5, p. 68.

[179] Id.

routine emails or hold conference calls; instead, they communicated individually with telecommunications providers. National Grid mentioned that line supervisors had local contact information for the telecommunications providers for emergencies.[180] Communications between NYSEG/RGE and telecommunication providers differed by division and ranged from an as-needed basis to in-person communications with Verizon at NYSEG's Brewster office.[181] Orange & Rockland's Joint Use Manager was in various offices as well as in the field and communicated via email, text messages, or phone calls with other telecommunications providers; however, email records with Verizon for Winter Storms Riley and Quinn only started on March 10, 2018. The exchange consisted of Verizon sharing information and asking for follow-up on specific jobs and Orange & Rockland forwarding photos from a municipality to Verizon.[182, 183] PSEG LI's Major Accounts team and Operations communicated via phone and email on specific instances and escalated emergencies to appropriate personnel.[184] During the May Windstorm, NYSEG's Brewster Division provided a list of broken poles to a Verizon contractor, which is an improvement from Winter Storms Riley and Quinn.[185]

One of the main actions that can be taken to facilitate communication is to co-locate representatives in the same area, typically one of the utilities' EOCs. Staff found that even with representatives present at electric utilities' EOCs during Winter Storms Riley and Quinn, information exchange was difficult. Verizon and Charter stated that they would send a representative to the electric utility's EOC upon request.[186, 187] While Con Edison stated that it extended invitations to

[180] National Grid's response to DPS-84, Q-1.

[181] NYSEG/RGE's response to DPS-61, Attachment 1.

[182] Orange & Rockland's response to DPS-74, Q-1.

[183] Orange & Rockland's response to DPS-74, Attachment 1.

[184] PSEG LI's response to DPS-69 and DPS-80, Q-1.

[185] NYSEG/RGE's response to DPS-82, Attachment 1.

[186] Verizon's confidential response to DPS-8, Q-1.

[187] Charter's confidential response to DPS-7, Q-1.

telecommunications providers to send a liaison to its EOC, Verizon was not present at Con Edison until March 7, 2018.[188] This was after DPS staff had asked the telecommunications providers about establishing representatives at Con Edison and NYSEG locations. Additionally, Con Edison's Utility Liaisons did not reach out to the Verizon representative and the people whom the Verizon representative interacted with at Rye were not prepared to share detailed make-safe and restoration information. On the positive side, by having a representative on site, Verizon was able to learn of Con Edison's restoration priorities.[189]

Overall, the coordination between electric utilities and telecommunications providers needs to improve.[190] While Comcast stated that it would welcome the opportunity to work with electric utilities in their EOCs, as it has been doing so in a productive manner with the electric utility in Connecticut, Charter and Altice preferred using normal points of contact or direct communications with field supervisors rather than sending representatives to utility EOCs.[191, 192, 193] Staff found that relying on information sharing through local crews and personnel is not ideal during major storms because electric crews may not always interact with crews from telecommunications providers in the areas they are working, normal points of contact for local foremen may not be assigned to that location or task during an emergency and fails to communicate the larger overall restoration plans. The electric utilities and telecommunications providers should agree on under what conditions to start sharing information on a divisional/regional level, the means of communications, and the level of detail of information and frequency of information that will be shared or easily accessible by appropriate parties.

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188 Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Con Edison Riley Quinn Part 105 Scorecard Report (filed April 11, 2018) p. 26.

189 Verizon's response to DPS-2, Q-2.

190 National Grid's response to DPS-80, Q-1.

191 Comcast's response to DPS-7, Q-1.

192 Charter's response to DPS-7, Q-1.

193 Altice's response to DPS-6, Q-1.

Another area where the lack of communications between electric utilities and telecommunications providers relates to pole installations. Certain telecommunications providers have the capability to install poles and this ability should be leveraged, especially when a sizable number of poles are damaged and in need of replacement. During Winter Storms Riley and Quinn, Frontier and Verizon assisted NYSEG, Orange & Rockland, and PSEG LI in installing 2-5% of the new poles required. According to Verizon, there was more coordination with electric utilities in the past, when Verizon was requested to also assist in delivering poles.[194] Additionally, considering that email communications existed only late in restoration and were reactive in nature, the electric utilities could have better utilized this resource. Orange & Rockland did improve its communications with telecommunications providers during the May Thunderstorms by asking Verizon and Frontier for assistance in installing poles at the start of the event.[195] NYSEG/RGE also stated it would benefit from readily available communications representatives and a review of roles, processes, procedures, and training.[196]

Recommendation 39	The electric utilities and telecommunications providers develop templates and other aids to ensure appropriate detailed information is shared during a storm event, including the contact information for individuals activated during the event.
Recommendation 40	The electric utilities modify their ERPs to clarify when representatives from telecommunications providers should be co-located in their EOCs and the process for communicating such a request as well as the reporting location(s) and the names and contact information of the assigned electric utility representative(s) located within the EOCs. Telecommunications providers also need to develop or modify their procedures to identify personnel to be co-located and ensure such action is taken.

194 Verizon Interview on June 22, 2018.

195 Orange & Rockland's response to DPS-74, Attachment 1.

196 Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, NYSEG/RGE April 4, 2018 Windstorm Part 105 Report (filed June 6, 2018) pp. 73-74.

Recommendation 41	The electric utilities and telecommunications providers develop a process to practice the communications and pole installation process as part of drills or other exercises and perform after actions and lessons learned reviews to identify process improvements.

4.6.6. Restoring Borderline Customers

Borderline customers are customers that lie within a utility's service territory and are billed by one utility but serviced by a bordering utility. New York electric utilities' borderline customers range from no borderline customers for PSEG LI to 2,800 Con Edison customers who are serviced by NYSEG. Borderline customers are identified by a known circuit that is fed by the other utility or by including the electric utility in the circuit name in the utility's OMS. When borderline customers experience outages, the billing utility must contact the other utility to request repair work and obtain updates. Because borderline customers' restoration times depend on the neighboring electric utilities, they could have different ETRs than other outages in the area and need to be tracked accordingly, such that the billing utility can provide accurate information to these customers. Therefore, it is important that utilities have updated contacts with bordering utilities and resources that are familiar with procedures to communicate with bordering utilities. Central Hudson and Orange & Rockland also use the utility outage maps from neighboring electric utilities to retrieve ETRs for their borderline customers in addition to contacting the neighboring utility.[197] Central Hudson, National Grid, and Orange & Rockland specifically stated that they would get ETR updates especially as the ETR approached or expired, a practice that should be adopted by the remaining utilities. [198, 199, 200]

[197] Central Hudson's response to DPS-61, Q-6; Orange & Rockland's response to DPS-63, Q-5.

[198] Central Hudson's response to DPS-61, Q-6.

[199] National Grid's response to DPS-61, Q-6.

[200] Orange & Rockland's response to DPS-63, Q-5.

During Winter Storm Riley, Orange & Rockland incorrectly told one of its borderline customers in Forestburgh that they should contact NYSEG to report their outage and NYSEG redirected the customer to Orange & Rockland since they were not a NYSEG customer.[201] This incident added to the frustration of this customer, who lost power and cellular service for multiple days and was provided changing ETRs from NYSEG's website.[202] While NYSEG reported no issues with coordination with other utilities[203] during Winter Storm Riley, DPS staff in the field observed that NYSEG had difficulty coordinating with Pennsylvania Power and Light (PPL) to expedite restoration to a borderline customer, resulting in the incident being escalated to regulators.[204] Borderline customers also complained about inaccurate ETRs, instances when ETRs were not provided in a timely manner, and long restoration times. Concerns related to ETRs will be discussed later in the report.

Based on its experience during Winter Storm Riley, Orange & Rockland stated that it will specifically code borderline customers and provide refresher training for its customer service representatives on addressing borderline customer outages.[205] Central Hudson has a section in its ERP regarding coordination with borderline utilities, while other utilities had little or no mention of borderline utility coordination or borderline customers. Central Hudson had good coordination with other utilities on borderline outages. The other utilities stated they have specific protocols for dealing with borderline utilities, even though procedures or protocols were not included or referenced in their ERPs.[206] To be more effective, procedures that clearly lay out the actions that the operations, planning, control center, and call center representatives would take to process borderline customer outages should be identified

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201 Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Public Statement Hearing Transcript April 25, 2018 6PM – Monticello, filed May 3, 2018, p. 25.

202 Id, pp. 25-26.

203 NYSEG/RGE's response to DPS-106, Q-6.

204 Staff 3/6 Field Notes.

205 Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Orange & Rockland Riley/Quinn Part 105 Scorecard Report (filed April 13, 2018) p. 51.

206 Con Edison's response to DPS-79-5 Attachment, National Grid's response to DPS-61, Attachment 1, NYSEG/RGE's response to DPS-63, Attachment 1, and Orange & Rockland's response to DPS-63, Q-5.

in the ERPs. In addition, the utilities should confirm that their procedures are updated and in alignment with those of the neighboring utilities they will be coordinating restoration efforts with, including contact information, and that necessary internal training is provided on the new or revised procedures.

Recommendation 42	All electric utilities, except PSEG LI as it does not have borderline customers, ensure borderline customers are easily distinguished in OMS and review their procedures related to communicating outages to and obtaining ETRs from neighboring utilities. Modifications to the ERPs shall be made accordingly.

4.7. Restoration of Critical Facilities

Critical facilities are defined as those facilities from which essential services and functions for the continuation of public health and safety, and disaster recovery are performed or provided.[207] These include hospitals, water treatment plants, mass transit, fire and police stations, among others. The services and functions provided by critical facilities are essential to a community, especially during and after a major storm event. Without power being supplied from the distribution system, critical facilities need to rely on back-up generation to maintain the health and safety of the community.[208] Therefore, communication, coordination, and information sharing between managers of critical facilities and electric utilities are important when preparing for and managing outage events. Managers of critical facilities, however, still need to plan for alternative electric service to ensure business continuity, or continuity of governmental services, and are responsible for their own back-up generation and its fuel. Maintaining and restoring the essential services critical facilities provide is an important aspect when responding to any emergency incident.

[207] Case 13-E-0550, In the Matter of the December 15, 2013 Electric Emergency Plan Review, Order Approving Electric Emergency Plans (issued March 28, 2014) p. 15.

[208] Although certain critical facilities, such as hospitals, are required to have back-up generation on-site, others do not have back-up generation to remain operational during sustained power outages.

After Superstorm Sandy, Staff and the utilities prioritized the types of critical facilities into three levels, which are reflected in each utilities' ERP.[209] The levels were intended to improve communication and coordination during an emergency event by placing emphasis on public health and safety facilities. Level 1 includes facilities most critical to public health and safety, such as hospitals. Level 2 includes facilities that provide significant public service, such as nursing homes. Level 3 facilities provide key products or services, such as high-rise buildings or grocery stores. The levels, as well as joint planning before an event, help ensure that essential services and functions are restored in a flexible and coordinated manner. Critical facility levels are used by the electric utilities as a guide in the development and execution of their restoration plan to respond effectively and accurately to the most urgent facilities. Successful priority restoration, however, is only accomplished with continuous effort coordinated by utilities, facility managers, and local officials.

Each utility's ERP contains the critical facility definition, levels, specific procedures for communicating with managers of critical facilities, and procedures for providing critical facility status information to the State during widespread events. All utilities maintain critical facility listings that include the facility name, address, city, state, 24/7 contact phone number, account number, and type of facility. This information is maintained in a database and is verified and updated at least annually as required by the ERPs to ensure accuracy. The number of critical facilities reaches into the thousands in every one of the utilities' service territories. This number of critical facilities makes the accuracy and management of the information in each list an important task. In order to have an effective plan to address critical facilities, the utilities must have accurate contacts identified and must know where the facilities are located on their system.

After Winter Storms Riley and Quinn, local officials provided feedback that identified inconsistencies or omissions with the utilities' critical facility lists. Officials from Yorktown, which is served by both Con Edison and NYSEG, noted the list they received from Con Edison was inadequate and they

[209] Id.

had no contact information for NYSEG to request their critical facilities list. Staff finds additional outreach efforts are needed to ensure all critical facilities are documented and appropriate contact information is maintained and shared accordingly. The utilities should provide each county emergency manager a utility contact who is responsible for coordinating revisions to the critical facility list and can provide an up to date list when requested by the county. County resources need to be aware of the sensitive nature of the lists and should coordinate with towns to facilitate information reviews and required revisions throughout the year. Joint utility and county meetings are encouraged to effectively communicate the function of the facilities on the lists and why the municipality considers it appropriate to be included.

Staff's review of each utility's critical facilities list showed that the data varies significantly with respect to both the quantity of facilities and the details maintained about the facility. The quantity of critical facilities is based on customer mix, the number of customers, and the size of the service territory. National Grid, which serves several counties across New York, has over 15,000 facilities in its critical facilities database, while at the other extreme, a smaller utility like Orange & Rockland has approximately 1,500 in its database. One common feature is that each of the utilities' lists contain entries that lack enough descriptive information to effectively distinguish one location's purpose from another owned by the same entity. The critical facilities lists should be reviewed to ensure that enough information is included in the descriptions of each facility so that each line item is uniquely identifiable. For example, a facility owner may have multiple electric meters at multiple locations, but, the data does not indicate each premise's purpose to allow for better prioritization during an event. As recommended in the United Westchester Report, the utilities should be verifying critical facilities that have backup generators and obtaining information on its condition, capacity, and age. Staff agrees and finds that the utilities should coordinate with counties as part of their review. This information will help gauge the generator's capabilities and vulnerabilities, so utilities, counties, and stakeholders can plan and react accordingly. Critical facility managers and local officials should also be aware of this information and make the necessary investments to maintain or update their backup generation as needed for reliability.

As part of our investigation, Staff determined that vulnerable customer populations are not always visible to the utilities or accounted for as part of the overall restoration strategy. For example, Dutchess County highlighted a mobile home neighborhood that had extended outages. While counties and local officials raised concerns to the utilities about certain areas, this is an ineffective way to ensure these residents are represented. Therefore, the critical facilities lists should include residential developments with large elderly populations or other vulnerable establishments. The utilities should coordinate with the counties to identify such locations and code them as priority level 3 critical facilities.

Each utility's ERP contains specific procedures for communicating with managers of critical facilities prior to a sizable outage event. For Winter Storm Riley, NYSEG and National Grid did not provide pre-event notifications to the critical facilities in their service territories as they were not expecting outages to exceed 48 hours. Given the importance of these facilities, a more objective trigger should be developed and cited in the ERPs. For instance, one possible trigger may be the severity of the weather versus the utility estimating the extent of outages that may occur and expected repair time. Forecasts provided by meteorological contractors establish an Energy Event Index for approaching storms ranging on a scale from 1-5 based on variables such as wind speed, snow accumulation, rainfall amounts, and others.[210] The forecasts also provide a probability percentage for a storm to achieve the given Energy Event Index. A threshold based on these metrics can be used to trigger the pre-event notification campaign to communicate the warning to critical facilities. While this may result in more notifications than before, the need to place these facilities on notice so they may take appropriate preparatory and planning steps outweighs the additional calls. The utilities should also discuss with the critical facility mangers what level of notification is warranted to assist in developing the notification criteria. Some facilities may prefer more notifications than others. If this is communicated and the people managing the facilities are aware of when they will be notified, then different criteria may be used for different facilities.

[210] DTN is a contract meteorologist company that provides forecasts to electric utilities multiple times daily, including when warnings are issued or there are significant changes in the forecasts.

Outages to circuits that serve critical facilities are inevitable during severe weather. Utilities prioritized critical facility outages in most cases and fulfilled the requirement to maintain communication with critical facilities throughout the duration of the storms. Comments, however, indicated a perception that the utilities were not prioritizing critical facilities. Consequently, utilities must consistently communicate, coordinate, and share information with counties while prioritizing critical facilities during major storm events. Circumstances sometimes lead to uncertainty as to how quickly service can be restored, particularly when numerous critical facilities are impacted. Prioritization among critical facilities is accomplished based on a three-level system; the most critical to public health and safety being sorted into level 1. This creates some order for utilities to follow when there are outages to numerous critical facilities. However, it is important to recognize that circumstances following a storm, or how a facility is currently being used, also need to be recognized. Urgent needs are communicated to the utility through county emergency managers. Therefore, utilities should coordinate with county officials to help establish what critical facilities take priority during a major storm event. Staff finds that if a county determines that a critical facility needs to be escalated for repair, the county should use the municipal liaisons as a primary means of raising this to the utilities' attention. However, because the municipal liaisons are not operations specialists, the utilities should be prepared to have resources from their planning/operations sections available for direct communications or meetings with the counties, if necessary. By doing so, counties will have access to decision-makers to enable a coordinated response. Staff also recommends that exercises and drills reflect the prioritization of critical facilities based on county input.

Storm calls and meetings between the utility and counties should include discussions such as the feasibility of a repair and time to complete the repair so that officials have the information they need to decide which facilities to repair first. County emergency managers are in the position to know what is best for their community during the restoration planning process. The counties have processes in place currently to identify the needs of the towns or facilities. Communication between the counties

and towns on a smaller level is also important to prevent situations where towns feel like their priorities are neglected, while other facilities are restored at the county level or in neighboring towns.

While being able to communicate the need for power restoration is important, municipalities should also give consideration to improving the flexibility of its response options. For example, having multiple locations to use as warming centers and emergency shelters, rather than only one location. Selecting alternate locations should be a collaborative effort between municipalities, county officials, and utilities. By doing so, local officials are better informed to select more resilient locations from an electric system standpoint, which will likely lead to better availability of these facilities immediately following an event. Another potential benefit would be alleviating the demand on utility resources to prioritize the restoration of a single critical facility.

Recommendation 43	All electric utilities meet with county officials semi-annually, at a minimum, to review critical facilities lists and circuit maps to verify their completeness and accuracy. All modifications (additions, deletions) shall be captured and incorporated into revised lists, which will be provided to the county. The ERPs shall incorporate this requirement.
Recommendation 44	Each electric utility coordinate with county officials to identify residential developments with large elderly populations or other similarly vulnerable establishments and code them as priority level 3 critical facilities.
Recommendation 45	All electric utilities coordinate with county officials to prioritize the restoration sequence of critical facilities during a major storm event. Communications with counties should be on a structured time schedule to allow these jobs to be included in work packages for the next day. Additionally, this prioritization should be part of future exercise and incorporated into the ERPs.
Recommendation 46	For outages that are escalated by a county, either through the liaisons or the other contact, utilities must be prepared to provide direct communications between decision-makers and counties to enable coordinated response efforts.
Recommendation 47	All electric utilities investigate historical outage information and circuit maps to identify potential investments that will increase reliability to critical facilities that counties consider essential.

5. COMMUNICATIONS

It is essential to have timely and accurate utility communications with customers, local officials and the media to keep the public safe and minimize customer confusion, particularly during emergency events. Staff evaluated the utilities' performance during the 2018 Winter and Spring Storms in several key areas related to how information was provided to customers and the public through various utility communication methods, including press releases, social media, and the utility's website, as well as communication with municipal officials, and call center performance. Staff found that the utilities' public-facing messages during an emergency event typically stem from the press releases, so it is crucial that the information contained in each release be accurate and provide a comprehensive representation of several key elements as more fully described below.

The Public Service Law and 16 N.Y.C.R.R., Part 105.4 requires the utilities to develop and document the procedures and processes for establishing and maintaining effective external communications regarding utility system damage and restoration progress with customers, the media, and state, county, and local agencies in their ERPs. Utilities are also required to maintain dedicated phone lines, designate company representatives to act as liaisons with government entities, and to provide regular and announced communication updates to the media.[211] The Scorecard Order also recommends that affected utilities "issue daily messages through the stated communications vehicles for each day of the utility restoration which must include information such as outages, ETRs, contact information, etc."[212]

[211] In Case 00-M-0095, Consolidated Edison Merger, Order Approving Outage Notification Incentive Mechanism (issued April 23, 2002), the Commission adopted the Outage Notification Incentive Mechanism (ONIM) for Con Edison to undertake specific notification activities in the event of an outage. These notification requirements include a telephone broadcast message, LSE customer contacts, notification of governmental officials, press releases and dispatch of a mobile command center to the affected area. More specifically, Section IV of Con Edison's ONIM requires the media be notified of the geographic area and customers affected for outage events affecting at least 70,000 customers for at least one hour or at least 40,000 customers for at least two consecutive hours.

[212] Case 13-E-0140, Utility Emergency Performance Metrics, Order Approving the Scorecard for Use as a Guidance Document to Assess Electric Utility Response to Significant Outages (issued December 23, 2013) Appendix 1, p. 9.

5.1. MASS COMMUNICATIONS

5.1.1. Press Releases

Press releases notify and inform the public and municipal officials of the utilities' preparations in advance of an event, as well as provide status reports during an event. Press releases often follow a template that includes standard outage reporting information and relevant safety tips. Staff found the utilities' processes for developing and issuing press releases during a major outage event to be generally similar.[213] The utilities' Public Information Officer (PIO) or designated press release writer will obtain the information from various sources within the utility, particularly customer outage numbers and system and service restoration information including details, if any, from operations personnel. At times, updated information will be obtained from a utility's Incident Command conference call, which typically occurs each morning and late afternoon and provides a high-level overview of customer and facility outages, weather conditions and overall system restoration efforts. The utility's morning call articulates the day's work plan and goals and the afternoon call addresses restoration efforts and goals for the following day. The utility's Incident Commander typically reviews the press release to ensure accuracy and approves each release before they are disseminated to the media and public. For NYSEG/RGE, Area Command, which is similar to the ICS structure, but scaled to incorporate the utilities' various operating divisions, reviews and approves the press releases. If there are large number of outages or an event is particularly severe, the utility president and/or vice president will commonly review a press release prior to issuance.

The content provided in a press release is critical during any emergency event, especially during a widespread snowstorm like Winter Storm Riley. During storms of similar magnitude, more information should be provided in a press release, rather than less. At a minimum, press releases should

[213] Central Hudson's response to DPS-13, National Grid's response to DPS-13, PSEG LI's response to DPS-13, Con Edison's response to DPS-14, NYSEG/RGE's response to DPS-14, and Orange & Rockland's response to DPS-14.

contain details of the storm and damage expected, occurring, and/or already incurred; area-specific restoration information; ETRs; estimated number of affected customers; affected areas (by county or locality, not only utility division); dry ice/water distribution and emergency shelter information or specific information as to where to find that information on the utility's website; designated utility contact information and utility website address; information on how to report an outage; and, relevant safety tips. Staff believes it is critical for customers to receive a clear picture that restoration efforts are underway and how the event may affect them.

The timing and number of press releases is also important during widespread emergency events. If too few press releases are issued, the public, the media and municipal officials will need to contact the utility's call center or the utility's municipal liaisons to obtain needed information, which ties up valuable resources for simple requests such as the latest outage information. On the other hand, if too many releases are issued, the utility's message becomes repetitive and might be ignored. Multiple updates can also create confusion if the utilities do not adequately coordinate their various internal and external outbound communications. For example, if a utility call center is unaware that a new press release was issued, representatives might unintentionally provide inconsistent or stale information to callers.

Staff believes that pre-determined time periods for press release issuance would help the media and municipalities know when to expect an update. This should also help the utility's own internal departments to know when to expect an update and coordinate their responses based more up to date and accurate information. Staff believes that any press release updates made in addition to the scheduled releases should contain pertinent information, such as a change in a global or regional ETR or a significant change in restoration progress, and any significant change should be easily identifiable. Decreased outage numbers alone, however, do not warrant an additional press release because they can change frequently.

Although the individual utility's ERPs differ regarding press releases, the ERPs generally cover the information that is required to be included and the timing of press release issuance to be coincident with the local news cycle. NYSEG/RGE's ERP is an exception on this point and Staff found that their ERP lacks sufficient detail with respect to their press release process, including content and timing. In response to inquiries from Staff, NYSEG/RGE stated they did not deviate from their ERP when developing and disseminating press releases. [214] However, Staff found that NYSEG/RGE did violate its ERP regarding press releases during the 2018 Winter and Spring Storms, and that there is room for significant procedural and implementational improvements for Con Edison, Orange & Rockland and Central Hudson.

Each utility issued a pre-event press release on March 1, 2018, which Staff finds appropriate given the forecast for Winter Storm Riley. The utilities also issued a pre-event press release for Winter Storm Quinn, often in combination with an update on Winter Storm Riley restoration. Staff found the pre-event news release for each event after Winter Storms Riley and Quinn provided helpful information, including what weather conditions to expect, how to prepare for the upcoming event, and how to contact the utility.

During Winter Storms Riley and Quinn, the number, timing and content of subsequent press releases varied widely among the utilities. Staff found Central Hudson, National Grid and PSEG LI met their ERP requirements. However, Staff found that NYSEG/RGE was the most inconsistent with respect to the timing of issuing press releases. Because NYSEG's press releases were not consistently issued to media outlets, the media frequently contacted NYSEG for updated information. This was inefficient and resulted in the utility having to respond to numerous media inquiries for updates, which could have been minimized by disseminating information consistently and on schedule. Deficiencies in NYSEG/RGE's press release process was also highlighted in the 2017 Windstorm Report, which noted that

[214] Central Hudson's response to DPS-13, National Grid's response to DPS-13, PSEG LI's response to DPS-13, Con Edison's response to DPS-14, NYSEG/RGE's response to DPS-14, and Orange & Rockland's response to DPS-14.

the information in the 2017 Windstorm press releases was not specific enough and did not provide information on restoration crew efforts.[215]

During Winter Storms Riley and Quinn, NYSEG/RGE issued several press releases daily; however, the press releases were not issued in compliance with their ERP. NYSEG/RGE's press releases were issued randomly. The earliest press release was 9:00 AM and as late as 11:00 PM, violating Section 9.7.3 of the ERP, which acknowledges accepted media cycles.[216]

NYSEG/RGE typically issued press releases on behalf of both utilities at the beginning of an event, even when a division or area specific press release may be more appropriate. Despite previous recommendations by Staff contained in the 2017 Windstorm Report, combination press releases were issued at the beginning of Winter Storm Riley although there were significantly more outages in NYSEG's service territory. NYSEG only began to issue company-specific press releases after outages were no longer an issue in RGE's service territory. Staff found the issuing of joint press releases inappropriate and may contribute to customer confusion during an event that significantly impacts one utility more than the other, as was the case during Winter Storm Riley. This practice must cease going forward. In addition, rather than referring to specific counties affected, which is familiar to the public and municipal officials, NYSEG's press releases during Winter Storms Riley and Quinn often referred to affected divisions. During the April Windstorm, NYSEG and RGE issued eight storm-related press releases from March 31 to April 7, 2018, including two pre-event releases on March 31 and April 3, 2018; however, only two press releases contained division/county-specific information, the rest were vague and did not include safety information. Staff found other utilities also referred to sections of their service territories on an uncommon geographical basis. Because the boundaries of utility-designated areas are not always known

[215] Case 17-E-0594, Investigation into March 2017 Windstorm Related Power Outages, Staff Report on NYSEG and RGE Electric Restoration and Communication Efforts (issued November 16, 2017) pp. 45-48.

[216] Case 17-E-0758, In the Matter of the December 15, 2017 Electric Emergency Plan Review, NYSEG & RGE's Electric Utility Emergency Plan (filed December 15, 2017) p.58.

by all, Staff finds that county-level details provide the public with a better idea of the scale of an event and what the utility is doing in each of those areas to restore power.

Staff finds NYSEG/RGE should have provided a clearer picture of Winter Storms Riley and Quinn's impacts and that information should have been more consistent in each press release. To facilitate consistent reporting, Staff finds that NYSEG/RGE should develop templates for various major event scenarios to include details of the storm and likely damage expected, occurring or occurred that comply with the minimum information listed above. Pre-approved press release templates, such as those used by National Grid and other utilities, save time by efficiently providing storm tips and outage reporting information.

Staff also found that NYSEG's press release approval process during Winter Storms Riley and Quinn was overly lengthy because several storm officers' approval was required, but their other duties prevented an expeditious review. [217] NYSEG used a subset of nine ICS officers who were able to approve press releases; however, Staff was unable to determine exactly which officer had final approval because none of the ICS officers admitted in interviews to having final approval of press releases. Concerns with the press release approval process were also identified in the 2017 Windstorm Report.[218] NYSEG/RGE stated that it will amend its internal processes to shorten the length of the approval time for press releases, as well as improve the flow of updated, relevant information to the PIO and/or press release writers.[219] NYSEG/RGE also indicated that going forward, the Incident Commander or a designee will have final approval on each press release so several people do not have to check the information in the press release.

Further, NYSEG's Area Command and PIO personnel were not all co-located during significant emergency events. For example, during Winter Storm Riley, the PIO was not co-located in the

[217] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, NYSEG/RGE April 4, 2018 Part 105 Scorecard Report (filed June 6, 2018) p. 74.

[218] NYSEG/RGE's response to DPS-14

[219] Case 19-M-0285, supra, NYSEG/RGE April 4, 2018 Part 105 Scorecard Report (filed June 6, 2018) p. 75.

Brewster or Liberty divisions until Winter Storm Quinn hit. NYSEG's April 4, 2018 Part 105 Report also states that the PIO was not co-located during this event and was instead updated by phone and email. Staff finds that co-location of key ICS roles to the hardest hit area in New York is crucial to providing a more comprehensive and consistent picture of the event and restoration activities. This is particularly true for the press release writer who, when co-located at the utility's command center during an event, has immediate access to real-time information and can follow-up on specific questions directly with key team members embedded at the same location. Staff finds the lack of on-site presence hinders press release approval and prolongs dissemination and was particularly problematic prior to the morning news cycle.

When not co-located, press release writers are instead simply supplied with data to plug into a press release from someone who could be in another part of the state. Staff finds this practice unacceptable. NYSEG's April Part 105 Report also states the press release approval process should be streamlined, but NYSEG did not provide details on the specific plan it intends to use to achieve success with this effort. Staff finds that implementing pre-determined time frames for press release issuance will streamline efforts by encouraging the Area Command officers who approve press releases to consistently make themselves accountable for timely review and approval.

NYSEG/RGE issued a combination utility pre-event press release on May 4, 2018 for the May Windstorm. Not counting the May 4, 2018 pre-event press release, a total of seven press releases were issued for the May Windstorm, and they were typically disseminated later in the day and are examples of NYSEG/RGE issuing combination press releases for an event that impacted NYSEG's service territory more than RGE's. The information in the press releases included details on the event, the number of personnel responding, the number of customer outages, the affected division and associated counties, as well as ETR information, which was an improvement over the press releases issued during Winter Storms Riley and Quinn. Staff finds that NYSEG and RGE should have distributed press releases more evenly throughout the day by issuing one in the morning and one in the early evening because press

releases issued too close together are generally not providing stakeholders with new or significantly different information. Staff finds that the information included in NYSEG's May Windstorm set of press releases was helpful to customers, as more county-level information and more specific details on the event were presented including relevant safety tips. That said, Staff's review found that NYSEG and RGE did not include utility contact information or instructions on how to report an outage in half of its press releases, which is unacceptable.

NYSEG did not issue a pre-event press release prior to the May Thunderstorm and explained it did not do so because "the potential extent of the extreme weather was not known until a few hours before the start of the event."[220] Although not required by their ERP, Staff finds that NYSEG should have issued a pre-event press release, as both Orange & Rockland and Central Hudson did. NYSEG issued its first press release for the May Thunderstorm at 8:12 PM, which was after the storm swept through the area, and then issued a total of nine press releases from May 15 to May 20, 2018. On a positive note, Staff found the quantity and quality of information provided in the press releases improved from the previous 2018 Winter and Spring Storms, and included key information relating to the cause of outages, updates on restoration efforts and crews, information by division/county, reminders on how to report outages, crew assignments, as well as utility contact information. The utility also included photos in the press releases, which enabled the media to better illustrate and explain the extent of the damage to the public.

NYSEG also captured customer feedback and frequent questions from social media posts and its call centers throughout Winter Storms Riley and Quinn that enabled the PIO to incorporate this information in subsequent press releases during the events.[221] The documents were also shared with NYSEG/RGE's Customer Needs Branch, IT and Assistant Area Command Deputy for further review and

[220] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, NYSEG/RGE May 4, 2018 Part 105 Scorecard Report (filed June 28, 2018) p. 6.

[221] NYSEG/RGE's response to DPS-71.

follow-up. Staff found this to be beneficial and recommends all other utilities compile a similar log of repeated customer concerns posted on social media and that come through call centers as a best practice. This log should be shared with relevant personnel, so they are aware of larger issues, including customer confusion or problems with the outage map, that can be incorporated into press releases and customer facing scripts, as well as the daily work plans.

Section VII of Con Edison's ERP specifies that the utility will issue at least two press releases per day coincident with the local news cycles and that specific content be included in each news release. Staff confirmed that Con Edison issued a pre-event press release on March 1, 2018, and then otherwise adhered to two press releases per day throughout Winter Storms Riley and Quinn, apart from only one release March 6, 2018. Staff found that the utility reasonably complied with its ERP for Winter Storm Riley. That said, some of the language used in its press releases was more dramatic than descriptive or constructive. For example, Con Edison used confusing language and phrases in some of its press releases, such as "No question about the wallop," "the life of tree-thrashing Riley" (8:15 AM March 5, 2018); "wind-whipped Riley" (8:00 AM March 6, 2018); and "smattering of single outages" (3:15 PM March 12, 2018). Staff finds the use of this overly dramatic language did not properly convey the message or respect the amount of damage that occurred or the number of customer outages and resulting hardships experienced statewide. Staff finds that customers, municipal officials and other stakeholders expect and deserve to receive consistent and straightforward informative messaging from the utility without the use of theatrical language. Staff also found that some of Con Edison's press releases contained repetitive or stale information, such as the same sentence from a previous release, which should be avoided in the future. For example, several of Con Edison's press releases during Winter Storms Riley and Quinn stated they were in contact with elected and school officials in Westchester to determine priority areas, without specifying which areas.[222]

[222] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Con Edison Riley Quinn Part 105 Scorecard Report (filed April 11, 2018) Attachment 18.a.

Orange & Rockland issued a total of 46 press releases from March 1 to March 12, 2018, for its service territories in New York and New Jersey. Although in compliance with Section 5.9 of its ERP, Staff finds that Orange & Rockland issued an excessive number of press releases and the information became repetitive because so many updates were issued each day. Staff found that the utility generally provided helpful information in its press releases, such as ETRs by county and specifics on the event, although some only contained safety tips that were largely covered in a previous release. Staff also found that Orange & Rockland's press releases for Winter Storms Riley and Quinn did not adequately differentiate the New York and New Jersey service territories and were therefore unclear about what information applied to which service territory.

For the May Thunderstorm, Orange & Rockland issued a pre-event press release at 3:00 PM on May 14, 2018, and then a total of 16 press releases between May 14-17, 2018 at regular intervals: early morning (6:00-8:00 AM); mid-morning (11:00 AM); afternoon/evening (4:00-6:00 PM); and late evening (10:00-11:00 PM). The press releases generally contained adequate information about the storm, affected areas, restoration efforts, ETRs and outage numbers; however, the dry ice locations/times listed in several press releases were confusing and often stated locations in past tense, so it was unclear if the locations were still open. Staff concludes that Orange & Rockland should refrain from issuing excessive numbers of press releases with stale or repetitive information or issuing a press release with only safety tips. Staff also finds that Orange & Rockland should issue state-specific press releases or, in the alternative, clearly explain what information in all press releases applies to their New York or New Jersey service territories.

Recommendation 48	All electric utilities develop and document within their ERPs pre-determined time periods for press release issuance and dissemination that coincides with local news cycles.

Recommendation 49	All electric utilities develop a process that permits press releases and related information updates outside of normal media cycles, only as events warrant; for example, a change in the global ETR. This shall be incorporated into their ERPs.
Recommendation 50	All electric utilities, and NYSEG/RGE in particular, delineate and clearly state which part(s) of its service territory, including counties affected, is being addressed in all press releases and on social media, especially for utilities with a large or multi-state presence, such as Avangrid (Parent company of NYSEG and RGE), National Grid and Orange & Rockland. The ERPs will incorporate this modification.
Recommendation 51	For regional press releases issued by all electric utilities, particularly NYSEG, clearly state the regions and counties covered by each press release.
Recommendation 52	NYSEG/RGE develop press release templates for various emergency event scenarios that contain pre-approved information, such as outage reporting instructions, relevant safety tips, utility website and contact information.
Recommendation 53	Con Edison cease from issuing press releases with stale information that was included in a previous/recent release.
Recommendation 54	Orange & Rockland cease from issuing excessive numbers of press releases with stale or information that was included in a previous/recent release, or issue press releases with only safety tips.
Recommendation 55	Orange & Rockland issue New York-specific press releases or, in the alternative, clearly state what information in each press release applies to New York or New Jersey. Orange & Rockland's ERP will incorporate this modification.
Recommendation 56	As a best practice, all electric utilities develop a process that captures customer feedback and frequent questions through social media and the call center so the PIO can incorporate this information in subsequent press releases during an event. The ERPs will incorporate this modification.

5.1.2. Social Media

All of the utilities had a significant social media presence during the 2018 Winter and Spring Storms, and generally performed well by posting frequently and addressing customer comments and

direct messages. Most utility social media postings provide the information contained in press releases and include standard tips on how to report outages. The ERPs for Central Hudson, NYSEG/RGE and PSEG LI provide explicit guidance in the social media sections and specify what the utilities will post to its social media pages during an event. [223] The other utility ERPs only state that social media will be used during an event, but do not stipulate content. [224]

The utilities, except for National Grid, responded directly to customers' social media comments and messages throughout Winter Storms Riley and Quinn. While a time-consuming process, this effort demonstrated the utilities' willingness to address customers' questions and concerns individually.[225] However, similar to Staff's findings with certain press releases, it was unclear at times which geographic area was being addressed on NYSEG, National Grid and Orange & Rockland's social media sites. Some National Grid and Orange & Rockland postings were unclear as to whether they were applicable to New York State or meant for other areas. Several public comments stated Con Edison needs to provide more localized information on social media because many customers turn to social media when the power is out. Aside from the above noted areas for improvement, Staff found the utilities performed adequately with respect to social media efforts during the 2018 Winter and Spring Storms. Staff finds the utilities should strive to disseminate more localized information as part of their social media postings, or at the very least refer customers to the utilities' outage maps for additional information, and share relevant information from the county EOCs, such as warming center and dry ice locations.

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[223] Case 17-E-0758, In the Matter of the December 15, 2017 Electric Emergency Plan Review, Central Hudson Gas & Electric Emergency Plan (filed December 15, 2017) p. 28; Case 17-E-0758, supra, NYSEG & RGE's Electric Utility Emergency Plan (filed December 15, 2017) p.43; Matter 17-02687, In the Matter of the 2018 Emergency Response Plan of the Long Island Power Authority and PSEG Long Island, PSEG Long Island 2018 Emergency Restoration Plan (filed December 15, 2017) p.149.

[224] Case 17-E-0758, supra, Consolidated Edison 2018 Emergency Response Plan (filed December 15, 2017) p. 77; Case 17-E-0758, supra, National Grid-New York Electric Emergency Response Plan (filed December 15, 2017) p. 246; Case 17-E-0758, supra, Orange & Rockland Electric Emergency Response Plan (filed December 15, 2017) p. 15.

[225] Central Hudson's response to DPS-06, Con Edison's response to DPS-06, National Grid's response to DPS-06, NYSEG/RGE's to DPS-06, Orange & Rockland's response to DPS-06, and PSEG LI's response to DPS-06.

5.1.3. Email and Text Alerts

The utilities' outbound email and text alerts, which are sent only to customers who have subscribed to these services, are proactive tools that provide customers with relevant information before and during a storm event. These alerts, however, are general in nature and do not directly relate to specific customer's experience, and most utilities' systems do not permit customers to reply to these broadcast messages to report an outage at their premises or to contact the utility.[226, 227] Staff found that the utilities appropriately sent "blast emails" to subscribed customers before and during the 2018 Winter and Spring Storms. Additionally, all utilities provide account specific outage alerts to enrolled customers.

Staff found that most utilities appropriately summarized the press release information in their emails. Con Edison and Orange & Rockland's blast emails, however, typically did not provide information of much value, rather the customer had to follow an embedded link to the storm page on their respective websites to obtain information. Staff finds this to be ineffective and a lost opportunity to streamline information for customers. Second, a utility's website may experience a problem, which actually occurred during Winter Storm Riley and Winter Storm Quinn as discussed previously in Section 4.6, and customers may therefore be unable to access important information that could have been provided in an initial and/or subsequent email. Con Edison and Orange & Rockland should revise their procedures to include narrative text as part of the automated emails.

While each utility provides general email notifications, not all provide broadcast text alerts. Staff found that only Central Hudson and National Grid sent broadcast text alerts, which are separate from outage alerts, to customers who subscribed to this service and which forewarn of an expected upcoming

[226] Only NYSEG/RGE customers can reply to a storm outreach email (not an Outage Alert email) and receive a response from the utility. All utilities provide contact information in the email and recommend the customer call directly to report an emergency.

[227] Central Hudson's response to DPS-05 and DPS-06, Con Edison's response to DPS-05 and DPS-06, National Grid's response to DPS-05 and DPS-06, NYSEG/RGE's response to DPS-05 and DPS-06, Orange & Rockland's response to DPS-05 and DPS-06, and PSEG LI's response to DPS-05 and DPS-06.

event. When Winter Storm Riley hit, PSEG LI was in the process of implementing a texting system, which had 400,000 customers enrolled. Because the system was not fully operational, text messages only went out to 150,000 customers. PSEG LI should have informed all enrolled customers that the system was being tested and customers should not solely rely on this form of communication. PSEG LI has since gone into full production; therefore, all enrolled customers will receive texts going forward.[228] The utilities need to be cognizant of systems being tested and better evaluate if the testing should be suspended prior to a storm event, as well as provide appropriate customer communications.

Recommendation 57	Con Edison and Orange & Rockland's blast emails contain narrative text with event-related and utility contact information in the body of the email as well as an embedded link referring to the utilities' storm page on its website. Con Edison and Orange & Rockland's will incorporate this modification.

5.2. Municipal Liaisons

Consistent and clear communications between all stakeholders during a widespread storm or utility services outage event are critical to establishing a solid foundation for confidence and cooperation. Furthermore, timely, accurate and consistent communication and information-sharing channels are of paramount importance to coordinate utility response activities with local municipal and elected officials, because they are the best opportunity to bring critical community resources into the process to facilitate overall utility system and municipal services restoration. To that end, each utility has designated specific utility personnel to act as liaisons with municipal and elected officials directly.

In general, the utilities' liaison programs were established to centralize and coordinate information flow from the utility and to minimize the confusion of multiple information sources during the restoration process. Although the actual positions are referred to differently across the utilities — municipal liaisons, community response team, public liaison officers, etc. — during major events these

[228] PSEG LI's response DPS-57.

representatives are generally available to municipal officials by either phone, email or by being physically deployed to a county and/or local EOCs during major outage events. Each utility's ERP defines the roles and responsibilities for personnel who act as utility liaisons with municipal and county governments. When deployed, the municipal liaisons serve as a readily available means to facilitate information sharing and assist in issue resolution with the municipalities, including road clearing efforts and prioritization of critical facilities.

5.2.1. Deployment of Municipal Liaisons

Staff generally found that the utilities, with the exception of NYSEG, appropriately deployed liaisons to municipalities and/or EOCs in accordance with their respective ERPs during Winter Storms Riley and Quinn.[229] Orange & Rockland staffed 46 Community Response Team (CRT) representatives across eight municipal locations and the CRT Command Center in addition providing all municipalities the CRT Command Center contact information.[230] Con Edison immediately deployed 12 of the 15 liaisons requested on March 2, 2018; the remaining three were not deployed until the next day due to unsafe travel conditions and the timing of the requests.[231] NYSEG/RGE assigned 20 liaisons to various municipalities and EOCs on March 2, 2018. The United Westchester Report highlighted comments received from the Town of Lewisboro that criticized NYSEG for failing to send a liaison for several days after Winter Storm Quinn hit that area.[232] The United Westchester Report went on to recommend that, "NYSEG should commit to providing liaisons to municipalities at the start of storm restoration work, rather

[229] Central Hudson's response to DPS-26, National Grid's response to DPS-26, NYSEG/RGE's response to DPS-26, PSEG LI's response to DPS-26, Con Edison, 's response to DPS-27, Orange & Rockland 's response to DPS-27.

[230] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Orange & Rockland Report on Preparation and System Restoration Performance Winter Storms Riley and Quinn March 2018 (filed May 11, 2018), p. 50.

[231] Id., p. 32.

[232] United Westchester March 2018 Storm Response Report, p. 32.

than days later."[233] The United Westchester Report also found that while liaisons were helpful overall, NYSEG did not deploy them as soon as the event began - this sentiment was echoed at several municipal meetings held after Winter Storms Riley and Quinn. Staff concurs that NYSEG liaisons should have provided at the start of restoration.[234] Staff concludes that Con Edison and NYSEG should be deployed all requested liaisons at the start of Winter Storm Riley, rather than at the start of restoration, to maximize coordination efforts with the municipalities.

Officials also suggest that they should have more than one point of contact within the utility for normal daily inquiries — particularly in light of the retirement of a seasoned and well-respected NYSEG liaison, who was on leave during Winter Storms Riley and Quinn — and a single dedicated liaison to facilitate coordination during a major event/storm restoration. It was also suggested that NYSEG should clearly inform officials which reporting method — call, text, email or an online system — should be used to report issues prior to events to ensure officials can quickly and efficiently contact the utility during an actual event. Staff concludes that NYSEG/RGE needs to strengthen its relationships with municipal officials and that regular joint storm response training with tabletop exercises should occur throughout the year to ensure that utility liaisons and local officials better understand the utility's processes and procedures during an actual event.

Recommendation 58	NYSEG ensure joint storm response training with tabletop exercises occur throughout the year such that utility liaisons and local officials fully understand the utility's processes and procedures during an actual event. NYSEG's ERP will incorporate this modification.

[233] Id., p. 34.

[234] United Westchester March 2018 Storm Response Report, p. 32-34.

5.2.2 Effectiveness of Liaisons

Staff attended several post-event municipal forums with local leaders in each utility's service area to more closely examine the issues and gain a better understanding of how the municipal liaison programs were actually managed and implemented during Winter Storms Riley and Quinn from the local official's perspectives. Overall, the execution of the liaisons' duties was the source of significant concern for some local municipal and elected officials. More specifically, Staff discussions with local officials during the events revealed several officials thought many utility municipal liaisons were largely ineffective and there were significant shortcomings in the quality of information that the utilities' liaisons were providing to municipalities. The officials offered the following examples:

- utility liaisons were often unable to provide even the most basic information, such as daily work plans or crew locations;
- utility liaisons lacked sufficient knowledge about the utilities' systems and restoration processes; and,
- officials stated that much of the information provided by the utility liaisons was often inaccurate and/or no different than what was already available on the utilities' websites.

A New York State Senate hearing was also held on March 27, 2018, and a municipal outreach meeting was held by Con Edison on April 4, 2018, during which speakers expressed the concern that Con Edison's municipal liaisons were not well-versed in either the details of the electrical system or their assigned areas. The United Westchester Report similarly stated that, "Con Ed should strongly consider strengthening its municipal liaison program, with both broader training and a more active role in providing support to Con Ed on its deployments and having full access to information that could be of use to a locality."[235] Several local municipal officials from NYSEG's service areas stated that NYSEG's liaisons were not selected appropriately, not properly trained on the more technical aspects of the local electric system, including the areas served by specific circuits or the location of crews, and did not have the authority to make decisions on crewing and job assignments when needed. Additionally, several

[235] Id., p. 34.

commented that the NYSEG's liaisons did not maintain, or were unable to provide, timely and accurate communications during Winter Storms Riley and Quinn, particularly with regard to job-specific ETRs and road-clearing schedules.

The utility liaison programs were established to minimize confusion and to streamline the reporting process of restoration activities, which is critical during widespread outages. The utility liaison's primary responsibility is to be a strong point of contact and voice for the utility to the municipalities and local leaders. In order to do this, the liaisons must have an understanding of the area, stakeholders, and system configuration. To ensure liaisons are well-prepared, particularly those being brought in from other regions, Staff recommends that the liaisons be supplied with a packet of local information including circuit maps, contact information for EOCs and municipal officials, and lists of critical facilities and LSE customers. Additionally, exercises involving liaisons should endeavor to include liaisons who are not typically located in that region.

Con Edison's ERP states that each municipality in its service territory can, upon request, have a dedicated municipal liaison designated to serve as the point of contact between the utility and the municipality during an emergency event and provide "up-to-date and accurate information regarding restoration efforts."[236] The utility also establishes a municipal liaison coordinator to oversee the liaisons and their support staff, coordinate liaison deployment, and address requests made by municipalities through the municipal portal and the utility's hotline, which are tools that municipal officials use to report issues during an event to streamline the process.[237] The municipal liaison then communicates to the municipalities the status of cut-and-clear crews, critical facilities, restoration crews and any other pertinent to their assigned municipality, and municipal liaisons communicate back to the company any

[236] Case 17-E-0758, In the Matter of the December 15, 2017 Electric Emergency Plan Review, Consolidated Edison 2018 Emergency Response Plan (filed December 15, 2017) p. 15.

[237] Con Edison's response to DPS-27.

road closures due to trees down on wires, wires down, and critical facility outages that were reported by the municipality through the hotline or municipal portal.[238]

Staff found that Con Edison discontinued a previous version of their municipal portal, which several officials preferred, and did not provide enough outreach and education or training on the new tool to prevent confusion among officials at the start of Winter Storms Riley and Quinn. The new version of the online tool allows officials to report trouble tickets online and to view their location and status on the utility's outage map. Staff found the use of the online tools to be acceptable provided the OMS is functioning properly. That said, during the events the municipal portal was often not providing sufficient updates to officials, who instead sought answers from the liaisons, Con Edison's Public Affairs staff, or during municipal conference calls. Staff recommends that Con Edison undertake additional training of the liaisons and conduct additional tabletop exercises with municipal officials each year to increase their understanding of the municipal trouble ticket portal and hotline. These steps should mitigate confusion in future events.

NYSEG's municipal liaison procedures[239] explain that the Public Liaison Officer (PLO) responsibilities include "(m)aking proactive calls to municipal/elected officials to provide contact information; providing daily updates on outages in their area and restoration activities; assist with special requests and needs; attend daily municipal officials' calls and follow up on any action items for that municipality; accompany municipal officials on field visits as necessary."[240] NYSEG states that Incident Command received information from the PLOs regarding significant restoration issues relayed through

[238] Id.

[239] Case 17-E-0758, In the Matter of the December 15, 2017 Electric Emergency Plan Review, NYSEG & RGE's Electric Utility Emergency Plan (filed December 15, 2017) p. 49.

[240] NYSEG/RGE's response to DPS-27.

the emergency management teams at the state, county or local levels.[241] The utilities also state "(t)he Public Liaison Office established team members to work with Operations Section to better identify street addresses and towns to the circuits listed in the work plans. The team is working to better map circuits of towns for all PLO members to have prior to events, enabling them to respond to municipal officials' questions faster."[242] While recognizing these areas for improvement, the utilities state they did not deviate from the ERP and claim that they did not receive any complaints directed at the liaisons for Winter Storms Riley and Quinn.[243] It strains credulity that NYSEG was unaware of issues regarding the effectiveness of its liaisons, and to claim that complaints were not received.

NYSEG's Part 105 Report recognized that the utility's coordination with municipalities could be improved, and further noted that the utilities and communities would be better served if prioritization of road clearing and other municipality needs occurred at the county level.[244] The Report also noted improvements in efficacy of the liaisons from Winter Storms Riley and Quinn through the subsequent storms. NYSEG states that its municipal partnerships during the April Windstorm were considered successful by local county officials, in part because a liaison was embedded within the EOC as the main point of contact.[245] NYSEG also claims its internal coordination improved during the May Thunderstorm, allowing for a decrease in duplicate wires down tickets; early engagement by liaisons with operations team members to improve information accuracy; and better coordination between the utility

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241 Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, New York State Electric & Gas and Rochester Gas & Electric Emergency Response Performance Assessment Part 105 Report March 1 and March 7, 2018 Nor'easters (filed May 11, 2018) p. 17.

242 Id., p. 109.

243 NYSEG's response to DPS-26.

244 Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, New York State Electric & Gas and Rochester Gas & Electric Emergency Response Performance Assessment Part 105 Report March 1 and March 7, 2018 Nor'easters (filed May 11, 2018) p. 108.

245 Case 19-M-0285, supra, New York State Electric & Gas Rochester Gas and Electric Emergency Response Performance Assessment Part 105 Report April 4, 2018 Windstorm (filed June 6, 2018) p. 72.

and county EOC to better prioritize jobs in conjunction with the county.[246] Staff acknowledges that NYSEG performed better during these later events, but we are not convinced that all underlying concerns have been acknowledged and fully resolved.

Orange & Rockland's ERP states that the CRT provides direct, on-site assistance to municipalities when required by establishing communication with the municipalities early and continuing throughout the restoration.[247] Orange & Rockland's CRT representatives may report to their assigned location and assist in prioritizing work, with more significant issues escalated to the CRT Director for appropriate resolution. In each storm emergency declaration, the CRT is mobilized, and representatives are deployed to their assigned locations or as requested by local government officials. [248] Orange & Rockland indicated that it did not deviate from the ERP in Winter Storms Riley and Quinn, but acknowledged that a complaint was received concerning a CRT representative's lack of experience and, in response, assigned another CRT to that location for the next shift.[249] Staff emphasizes that it is crucial for liaisons to have adequate training, are knowledgeable about the specific area and the municipal officials in that assigned area, and have all of the necessary tools to meet municipalities' needs. Staff's interviews with local municipal officials found that the officials were generally satisfied with Orange & Rockland's liaisons during the 2018 Winter and Spring Storms. However, some officials stated that Orange & Rockland's liaisons were great to work with and helpful, but that information about reported trouble tickets was not always readily available so the liaison could not always provide timely updates.

Central Hudson, National Grid, and PSEG LI followed their ERPs by effectively deploying and utilizing their liaisons. However, following Winter Storms Riley and Quinn, PSEG LI noted

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246 Case 19-M-0285, supra, New York State Electric & Gas Rochester Gas and Electric Emergency Response Performance Assessment Part 105 Report, May 15, 2018 Thunderstorm, (filed June 21, 2018) pp. 64 – 66.

247 Case 17-E-0758, In the Matter of the December 15, 2017 Electric Emergency Plan Review, Orange & Rockland Electric Emergency Response Plan (ERP) (filed December 15, 2017) pp. 45-46.

248 Id.

249 Orange & Rockland's response to DPS-27.

opportunities to further improve the function and usefulness of EOC liaisons.[250] More specifically, PSEG LI stated that the EOC liaisons did not consistently log all requests and actions, but have since been granted access to the Municipal Call Log, which is an electronic repository where issues raised by officials during municipal calls are recorded and tracked - EOC liaisons can now enter and track issues raised by the county EOCs. By using one format to log all issues, municipal requests will be completed without duplication of efforts.[251] Staff found that a similar common and consistent municipal call log format is used at all other utilities, except for Orange & Rockland and Central Hudson, and Staff supports it as a best practice among all utilities. [252]

After review of Winter Storms Riley and Quinn, Staff concludes that municipal liaison programs did not uniformly communicate clear messages regarding restoration efforts or progress and was consequently not as effective as the program could or should have been. That said, Staff firmly believes that conceptually the municipal liaison program has merit and can be a critical component to more effectively coordinate utility systems and community services restoration efforts. Con Edison's also recognized opportunities for further improvement regarding municipal liaisons, particularly with regard to training and coordination practices with officials.[253] Staff endorses Con Edison's commitment to "look for ways to leverage technology to provide quicker access to information needed for this role;" investigate "how to empower our municipal liaisons with more information so that they can provide municipal leaders

[250] PSEG LI's Response to DPS-26.

[251] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, PSEG Long Island's Emergency Response Performance Assessment – Winter Storm Riley and Quinn (filed May 11, 2018) p. 68.

[252] Central Hudson's response to DPS-59, Con Edison's response to DPS-76, National Grid's response to DPS-59, NYSEG's response to DPS-67, Orange & Rockland's response to DPS-60, and PSEG LI's response to DPS-58.

[253] Consolidated Company of New York, Inc. Report on Preparation and System Restoration Performance Winter Storms Riley and Quinn March 2018, pp. 81-82 (May 11, 2018).

with better information;" and "enhance communication flow through liaison training and tools that will provide better transparency of crew locations and critical facility restoration information."[254]

Unfortunately, certain stakeholders claim to have received information from utility crews that differed and conflicted with information that was presented during municipal calls and liaison conversations, which was a source of confusion and frustration for the municipal officials. The purpose of the liaison is to communicate information to stakeholders. Liaisons should remain informed and attentive to stakeholder concerns. Stakeholders should not have to interrupt utility crews to acquire information liaisons were unable to provide. Going forward, Staff recommends information from utility crews be channeled through the liaison and then to municipal officials and county EOC to provide a consistent message from the utility. To ensure the municipal liaison program achieves its goals, the utilities should take the necessary steps to ensure liaisons have access to up-to-date information; officials are aware of the liaison resource for accurate information; and utility crews know to refer municipal officials to the area-specific liaison and the public to the utility's website and/or call center to safeguard against the release of inaccurate information by field personnel.

Recommendation 59	All electric utilities provide their respective municipal liaisons with information necessary to support effective communication between the utility and the counties.
Recommendation 60	To ensure liaisons are aware of the area they are representing, all electric utilities establish a packet of local information including circuit maps, contact information for EOCs and municipal officials, and lists of critical facilities and LSE customers that can be provided to liaisons. The ERPs will incorporate this modification.
Recommendation 61	The electric utilities' exercises involving liaisons should endeavor to include liaisons who are not typically located in that region. The ERPs will incorporate this modification.

[254] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Consolidated Edison Company of New York, Inc. Report on Preparation and System Restoration Performance - Winter Storms Riley and Quinn March 2018, Part 105 Report (filed May 14, 2018) p. 64; p. 82.

Recommendation 62	Con Edison develop and implement a revised Municipal Liaison Program that includes, at a minimum, enhancements made to training and any new tools to be provided to liaisons, e.g. increased access to real-time data and level of authority. Con Edison's ERP will incorporate this modification.

5.3. MUNICIPAL CALLS

The ERPs require the utilities to hold at least one conference call with municipal leaders and local officials each day during multi-day outage events. These conference calls, commonly referred to as "municipal calls," are intended for the utilities to provide information regarding restoration status, weather forecasts, LSE customer outreach, dry ice/bottled water distribution, and road-clearing activities to local officials. Municipal calls occur both pre- and post-storm and each utility has some discretion in managing the calls. Staff reviewed the approaches of each utility to identify best practices in addition to reviewing the efficacy of actual calls with municipal officials. Because the utilities also disseminate information to municipalities through municipal liaison outreach, press releases, emails, texts, or websites, the municipal calls should provide information that is beyond what is readily available to local officials and the public via other public sources, while still complying with requirements of the Scorecard Order.

The Scorecard Order requires that pre-storm municipal calls will be held prior to the event and include information relating to the following: the type and anticipated severity of the storm; the effects it may have on the utility and expected level of system damage; activities actions being taken to prepare for the event; and, processes for communication with utilities throughout the event. [255] Once a significant event has begun, utilities are required to hold properly managed municipal calls throughout the event, which must provide, at a minimum, baseline system and outage status information, updates on road clearing activities and allow time for questions from local officials. In addition to these guidelines,

[255] Case 13-E-0140, Utility Emergency Performance Metrics, Order Approving the Scorecard to Assess Electric Utility Response (issued December 23, 2013) p. 37.

each major utility's ERP contains a section that provides specifics on how municipal calls will be conducted in each service territory. To facilitate the calls, Staff recommends that a call agenda be set and circulated to participants prior to the call and include appropriate time for participants to ask questions. Staff also recommends the utilities provide a brief overview of what has been accomplished since the last municipal call, as well as the workplan for the following day.

Although the utilities generally followed the Scorecard Order and their ERPs during Winter Storms Riley and Quinn, municipal officials expressed frustration with the relevancy of the calls due to the generic nature of information provided, resulting in officials questioning about specific jobs that extended the length of the calls. These calls were first established to update local officials on particular topics that affect the geographical area of the participants and supplement any municipality-specific information that is disseminated through other venues. Based on follow-up conversations with local officials and notes from Staff who monitored the calls during Winter Storms Riley and Quinn, Staff recommends that the municipal call sections of the ERPs be updated to reflect the evolving ways that local officials can access relevant information from other sources, such as a utility's outage map, in a more timely and effective manner. Staff also believes that for the municipal calls to be more effective both the utility and the municipal participants must know what to expect from the call. Further, the call's question-and-answer sessions should only address or clarify information presented by the utility. The calls should not be used as a forum to air grievances against the utility.

Staff's other observations regarding municipal calls include, during Winter Storms Riley and Quinn, several Central Hudson call transcripts note conversations happening in the background of unmuted participants, and many NYSEG calls lasted significantly longer than other utilities because the utility also attempted to answer localized questions that were not planned to be discussed on the call. [256,]

[256] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Central Hudson Riley/Quinn Part 105 Report (filed April 11, 2018) Attachment 5.

[257] Staff found that some Con Edison and NYSEG municipal calls lasted over two hours. While there is no current requirement or guideline regarding the length of the calls, utilities should strive to provide the best information available in the most succinct and effective way. Staff also found Con Edison and NYSEG calls tended to be more disorganized when compared to the calls of utilities that use operator-assisted systems, such as National Grid and Orange & Rockland, especially during roll call and the question-and-answer portions. During many of Con Edison and NYSEG calls, local officials spoke at the same time diminishing the effectiveness of the calls, all of which could be alleviated by using operator-assisted calls to better control who may speak at a given time. The United Westchester Report specifically identified Con Edison's current practice of "municipality by municipality alphabetical (or reverse-alphabetical) roll call of local governments" is ineffective. Staff is therefore recommending that operator-assisted calls be used exclusively going forward. [258] The operator-assisted calls also enable the operator to mute lines to keep the call focused on the agenda and answer questions by limiting the discussion to one participant at a time rather than multiple speakers at once. An operator-assisted system also enables transcripts of the call be made, which helps ensure all action items are documented and identify areas for future improvement opportunities.

National Grid's ERP offers additional details and guidelines regarding how the municipal calls should be run, beginning with providing information to the participants regarding the format of the call. [259] According to the National Grid's ERP, the call should last approximately 20 minutes, questions from the participants will be taken at the end of the call and should be general in nature, requests for information concerning specific locations should be discussed separately after the conclusion of the call, and local government representatives should contact their respective Community and Customer

[257] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, NYSEG Scorecard on Winter Storms Riley and Quinn (filed April 11, 2018) Appendix E Outreach Communications.

[258] United Westchester March 2018 Storm Response Report, p. 18.

[259] Case 17-E-0758, In the Matter of the December 15, 2017 Electric Emergency Plan Review, National Grid-New York Electric Emergency Response Plan (filed December 15, 2017) p. 257-263.

Management contacts or their County Emergency Management Office for additional update information. Although National Grid stated it was not required to, and therefore did not, hold municipal calls for Winter Storms Riley and Quinn, subsequent feedback to Staff in follow-up interviews with local leaders indicated that National Grid's municipal calls are typically efficient, well-managed, and informative. The National Grid ERP lays out "ground rules" for each call and lists the information that will be provided during the call.[260] Staff believes National Grid's detailed call format contained in the ERP helps to manage expectations, effectively inform local leaders and officials of important updates and progress, and keep the calls focused on the intended purpose. Staff considers this to be a best practice, which should be used by all utilities going forward.

Staff also heard complaints in hearings and comments received following Winter Storms Riley and Quinn that utilities did not maintain and update lists of the proper municipal/elected officials to notify of the details of pre- and post-storm municipal calls. On this point, the United Westchester Report identified that some officials were not prepared to participate in the pre-storm calls held by Con Edison, leading to an "early recommendation" that, "Utility companies should invite county, state and federal elected officials to participate in pre-storm conference calls when they are held."[261] These officials want to receive the invitation to determine if they need to participate, rather than having the utility decide. Staff concludes that utilities are inviting the appropriate officials from their contact lists. Staff also concludes that updates to the contact list should not occur during an emergency event unless absolutely necessary and having set timelines for utility-initiated updates reminds the officials of the need to proactively contact the utility to update in-between those times. Updates from officials should be entered on a monthly basis into the utilities' contact list document, reducing the likelihood of not contacting the appropriate officials during an emergency event.

[260] Id., p. 259.

[261] United Westchester March 2018 Storm Response Report, p. 8.

Recommendation 63	All electric utilities improve communication with municipalities by encouraging municipal officials to report specific issues to their county EOCs, leaving the municipal calls to serve as brief updates for the affected area(s) as a whole and leaving individual issues to be addressed using other communication avenues, including, but not limited to, municipal liaisons.
Recommendation 64	During municipal calls, all electric utilities discuss, at a high-level, the hardest-hit areas, what has been accomplished since the last call, and the workplan for the following day. The ERPs will incorporate this modification.
Recommendation 65	All electric utilities include in the call invitation a detailed agenda covering what will be discussed in each call, any information regarding the correct venues or channels to report municipal-specific issues, and ways to access updates through outage maps or liaisons. The ERPs will incorporate this modification.
Recommendation 66	All electric utilities exclusively use operator-assisted systems with line-muting capability for the municipal calls to minimize disruptions and to streamline the calls, specifically for the roll call and question-and-answer session. The ERPs will incorporate this modification.
Recommendation 67	Con Edison hold separate municipal calls based on geographical regions for municipal and elected officials in Westchester County. Outreach to municipal officials should be clear to avoid any confusion about the separate calls going forward. The ERPs will incorporate this modification.
Recommendation 68	The electric utilities semi-annually update municipal and elected official contact lists on prescribed dates and provide a document to officials detailing the methods to contact the utility if any information changes in the interim. The ERPs will incorporate this modification.
Recommendation 69	All electric utilities survey the municipal leaders and elected officials to determine if the Municipal Calls are useful, if there is a better method to distribute information, and what information is required. The ERPs will incorporate all agreed upon changes.

5.4. UTILITY WEBSITES

A utility's website is one of the most efficient resources for customers to receive accurate and timely information during storm events and on blue-sky days. The electric utilities encourage customers to visit their websites to obtain event and outage related information required by the Scorecard Order, such as ETRs, locations for the distribution of dry ice and bottled water and/or warming shelters, safety tips and up-to date news on restoration efforts.[262] Customers can also report outages via the website. Thus, when a utility's website is taken offline for any reason, customers have lost a valuable resource for information that may be necessary for them to make informed decisions, including the need to relocate. Staff's investigation examined the effectiveness of each utility's website, the availability and ease of access for customers, any deficiencies that presented during the storm events and the utilities' back-up plans if their websites are off-line.

The Scorecard Order requires the utilities' websites to be available around the clock during an event and to be updated at least hourly until restoration is complete, although website maintenance is permitted if "downtime is reasonably short in duration and is performed during off-peak hours."[263] Each utility's ERP contains procedures for updating the websites during storm events. If no new information is available, the utilities should update the website with new timestamps on applicable pages to comply with the Commission's directive in the Scorecard Order.

During Winter Storms Riley and Quinn, Con Edison had over 3.2 million views of the website, averaging approximately 292,000 views each day.[264] Central Hudson's website had 1.3 million

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[262] Case 13-E-0140, Proceeding on Motion of the Commission to Consider Utility Emergency Performance Metrics, Order Approving the Scorecard for Use as a Guidance Document to Assess Electric Utility Response to Significant Outages (issued December 23, 2013) p. 23.

[263] Id., pp. 8-9.

[264] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Consolidated Edison Company of New York, Inc. Report on Preparation and System Restoration Performance - Winter Storms Riley and Quinn March 2018, Part 105 Report (filed May 14, 2018) p. 38.

views during Winter Storms Riley and Quinn.[265] As evidenced by the volume of traffic, the utilities' websites are an important source of valuable and essential information for customers. Staff's investigation found several deficiencies with the utilities' websites, however, and all, except for PSEG LI, experienced malfunctions during critical periods. Although, certain utilities were able to limit the issues and get the sites back online quickly, Con Edison and Orange & Rockland's websites remained inaccurate or showed maintenance screens for several hours during the events; violating Section II(B)(3) and Section 5.9 of their ERPs, respectively. The United Westchester Report stated that Con Edison's website did not work properly and/or failed to provide accurate information during Winter Storms Riley and Quinn. During one conference call between Con Edison and municipal officials, Con Edison informed callers that the utility's posted restoration times on its website were inaccurate and in need of revision, but no website banner or other messaging on its website was posted to inform customers of the inaccuracies.

Con Edison's website is a critical source and conduit of vital information during a system emergency, yet multiple sources confirm that Con Edison's website was unavailable on March 10, 2018 from 2:36 PM until 11:00 PM. Con Edison stated this was the result of a hardware failure in the utility's datacenter, which caused a non-critical function to go offline and a software error that displayed an application error on the website. Con Edison attempted to mitigate the issue and took a proactive step by substituting a manual webpage. Staff found that Con Edison's efforts to the mitigate the software issue was appropriate under the circumstances. Nonetheless, a customer's inability to receive timely information during a storm event is unacceptable and Staff concludes Con Edison's website outage violated the Scorecard Order and Section II(B)(3) of its ERP during Winter Storm Quinn. To address future website failure, Staff recommends that each electric utility develop processes to post a website banner noting any known website deficiencies, including issues related to ETRs or other posted information, and an estimate of when updated and corrected information should be expected. These procedural steps and requirements should be incorporated into the utilities' ERPs.

[265] Case 19-M-0285, supra, Central Hudson Riley/Quinn Part 105 Report (filed April 11, 2018) p. 18.

NYSEG/RGE's ERP states that a special page will be loaded to its website during storms to alert customers to additional information that is available on the website.[266] During Winter Storms Riley and Quinn, the website was updated inconsistently, often going seven hours or more between updates. Several public comments were submitted by customers in NYSEG's service territories regarding the utility's website's accuracy and performance. Ensuring that the website is accurate and updated is important for customers to plan around a utility's restoration efforts. NYSEG/RGE's ERP lacks detailed information regarding who is responsible for maintaining and updating the utility websites during storm events and should be modified accordingly. Staff also recommends that NYSEG/RGE include in their ERP, the person or group responsible for spot-checking the accuracy of the website throughout the event and within one hour after all press releases are issued. Additionally, a time-stamp should be placed on the website page to provide notice of information accuracy as of a time certain.

Orange & Rockland states that the Quality Control Group is responsible for monitoring the utility's website and outage reporting information. If the group finds any inconsistencies, they are to notify the responsible groups, gather times of corrective actions and follow up to ensure completion. Orange & Rockland's website experienced two failures during Winter Storms Riley and Quinn due to data inconsistencies, a hardware failure and a software bug. Orange & Rockland's website was down the morning of March 9, 2018 for six and a half hours because the utility removed the outage map to "address data inconsistencies relating to under- and over-counting of outages."[267] Orange & Rockland also stated the entire website experienced an additional outage on March 10, 2018 caused by hardware and other issues, which resulted in an eight-hour interruption of the site.[268] Due to the length of time Orange &

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[266] Case 19-M-0285, supra, NYSEG/RGE Scorecard Report (filed April 11, 2018) Appendix A: Electric Utility Emergency Plan, p. 50.

[267] Orange & Rockland's response to DPS-18, Q-4; Q-5.

[268] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Orange & Rockland Report on Preparation and System Restoration Performance Winter Storms Riley and Quinn March 2018 (filed May 11, 2018) pp. 57-58.

Rockland's website experienced outages, Staff concludes that Orange & Rockland violated Section 5.9 of its ERP.

Recommendation 70	All utilities establish a website banner noting any known deficiencies or issues related to ETRs and when updated information can be expected. The ERPs will incorporate this modification.
Recommendation 71	NYSEG/RGE include in its ERP the person or group responsible for spot-checking accuracy of the website throughout events and within one hour after each press release is issued. NYSEG/RGE's ERP will incorporate this modification.
Recommendation 72	All storm-related website pages include a timestamp indicating when the information was posted and updated. If no new information is available over an eight hour period, the electric utilities need to revise the timestamps on applicable pages to clearly show the public that the information is accurate. The ERPs will incorporate this modification.

5.5. Call Center Operations

Providing excellent customer service through the utilities call center operations demonstrates that customers are important to the organization and that the organization values its customers. Utility call center representatives are trained to assist customers during emergency and outage situations in addition to their routine activities, such as billing inquiries. 16 N.Y.C.R.R., 16 Part 105.4(9) requires each electric utility to provide guidelines indicating how the utility will respond to the calls received by its call centers, including periods of high call volume during storm events. Per these guidelines, each utility's ERP establishes the methods to achieve set performance goals and provide customers with accurate and timely information as call volumes escalate. Appropriately augmenting call center staffing throughout an event is critical to effectively addressing the needs of customers regarding outages, restoration, emergency concerns, and other event-related customer service needs to the satisfaction of the customer.

As the incoming call volumes increase utilities employ other tools to supplement call center staff including Interactive Voice Response (IVR), High Volume Call Application (HVCA) assistance systems, and their websites, for customers to report outages and obtain up-to-date information. Utilities may also limit responding to non-emergency calls, such as bill inquiries, by requesting callers to delay their non-critical inquiries until the event has ended. These tools allow the utilities Customer Service Representatives (CSRs) to answer event-related calls more efficiently. Call centers can be viewed as the eyes and ears of a utility, as such when the customer is unable to obtain relevant information they may conclude that they are not one of the utility's priorities. Based on complaints received by the Department and statements made by customers and elected officials at public statement hearings, customers generally expressed dissatisfaction with the utilities' call handling practices, including the length of time they were placed on hold, the inability to speak with a live representative, and being provided inaccurate information by the utility representatives during Winter Storms Riley and Quinn.[269]

5.5.1. Call Answer Performance

Call answer rates are a customary means to determine if a call center has adequately augmented its staffing in response to incoming call volumes. A utility call center(s) is expected to answer a minimum of 80 percent of calls by live representatives within 90 seconds. Staff concludes that during Winter Storms Riley and Quinn and the May Thunderstorm Central Hudson, National Grid, and PSEG LI performed satisfactorily by answering calls with a live representative within 90 seconds. As

[269] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Public Statement Hearing Transcript April 23, 2018 2pm - Larchmont, filed May 2, 2018, pp. 20, 25 and 26, Public Statement Hearing Transcript April 23, 2018 6pm - Somers, filed May 2, 2018, pp. 39 – 40, 50-52, and 75, Public Statement Hearing Transcript April 24, 2018 6:05pm – White Plains, filed May 3, 2018, pp. 40 and 48, Public Statement Hearing Transcript April 25, 2018 2pm - Monticello, filed May 3, 2018, pp. 48, 51, 53, and 55, Public Statement Hearing Transcript April 25, 2018 6pm - Monticello, filed May 3, 2018, p. 27.

explained below, Con Edison, NYSEG, and Orange & Rockland, however, did not meet this standard on several occasions during these events.

During Winter Storm Riley, Con Edison did not meet its minimum call answer rate on March 2 and March 3, 2018 with performances of 65% and 41%, respectively.[270] Staff's investigation found that Con Edison's call center staffing levels were below the levels specified in its ERP.[271] Winter Storms Riley and Quinn were both considered Full Scale 3B storm classifications requiring 370 representatives, at a minimum, over each 24-hour operational period.[272] Con Edison acknowledged that call center staffing was inadequate from March 2 through March 3, 2018, which resulted in low call answer rates, long average wait times, and a high number of customer abandoned calls. Con Edison increased its staffing levels on March 5, 2018 and had a minimum of 400 CSRs available during each 24-period thereafter. With the appropriate level of staffing, Con Edison was able to answer calls within 90 seconds for the remainder of Winter Storm Riley and throughout Winter Storm Quinn and thereby met its performance metric target. While failure to achieve the call answer rate percentage target is not an ERP violation, Con Edison's insufficient staffing levels is a violation of Section VII(E) during Winter Storm Riley.

NYSEG's call center performance on March 2 and March 3, 2018 was 76% and 71%, respectively. During the initial days of Winter Storm Riley, the Department's call center also received several complaints from NYSEG customers who were unable to reach a live utility representative. Department Staff contacted NYSEG about the concerns being reported and to identify a resolution. It was determined that NYSEG was using its third-party vendor's IVR to satisfy all incoming calls, except for those specifically reporting emergencies. Department Staff found the use of the third-party vendor's

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[270] Con Edison's Response to DPS-77.

[271] Id., Con Edison's Preparation and Restoration Performance Report indicates that Staffing was based on the 3B Full Scale (Overhead) ICS storm classification for March 3 through March 4, 2018; however, a total of 290 CSRs worked over each 24-hour period.

[272] Id.

IVR exclusively was not appropriate because callers were unable to otherwise request a live agent. To reach a live agent, these customers had to remain on the line and wait through all IVR options before connecting to a live agent. On the morning of March 6, 2018, NYSEG discontinued use of the third-party vendor and all calls were routed through the utility's internal IVR system, allowing callers increased access to live representatives.

Orange & Rockland managed the call center appropriately at the start of the events; however, on March 6 and March 12, 2018, the utility experienced a high number of abandoned calls. As a result, customers were unable to reach a representative or heard busy signals.[273] Orange & Rockland identified that on March 6, 2018 a total of 1,131 calls were abandoned out of the 2,411 calls (47%) offered to live representatives and on March 12, 2018, a total of 1,020 calls were abandoned out of the 2,552 calls (40%) offered to live representatives. Orange & Rockland attributed the issues on those dates to the utility's decision to no longer restrict the call center's calls to only storm or emergency-related calls. By allowing the increased traffic for all service calls too soon, Orange and Rockland's performance deteriorated, and it needs to be more conservative in reinstating normal operations as storm events progress or to otherwise increase call center staffing. Staff also found, to a lesser extent, that National Grid and PSEG LI had issues with calls being abandoned during Winter Storms Riley and Quinn. [274, 275]

During the May Thunderstorm, Orange & Rockland's performed at 91 percent on average for calls answered by live representatives within 90 seconds.[276] Orange & Rockland attributed its

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[273] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Orange & Rockland Report on Preparation and System Restoration Performance Winter Storms Riley and Quinn March 2018 (filed May 11, 2018) p. 58; Orange & Rockland's response to DPS-81.

[274] National Grid's response to DPS-29. On March 2, 2018, 970 calls were abandoned of the total 13,757 calls offered into the call center on that day.

[275] PSEG LI's response to DPS-30, Attachment 1. For Winter Storm Riley and Quinn, PSEG LI indicated high abandon rates intermittently.

[276] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Orange & Rockland Preparation and Restoration Performance Report May 15 Thunderstorm (filed July 19, 2018) pp. 42-43.

improved performance to the use of supplemental employees. The utility plans to hire additional CSRs and using a Mutual Assistance Routing System, which provides access to outsourced live agents during extended outages and emergencies. Staff believes that Orange & Rockland's proposed improvements should result in improved call response rates and customer service.

A call center's performance success is directly dependent on appropriate staffing, particularly during storm events; Staff however, found that tracking of staffing levels varied between the utilities. Orange & Rockland and Con Edison reported the total number of FTEs working for each 24-hour period while the remaining utilities – Central Hudson, National Grid, NYSEG/RGE, and PSEG LI – reported the number of CSRs for blocks of time within each 24-hour period as stated in the ERPs (e.g., 6:00 AM to 8:00 AM). Staff found that reporting only FTE levels is insufficient to evaluate whether adequate staffing was in place. Therefore, utilities should report the number of incoming telephone lines being serviced by CSRs per shift.

Recommendation 73	All utilities update their methods of tracking call center staffing during events to reflect the actual number of incoming telephone lines being serviced on a 30-minute interval basis.
Recommendation 74	All utilities identify a person or group to monitor and resolve any instances of high abandon rates or reports of busy signals on its incoming call center telephone lines. The ERPs will incorporate this modification and future reports need to reflect abandon rates and busy signals.

5.5.2. Interactive Voice Response

IVR systems allow the utilities to provide basic information to customers prior to speaking with a representative, in addition to enabling call routing.[277, 278] During outage events, IVR messages

[277] Staff reviewed each utilities' call flow diagrams to identify which utilities clearly offered a live representative. Options to speak with a live representative are present in the call flow diagrams. Central Hudson's response to DPS-30, Con Edison's response to DPS -38, National Grid's response to DPS-29, PSEG LI's response to DPS-30, and Orange & Rockland's response to DPS-32.

[278] NYSEG's response to DPS-33. NYSEG indicated that a live representative is only offered during certain situations.

should be designed to provide callers with concise information related to the utility's restoration progress, including, but not limited to: ETR information, when available; safety information, such as shelter, water, and dry ice availability; and, a reference to the utility's website such that the customer can access additional information and related updates. To keep this information "fresh and relevant" requires the IVRs to be updated throughout an event. While there is no specific mandated frequency of such updates, at a minimum each utility is required to complete updates of the IVR messaging within one hour of each press release.

Customers reported that the quality of information received through the IVR systems during Winter Storms Riley and Quinn was often inaccurate and/or incomplete. [279, 280] Staff found that NYSEG and RGE's IVR systems performed best among the utilities during Winter Storms Riley and Quinn and the May Thunderstorm, with respect to the content and timely updating of their IVR messages. This was likely the result of improvements made following recommendations contained in the 2017 Windstorm Report.[281] Staff's investigation found that the quality of information provided and implementation time of IVR updates for Central Hudson, Con Edison, National Grid, and PSEG LI were

[279] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Public Statement Hearing Transcript April 23, 2018 2pm - Larchmont, filed May 2, 2018, pp. 20, 25 and 26, Public Statement Hearing Transcript April 23, 2018 6pm - Somers, filed May 2, 2018, pp. 39 – 40, 50-52, and 75, Public Statement Hearing Transcript April 24, 2018 6:05pm – White Plains, filed May 3, 2018, pp. 40 and 48, Public Statement Hearing Transcript April 25, 2018 2pm - Monticello, filed May 3, 2018, pp. 48, 51, 53, and 55, Public Statement Hearing Transcript April 25, 2018 6pm - Monticello, filed May 3, 2018, p. 27.

[280] United Westchester March 2018 Storm Response Report, Early Recommendation #5: States in part "The utilities should make a strong commitment to provide accurate information in all circumstances, including with government officials and the public", pp. 20-21.

[281] NYSEG and RGE's ERP submitted on April 18, 2018 contains Appendix G: Sample Pre-Approved IVR Scripts. The messaging used primarily during Winter Storm Quinn follow along these pre-approved IVR scripting guidelines and can be referred to as a best practice for IVR messaging when used (Page G1).

not consistent with their press releases.[282, 283, 284, 285] Central Hudson and National Grid failed to meet the one hour post press release IVR update requirement which ranged from only minutes outside of the allotted timeframe to hours, or updates not completed at all in some cases. Central Hudson's failures are a violation of its ERP Section 6.2 for Winter Storms Riley and Quinn. National Grid's failure is a violation of its ERP Section 17.2(2) for Winter Storm Riley.

Con Edison's failure to consistently provide timely updates to their IVR consistent with the issuance of press releases within a reasonable time is a violation of its ERP Section VII(E), for Winter Storms Riley and Quinn. Con Edison's failure cannot be excused by a lack of specificity contained in Con Edison's ERP. Con Edison should have updated their IVR messaging as reflected in the Scorecard Order.[286]

Staff also found certain performance issues that impacted the effectiveness of the IVR systems during Winter Storm Riley and Quinn. On March 2, 2018, a limited number of NYSEG customers attempting to navigate through the IVR between approximately 7:30 PM and 9:00 PM were unable to connect with a live representative.[287] Customers should retain the ability to connect with a live

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[282] During Winter Storms Riley and Quinn, Central Hudson updated the IVR 31 times while there were 14 press releases. A total of 6 press releases did not have IVR messages that were updated within an hour. During the May 15 thunderstorm, Central Hudson updated the IVR 15 times and all IVR updates directly associated with the 9 press releases were completed within the required timeframe. Central Hudson's May 15 thunderstorm IVR message updates were concise and consistent and could be referred to as a best practice.

[283] During Winter Storms Riley and Quinn, Con Edison updated the IVR 65 times (regionally) while there were 33 press releases. A total of 8 press releases did not have IVR updates within an hour.

[284] During Winter Storm Riley, National Grid updated the IVR 5 times with 5 press releases; however, none of the IVR updates were made within one hour of a press release.

[285] During Winter Storms Riley and Quinn, PSEG LI had 21 press releases, and only one IVR message update, which was not within an hour of any of the press releases.

[286] Case 13-E-0140, Proceeding on Motion of the Commission to Consider Utility Emergency Performance Metrics, Order Approving the Scorecard for Use by The Commission as A Guidance Document to Assess Electric Utility Response to Significant Outage (issued December 23, 2013).

[287] NYSEG's response to DPS-32. NYSEG received a total of 201 cases from the Department of Public Service. A portion of these complaints, taken particularly during Winter Storm Riley, were related to customer's inability to contact NYSEG to either report its outage or obtain information on the status of its restoration.

representative through the IVR system in the event of a life-threatening emergency or the information contained in the IVR messaging is insufficient to meet their needs.

On March 8, 2018, Central Hudson identified an OMS call processor error caused an incorrect IVR message, which advised callers that there were no outages reported in their area for approximately two hours. Con Edison identified telephone issues on March 2, March 3, March 6, and March 7, 2018 resulting in inbound calls being choppy, having dead air, looping callers inappropriately, preventing use of speech recognition to request a CSR, and abandoned calls.[288] These issues are a result of various technical failures that were addressed timely and corrected on a forward going basis.

The utilities need to be vigilant in their call and IVR monitoring efforts by frequently reviewing the call statistics to promptly identify errors or issues. By doing so, the utilities will be able to take the steps needed to re-establish appropriate performance levels.

Recommendation 75	NYSEG shall ensure customers have clear options to speak with a live representative for all calls handled by any IVR systems.
Recommendation 76	All utilities develop proactive measures to ensure that concise, comprehensive, and accurate information is being provided in all IVR messaging. The ERPs will incorporate this modification.
Recommendation 77	Central Hudson, Con Edison, National Grid, and PSEG LI develop procedures to ensure IVR messaging is updated within 1 hour following a press release issuance and to be consistent with the information provided in press release.

5.6. Life Support Equipment Customers

Life Support Equipment (LSE) customers are defined under 16 NYCRR § 105.4(b)(9), as those customers who require electrically operated equipment to sustain basic life functions. LSE

[288] Con Edison's response to DPS-38.

customers receive a specialized level of communication from their utilities due to their increased vulnerability. LSE customer's accounts are coded as such and their meter is tagged with a medical seal to avoid disconnection. The utilities' ERPs detail how LSE customer information is to be verified and updated semi-annually, at a minimum.[289] The most current LSE customer information is obtained by utility CSRs, other internal groups during routine utility communications, and specific outreach efforts. If the LSE customer's information is not accurate, as was the case in some instances for each of the l utilities during Winter Storms Riley and Quinn, a utility cannot easily verify the status of their LSE customers by phone during an outage event. Staff found several instances among each of the utilities where LSE customers were no longer residing at the premises on file or were actually deceased. These instances led to unnecessary wellness visits, resulting in personnel being diverted from other restoration efforts.

Based on Staff's findings, the utilities should direct CSRs that speak with an LSE customer to review the customer's information and make updates as necessary, after addressing the immediate concern. Staff also concludes that each utility should strive to have at least two alternate emergency contact telephone numbers for each LSE customer account. Staff further recommends that the utilities be directed to certify with Staff that the LSE customer lists and information have been updated and verified at least twice a year.

Recommendation 78	All utilities ensure procedures direct CSRs who speak with an LSE customer to update the customer's contact information, after addressing their concern.
Recommendation 79	All utilities should strive to have a minimum of two alternate emergency contact telephone numbers for each LSE customer account.
Recommendation 80	All utilities certify that the LSE customer lists and information have been updated and verified at least twice a year.

[289] 16 N.Y.C.R.R., Part 105.4(b)(5)(iii) and the Home Energy Fair Practices Act (HEFPA) 16 N.Y.C.R.R., Part 11.5(a)(5) require utilities to maintain accurate LSE customer contact lists. Each utility has documented processes for how customers may be recognized as an LSE account.

5.6.1. Pre-Storm Notification Requirements

The utilities are required to notify LSE customers before an expected major storm event begins, via automated calls, to alert them of the possible loss of power, to encourage them to undertake plans for personal safety, and to call emergency services directly, if assistance is needed at any time. In accordance with the utilities' ERP protocols, an automated pre-storm call was made to all registered LSE customers on March 1, 2018 to inform them that Winter Storm Riley might cause service interruptions. Similar pre-storm calls were made conducted by all the utilities, except for NYSEG/RGE, on March 6, 2018 for Winter Storm Quinn. Although required by their ERP to make pre-event calls, NYSEG/RGE explained that a March 6th notification call to all LSE customers call was not performed because direct contacts with LSE customers were already being conducted following Winter Storm Riley.[290] On this point, however, NYSEG/RGE was actually only contacting LSE customers that continued to be without power and not its entire LSE population in the areas that would be impacted by Winter Storm Quinn.[291] Staff finds that NYSEG/RGE should have conducted automated pre-storm calls to all LSE customers to comply with its ERP and, by not doing so, the utilities violated Section 9.3.2.1 of its ERP for Winter Storm Quinn.[292] Pre-storm notifications to LSE customers were otherwise made appropriately by the utilities for the 2018 Winter and Spring Storms.

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[290] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, New York State Electric & Gas and Rochester Gas & Electric Emergency Response Performance Assessment Part 105 Report March 1 and March 7, 2018 Nor'easters (filed April 11, 2018) p. 16.

[291] NYSEG's response to DPS-16, Attachment 1.

[292] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, New York State Electric & Gas and Rochester Gas & Electric Emergency Response Performance Assessment Part 105 Report March 1 and March 7, 2018 Nor'easters (filed May 11, 2018) Appendix A, p. 54.

5.6.2. Contact Requirements for Affected LSE Customers

The utilities are required to maintain daily direct contact with all affected LSE customers during major events to verify their continued safety and well-being. Utilities are expected to contact 80 percent of affected LSE customers, via telephone, within 12 hours of the start of the event; make a second attempt within the same 12-hour period if the LSE customer is not reached the first time; and to directly contact or refer to an EOC or other third-party for 100 percent of affected LSE customers within 24 hours.[293] It is important to note that at no time during an outage event does the responsibility for this daily direct contact with LSE customers shift to any other third party, such as an EOC or emergency responder. The utility bears the ultimate responsibility for all communications with LSE customers, including closing the loop with LSE customers to ensure daily contacts are made when referrals are provided to an EOC.

Staff found that only Orange & Rockland, National Grid and Central Hudson performed their LSE related activities as required during the 2018 Winter and Spring Storms. Con Edison, NYSEG/RGE and PSEG LI did not meet the requirement to contact 80 percent of affected LSE customers within 12 hours of Winter Storm Riley and Con Edison and PSEG LI failed to contact 80 percent of affected LSE customers within 12 hours during Winter Storm Quinn.

During Winter Storm Riley, NYSEG failed to properly identify all impacted LSE customers as required. Staff found that 190 LSE customers that were potentially impacted were not represented on NYSEG's OMS system, however, these customers were identified in NYSEG's call center system. This discrepancy was not discovered until March 5, 2018, three days into Winter Storm Riley.[294] While NYSEG appropriately contacted the additional customers as part of its subsequent ongoing daily LSE customer

[293] Case 13-E-0140, Proceeding on Motion of the Commission to Consider Utility Emergency Performance Metrics, Order Approving the Scorecard for Use as a Guidance Document to Assess Electric Utility Response to Significant Outages, (issued December 23, 2013) p. 26.

[294] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, New York State Electric & Gas and Rochester Gas & Electric Emergency Response Performance Assessment Part 105 Report March 1 and March 7, 2018 Nor'easters (filed April 11, 2018) p. 91.

outreach efforts, it is alarming that the two systems were inconsistent, particularly given the utilities' history of not identifying all LSE customers during large events, as noted in the 2017 Windstorm Report. The 2017 Windstorm Report also noted that NYSEG/RGE's OMS did not capture single customer outages that were not linked to an incident when creating an outage report.[295] Although NYSEG/RGE indicated that they will continue to enhance the OMS system to mitigate these issues during future events, more oversight and factual accuracy is needed to ensure that all LSE customers are accounted for going forward.[296] Staff concludes that NYSEG/RGE violated Section 9.3.2.2 of their joint ERP by failing to properly identify and contact all affected LSE customers for Winter Storm Riley. Although this issue was discovered by Staff in its review of NYSEG, Staff recommends that all utilities be required to provide improved procedures, for inclusion in their ERPs, that are designed to eliminate the critical failures noted above in their OMS system, as well as LSE customer notifications and site visits going forward.

In addition to not having a complete LSE customer list, NYSEG had staffing issues related to making LSE customer calls. The number of customer advocates or designees that NYSEG used varied, starting at 10 resources on March 2, 2018, 13 and March 3, 2018, 15 on March 4, 2018, and 2 on March 7, 2018.[297] Although resources were added, NYSEG failed to assign the number of resources necessary as defined by their ERP. Therefore, Staff concludes that NYSEG violated Section 9.3.2.2 of their ERP during Winter Storms Riley and Quinn by not having a minimum of 50 LSE customer advocates or designees on March 2, 2018, 28 on March 3, 2018, 19 on March 4, 2018, and 4 on March 7, 2018.[298] During Winter Storm Riley, RGE failed to make multiple attempts to reach affected LSE customers not contacted during the first round of calls, violating Section 9.3.2.2 of its ERP. NYSEG also failed to meet its related LSE contact

[295] Case 17-E-0594, Investigation into March 2017 Windstorm Related Power Outages, Staff Report on NYSEG and RGE Electric Restoration and Communication Efforts (issued November 16, 2017) p. 55.

[296] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, New York State Electric & Gas and Rochester Gas & Electric Emergency Response Performance Assessment Part 105 Report March 1 and March 7, 2018 Nor'easters (filed May 11, 2018) p. 109.

[297] NYSEG's response to DPS-17, Attachment 1, Tab B.

[298] NYSEG's response to DPS-16, Attachment 1.

targets during the May Windstorm and the May Thunderstorm. For the May Windstorm NYSEG failed to meet targets for the number of affected LSE customer contacted within twelve hours while not a violation of its ERP, NYSEG failed to make follow up calls to each affected LSE customer; violating Section 9.3.2.2 of its ERP. For the May Thunderstorm NYSEG failed to meet targets for the number of affected LSE customers contacted within twenty-four hours and calls placed to each affected LSE customer; also violating Section 9.3.2.2 of its ERP. NYSEG and RGE must adhere to their respective ERP staffing levels.

Most utilities use dedicated resources to reach out to affected LSE customers. Con Edison, however, used its call center staff to contact affected LSE customers by phone and as a result the utility's contact rates varied greatly during Winter Storm Riley. Staff found that Con Edison's call center personnel were unable to execute LSE calls appropriately even when there was a low number of affected LSE customers, likely a result of call center personnel responding to the overall rising number of incoming calls or other assigned tasks. On March 4, 2018 for example, four Con Edison LSE customers were affected, yet only one of the LSE customers was contacted in a timely manner. Staff attributes Con Edison's poor performance on this important task to a reduction in Con Edison's available call center resources, which went from 11 FTEs on March 3, 2018 to three on March 4, 2018.[299] This failure to contact three LSE customers violated Con Edison's ERP, section VII(G).

Recommendation 81	All electric utilities provide improved procedures in their ERPs, designed to eliminate the critical failures in their OMS system, as well as LSE customer notifications and site visits going forward.

5.6.3. Wellness Visits

If an electric utility is unable to reach affected LSE customers by phone, the utility must perform a site visit or refer those customers to an EOC for a visit to the customer's premises within 24

[299] Con Edison's response to DPS-117, Attachment.

hours, inclusive of the time used for call attempts. While the site visits were largely successful during Winter Storms Riley and Quinn, improvements can be made to the procedures for coordinating with EOCs. The utilities should be coordinating with EOCs well in advance of an expected event and inform the EOCs that they may be called upon to assist with LSE contacts and the Company will provide an estimate of how many visits may be requested such that the EOC can plan and identify resource needs accordingly. Simply sending an LSE customer list without forewarning is not sufficient and can create delays in reaching these vulnerable customers within the 24-hour window and puts the utility at risk to miss its notification requirements.

During Winter Storm Riley, Con Edison reached 99 percent of the impacted LSE customers within 24 hours, either by calling the customer or referring that customer to an emergency service agency if not reached by phone. Con Edison stated that the remaining one percent of affected LSE customers did not receive a follow up call within 12 hours and were not referred to an EOC within 24 hours.[300] Staff concludes that Con Edison violated Section VII(G) of its ERP because it failed to perform follow up calls within 12 hours and the wellness checks within 24 hours.[301] The utility's justification for failing to meet the 100 percent of affected LSE customers because of an execution error is unacceptable.[302] Con Edison's inability to meet the 100 percent target identifies a failing in the utility's LSE customer outreach process. Con Edison has indicated that it will require additional training on the utility's outreach process, conduct quality assurance reviews on the LSE outreach process, incorporate customer perspectives in the outage journey process, and develop improved technology to support employees communicating with LSE customers during an event.[303]

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[300] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Consolidated Edison Company of New York, Inc. Report on Preparation and System Restoration Performance - Winter Storms Riley and Quinn March 2018, Part 105 Report (filed May 14, 2018) pp. 43-44.

[301] Id., p. 42.

[302] Id., p. 44.

[303] Id., p. 83

Con Edison's ERP provides instructions that after the Westchester Police Department or the New York Police Department (NYPD) provide a response on the status of a field visit to an LSE customer, the customer's account should be updated with information on the disposition of the visit by utility representatives, such as a CSR or designee. During Winter Storms Riley and Quinn, Westchester was an especially hard-hit area, where a significant number of LSE customers reside. Staff's review identified that Con Edison Call Center supervisors failed to properly document LSE customer status updates in the utility's systems following field visits.[304] Consequently, Con Edison violated Section VII(G) of its ERP by failing to document the status of LSE customers that were referred for field visits by the Westchester Police Department or the NYPD during Winter Storm Riley.

During the May Thunderstorm event NYSEG failed to perform site visits for 4 percent of affected LSE customers not reached by phone in its Brewster division and did not refer these customers to an EOC for assistance with performing the site visits. Staff therefore concludes that NYSEG violated Section 9.3.2.2 of its ERP.[305]

Recommendation 82	Con Edison modify its procedures to execute LSE customer wellness visits on time and ensure proper recordkeeping of LSE customer contacts. Con Edison's ERP will incorporate these modifications.

5.6.4. Dedicated LSE Customer Call Numbers and Procedures

As part of normal business procedures, Con Edison, National Grid, Orange & Rockland, NYSEG, RGE, and PSEG LI each have dedicated, toll-free telephone hotlines to enable LSE customers to contact and communicate with their respective utility. The hotlines provide LSE customer better access

[304] Id., p. 44.

[305] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, New York State Electric & Gas and Rochester Gas & Electric Emergency Response Performance Assessment Part 105 Report March 1 and March 7, 2018 Nor'easters (filed April 11, 2018) Appendix A: Electric Utility Emergency Plan, pp. A-95-A-96.

to utility representatives by not having to wait in the general customer queue. Quicker access for these vulnerable customers is critical particularly during storm events to establish, maintain, and memorialize communications with LSE customers, as well as to timely address any concerns or issues these customers may have until their power is restored. That said, if LSE customers call the general utility number instead of the dedicated LSE customer hotline, most utilities have procedures to escalate and prioritize incoming LSE customer calls within their call centers.

Central Hudson is the only major electric utility in New York that does not have a dedicated LSE customer hotline. Central Hudson's LSE customers use the same customer service telephone number for all other Central Hudson customers. When asked to provide a listing of LSE customers that called Central Hudson's customer service line, the utility responded that it could not provide that information because a dedicated LSE customer hotline does not exist.[306] Staff finds this to be problematic and believes that it is important for the utility to prioritize and expeditiously address LSE customer issues by routing these customers directly to a CSR, rather than putting them into a general customer queue or providing them with an IVR menu with various options. Central Hudson stated LSE customers who called in during Winter Storms Riley and Quinn, and the May Thunderstorm, were counted among all other customers and that it did not have the ability to isolate LSE-specific calls.[307, 308] Given its lack of visibility on LSE-specific calls, Staff recommends that Central Hudson establish a dedicated hotline for LSE customers.

Staff found recordkeeping shortcomings for LSE customers was not isolated to Central Hudson, as Orange & Rockland and PSEG LI did not maintain adequate records regarding LSE customer calls into the call center. Staff is concerned that LSE customers are not receiving the full protections that they are entitled to. Maintaining detailed records will ensure that all LSE-related issues are memorialized and tracked to resolution minimizing the risk of an LSE call not being properly handled during high volume

[306] Central Hudson's response to DPS-15.

[307] Id.

[308] Central Hudson's response to DPS-74.

call periods at call centers. Staff believes that all utilities should maintain the following LSE contact information, both during storm events and on blue-sky days, for inbound and outgoing calls: number of LSE customer contacts; nature of the call; resolution of the call; and, follow-up results (i.e., wellness visits, referrals to EOCs), including times, dates and the entity that conducted the follow-up. Staff also believes that standardizing the information captured regarding LSE customers can greatly improve the utilities' communication with and treatment of LSE customers in the future. To this address this issue Staff has shared a draft standardized LSE reporting template with the utilities and intends to work with the utilities to implement this process improvement.

Recommendation 83	Central Hudson establish a dedicated LSE customer hotline.
Recommendation 84	NYSEG, Central Hudson, Orange & Rockland, and PSEG LI develop detailed procedures to accurately track and log LSE customer contacts.

5.7. Dry Ice Distribution

Dry ice is particularly effective to address the need for keeping perishables safe during a protracted outage event, as it has twice the cooling power of water or wet ice. Accordingly, the New York utilities distribute dry ice during power outages to help minimize customers' loss of food, medication, or other goods that require refrigeration. As required by Part 105, the electric utilities' ERPs, describe arrangements for obtaining and distributing dry ice during an emergency period that is projected to last more than 48 hours and identify the means of communications used to make affected customers aware of the availability of dry ice.[309] The ERPs also discuss the roles and responsibilities for estimating the

[309] 16 N.Y.C.R.R., Part 105.4(b)(9).

number of customers affected by the event, the likely number of dry ice distribution sites needed, the location of the sites, and the timing of dry ice distribution.[310, 311,312, 313, 314, 315, 316]

During Winter Storms Riley and Quinn, Central Hudson, Con Edison, NYSEG, and Orange & Rockland, each worked with local municipalities to establish distribution sites to best meet the needs of the municipalities. [317, 318, 319, 320] Several towns and municipalities within Con Edison and NYSEG's service territories, however, were not satisfied with the dry ice distribution process during the events. Con Edison and NYSEG also received several comments and complaints through the utilities' Facebook and Twitter pages regarding the need for additional dry ice locations.

Con Edison distributed dry ice from March 3 through March 6, 2018 and March 8 through March 11, 2018.[321] Information on Con Edison's dry ice distribution locations was communicated during municipal conference calls, and otherwise through the utility's website, press releases, and social media. Although dry ice distribution began on March 3, 2018 and distribution areas were selected in coordination with municipalities, several public comments submitted in response to this investigation stated that that dry ice was not reaching certain areas that experienced outages or that Con Edison was distributing dry

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310 Case 17-E-0758, In the Matter of the December 15, 2017 Electric Emergency Plan Review, National Grid – New York Emergency Response Plan (filed December 15, 2017) Section 18.10, p. 268.

311 Case 17-E-0758, supra, Consolidated Edison Emergency Response Plan (filed December 15, 2017).

312 Case 17-E-0758, supra, Consolidated Edison Emergency Response Plan (filed December 15, 2017) p. 43; p 273.

313 Case 17-E-0758, supra, Orange & Rockland Electric Emergency Response Plan (filed December 15, 2017) pp. 43-46.

314 Case 17-E-0758, supra, Central Hudson Gas & Electric Emergency Plan (filed December 15, 2017) p. 22.

315 Case 17-E-0758, supra, NYSEG & RGE's Electric Utility Emergency Plan (filed December 15, 2017) p. 49.

316 Matter 17-02687, In the Matter of the 2018 Emergency Response Plan of the Long Island Power Authority and PSEG Long Island, PSEG Long Island 2018 Emergency Restoration Plan (filed December 15, 2017) p. 127.

317 Central Hudson's response to DPS-25.

318 Con Edison's response to DPS-26.

319 NYSEG/RGE's response to DPS-26.

320 Orange & Rockland's response to DPS-26.

321 Con Edison's response to DPS-26.

ice too late. Staff found that Con Edison began distributing dry ice in a timely manner, however, the utility needs to do a better job at establishing distribution locations that better meet the needs of its customers.

NYSEG distributed dry ice March 3 through March 10, 2018. The distribution locations were determined at the request of, and or through coordination with each municipality or an EOC. On various municipal calls during Winter Storms Riley and Quinn, officials requested that NYSEG make dry ice available for bulk pick-up by municipalities, and NYSEG complied with this request. NYSEG stated it received one customer call regarding dry ice distribution hours at one specific location, which was resolved by a customer service representative who clarified that the dry ice distribution location was open.[322] NYSEG also stated it received a customer complaint that the utility was not providing dry ice to Columbia County. NYSEG replied that it was willing to move supplies to the area, but the county EOC decided not to pursue the request for dry ice.[323] Overall, Staff found that NYSEG was responsive to customer complaints and official's requests for dry ice.

Central Hudson distributed dry ice March 3 through March 6, 2018 and March 8 through March 9, 2018 at locations coordinated through county EOCs and municipalities; this information was shared through a wide variety of channels, including municipal conference calls, social media, the outage map, and its website.[324] Central Hudson's press releases also referred to its website for up-to-date dry-ice distribution locations. Staff found coordination with OEMs/EOCs to establish dry ice distribution sites as well as Central Hudson's customer outreach through multiple channels to be effective and recommends that the other utilities employ these approaches going forward.

Orange & Rockland had three dry-ice distribution sites, two of which were open March 4, 2018, with the third in operation from March 4 through March 11, 2018. Orange & Rockland coordinated with municipal officials and Office of Emergency Management (OEM) in Sullivan County to select dry ice

[322] NYSEG/RGE's response to DPS-25.

[323] NYSEG/RGE's response to DPS-25.

[324] Central Hudson's response to DPS-25.

distribution locations. Staff found that Orange & Rockland performed well with respect to dry ice distribution during Winter Storms Riley and Quinn. Because National Grid and PSEG LI did not estimate outage times to exceed 48 hours for Winter Storms Riley or Quinn, the utilities did not distribute dry ice in compliance with their ERPs. Staff found this acceptable for National Grid and PSEG LI. [325, 326]

During the May Thunderstorm, Central Hudson, NYSEG, and Orange & Rockland did not make dry ice available until late in the day on May 16 or May 17, 2018. Central Hudson had difficulty obtaining dry ice from its vendor to meet multiple requests from municipal officials. [327] During the municipal call on May 15, 2018, Central Hudson explained that stockpiles of dry ice were not available, and the vendors would be producing dry ice that day.[328] Although Central Hudson was ultimately unable to provide dry ice until May 17, 2018, the utility kept officials up-to-date through municipal conference calls[329] and emails.[330] Despite limited supply of dry ice due to vendor constraints, Staff found that Central Hudson acted appropriately by keeping officials informed of availability and ordering dry ice shortly after the storm occurred.[331]

NYSEG did not order dry ice until May 16, 2018 for distribution on May 17, 2018.[332] NYSEG stated the adverse weather began during the afternoon of May 16, 2018 and an assessment of potential

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325 National Grid's response to DPS-25.

326 PSEG LI's response to DPS-25.

327 Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Central Hudson Gas & Electric Storm Scorecard Thunderstorms, Tornados, and Macroburst May 15, 2018 through May 19, 2018 (filed June 21, 2018) Municipal Calls p. 299; pp. 312-313 and Municipal Emails pp. 106-261.

328 Id., p. 299.

329 Id. p. 299; pp. 312-313.

330 Id., pp. 106-261.

331 Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Orange & Rockland Preparation and Restoration Performance Report May 15 Thunderstorm May 15 – May 21, 2018 (filed July 23, 2018) Appendix 1.3.

332 Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, New York State Electric & Gas Rochester Gas and Electric Emergency Response Performance Assessment Part 105 Report, May 15, 2018 Thunderstorm, (filed July 20, 2018) p. 61.

damage and expected duration of the event needed to occur before they could make a decision regarding dry ice.[333] On NYSEG's May 16, 2018 municipal conference call, several local leaders took issue with the timing, noting that dry ice was needed earlier in an event to be useful, and that waiting the extra day for distribution was too late. [334, 335] Customer complaints on NYSEG's social media and municipal calls stated that delays in dry ice distribution led to the loss of food and other perishable goods during the May Thunderstorm. [336] Staff found that NYSEG should have ordered dry ice on May 15, like Central Hudson and Orange and Rockland in order to expedite its availability to customers.

Customers' and officials' reactions regarding food and medication spoilage during and after the 2018 Winter and Spring Storms, as well as the number of customer reimbursement claims submitted to the utilities after Winter Storms Riley and Quinn, which is discussed later, provides Staff with sufficient evidence that for several of the utilities that dry ice is needed sooner during an outage event. Staff recommends that utilities distribute dry ice within 24 hours of the start of restoration to minimize the loss of food and medications among affected customers. The 24-hour window may be difficult to achieve during some events if there is not sufficient notice provided to the dry ice supplier, as was the case during the May Thunderstorm, but the utilities should strive to meet this time frame.

Recommendation 85	All electric utilities begin distributing dry ice within 24 hours of the start of restoration when outages are anticipated to last more than 48 hours. The ERPs will incorporate this modification.

[333] NYSEG's response to DPS-112.

[334] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, New York State Electric & Gas Rochester Gas and Electric Emergency Response Performance Assessment Part 105 Report, May 15, 2018 Thunderstorm, (filed June 21, 2018) Appendix E, pp. E-19-E-31.

[335] Id., Appendix E, p. E-21.

[336] Id., pp. E-19 – E-31.

Recommendation 86	All electric utilities consult with county EOCs to develop geographically appropriate locations for dry ice distribution. This includes establishing a list of potential distribution locations before an event. The ERPs will incorporate this modification.

5.8. CUSTOMER REIMBURSEMENTS

Utility customers receive an out-of-service credit from their utility if an outage lasts 72 hours or more.[337] The Commission's November 18, 2013 Order Establishing Customer Outage Credit Policies states, in part, that customer credits will be calculated on a proportional basis and applied to customer bills within 75 days of the outage.[338] All the electric utilities provided bill credits for the time customers were out of service during the 2018 Winter and Spring Storms.[339] Staff's review found the calculations and credits to customer accounts to be reasonable and in compliance with the 2013 Order.

In addition to the bill credit, customers can file a claim with their utility for reimbursement of spoiled food and/or medications. With the exception of Con Edison, which is the only utility with a specific reimbursement tariff in place, the level of reimbursements, if any, is at the utilities' discretion. After Winter Storms Riley and Quinn, Con Edison received over 6,900 claims and Orange & Rockland received over 2,000 claims for food and medication reimbursement, and average payments to customers were $290 and $244, respectively.[340] Con Edison's reimbursements were consistent with its tariffs and Orange & Rockland offered to reimburse residential and business customers for the cost of spoiled food and medication up to $225 without receipts, or up to $515 with receipts for residential customers and up to $10,200 with receipts for business customers. Customers stated in public comments to the

337 Case 13-M-0061, Customer Outage Credit Policies, Order Establishing Policies (issued November 18, 2013).

338 Id.

339 PSEG LI was not required to provide customer credits as restoration was complete within 72 hours.

340 Con Edison's response to DPS-100; Orange & Rockland's response to DPS-91.

Commission that it took Con Edison and Orange & Rockland too long to issue these reimbursements.[341] The average time for Con Edison and Orange & Rockland to process claims and issue a reimbursement to customers was less than 30 days, which Staff found to be reasonable given the large number of claims filed. Staff also found Orange & Rockland 's voluntary action to provide reimbursements for spoiled food and medication to be appropriate.

After Winter Storms Riley and Quinn, over 750 NYSEG customers filed claims to receive reimbursement for spoiled food and/or medication.[342] NYSEG, as well as the remaining utilities, did not reimburse any customers for costs associated with spoiled food and medication, although these types of claims were received by all.[343] The utilities typically denied these claims stating that there were no regulatory requirements for them to reimburse customers for these losses. Many customers commented that NYSEG did not provide confirmation that a claim was received or that NYSEG took too long to notify the customers of the reimbursement disposition, which was over 90 days.[344] Staff found the amount of time it took NYSEG to acknowledge receipt of a claim excessive and unacceptable, particularly considering the utility expects to reach a decision within 30 days for completed claim forms. NYSEG must develop a transparent process that includes acknowledgment of a claim and setting a more reasonable timeframe for customers to receive a letter with a reimbursement check or justification as to why a claim has been denied.

Customers can also submit reimbursement claims for property damaged by the utility or its contractors during restoration efforts. Once a claim is received, the utility typically determines if it was negligent, or recommends the customer file a claim with their insurance carrier. Staff found that the

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341 Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Public Comments.

342 NYSEG/RGE's response to DPS-110.

343 Central Hudson's response to DPS-84, National Grid's responses to DPS-84, NYSEG/RGE's response to DPS-110, and PSEG LI's response to DPS-78.

344 Id.

utilities appropriately reimbursed customers with valid claims for property damage caused by utility and/or contractor work operations during restoration activities, although reimbursement of these claims is not specifically required by the utilities' tariffs.

Recommendation 87	All electric utilities develop and implement a transparent process that includes acknowledgment of a claim and sets a reasonable timeframe for reimbursement disposition.

6. SYSTEM IMPROVEMENTS

6.1. HARDENING THE ELECTRIC SYSTEM

Storm hardening is the process of constructing new, or upgrading old, infrastructure to increase resiliency and overall reliability during weather events. Due to the rise in storm intensity, dedicated storm hardening programs need to be developed and implemented throughout New York State to reduce damage from future weather events. The 2018 Winter and Spring Storms are examples of major storms that greatly impacted New York's electric distribution system in 2018. The experiences from the 2018 Winter and Spring Storms make it clear that storm hardening efforts are needed to mitigate some of the impacts to the distribution infrastructure and customers.

Storm hardening can be implemented in numerous ways, with varying benefits, depending on the type of weather that affects the distribution system. The installation of stronger poles, automated switching equipment, and detachable service cables can reinforce reliability and shorten restoration time during high wind and wet snow events, when branches and even whole trees can come down on wires and poles. In addition, the use of submersible equipment, construction of flood gates, and foam sealing may decrease the damage inflicted by intense flooding that could lead to water seepage into underground electrical equipment, causing corrosion and equipment failure. Examples of the numerous potential improvements to increase reliability include: installation of aerial cable that is more resilient than traditional open wire designs; additional redundancy in the network so feeders can provide power to a subset of customers after damage occurs; creating greater clearances around distribution facilities, and undergrounding select overhead lines.

While the utilities have been updating design specifications to improve their infrastructure going forward, there are relatively few utilities that have a dedicated storm hardening program. Staff notes, however, that many of the existing reliability programs, which should continue, may harden the system, but these improvements may not be targeting the locations most prone to storm damage. To

ensure that all utilities have a proper plan for hardening the electric distribution system, the utilities must provide an actionable plan, with benchmarks, that details the capital investments and steps needed to harden their infrastructure. Staff is confident that once these plans have been formalized, a decision on how to move forward can be determined by the Commission.

Recommendation 88	All electric utilities submit an actionable plan by July 1, 2019, which details future storm hardening measures including a budget, timeline, and major performance benchmarks.

6.2. Telecommunications Providers Service Reliability and Resiliency

Reliable and resilient telecommunications services should function outside normal parameters of operation.[345] Those services, along with the equipment installed, have contingency measures capable of providing continued voice services to customers. The need for a reliable and resilient communications network is to assure the customer that they will be able to contact 911 or any other emergency assistance during or after a storm event. When measures are taken to strengthen the telecommunications network to continue operating after a loss of power, those efforts will mitigate the loss of life and property.

A loss of electricity in the region affects the legacy wireline, wireless, and Internet Protocol (IP) based enabled voice carriers, and wireless carriers in different ways. Wireline telephone carrier's voice services to the customer in the majority of installations, often referred to as plain old telephone service (POTS) lines, does not require the customer to have power.[346] The service line is powered from the telephone companies' Central Offices, meaning that even if the customer loses power, their voice

[345] "Telecommunication services", referenced here denotes either traditional wireline telecommunication companies, or cable companies offering voice via internet protocol, or either serving as the carrier of a VoIP alternative by a third party

[346] Plain old telephone service is voice grade telephone service employing analog signal transmission or copper loops.

service will remain operational. However, IP enabled voice services require power at the customer premise in order to enable the providers' onsite equipment to function.[347] When power is lost at the customer's premises, service from the IP enabled carrier is lost. Under the terms of the Federal Communications Commission (FCC) Order FCC 15-98, the FCC has strengthened reliability and resiliency in networks which employ an IP enabled solution where power at the customer's premises is required for the carrier's voice service to be operational.[348] Through this Order, the FCC has taken steps to assure that customers who have service via an IP enabled architecture has measures in place to be able to maintain their voice service after the loss of local power. For example, customers may be able to purchase equipment with eight hours of backup power.

Commercial wireless carriers' reliance on power to serve their mobile customer subscribers is as critical as IP voice service providers, maybe more so as it is often relied on when other telecommunications services are lost. FCC 07-107 ordered an 8-hour back-up battery solution for wireline as well as commercial wireless providers at cell site locations.[349] This order is a good foundation to strengthening the resiliency of the wireless providers network. However, with an ever-increasing need by first responders, government and the public at large to communicate via wireless communication under the difficulties presented by regional weather impacts, more can be done to ensure the continued connectivity of the wireless communications providers network.

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[347] Internet Protocol, IP-Enabled Services. Voice over Internet Protocol (VoIP), is a technology that allows you to make voice calls using a broadband Internet connection instead of a regular (or analog) phone line.

[348] FCC 15-98, Providers shall offer for sale at least one option with a minimum of eight hours of standby backup power. Within three years of the effective date of the obligation, providers of a Covered Service shall offer for sale also at least one option that provides a minimum of twenty-four hours of standby backup power.

[349] FCC 07-107, Local exchange carriers (LECs), including incumbent LECS (ILECs) and competitive LECs (CLECs), and commercial mobile radio service (CMRS) providers must have an emergency backup power source for all assets that are normally powered from local AC commercial power, including those inside central offices, cell sites, remote switches and digital loop carrier system remote terminals. LECs and CMRS providers should maintain emergency back-up power for a minimum of 24 hours for assets inside central offices and eight hours for cell sites, remote switches and digital loop carrier system remote terminals that are normally powered from local AC commercial power. LECs that meet the definition of a Class B company as set forth in Section 32.11(b)(2) of the Commission's rules and non-nationwide CMRS providers with no more than 500,000 subscribers are exempt from this rule.

Wireline carriers whose network architecture employs equipment requiring an outside source of power, however, are not under the same obligations set forth in FCC 15-98. Therefore, equipment used by providers as part of their networks require commercial power to operate, such as Subscriber Line Carrier (SLC) system which can host several hundred POTS line or Time-Division Multiplexing systems deployed in the wireless telephone network remain vulnerable to the loss of power and outages impacting these devices would result in the loss of service to customers.[350, 351]

Staff reviewed pre-storm measures that can be taken to improve the reliability and resiliency of both traditional wireline, wireless, and IP enabled voice service. Although, the wireline telephone providers conform to best practices, and FCC Order 07-107, in most cases have additional 8-hour duration back-up power supplies contained within the SLC, there is a need for greater improvement of these systems, so they may remain operational for a longer period after a power loss.[352] Because the providers rely on batteries with relatively short discharge cycle when compared to the overall length of outages experienced during Winter and Spring Storms, it is not in itself a fix for the loss of electricity at critical equipment sites in all cases. Therefore, Staff recommends that the telecommunications providers are prepared to use employ generators that can be used to maintain service over an extended electric outage. Staff recognizes that permanent generators are not always appropriate. Therefore, for critical facilities that will be dependent on portable generators, should be equipped with ambilocal power components to affix a portable generator easily. Additionally, Staff recommends the telecommunications providers pre-stage portable generators for at appropriate locations based on weather forecasts.

[350] SLC systems provide telephone exchange-like telephone interface functionality. SLC remote terminals are typically located in areas with a high density of telephone subscribers, such as a residential neighborhood, that are remote from the telephone company's central office.

[351] Time-division multiplexing is a method of transmitting and receiving independent signals over a common signal path by means of synchronized switches.

[352] NRIC-VII Backup Power Best Practices.

During Winter Storm Riley, the loss of back-up power was experienced in Putnam County. Although Putnam County's resiliency measures worked as intended, there were issues that adversely affected Putnam County 911 due to a loss of power. The Putnam County PSAP is served by two Verizon Central Offices, White Plains and Nyack, for redundancy, a total of fifteen 911 trunk lines, two ALI circuits and eight administrative lines. [353, 354, 355, 356] When power was lost during the storm, Putnam County lost their eight administrative lines, two ALI circuits and ten 911 trunks. Redundancy contingencies allowed for five 911 trunks to be operational because the architecture allowed for diversity in the path to the PSAP. When the administrative lines were lost due to a loss of power in the region, that loss of power affected a SLC which is part of Verizon's network architecture in providing service to the Putnam County PSAP. [357] The batteries which support the SLC which delivers the administrative, ALI circuits and 911 trunks to the Putman County PSAP failed after 2 hours due to age. When the batteries failed the Putnam County PSAP was without the ability to call back a 911 caller if the call was dropped. The ability to reconnect with a 911 caller is an absolute imperative, and essential in the proper operation of the PSAP. It should be noted that after the batteries failed causing the loss of the operation of the SLC, Putnam County was able

[353] PSAP defined as a Public Service Answering Point operated by the local responding emergency authority who is authorized to receive emergency calls from the public

[354] In telecommunications, trunking is a method for a system to provide network access to many clients by sharing a set of lines or frequencies instead of providing them individually.

[355] Address information is not passed along by the public phone network; only the calling party's phone number is passed. The PSAP uses the calling party's number to locate the address in the Automatic Location Identification (ALI) database. The ALI database is secured and separate from the public phone network by design. It is generally maintained by the Incumbent Local Exchange Carrier (ILEC) under contract by the PSAP.

[356] Verizon' response to DPS 3, Q-8. In Putnam County, the 911 primary PSAP had ten of their fifteen 911 trunks and eight of their administrative lines out of service due to a power failure at the subscriber line carrier system. Both of their ALI circuits at their primary location were down and intermittent ALI at the back-up PSAP was reported. The PSAP is configured to answer calls to their primary and back-up PSAPs from either location so they did not want to move from the primary PSAP at the time. Service was restored when Verizon deployed a portable generator.

[357] A subscriber loop carrier or subscriber line carrier (SLC) provides telephone exchange-like telephone interface functionality. An SLC remote terminal is typically located in an area with a high density of telephone subscribers, such as a residential neighborhood, that is remote from the telephone company's central office. Two or four T1 circuits (depending on the configuration) connect the SLC remote terminal to the central office terminal (COT).

to request from Verizon a standby generator to regain service to the 911 trunks, ALI circuits, and their administrative lines.

As in any event affecting the day to day operations of a region such as the Winter and Spring Storms, proper pre-storm resiliency efforts must be taken to maintain order and control under the duress of such an event. As electric and communications infrastructure is disabled by storm events, self-assessment allows them to know what actions need to be taken to minimize the impact of future storms and what critical areas that were affected should be the focus by the utilities. Utilities need to be aware of critical municipal interests vital to the restoration or continuance of local government.

Recommendation 89	All communication equipment utilizing an external electrical power source to supply voice services, internet services, 9-1-1, E9-1-1, NG9-1-1, or any other technical equivalent to municipal or county governments and utilizes a backup battery architecture must verify through pre-storm testing a minimum of an 8-hour battery capacity, and replace batteries as needed to meet compliance.
Recommendation 90	All communication equipment utilizing an external electrical power source to supply voice services, internet services, 9-1-1, E9-1-1, NG9-1-1, or any other technical equivalent to municipal or county governments whose communication equipment may utilizes a backup battery architecture must have ambilocal power components available to affix a portable generator if needed to maintain continuity of service.
Recommendation 91	All communication equipment utilizing an external electrical power source to supply voice services, internet services, 9-1-1, E9-1-1, NG9-1-1, or any other technical equivalent to municipal or county governments whose communication equipment may utilizes a backup battery architecture, pre-stage portable generators in the proximity of the said communication equipment, either securely on-site or at an area predesignated by local municipalities and or county government.

6.3. TREE MANAGEMENT

6.3.1. Right of Way

For safety reasons, tree removals and trimming near service lines should be done by an electric-qualified tree contractor who employs workers specifically trained to work within 10 feet of electrical hazards. The utility is responsible for routine trimming around the primary distribution wires, within the ROW, to maintain reliable electric service. In order for the utility to trim or remove trees outside the ROW, written permission must be obtained from property owners. All electric utilities have tree management programs in place to trim and remove encroaching tree that may affect the safe and reliable distribution of electric service. These maintenance programs are cyclical for a utility's entire service territory; trim cycles for each utility are shown on Table 4. The areas trimmed are typically within the utility's (ROW and not on private property. A benefit of these trimming programs is that they are designed to aid in hardening the distribution system, since trimming of encroaching vegetation can prevent tree limbs from falling on electric lines. However, these programs do not prevent damage from uprooted or broken trees that are tall enough to strike distribution lines, including those located outside of the ROW. In short, tree trimming programs help keep the distribution system reliable by mitigating outages caused by tree limbs or other debris that may fall on or damage utility infrastructure within the ROW.

Tree trimming practices for all utilities, except Con Edison's New York City service territory, include maintaining at least a 10-foot tree clearance to the sides and underneath a distribution line, and at least a 15-foot tree clearance above the distribution line. In Con Edison's New York City service territory, the utility maintains a tree clearance at least 6-feet to the sides and underneath a distribution line, and a minimum 10-foot clearance of tree above the distribution line.[358]

[358] Con Edison's response to DPS-93-2, Attachment A, p. 40. Con Edison's New York City service territory includes Bronx, Kings, Manhattan, Queens, and Richmond counties.

Utility	Trim Cycle
Central Hudson	Four-year
Con Edison	Three-year, except railroad primary lines on two-year
National Grid	Five and half-year average, each Division has a different cycle
NYSEG/RGE	NYSEG five-year Brewster only RGE five-year
PSEG LI	Four-year
Orange & Rockland	Four-year

Table 4: Distribution Trim Cycles for New York's Major Electric Utilities[359]

6.3.2. Danger Tree Programs

Trees that are structurally unsound, dead, dying, diseased, infested by insects, and/or deformed are referred to as danger trees. Due to their weakened state, danger trees are more likely to fall/break apart during storm events and may strike electric infrastructure when they fall. To mitigate the threat of danger trees, some utilities have created dedicated danger tree programs that are primarily used to remove danger trees that are outside the ROW or on privately-owned property.

In the wake of Winter Storms Riley and Quinn, Con Edison and Orange & Rockland each requested that Davey Resource Group Inc. (Davey) perform a survey of tree-related outages resulting from the two storms. Davey concluded that approximately 75 percent of the surveyed damage was caused by privately owned trees and large tree limbs outside the utility's ROW.[360] Similarly, interruption

[359] Central Hudson's response to DPS-33, Con Edison 's response to DPS-43, National Grid 's response to DPS-33, NYSEG/RGE's response to DPS-37, Orange & Rockland's response to DPS-37, and PSEG LI's response to DPS-34.

[360] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Consolidated Edison Company of New York, Inc. Report on Preparation and System Restoration Performance - Winter Storms Riley and Quinn March 2018, Part 105 Report (filed May 14, 2018) p. 46.

data reviewed by NYSEG for the Brewster and Liberty Divisions shows approximately 70 percent of damage was caused by trees outside the utility's ROW.[361, 362] NYSEG also concluded that approximately 65 percent of damage to the electric system was due to trees or tree trunks coming into contact with electric infrastructure.

Central Hudson, National Grid, and PSEG LI have robust Danger Tree Programs that include the removal of danger trees from private property. Con Edison has recently begun a pilot for danger tree removals. NYSEG and RGE each employ a single Vegetation Management and Danger Tree Program, instead of having two distinct programs. Central Hudson, National Grid, and Orange & Rockland go one step further by having dedicated funding to remove trees impacted by the Emerald Ash Borer beetle as they deteriorate rapidly and may fall into electrical distribution lines, making danger tree programs are even more crucial.[363]

Despite these programs, NYSEG/RGE have indicated that their performance could be improved if the existing program specification was modified to include ground to sky clearing, as well as having the ability to remove danger trees outside of their ROW.[364] Ground to sky clearance in a ROW means all trees and branches in the ROW between the earth and the sky are removed during trimming. This would include removing any branches that may be growing over the right of way from trees located outside of the ROW. Staff agrees that existing tree management specifications should be strengthen and expanded in certain areas, such as on a portion of a circuit that serves a critical facility. NYSEG/RGE's next rate case filing should also include a proposal to move to a system-wide five-year trim cycle. In the interim,

[361] NYSEG/RGE's response to DPS-96.

[362] NYSEG'S Brewster and Liberty Divisions includes portions of Delaware, Dutchess, Orange, Putnam, Sullivan, Ulster, and Westchester counties.

[363] Emerald Ash Borer is an aggressive invasive species that will result in 100 percent mortality of ash trees. Ash trees are often found dead or in a state of decay due to the Emerald Ash Borer throughout western and southern New York.

[364] NYSEG/RGE's response to DPS-96.

NYSEG/RGE should present a report to Staff that proposes what measures need to be implemented to create a more robust danger tree program.

To ensure that Con Edison's electric distribution facilities are better prepared against adverse weather, Staff finds that Con Edison must also put into place a distinct danger tree program. The program would be considered separate from the cycle-based tree management program in place and be focused on identifying danger trees outside of the distribution ROW. Con Edison must also work with municipalities to develop beneficial approaches to address access to trees on privately-owned property. Staff's opinion was confirmed by Davey who also noted that the utilities should consider designing a comprehensive Danger Tree Program.[365] This type of program is crucial to mitigate future outages caused by trees and should be implemented as soon as possible. Con Edison should meet and work with municipalities to thoroughly implement the Danger Tree Program throughout the 2019 trimming cycle.

Recommendation 92	Con Edison submit a plan for a Danger Tree Program to the Department, which includes a budget and timeline for implementation.

6.3.3. Future Coordination

Coordination of tree management activities is important when multiple parties are involved. The parties include, but, are not limited to, municipal officials and their municipal departments, utilities, and private property owners. Municipal officials are responsible for keeping roads and roadsides safe; this includes maintaining trees and undergrowth in such a way that they are not a hazard to travelers and pedestrians. These trees should be inspected and maintained by the public at public expense. Electric utilities are responsible for maintaining the reliability of their system and protecting their equipment which is located in the ROW. The costs of utility tree trimming or tree removal are spread among all of

[365] Case 19-M-0285, In the Matter of Utility Preparation and Response to Power Outages During the March 2018 Winter and Spring Storms, Consolidated Edison Company of New York, Inc. Report on Preparation and System Restoration Performance - Winter Storms Riley and Quinn March 2018, Part 105 Report (filed May 14, 2018) p. 5.

the utility's electric consumers. Private property owners are responsible for maintaining trees on their property. Municipal officials, electric utilities, and private property owners all share the responsibility of maintaining trees, preserving as many trees as possible, planting the right species of trees in the right places, and taking a proactive approach to tree management.

Private property owners own the trees outside of the utility's ROW and are responsible for trimming tree branches near the low voltage service wires to their homes. In addition, private property owners have the duty, and at their own expense, to cut down and remove any trees upon their property which are dead, harbor insects or disease, or which are so damaged as to be a public nuisance and/or in danger of falling, thereby potentially causing damage to persons or property of others. Historically, private property owners have been opposed to granting permission to the utilities to trim and/or remove their trees, even when there is a significant risk of tree interference with the utilities' infrastructure. Staff believes that property owners need to take a more active role with the utilities and municipalities in the tree management on their private property to minimize future outages caused by trees.

Proactive coordination between the utilities and municipalities concerning danger trees is essential to decreasing the number of outages and the duration of outages after major storms like Winter Storms Riley and Quinn. Public education and cooperative information sharing are the primary topics that need to be addressed and improved. To increase the probability that all Danger Tree Programs are implemented successfully, property owners need to understand the risks danger trees present to distribution lines and equipment. Additionally, a greater emphasis needs to be placed on cooperation and coordination between the utilities and municipalities. Comments from the Towns of New Castle and Greenberg support this finding noting that cooperation between utilities and townships have shown positive results to ensure the removal of hazard and danger trees. [366] This provides an opportunity for

[366] Case 19-M-0285, supra, Public Comments. The Town of New Castle documented components of this cooperative effort in their comments dated April 10, 2018; further the Town New Castle also documents the use of proactive teams to handle tree trimming and removal in their comments dated March 20, 2018.

the utilities to enlist assistance from municipalities and public officials to better educate residents on the acute need to eliminate as many danger trees as possible to avoid future outages.

Active participation of municipalities and public officials in this process could be the catalyst to mitigating many potential outages. Since public officials are, by far, more familiar with and have more consistent contact with residents, Staff believes that their impact to inform residents of danger trees and tree management could be substantial. The familiarity of municipal officials can reinforce the fact that danger trees are not just a utility issue, it's also a municipal issue. Danger trees affect roads, emergency response, and the lives of every resident in a municipality. If municipal officials voice this message to their constituents, they may conceivably motivate residents to take ownership and allow the utilities to remove or trim trees in area of their property that require consent. For municipal officials to successfully reach residents, Staff recommends that the utilities work with municipal officials to increase public education regarding danger trees, tree replacement, and tree removal on private property. This cooperation could result in fewer power outages, shorter power outages, a greater adherence to public safety, and potentially save lives. Staff recommends that the utilities and the municipalities work together to improve public education regarding danger trees.

Currently, utilities receive a low volume of requests from municipalities to remove danger trees from outside of the ROW. Coordination of danger tree removal with municipal partners is accomplished through regular phone or face-to-face communication between the utility's arborist and the municipality's Department of Public Works (DPW). For instance, NYSEG will remove wood greater than 10 feet above the ground, while the DPW will remove wood under the 10-foot mark, provide flagging, and chipping wood when necessary. In contrast, the New York City Parks Department made over 500 tree removal requests in 2017. The Parks Department list is constantly changing and being updated; Bronx, Kings, Queens, and Richmond counties, each have their own list and Con Edison's budget allocates a general amount for each area per year. The New York City Parks Department is currently developing a phone application to better organize and prioritize requests. The application will allow Con Edison to

better plan crew locations to meet New York City Parks Department's requests. Still, after large scale weather events such as Superstorm Sandy, Winter Storm Riley, Winter Storm Quinn, the April Windstorm, the May Windstorm, and the May Thunderstorm, infrastructure damage suffered far exceeds the ability of regular utility tree maintenance to prevent damage.[367] To take these efforts a step further, Staff believes the utilities should supply towns and municipalities with lists of private property owners who have refused to allow danger trees to be removed by the utility from their property. Staff believes this effort will prompt the municipality to work with the utility and the residents to ensure the best coordinated approach to remove danger trees.

Recommendation 93	All electric utilities submit a report to Staff, detailing all efforts that have been made with the towns and/or municipalities to improve public education regarding danger tree removal on private property.
Recommendation 94	All electric utilities immediately begin sharing the list of customers that refuse removal of danger trees with the appropriate municipal officials. These lists should be shared at least on a semi-annual basis.

[367] Orange & Rockland's response to DPS-79-2.

7. CONCLUSION

This report presents the findings and recommendations resulting from the Department Staff's extensive and in-depth investigation. In total, 94 recommendations are included, detailing actions to be taken by the utilities to improve future storm preparation and restoration performance. Of these recommendations, the most significant relate to road clearing, damage assessment, estimated times of restoration, and utility' communications with customers, county and local officials, as well as the public. Most of the deficiencies identified in this report relate to NYSEG, Con Edison, and Orange & Rockland; however, all utilities, except for National Grid, did not completely follow their ERPs for all 2018 Winter and Spring Storms. While certain aspects of NYSEG's, Con Edison's, and Orange & Rockland's performance were inadequate and fell short of the reasonable expectations of the public, thereby demanding immediate attention, all utilities should incorporate the Department recommendations and continue to strive to include best practices into their response and restoration procedures. While the 2018 Winter and Spring Storms may have exposed continued areas of concern, as well as bringing new issues to light, the utilities must not be satisfied with the status quo, but must continue to improve – customers deserve proper timely utility action and better response and restoration performance.

The number, severity and frequency of ERP violations by Con Edison, Orange & Rockland, and NYSEG leads to a Department recommendation that the Commission consider initiating PSL §25-a and/or enforcement proceedings to ensure that these utilities not only revise their ERPs, accordingly, but also implement and follow their ERP provisions and procedures.