MARCH 2017 WINDSTORM
A REPORT ON NYSEG and RGE ELECTRIC RESTORATION AND COMMUNICATION EFFORTS

NEW YORK STATE

DEPARTMENT OF PUBLIC SERVICE

NOVEMBER 2017

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EXECUTIVE SUMMARY

The following report contains the findings of the investigation by the Department of Public Service (Department) regarding the performance of New York State Electric & Gas Corporation (NYSEG), Rochester Gas and Electric Corporation (RGE), collectively the "Companies", and Niagara Mohawk Power Corporation, d/b/a National Grid (National Grid) during and following the March 8, 2017 Windstorm (windstorm or event). Utilities are required to follow their approved emergency response plan (ERP) when preparing for, and responding to, outages.[1] While Staff found certain areas where NYSEG and RGE performed appropriately, Staff's analysis found several areas where the Companies did not follow their emergency response plan and identified areas where the Companies need improvement during emergency outage events. Staff found that National Grid followed their emergency response plan and identified no significant issues or deficiencies with National Grid's performance; therefore, this report will focus on NYSEG and RGE's performance due to their shortcomings.

The investigation by the Department of Public Service Staff (Staff) considered whether the Companies were properly prepared for, and how they responded to, the effects of the windstorm. Staff also examined the communications used to inform customers, emergency management personnel, governmental officials, and the media of the Companies' response and restoration efforts. This report provides Staff's assessment of the performance of NYSEG and RGE during their respective restoration efforts. Staff identified approximately 30 recommendations for corrective actions.

On the afternoon of March 8, the windstorm swept across Western New York State, causing widespread damage and thousands of electric service interruptions. The windstorm affected customers served by NYSEG, RGE, and National Grid. The

[1] Commission regulation 16 NYCRR §105.3 requires annual ERP filings and Public Service Law (PSL) §66(21) requires these filings on or before December 15 for the following calendar year. Additionally, NYSEG and RGE file a combined ERP for both companies. See, Case 16-E-0635, In the Matter of the December 15, 2016 Electric Emergency Plan Review, Order Approving Amended Emergency Plans (issued March 13, 2017)(Emergency Response Plan Order).

windstorm caused major damage to overhead electric distribution systems. Residential homes and businesses throughout the area were also severely affected. Access to roadways were blocked because of fallen trees, making it difficult for emergency responders and utility crews to begin work. Downed electrical wires created hazardous conditions for residents and emergency crews. The amount of downed wires, poles, and fallen trees was extensive and assistance beyond normal crew complements was needed. Peak outages were approximately 48,000 for NYSEG, 123,000 for RGE, and 113,000 for National Grid. Restoration took until March 13, 2017 for NYSEG and March 15, 2017 for RGE. National Grid restored service to customers affected by the windstorm by mid-day on March 12, 2017.

New York State Public Service Commission (Commission) regulations require any New York investor-owned utility that experiences an outage with a restoration period exceeding three days to file self-assessments of their restoration efforts. NYSEG and RGE submitted a combined report related to this event because they respond as one entity under their emergency response plan. Staff reviewed the self-assessment report and performed its own assessment of NYSEG and RGE's storm recovery efforts. To perform its analysis, Staff reviewed a combination of factors, including a review of compliance with the Companies' emergency response plan; discussions and interviews with utility representatives and public officials; evaluation of complaint data filed with the Department's Office of Consumer Services; comments received as part of public statement hearings; meetings with Company management and staff; analysis of the Companies' responses to information requests; and other salient information.

The Companies' report, while offering useful recommendations, does not adequately recognize or address problems identified during the course of this investigation, including some instances where the Companies did not follow their own emergency response plan as ordered by the Commission.[2] Staff identified several

[2] 16 NYCRR Part 105 Section 105.6 (b) allows utilities, under emergency conditions, to modify their response from that in filed emergency response plans to the extent required to restore service in a safe and efficient manner. However, any modifications are required to be filed with the Secretary within 60 days from restoration of full service.

additional areas where NYSEG and RGE must improve their future performance, including damage assessment, estimated time of restoration (ETR), and communications with county and local officials, as well as the public. The Companies fell short of the Department's and the public's expectations of investor-owned utilities to provide timely, accurate, and detailed information during a power outage. In fact, while local NYSEG incident command provided preliminary global restoration information on March 9 to their "Area Command", NYSEG Area Command did not release any ETR for NYSEG until the next day. This delay is disturbing because, by that time, more than half of NYSEG's customers had been restored before any ETR was ever publicly released.

ETRs are vital to customers who must rely on this information for planning purposes during outage events, and today's customers expect the most up to date information to be provided to them through a variety of outlets. The Companies did not develop ETRs as timely as required in their emergency response plan, and also did not make optimal use of social media or their websites to keep customers and public officials well informed during the windstorm. In fact, all communication tools used by the Companies - press releases, municipal calls and, most importantly, customer service call center operations – lacked consistent and accurate updates on restoration efforts and ETRs. The Companies chose to limit the release of key information that would have been helpful to the public. For instance, they chose to state the message that they were in "assessing" mode over an extended time period, despite knowing it was an ineffective message, which only infuriated customers and public officials.

Another area of concern includes the manner in which the Companies prioritized restoration work during the event and that there was a delay in the start of restoration. The Companies worked first on the circuits with the largest number of customers without power. However, RGE failed to give proper consideration to affected critical facilities as required by Section 8.2.2 of its emergency response plan, or areas with smaller circuits, such as in the City of Rochester. This inaction hampered the decision-making ability of organizations to support humanitarian efforts, such as whether shelters should be opened. In fact, Staff uncovered that the Companies' list of the critical facilities in their service territories was incomplete. The lack of a holistic view

of the restoration effort cost the Companies the opportunity to respond to the event faster and more efficiently.

Further, Staff identified the Companies' need to improve the process used for crew acquisition. The Companies did not perform adequate damage assessment in the early stages of storm restoration and lost valuable time during the first day of restoration by verifying broken poles, rather than performing a holistic review of their system. The Companies did not send an adequate number of damage assessors out into the field initially which affected the entire restoration effort. The failure to initiate proper damage assessment resulted in the Companies having insufficient visibility of field conditions and making a low initial request of resources through mutual assistance groups. While the Companies later realized that more resources were needed and made additional requests, the Companies lacked a clear process to determine appropriate crewing levels for the initial request which impacted the Companies' response in the early stages. Additionally, Staff found that the Companies did not request the assistance of municipal crews until the third day of storm restoration. Some crews were available in nearby municipalities from the first hours, but the Companies failed to consider them. This was another missed opportunity for the Companies to acquire resources earlier in the restoration period.

Another identified concern was the process used by the Companies to communicate with their life support equipment (LSE) customers. 16 NYCRR Part 105 outlines the requirements to be contained in emergency response plans and met by all investor-owned utilities regarding such communications. Each utility must maintain direct and live contact with LSE customers before, during, and after any outage event. Follow-up on LSE referrals is required of utilities, yet the Companies appeared to act indifferently about this important step in LSE communications. In fact, one interviewee revealed that they were unaware that some LSE customers were removed from their homes by ambulance during welfare checks conducted through the Monroe County Emergency Operations Center (EOC). During the windstorm, the Companies not only delayed providing lists of affected LSE customers that could not be contacted to the appropriate EOC for field welfare checks, they also failed to close the loop to confirm LSE contact with the EOC on those referrals each day as required by the emergency

response plan.

In addition, Staff identified the need for the Companies to make improvements to their wires down procedures. RGE was not prepared to handle the high volume of 911 wire down reports that came into its control center. While RGE did eventually correct the situation, the delay led to numerous wire down reports having to be resent, some multiple times.

Staff believes the Companies should implement all recommendations in this report and provide a status report by December 15, 2017 detailing their implementation progress, including their own recommendations identified in their self-assessment reports. Lastly, all recommendations should be formalized and incorporated into the Companies' emergency response plan by December 15, 2017.

EMERGENCY RESPONSE PLAN VIOLATIONS

One of the primary methods to evaluate utility performance is to determine whether the utilities followed the process and protocols outlined in their emergency response plans. While the plans allow for certain flexibility to respond to various conditions, the principles laid out in the plans need to be followed. Staff has determined that NYSEG and RGE did not follow their emergency response plan in several instances. These violations are discussed in more detail in the body of this report. In addition, this event exercised multiple aspects of the emergency response plan and Staff has identified areas that should be enhanced. A summary of the emergency response plan violations are as follows:

<u>ERP Section 8.1.3: Wires Down (pages 39-42)</u>

ERP Section 8.1.3 addresses the wires down protocol and follows PSL §66(21):

> Municipal reports of wires down will follow Public Service Law protocols to promptly secure downed wires within thirty-six hours of notification.
>
> Reports of wires down are assigned according to the priorities outlined in EOP-023:

Both Companies were not able to secure downed wires within 36 hours of

notification. NYSEG secured sixty-nine percent and RGE secured seventy-four percent within that time period.

ERP Sections 8.1.4: Damage Assessment (pages 33-34)

Sections 5.1 and 8.1.4 are associated with performing damage assessment activities. Section 8.1.4 specifically states:

> The Planning Section Chief (or Incident Commander) will initiate the Damage Assessment program. The Planning Section Chief instructs the Damage Assessment Branch Director (if applicable) regarding how much of the system to assess and the time period in which the analysis is required to be completed. Each Division strives to maintain the resources necessary to conduct a preliminary damage assessment for the three-phase and impacted circuits as rapidly as is safe and practical during the first daylight opportunity after the start of restoration.
>
> In general, completion of a preliminary assessment for three-phase and impacted circuits as rapidly as is safe and practical during the first daylight opportunity during an event is desired in order to capture the most critical information (e.g., broken pole locations, blocked roads and environmental concerns with leaking transformers). Events particular to each emergency however may influence the timetable. Depending on conditions, a sampling of the affected area may be utilized to estimate the extent of the damage.

RGE did not start three-phase damage assessment until Friday, March 10. The first day-light opportunity was on March 9 and the Company chose to delay damage assessment activities and use its resources that day instead to verify broken pole locations, rather than perform a holistic view of how the system was impacted.

ERP Section 8.2.1: Estimated Times of Restoration (pages 42-45)

The Companies ERP states it needs to comply with Estimated Time of Restoration (ETR) Protocols developed to ensure the public and Staff are adequately informed. The ETR Protocols require that within the first 36 hours of the restoration period:

> For storms with expected restoration periods five days or less, provide DPS Staff a global ETR.

> Establish regional/county ETRs for areas expected to be restored in five days, even if the total restoration period is expected to be more than five days.

NYSEG did not publish global ETRs within the requisite 36 hours. Further, both Companies did not provide unique regional/county ETRs for lesser impacted areas, but instead simply used a global ETR for all impacted areas. The ETR Protocols are considered minimum requirements and the Companies failure to timely communicate appropriate ETRs to its customers and/or municipal officials is of great concern.

ERP Section 8.2.2: Restoration Priorities (pages 37-38)

Restoration activities need to account for critical facilities to ensure the safety and welfare of the impacted areas are properly maintained. Each utility has a predefined list of critical facilities within its service territory. According to Section 8.2.2,

> A priority list should be developed by Incident Command to determine the order of importance for restoring critical facilities… The IC Operations section shall follow these system restoration priority guidelines taking into consideration the needs of critical facilities affected…"

RGE did not create a comprehensive priority list of all critical facilities to be used for determining restoration priority; rather, the Company only included a small number of critical facilities as part of their restoration planning.

ERP Section 9.1: Call Center (page 58)

Section 9.1 requires a certain level of initial call center staffing based on the severity level of an outage event. The windstorm is considered a "disaster event" defined as over 100,000 customer outages. The Companies identified the appropriate level of such staffing and this level was adopted in the ERP Order. During the windstorm, RGE did not have the required staffing in its call center for a Disaster Event.

ERP Section 9.1: IVR updates (pages 56-59)

The Companies relied on automated IVR messaging to communicate with their customers. ERP Section 9.1 requires that,

> The NYSEG and RG&E IVR, websites and mobile views interface with the SAP Outage Management System (OMS) to provide timely information to customers.... IVR messaging shall be updated within one hour of a press release being issued.

Between the evening of March 8 until the afternoon of March 10 (approximately 45 hours), RGE did not update its IVR system. During this time period, useful information was being shared through several press releases and other means; however, RGE failed to update its IVR messaging to readily inform customers that were actively reaching out to the Company.

ERP Section 9.3.2.2: Life Support Equipment (LSE) Customers (pages 50-54)

The Companies' ERP concerning the specific need to communicate with LSE customers that have lost power is as follows:

> In the event the Companies have not been able to reach the LSE customer (or their designee) within a 24-hour period via phone call, the company will complete a follow-up field visit to assess the customer's situation. In the event that the Companies engage outside agencies in the future, the process will include follow-up with those agencies to verify results.
>
> When attempts at direct contact are unsuccessful or impractical during an event, the Companies will make referrals to local or county Emergency Operations Centers, first responders or other human service entities for further direct contact attempts. A referral will be made by the Life Support Coordinator to the Public Liaison Officer. The Public Liaison Officer will work directly with the individual county Emergency Operations Center to process the referral and provide follow up on the status. The Public Liaison Officer will update the Life Support Coordinator once a status update is received from Emergency Operations.

The Companies failed to verify whether the LSE customers were contacted once referrals occurred throughout the event. The Companies remain ultimately responsible for ensuring that this potentially vulnerable customer population is contacted and supported during an emergency event. This responsibility does not shift

to the referred entity upon referral. The lack of verification as required by the ERP was not in the public interest, and could have resulted in harm to or death of an LSE customer.[3]

Additionally, also pursuant to Section 9.3.2.2,

> Once an outage is deemed to be a Class II or III emergency and at the direction of Area Command, the on-call Customer Advocate (or designee) will be notified by his/her management designee. The Customer Advocate (or designee) will retrieve a listing of all LSE customers impacted via an SAP transaction. This report will highlight any incidents of an outage, voltage problem, flicker, or partial power, which involves an LSE customer.

The Companies did not identify all LSE customers due to improper software systems.

INTRODUCTION

On Wednesday March 8, 2017, a severe windstorm hit Western New York causing widespread damage to the area. Sustained winds in the 50 to 70 miles per hour range uprooted and snapped trees, which in turn caused substantial damage to the electric infrastructure. The worst of the windstorm had winds gusting to 81 mph in Rochester, the second-highest ever recorded for the area. Power lines and poles were downed causing large scale electric outages in the area. Roads were blocked by trees and other debris, hampering vehicles' access to streets and restoration efforts. Strong winds from the windstorm lasted into the early morning of Thursday, March 9, 2017. The windstorm was immediately followed by a cold front that caused temperatures to dip below freezing creating further challenges for customers already without heat and electricity. Winter storm Stella, which brought sizable snowfall to the Northeast, also impacted the area prior to complete service restoration.

Although 14 of 17 divisions in the Companies' service territories experienced a significant number of customer outages, the hardest hit areas were Lancaster and Lockport for NYSEG, and Central and Sodus for RGE. The Companies

[3] Staff understands that no LSE customers were injured as a result of this violation.

reported peak outages of approximately 123,000 and 48,000 for RGE and NYSEG, respectively. Nearly 93,000 of these customer outages occurred in Monroe County. RGE received and handled 76,426 outage calls between March 8 and March 15, 2017, while NYSEG received 66,121 outage calls between a similar period.

For National Grid, areas from its Genesee, Frontier, and Southwest divisions sustained damage from the windstorm, with the most damage in the Genesee division. Customer outages for National Grid peaked at 113,000 and complete restoration was accomplished on March 12. Staff found that National Grid restored more than 90% of affected customers within 36 hours. Only approximately 8,000 customers in the Genesee region went into the third day of restoration. National Grid received and handled 17,327 outages calls between March 8 and March 12, 2017. Due to National Grid's ability to restore customers in a timely manner, the focus of the report will be on RGE and NYSEG.

DEPARTMENT RESPONSIBILITY

The Department is responsible for ensuring utilities in New York provide electric, natural gas, and telecommunications services in a safe and reliable manner. The Department's specific responsibility for emergency response oversight occurs in three phases: storm preparation, active monitoring of utility impacts and system restoration, and post-storm analysis. To ensure that the electric utility companies are fully prepared, Public Service Law (PSL) §66(21)(a) and Part 105 of Title 16 in the New York Codes, Rules, and Regulations requires each electric utility to submit a comprehensive emergency response plan to the Commission. The emergency response plans detail procedures and define roles, responsibilities, and required training to reduce confusion and promote a common understanding of the restoration process. The emergency response plans are annually reviewed by Staff and approved by the Commission. The Commission requires each electric utility to perform restoration efforts in compliance with its emergency response plan. The utility companies are also expected to update its plan after a major event to capture all lessons learned.

Staff participates in executive level multi-agency coordination calls hosted by the New York State Department of Homeland Security and Emergency Services, weather briefings, monitors the utilities' outreach efforts, and assists customers directly through the Department's call center. Staff is often assigned to conduct field visits of the affected areas and communicates directly with the utility, local officials, and county emergency response managers, as required. When requested, Staff sends personnel to the State's Emergency Operations Center to support its efforts. One of the Department's main objectives is to promote high-quality information flow between interested parties and the utilities during an outage event. Following a significant event, a detailed review is performed to determine whether the utilities were properly prepared for, and responded appropriately to, the effects of the event. During the windstorm, Staff communicated with the utilities throughout the restoration process and provided status reports based on information learned.

PREPARATION ACTIVITIES

During large scale events, the New York utilities follow the Incident Command System (ICS), a nationally recognized organizational system to employ a consistent management approach that promotes the coordination of facilities, equipment, personnel, procedures and communications; enables response coordination between different jurisdictions and outside agencies, both public and private; and, establishes common processes for planning and managing resources. ICS permits the use of an integrated organizational structure that can coordinate the complexities and demands of an emergency response. A key benefit of the ICS is that it is scalable, making it easier for utilities to ramp up or ramp down their restoration efforts as conditions change. If managed properly, utilities are able to readily integrate resources from other parts of their service territories or other utilities when responding to significant outage events.

Area Command is an extension of the ICS, and provides for the overall management of multiple Incident Command teams during an emergency event (see Addendum 1). Area Command is used when a utility establishes localized management

of multiple incidents that are each being handled by a separate ICS organization and to oversee the management of a very large or evolving incident. An Area Command is activated only if necessary, depending on the complexity of the incident and incident management span-of-control considerations. For the windstorm event, the Companies made the decision to establish an Area Command in RGE's West Avenue facility to manage the multiple ICS structures in place in the Central and Sodus divisions of RGE and the Lancaster and Lockport divisions of NYSEG. The Area Commander led the Companies' preparation and response activities.

The Companies began monitoring the potential for weather-related system damage on Friday, March 3. Internal informal Company discussions were held throughout the weekend in anticipation of the upcoming event. Area and Incident Command leadership personnel monitored the National Weather Service and relied on two contract meteorologist companies, Schneider and Atmos, which provided daily weather forecasts. Between March 6 and 8, these weather forecasts were used by emergency preparedness personnel to run Damage Prediction Models, that predict the level of outages that may occur, which could then be used to determine the amount of resources needed to respond adequately. On the morning of March 6, the Area Commander started email communications with the Companies' leadership, which included Vice Presidents in Avangrid and personnel that would act as Incident Commanders. At that time, the Companies were also preparing for a leadership meeting to be held in eastern New York (Mechanicville); based on the forecasts, however, local Incident Commanders from Lancaster, Lockport and Rochester were instructed to remain in these potential impact areas.

On March 7, the Companies held a call with the Incident Commanders and Energy Control Center (ECC) personnel to further discuss emergency response planning. This call was followed by an email from the Area Commander with detailed instructions on storm readiness activities, damage prediction modeling, mobilization and crewing requirements. Additionally, the Area Command team held a weather call on the morning of March 8 with its meteorologist companies, Incident Commanders, ECC and Emergency Preparedness personnel to confirm weather forecasts and potential impacted areas.

Based on the forecast of 40 to 50 mph winds with gusts reaching 50 to 60 mph, and damage prediction models using those forecasts, the Companies' assessment was that appropriate Company and contractor resources were in place to effectively respond to the potential impacted areas. In the days preceding the March windstorm event, the Companies followed their emergency response plan and other procedures and determined that Company and contractor resources were available to respond to potential storm impacts. Area Command, Area Command Planning, and Emergency Preparedness teams evaluated resource needs based on forecasted damage. Beginning on March 6, discussions started with employees and contractors regarding storm duty activation and mobilization requirements. Planning calls were held between Area Command, local Incident Commanders and the Executive Team. On March 7, a decision was made by the Area Commander to hold contractor line and vegetation crews on the Companies' properties. This resulted in having the normal staffing level of 400 company line full time equivalents (FTEs), 121 contractor line FTEs, and approximately 190 vegetation FTEs available for potential storm restoration activities. Based on the total number of FTEs scattered across the Companies' service territories by the morning of March 8, the Companies concluded that appropriate resources were available and no mutual assistance requests were needed for the event. While the Companies stated these resources were available in the hours before the storm's arrival, Staff determined FTEs were located in several divisions including those unlikely to be impacted by the weather forecast, such as Brewster, and therefore, not appropriately staged leading to additional travel in a reactive manner to support the most severely storm impacted locations. Since the Companies did not have a clear sense of the specific areas that would be severely affected by the windstorm, the Area Commander gave instructions to local regions for crews to report to their work site by 7 a.m. on March 8 and be ready to travel, if necessary. Consequently, mutual assistance calls were not held before the start of the event. While the Companies performed certain pre-storm activities, they fell short in enabling a timely response for supplementing crewing levels in the areas of highest concern.

Preparation Recommendation:

> ***The Companies shall evaluate how quickly line and vegetation resources are able to be mobilized into impacted areas and define appropriate times and distances for pre-staging resources to allow a timely response should the actual impact of an event be worse than originally predicted*.**

ELECTRIC OPERATIONS

Overview

Most of the overall damage to the distribution system was a result of the windstorm causing trees to make contact with the overhead utility facilities, damaging the poles and subsequently downing wires. This is not surprising due to the close proximity of the distribution facilities to trees and other vegetation. During this event, 921 poles and more than 300 distribution transformers had to be replaced. In addition, more than 6,000 locations of downed wires were reported. Peak outage numbers for RGE exceeded 100,000 customers during the windstorm. NYSEG's peak numbers approached 48,000 customers.

A significant restoration effort was needed based on the damage sustained. While winds continued to affect the service territories until late on March 9, 2017, service restoration began as soon as it was safe for crews to work. NYSEG began in the evening of March 8 and, RGE began the morning of March 9, 2017. Service was restored on March 11, 2017 to all customers in the Lockport (NYSEG) and Sodus (RGE) areas, on March 13, 2017 in Lancaster (NYSEG), and on March 15, 2017 in the Central (RGE) territories, which were the most severely affected areas. The outage duration lasted from Wednesday March 8th to Thursday March 15th. It took RGE significantly longer to restore power to their customers compared to NYSEG. Figure 1 below shows the number of customers without power versus timeline of the outage.

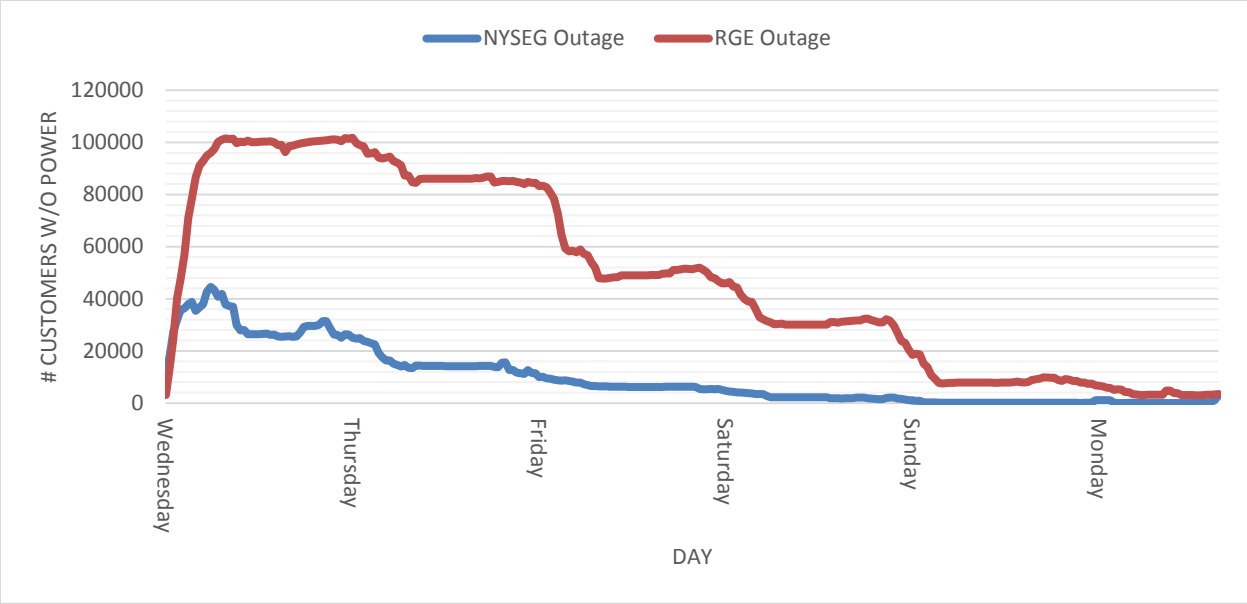

Figure 1: Customer outage number timeline

A total of 27,414 customer outages (or 11% of the overall Companies' total) were a result of interruptions at the 34.5 kV sub-transmission level. In NYSEG's Lancaster and Lockport divisions, eleven 34.5 kV circuits were locked out, affecting 18,385 customers; while RGE's Central and Sodus operating territories had eight 34.5 kV circuits locked out, resulting in 9,032 customer outages. At voltage levels above 34.5 kV, only two NYSEG transmission lines (Niagara – Robinson Road and Stolle Road – Five Mile Road) received minor damage. Neither of these lines tripped offline as a result of the damage. Therefore, the Companies' higher voltage systems performed well despite the severity of the windstorm.

Sub-transmission (34.5 kV) circuits were repaired within two to three days, except for circuit #531. Circuit #531 tripped to lock out on March 8, 2017 at 12:43 due to broken poles caused by a tree falling onto the conductors and was restored on March 13, 2017. Customers on this circuit, however, were restored March 8, 2017 at 4:25 p.m. via alternate source (from 34.5 kV, 523 line, from Big Tree Substation).

As part of the investigation, Staff looked at two windstorm incidents that occurred on March 1 and 8, along Lee Road in Rochester. During the March 1 incident, 17 sub-transmission class '3' poles were broken in a row, which resulted in damages to pole-mounted switches and fixtures. Approximately 1,100 customers were impacted by

this incident. RGE completed the installation of new and stronger class '2' poles with side guide wires and anchors on March 3. Regarding the March 8 incident, 14 of the 17 newly installed poles came out of the freshly dug pole holes because the soil around the poles had not been fully set. These poles were leaning but were not broken. Additionally, there were no customer impacts and no damage to the pole-mounted fixtures as a result of this incident.

Staff's review of the Companies' pole inspection records and the damage sustained from the two incidents shows that proper pole inspection and replacement protocols were followed, and there were no indications that the poles were going to fail. All of the poles involved in the March 1 incident had been inspected in recent years as part of RGE's safety standard inspection programs. The pole inspections did not identify any pole condition issues, and the remaining strength of the poles were estimated to be between 98% and 100%. Visual inspections after the March 1 incident of the pole fractures were consistent with the pole inspection results, with no sign of decay or any indication of pole integrity issues. Since there were multiple electric and telecommunication equipment on the poles, this incident was likely the result of a cascading pole failure after one or two poles were broken by high winds. Based on the lessons learned from these two incidents, RGE has reviewed the pole selection design guidance documents that are used by field personnel. RGE has identified areas that will be enhanced when designing pole lines with multiple circuits, with a mix of transmission and distribution equipment, and where there are several telecommunication attachments on the lines. Both lateral and longitudinal strength analysis have been and will remain part of RGE's pole installation design process.

Initial Response

Standard Operating Procedures (SOPs) and Emergency Operating Procedures (EOPs) are supplemental procedures that NYSEG and RGE use in conjunction with their emergency response plan. These procedures provide specific guidance to utility personnel when responding to emergency events. In preparation for the March event, the Companies relied on a series of procedures. Specifically, Area

Command and regional Incident Command teams used three SOPs[4] as a guide for adding additional crews, tracking and retaining contractor resources, and maintaining adequate crewing levels in preparation for the event. These SOPs, however, are not included or referenced in the Companies' emergency response plan that was approved by the Commission in March of 2017.

The Companies claimed they were following the above-mentioned SOPs on March 7 and 8. Accordingly, they indicate that their Area and Incident Commanders made critical decisions to hold contract line and vegetation crews on premises and required Company resources to be at their assigned storm work sites by the morning of March 8.

Prior to the start of the event on March 8, NYSEG and RGE believed that they had adequate company and contractor resources to provide an appropriate response based on forecasted damage. Company resources and available contract resources were moved to NYSEG Lancaster and RGE Central divisions beginning in the evening of March 8 once the Companies determined that the weather threat was minimal for their other operating divisions. The Companies also requested crews from Central Maine Power (CMP) and United Illuminating (UI) together with NYSEG and RGE all of which are affiliated utilities under parent company Avangrid. An additional request was made to CMP the next day, however, these resources were not available to perform restoration activities in the Rochester area until the evening of March 9 for the first group of CMP and UI crews and the morning of March 11 for the subsequent request to CMP. In addition, NYSEG and RGE contacted other contract resources affiliated with the Companies' operating utilities in New York, Connecticut and Maine.

When Staff tried to re-create the decision-making activities using the SOPs, Staff determined that the purpose and process outlined in each of the SOPs are not adequate or well-defined. For instance, certain tasks such as tracking contractor resources and holding line crews, identified during Staff's investigation of the Companies' event preparation, are not included in the SOPs. The purpose section of

[4] SOP 2011-015: Call in Additional Crews; SOP 2011-003: Additional Crew Support; SOP 2011-024: Ramping Up/Down Contractors.

each SOP should clearly indicate the Company personnel who should use the procedure and the circumstances where the procedure should be used. Furthermore, the process section of each SOP should identify the actions that should be taken when using the procedure. SOP 2011-015, SOP 2011-003 and SOP 2011-024 failed to clearly outline the procedures that the Companies followed in preparation to the March windstorm event. Improvements made to these procedures will be beneficial to Company personnel tasked with critical decision making in future events.

SOP Recommendations

- ***SOP 2011-015, SOP 2011-003 and SOP 2011-024 failed to clearly outline the procedures that the Companies followed in preparation to the March windstorm event. The Companies should reevaluate these SOPs and develop adequate operating procedures that consider the tasks that need to be completed with respect to adding and maintaining Company and contractor resources. These and any newly developed SOPs associated with this effort shall be included in the Companies' emergency response plan.***

Resource Acquisition

According to the Companies' emergency response procedures, when a local Incident Command requires additional resources beyond its control, a request is submitted to Area Command for additional support. During the windstorm event, requests from local Incident Command to Area Command teams were done both formally and informally. While a formal request is done in writing or via email, an informal request is a verbal demand made during Area Command Calls or through direct phone conversations between a local Incident Commander and the Area Commander. Both type of resource requests needed to be reviewed, approved by the Area Commander, and forwarded to Area Command planning for execution. The Companies' procedure is to fill these requests with available Company or contractor resources on site; however, mutual assistance groups are contacted if Company and contractor resources are not able to fulfill all requests.

Given the impact to the systems, the Companies realized that additional resources were needed and contacted the North Atlantic Mutual Assistance Group

(NAMAG) to obtain assistance. NAMAG is a mutual assistance group that provides a forum for member utilities to share resources in a predefined manner, and it includes utilities in the Northeastern part of the United States and other utilities in Canada. When additional resources are needed, a utility is required to make a request to the other NAMAG utilities in the form of full time equivalents (FTEs). Other member utilities fill the request by offering resources to the requesting utility. The request process does not automatically result in the utility getting the amount of resources it requests or needs, as member utilities may not be releasing resources due to current or anticipated storm response in their own territories. Furthermore, utilities need to consider travel time, which depends on the regions where the crews originate from, when requesting resources because this will impact when the resources will actually be deployed into the field. Long travel times and late arrivals may result in resources needing to be rested before starting work. Thus, restoration activities can be delayed depending on the time crews arrived.

In the early evening of March 8, the Companies made a request for 240 FTEs based on the limited damage reports entered in the Companies' outage management system. This initial request was low, and it proves that the Companies did not have good visibility of field conditions at the time the request was made. However, NYSEG and RGE began to realize that more resources were needed as broken poles, wires down, and other field conditions were being reported. Thus, the Area Commander requested later that evening that Area Command Planning and the Mutual Assistance Group liaison make efforts to secure an additional 200 FTEs through contract resources and mutual assistance processes.

Staff found that the analysis done when requesting mutual assistance crews in the first few hours within the start of the March windstorm event to be lacking. During this period, the Companies relied mainly on known damage and past storm experience to determine crewing resource needs in the affected areas. Other factors, such as emergency management office's concerns and location of damages should be strongly considered by the Area Command Planning section in determining the amount of resources needed.

Initial Response Recommendations

- ***The Companies shall develop a process to better establish the crewing levels needed to respond effectively such that appropriate resource requests can be made in the initial hours of an outage event to avoid unnecessary delays. The Companies should benchmark with other utilities to identify best practices.***

On March 9, the Companies continued to request more crews from contract resources and through two additional NAMAG calls (one in the morning and one in the evening) as the Companies gained more knowledge of field conditions and significant outages in the affected areas. In the evening of March 9, the Companies also requested 24 line FTEs from CMP to relocate to Rochester in addition to the 50 CMP and 45 UI FTEs that had been requested the previous day. The use of CMP and UI resources in the restoration phase was a good practice, and it should continue. Furthermore, the Companies realized the need for more pole digger crews as more broken poles were being reported. These crews were obtained from contract resources and requests made through the NAMAG investor-owned utilities. By the evening of March 10, NYSEG had 101 line FTEs in Lancaster and Lockport, which represents 39 more than the amount that was available at the start of the event. In comparison, RGE had 920 line FTEs in Rochester and Sodus, which was approximately ten times more than the amount available at the start of the event. More details on actual crewing numbers available or acquired during this response period are provided in the Asset Allocation section of this report.

From March 9 to March 11, the Companies engaged the additional resources acquired from the investor-owned utilities in the restoration effort. The Companies predicted on March 10 and 11 that they could lose approximately 600 of the committed FTEs, as other NAMAG utilities were preparing for winter storm Stella which was anticipated to hit the Companies' service territories on March 14. As was predicted, the NAMAG utilities recalled these FTEs by March 13. Because of winter storm Stella and the need for additional resources by NAMAG utilities, the activation of the Southern Electric Exchange (SEE), a neighboring mutual activation group, was required. The Companies made a final NAMAG request regarding the windstorm event on March 11, and three additional requests related to winter storm Stella on March 12

and 13. These three requests were expanded to include SEE resources from Alabama, Georgia and Florida. The Companies were able to replace about 95 percent of the recalled FTEs through the mutual assistance process by March 13 which alleviated the concern of losing a significant number of resources to complete the restoration efforts. Staff's review of the mutual aid requests found that NYSEG and RGE should have requested more resources earlier. The table below shows the request time, resources requested, and resources allocated to NYSEG and RGE as part of the mutual assistance process.

NAMAG Requests - March Windstorm and Winter Storm Stella						
Event	NAMAG Call Date	NAMAG Call Time	Line Resources Requested	Forestry Resources Requested	Line Resources Allocated to NYSEG/RGE	Forestry Resources Allocated to NYSEG/RGE
Windstorm	March 8	7:00 PM	240	40	169	0
	March 9	09:00 AM	120	40	143	32
	March 9	10:00 PM	320	0	330	0
	March 11	2:00 PM	350	0	374	0
Stella	March 12	1:00 PM	100	0	0	0
	March 12	7:00 PM	100	0	100	0
	March 13	4:00 PM	50	0	50	0

Table 1. NAMAG Requests - March Windstorm and Winter Storm Stella

In addition to the NAMAG process, the New York Public/Private Utility Mutual Assistance protocol (NYP/PUMA) was activated on March 10. NYP/PUMA is a mutual assistance agreement that exists between public and investor-owned electric utilities in New York. The public utilities include the New York Power Authority (NYPA), municipal electric and co-operative electric entities. Although NYPA specializes in transmission level work, they should still be considered a resource to replace company transmission workers, thereby, enabling the company employees to perform work on the distribution system. Since local municipal utilities' electric systems were not impacted during the windstorm event, they were also able to provide resources to the Companies as per the NYP/PUMA protocol.

The NYP/PUMA protocol was activated for the first time by the Companies

during the March windstorm event. This arrangement was beneficial to the Companies because some of these resources were located nearby and in certain instances were more familiar than foreign crews with the Companies' service areas. During the first few hours into the restoration process, the Companies had the ability to obtain these resources, but did not. This was a missed opportunity for the Companies, and it needs to correct its process to enable the prompt uses of resources available through the NYP/PUMA protocol. From March 10 through 13, a total of seven calls were held and resulted in the Companies acquiring approximately 100 FTEs. Had this mutual assistance process been fully implemented earlier, the Companies could have used these municipal crews during the first few hours of restoration.

NYP/PUMA Recommendations:

- ***All New York utilities shall consider using such resources in their restoration activities and develop procedures that ensure acquisition of these municipal crews is efficient and effective.***

- ***The NYP/PUMA process shall be reevaluated and a section describing the NYP/PUMA protocol, similar to the North Atlantic Mutual Assistance Group (NAMAG) process, shall be formally included in all New York utilities' emergency response plans to allow the effective use of municipal resources.***

Due to the amount of foreign resources that the Companies obtained during the windstorm event, an effective process was necessary to ensure that these crews understand the aspects and technical specifications of working in a different environment, typically referred as "on-boarding." The foreign crews were provided with job briefings that included a description of the Companies' electrical system and safety briefings for effective and safe working practices. Staff's review revealed that the Companies' on-boarding process was effective during the event.

Asset Allocation

Crew movements were tracked by the Companies throughout the restoration period. As the Companies were obtaining more foreign crews, safety orientations were conducted, and these crews were sent to the regions where they were

mostly needed. Initially, the focus was on sending crews to both NYSEG Lancaster and RGE Central, but the attention shifted to RGE Central by March 11 due to the significant damage and outage conditions reported in this division. In all the operating divisions, utilization of resources was based on geographical constraints and damage severity rather than electrical system requirements because most line crews were qualified to work on all portions of the electrical system.

Where NYSEG and RGE shared the same Area Command structure, the Companies had flexibility when allocating crews to the affected divisions of Rochester Central, Sodus, Lancaster and Lockport divisions. During the first few hours of restoration, allocation of line FTEs was driven by the customer outage and damage information reported in the affected areas. NYSEG and RGE had a total of 62 line FTEs in Lancaster and Lockport when the Companies started restoration efforts in these affected areas in the evening of March 8. This number is comparable to the number of FTEs that is typically available to work in these regions on a normal day. This number slightly increased to 91 on the evening of March 9 as NYSEG added more contract resources in Lancaster throughout the day. With respect to Rochester and Sodus, the restoration activities started in the morning of March 9 with normal staffing levels of 96 line FTEs.

While the number of resources remained constant in Lockport and Sodus throughout the entire restoration period, line FTEs increased considerably in Lancaster and Rochester as the Companies were obtaining additional FTEs from contract and mutual assistance resources. By the morning of March 10, RGE added 547 additional FTEs in Rochester through the reassignment of company crews, the relocation of CMP crews, and the acquisition of contract resources. From the evening of March 11 through the evening of March 13, NYSEG had 165 total FTEs allocated to Lancaster and Lockport. This was the highest number of FTEs allocated in these regions, and more than half of the FTEs were from contract and mutual assistance resources. In Rochester, RGE's peak of 2,049 FTEs was on the morning of March 13. More than 80 percent of these FTEs were from contract and mutual assistance resources.

Staff's review of these resources concluded that the Companies were slow in acquiring additional resources during the first few hours of restoration. Considering

the large number of foreign resources that were needed in Rochester, crew mobilization should have been done faster in the first few hours of the event. As a result of the low number of FTEs initially requested, Rochester was considerably understaffed in the initial part of restoration. Overall, NYSEG and RGE adequately allocated the arriving line FTEs to the affected areas in the latter part of the restoration period as the Companies gained better visibility of damage and field conditions. Tables 2 and 3 show the number of Line FTEs that were available in the affected areas to perform restoration work from March 8 through March 15.

Resource Allocation – NYSEG											
Line FTEs	8-Mar		9-Mar		10-Mar		11-Mar	12-Mar	13-Mar	14-Mar	15-Mar
	7 AM	7 PM	7 AM	7 PM	7 AM	7 PM	7 AM	7 AM	7 AM	7 AM	7 AM
Company Resources	42	42	42	42	42	42	42	42	42	42	42
CMP	-	-	-	-	-	-	-	-	-	-	-
UI	-	-	-	-	-	-	-	-	-	-	-
Contractors Normally on Property	20	20	20	49	49	49	49	34	34	16	6
Contractors Obtained through Direct Calls	-	-	-	-	-	-	-	43	43	29	20
Contractors Obtained through NAMAG	-	-	-	-	-	-	-	41	41	10	
Resources Obtained through NYP/PUMA	-	-	-	-	-	10	10	5	5	5	5
Total Resources	62	62	62	91	91	101	101	165	165	102	73

Table 2. Resource Allocation – NYSEG

Resource Allocation – RGE												
Line FTEs	Region	8-Mar		9-Mar		10-Mar		11-Mar	12-Mar	13-Mar	14-Mar	15-Mar
		7 AM	7 PM	7 AM	7 PM	7 AM	7 PM	7 AM	7 AM	7 AM	7 AM	7 AM
Company Resources	Rochester	50	50	50	166	166	166	166	166	166	166	166
	Sodus	12	12	12	12	12	12	12	12	12	12	12
CMP	Rochester	-	-	-	50	50	50	74	74	74	74	-
UI	Rochester	-	-	-	-	-	-	45	45	-	-	-

Resource Allocation – RGE												
Line FTEs	Region	8-Mar		9-Mar		10-Mar		11-Mar	12-Mar	13-Mar	14-Mar	15-Mar
		7 AM	7 PM	7 AM	7 PM	7 AM	7 PM	7 AM	7 AM	7 AM	7 AM	7 AM
Contractors Normally on Property	Rochester	34	34	34	50	50	50	50	83	83	101	111
Contractors Obtained through Direct Calls	Rochester	-	-	-	365	365	365	365	365	428	441	445
Contractors Obtained through NAMAG	Rochester	-	-	-	-	-	240	387	758	1202	763	756
Resources Obtained through NYP / PUMA	Rochester	-	-	-	-	-	37	43	96	96	58	58
Subtotal resources	Rochester	84	84	84	631	631	908	1130	1587	2049	1603	1536
Total resources	Rochester & Sodus	96	96	96	643	643	920	1142	1599	2061	1615	1548

Table 3. Resource Allocation – RGE

Vegetation FTEs supported line crews by performing road clearing activities, trimming trees, and removing fallen trees to allow for power to be safely restored. Like line FTEs, vegetation FTEs were allocated to the affected areas based on damage information available to the Companies in the first few hours of restoration. As shown in Table 4, the total number of FTEs available on the morning of March 8 is lower than the numbers shown on subsequent days. The March 8 total amount is in line with available resources at the Companies on a normal day. The total number of vegetation FTEs increased in all the regions as the Companies were obtaining crews from contract resources. Most of these FTEs were allocated to Rochester because of the sizable number of customers impacted and damage incurred in that area. The numbers shown in Table 4 indicate that the Companies allocated vegetation FTEs appropriately during the windstorm event.

Allocation of Vegetation FTEs																
Vegetation FTEs	8-Mar		9-Mar		10-Mar		11-Mar		12-Mar		13-Mar		14-Mar		15-Mar	
	7AM	7PM	7AM	7PM	7AM	7 PM	7 AM	7 PM	7 AM	7 PM	7 AM	7 PM	7 AM	7 PM	7 AM	7 PM
Lancaster	16	36	36	52	52	70	70	90	80	80	40	40	-	-	-	-
Lockport	-	-	50	50	50	-	-	-	-	-	-	-	-	-	-	-
Sodus	-	-	-	6	16	20	20	10	10	4	4	4	4	-	-	-
Rochester	30	60	66	154	154	156	156	206	256	266	266	228	226	226	226	226
Total Resources	46	96	152	262	272	246	246	306	346	350	310	272	230	226	226	226

Table 4. Allocation of Vegetation FTEs

Restoration Work Plans

The Companies' emergency response plan outlines the procedures that need to be followed to ensure an efficient response to an event and the safety of crews and the public during restoration activities. On March 8 and 9, the Area Command and Incident Command teams developed Incident Action Plans (IAPs) that outlined the Companies' primary objectives in the first few hours within the start of restoration of the windstorm event. As per the Companies' emergency response plan, the common practice is to have crews primarily work to clear hazardous conditions during the first hours of an event. The implementation of safety measures (make safe), which involved the clearing of wires down and other hazards, was the most important objective of the affected regions. The make safe work was prioritized based on the regional Incident Command teams' assessment of the risks associated with damage and outage information reported by damage assessors, first responders, and the public. The Companies gave higher priority to Police, Fire and 911 calls in responding to electrical hazards in all the affected areas.

During the make safe period, the process utilized for getting updates from crews was different among the affected areas. In Lancaster and Lockport, crews reported to the areas' field circuit coordinators and wires down branch director. Conversely, in RGE Central, crews provided updates of their work assignments by calling into RGE's ECC. In some instances, line crews performed make safe activities by operating overhead switches to isolate damaged sections of the electric circuits. Electric service and substation crews also performed make safe work on circuits that had not yet been assigned to line crews. Due to the extensive damages that were

being reported, the Companies' instruction to crews was to focus on making areas safe and complete restoration work only in instances that did not impede the make safe process.

Staff's investigation found that the Companies followed their emergency response plan with regards to making areas safe. Both NYSEG and RGE implemented adequate safety measures to clear or protect hazardous conditions during the first few hours within the start of restoration. The safety related work activities were prioritized and assigned to appropriate crews; this activity lasted for the majority of March 9 in the Rochester area due to the amount of damage. While the Companies did not have a good visibility of field conditions in the first few hours of the event, the Companies' work performance with regards to make safe activities was effective.

RGE transitioned from make safe activities to performing restoration work on March 10 and began restoration activities by prioritizing the areas with the largest outages. The development of work packages was centralized and performed by the Area Command planning section. Instructions on restoration progress, circuit issues, electric system maps, and daily safety briefings were included as part of the work packages. These packages were developed overnight and distributed to the appropriate crews in the morning. Throughout the restoration period, adjustments were made as needed to work activities, and there were always more packages produced than the number of crew assigned to restore damaged circuits. Thus, work assignments were always available to existing crews as they completed previous work activities and to incoming crews as they arrived in the affected areas. Furthermore, the Companies decided to identify the circuits that would be repaired by local line workers as opposed to foreign crews because of the complexity of the electric system in the Rochester area. During the March event, the Companies kept the focus on safe work practices and implemented effective safety measures to prevent injuries to field workers and the public. For NYSEG restoration priorities and work activities were developed by the local Incident Command structures. Additionally, more than three quarters of the customer were restored by the end of March 9.

To enable the integration of foreign crews in restoration work activities, the Companies started on March 9 to assign foreign crews to field circuit coordinators

(FCCs) with knowledge of the of the Companies' system. The FCCs were crew guides with responsibility to manage restoration activities of damaged electric circuits. Initially, these FCCs were substation and line workers of the Companies, line supervisors acquired from affiliated utilities (CMP and UI), or retirees who were rehired to assist with the restoration activities. Due to the volume of foreign crews that were performing restoration activities in Rochester, the Companies lost the ability to manage restoration work with only their existing supervisory personnel. Thus, RGE decided to re-allocate some company crews from performing repair activities to supervising foreign crews. There were 18 FCCs utilized by NYSEG during the March event. Of the 18 FCCs, 14 were line workers who were reassigned from field work; and the remaining four FCCs included two substation employees, one retiree, and one individual from the affiliated utilities. Comparatively at RGE, 86 FCCs were used during the event. Of these 86 FCCs, there were 27 line workers who were reassigned from field work; and the remaining FCCs included 15 substation employees, 8 retirees, and 36 individuals from the affiliated utilities. Staff found the reassignments of line workers to be an improper practice, and the Companies should have done more to bring experienced workers from non-impacted areas within Avangrid or obtain personnel from other utilities to serve in this function. Line workers should have been kept in the field to perform restoration work. Additionally, the use of field coordinators has never been practiced and is not part of the Companies' emergency response procedures. Thus, it likely caused some delays in getting crews to start working.

Restoration Work Plans Recommendations:

- ***The procedures that outline the roles and responsibilities of a field circuit coordinator shall be detailed and included in the Companies' emergency response plan.***

- ***The Companies shall have an adequate number of personnel trained to perform as field circuit coordinators and not use line workers to serve in this storm function.***

Contractors with the largest number of resources were assigned to the circuit areas that had the most damage. At RGE Central, crews with larger equipment were assigned mostly to the suburbs and not in the city, which allowed the crews to

maneuver their equipment more effectively. Towards the latter part of the restoration period, the priority of restoration work shifted to smaller distribution circuits and to rear lot poles with smaller numbers of customer outages. As a result of this prioritization, outage numbers in the city of Rochester were somewhat stagnant for days. RGE did not seek restoration of smaller circuits in the city of Rochester until several days into the restoration. RGE should have begun restoration of smaller circuits and single customer outages as soon as make safe activities were complete. The Companies continued to use pole setting branch directors throughout the event to manage the replacement of broken poles in the affected regions. Crew demobilization plans were developed separately for each of the affected regions as the bulk of the restoration was being completed in each region. Lockport was the first area to start its demobilization plan on March 11, followed by Lancaster on March 13, and RGE Central on March 14. In conjunction with the demobilization period, each region assigned specific crews to patrol all the most impacted circuits to identify any potential issues prior to the region's return to normal operations.

The Companies raised safety concerns of crews working during night shifts, most of which are reasonable. However, during Staff interviews with Company representatives, Staff did not get a clear sense that a great deal of work was being completed during the overnight hours of the windstorm event. Based on the timing of the March windstorm, there were opportunities to have a better balance between day and overnight work, particularly during the first overnight session. Since the Companies did not have control over foreign crews' arrival time, having a work shift that ended prior to midnight limited the amount of work hours for crews that arrived later in the day. In addition, crews that arrived late in the day were told to rest and be ready for work the next morning. It was possible to involve certain crews earlier in the restoration activities. Staff recognizes that worker safety is paramount, and to the extent that safety concerns are mitigated, the Companies should re-evaluate this work practice, the process for overnight work, and determine the appropriate balance between day and overnight work. This is especially true for events that occur late in the day.

Damage Assessment

Damage assessment is an integral part of an effective storm response. Trained personnel are sent out to survey and document damage which is shared with the planning section and incident command. The planning section uses this information to create work packages for crews. Damage assessment results also give the Incident Commander situational awareness which is used to line up the proper crewing and materials so that restoration crews can be used most effectively. During the March windstorm, RGE did not perform adequate damage assessment as discussed below. This error with damage assessment in the early stages of storm restoration carried through the entire restoration process and ultimately had a negative impact on the overall restoration and response.

On March 8, RGE deployed 21 assessors to assess the eight impacted 34.5kv circuits in the affected areas. NYSEG used seven assessors in the Lancaster and Lockport divisions to verify broken poles. In its self-assessment report, the Companies included sample outage management system data under its Damage Assessor section and responded on numerous occasions during our investigation that data obtained from its Supervisory Control and Data Acquisition (SCADA) system was used to assess circuit damage. While this information enabled a high-level analysis, it did not take the place of proper visual damage assessment to identify what has actually occurred in the field.

The Companies' damage assessment process is included in Section 5.1 and 8.1.4 of their emergency response plan. As discussed in the Companies' emergency plan, two types of damage assessment are generally performed after an event: a preliminary assessment and a detailed assessment. The preliminary assessment is done to rapidly capture critical damage information such as repairs, access locations, environmental issues with leaking transformers, broken pole locations, and extreme tree damage. Conversely, a detailed assessment is performed to capture more detailed damage information to better refine ETR data. Overall, Staff determined that the Companies did not comply with Section 8.1.4 of their emergency response

plan.[5] First, the Companies were late to initiate damage assessment and were too focused on verifying broken pole locations as opposed to performing a holistic review of the three-phase section, particularly in the Rochester area. This misdirection of priorities was exacerbated by the fact that RGE only had limited resources compared to the number of circuits impacted. In addition, as shown in the table 5 below, barely any circuit assessment took place in the initial days. Second, while the Companies indicate that the start of restoration began at 6:00 a.m. on March 9, Staff also determined that RGE did not deploy damage assessors until later that day despite the plan specifying that damage assessment should be conducted as soon as it is safe and practical during the first daylight opportunity. By definition, the start of restoration is when it is considered to be safe to deploy resources into the field. Lastly, RGE failed to perform preliminary damage assessment, instead directly assigned assessors to perform detailed assessment. By contrast, NYSEG more closely followed the protocol defined in the emergency response plan for damage assessment.

On March 9, RGE used 30 assessors to confirm broken poles, rather than perform damage assessment in the field because RGE relies heavily on an ETR calculator that places an emphasis on broken poles. Rather than merely relying on a sampling approach for verification given the overall volume of location or using unconfirmed broken pole reports from their outage management system (OMS), RGE chose to put off damage assessment for an entire day to formally verify broken poles. Staff determined that this decision was a critical misstep and resulted in RGE losing valuable time obtaining detailed damage assessment that could be used to better plan its restoration approach and a more effective response. Contrary to the lack of circuits surveyed, RGE indicated in its report that on the March 9, 2:00 p.m. call with Area Command, preliminary damage assessment was complete in in RGE.

[5] Response to Staff Interrogatory DPS 24.

Damage Assessment

Date	Assessors	Circuits Planned	Circuits with Preliminary Assessment Completed	Circuits with Detailed Assessment Completed
RGE				
3/8/17	21	0*	n/a	0
3/9/17	30	0*	n/a	0
3/10/17	106	39	n/a	6
3/11/17	106	66	n/a	45
3/12/17	107	173	n/a	122
3/13/17	98	156	n/a	101
3/14/17	90	69	n/a	61
		9	n/a	9
NYSEG				
3/8/17	7	n/a	13	0
3/9/17	32	19	16	0
3/10/17	33	51	37	4
3/11/17	22	31	10	21

Table 5. Damage Assessment

*RGE was focused on broken pole verification

As shown in the table 5 above, circuit assessment continued several days into restoration. Specifically, the lack of detailed damage assessment lead to inadequate local ETRs in the Rochester division.

Damage Assessment Recommendations

- ***Damage assessors shall be deployed to begin formal assessment as soon as weather and safety conditions allow. RGE shall not rely on make-safe resources to perform informal damage assessment. RGE shall have ample designated staff allocated for damage assessment in addition to resources used solely for make safe activities.***

- ***Damage assessment activities shall not be delayed for the purpose of strictly confirming broken poles during large outage events. The Companies shall develop procedures and processes to reasonably estimate the number of broken poles for restoration activities and ETR development.***

Decentralization

Utilities typically operate under centralized operations, where the system control center operators manage restoration activities. When outages are significantly elevated additional resources and infrastructure are needed to effectively manage the event. Decentralizing operations allows local system control to local staff such that they oversee and coordinate response activities. Decentralization is implemented to better maintain operational control over field resources. The main benefit of a decentralized operations is that local staff can better react to situations by providing quicker responses.

The RGE ECC Director requested decentralization the morning of March 9 to assist in the management of an anticipated large influx of foreign crews. That evening, it was decided that operations be decentralized. The ECCs received about 1,000 911 calls regarding arcing and sparking wires on the first day of the storm. The process for receiving such high volumes of wires down reports was not organized. The ECC became overwhelmed with incoming calls and directed that fax lines be set up for municipalities, 911, etc. to use when making wires down reports so the information could be processed more efficiently. This process took time to get worked out and resulted in many wire down reports falling through the cracks.

Due to extensive localized damage, volume of work, and the influx of foreign crews in the affected areas; the Companies realized that decentralization was needed and took the necessary steps. This was a good decision, and it improved the Companies' response time and management of work during the event. Staff's investigation, however, found that the launch of the decentralization process was challenging to RGE because it had not used this tool in many years. As a result, many hours were spent discussing how to break the system up and who would be responsible for what activities. ECC operators were assigned a specific subset of circuits to oversee and manage. Switching orders then went through local line crews and when the switching was done, the local line operators would send updates back to the dispatchers at the ECC for processing and updating the system. The wires down process was also transferred to the local Incident Commander at the West Avenue facility from the ECC. Although RGE was eventually able to execute decentralization,

the process should have been smoother and done faster.

The decentralization process is not included in the Companies' emergency response plan. Both NYSEG and RGE plan to utilize the decentralization process in the future. The use of this process requires the involvement of multiple individuals in different roles. For example, a circuit information coordinator might be needed to gather information from each line supervisor. Having one circuit information coordinator to compile information for multiple supervisors would most likely result in delays or inaccuracies when inputting information into the appropriate storm management systems. In addition, a more consistent approach would need to be followed by the supervisors when relaying information to the circuit information coordinator. Staff noted that some supervisors put information on a white board, others on paper or entered it electronically. To avoid inaccuracies or delays in relaying information, the Companies should target the personnel that would be tasked with performing activities related to the decentralization process for further training.

Decentralization Recommendations

- ***The Companies shall clearly describe the procedures and processes of decentralization in their emergency response plan. The Companies shall also detail each employee's role that is impacted by decentralized operations during large outage events. Additional training for staff in each storm role associated with decentralization shall be conducted and the process shall be included in the Companies' exercises.***

Prioritization of Repair

A large number of Company, contract, and mutual assistance resources participated in the restoration activities, but a large volume of crews is only as good as the plan to manage them. It takes more than raw numbers of employees to do appropriate restoration and provide adequate response to an event. Key factors such as safety of crews and the public, prioritization of work, and utilization of resources are invaluable.

In general, the method used for restoring electric service considers public safety first and prioritizes restoration activities such that power is restored to the largest groups of customers and critical facilities first. To accomplish this, the electric utilities

follow a guide outlining the order that systems should be restored based on safety and speed of restoration. The best practice order is listed below, but it should be noted that safety and restoration activities may be performed in parallel where different skills are required.

Health and Safety Concerns	Repairs to the Electric System
Responding to safety concerns, including live downed wires	Transmission/sub-transmission facilities, including substations
Restoration of key facilities, such as hospitals or police stations	Distribution substations
Feeders with critical facilities or high-priority customers	Three-phase primary
	Single-phase side taps
	Secondary services and individual distribution transformers supplying small groups of customers

Table 6: Utility Priorities During Restoration

Restoring the largest groups of customers after an event is important; however, the restoration of critical facilities is also a top priority. Section 8.2.2 of the emergency plan indicates a list of critical facilities impacted should be developed. This action was not taken by RGE and is a violation of the emergency response plan.[6]

With respect to the prioritization of work, the Companies' plan to prioritize restoration work mainly based on large circuit issues did not meet this balance of working the expected paths in parallel. In Rochester, some critical facilities and groups of customers that received electric service from smaller circuits were overlooked, which resulted in longer outages for these customers. Specifically, Staff identified a housing complex that was out for four to five days; Rochester City road crews had to wait long hours for RGE to clear roads of hazards; and, police patrolling the streets did not get accurate information from RGE regarding the time the utility crews would start working in specific areas to relieve the officers. Additionally, the Companies failed to address some county concerns in a timely manner or did not return calls at all. During an

[6] Response to Staff Interrogatory DPS 6.

interview with a City of Rochester official, that official indicated that a sewage treatment plant, fresh water facility, and other critical facilities in Monroe County were not addressed appropriately by RGE.

The Companies' uncertainty on how to properly prioritize work for critical facilities was apparent during Staff's field observations from March 11 to 13 of the restoration work for an outage incident that affected the Cobbs Hill Radio Tower. This was one of the several critical facility outages that were reported to the Companies by local officials during the event. On March 12, Staff observed that the Companies started repairing the electric infrastructure in the area, but the restoration activities stopped because crews were relocated to support larger projects in other areas. At that time, the Companies' representatives could not provide the time that work would resume on Cobbs Hill, yet crews returned to location the following day and continued to work on transferring equipment to poles that were previously installed. Restoration of service to the Cobbs Hill Radio Tower was important because of issues not only with its internal generator, but also with the portable generator provided by Monroe County. Due to poor coordination and communication between RGE and the representative RGE had embedded at the Monroe County EOC, RGE was not aware of the generator issue. The Cobbs Hill restoration is an example of how poor communications resulted in inefficient work efforts which could have been better managed and prioritized. When work was postponed on March 12, the Companies should have provided a reason for the stoppage and communicated a plan to all interested parties detailing when and how work would resume.

<u>Prioritization of Repair Recommendation</u>

- ***The Companies shall concurrently address circuits with the largest numbers of customer outages and other priority areas. This approach allows for critical facilities, customers on large circuits, and urban areas on smaller circuits to be restored in a coordinated fashion.***

- ***The Companies shall hold exercises with emergency operation personnel to ensure the parties are familiar with each other's operations and requirements prior to outage events.***

Wires Down

Wires that become dislodged from poles and are either down on the ground or hanging low present one of the most serious public safety concerns during outage events. To safeguard down wires, utilities either deploy line crews directly to the sites or send personnel, commonly referred to as “wire guards”, to maintain a safe area around the compromised facilities until the line crews arrive on site. Normally, the number of wire guards or site safety personnel used during an event is based on weather forecasts, storm classification, and the number of down wires reported from the field during the restoration efforts. Wire guards are strategically dispatched to safeguard conditions reported directly by first responders (Police/Fire Department), public officials, customers, or by utility personnel performing damage assessment activities in the field. When wire guards arrive on scene, they relay information back to the home office to help prioritize the utilities’ response or to eliminate the unnecessary dispatching of line crews should the wire belong to a telephone or cable provider. During large events, the volume of wires down will exceed available utility resources and forces the utilities to prioritize which locations are guarded based on public safety. The emergency response plan, per PSL §66(21), has requirement to properly secure wire down reports from municipal officials within 36 hours.

NYSEG and RGE reported a cumulative total of 6,080 wires down during the event between March 8, 2017 and March 15, 2017 with the majority of wires down (4,303) reported by March 9. As a result of the significance of the event, the Wires Down Branch was activated on March 8 at approximately 1:30 p.m. for RGE and 1:45 p.m. for NYSEG. The number of wire guards helping with make safe activities was as high as 155 on day 1 (March 8), 305 on March 9, and peaked at 500 on March 11.

NYSEG’s Lancaster region totaled 1,055 wires down and had as many as 71 wire guards deployed over the course of 6 days. The NYSEG Lockport region totaled 133 wires down and had as many as 26 wire guards deployed over the course of four days. RGE Central and Sodus totaled 4,892 wires down and had as many as 420 wire guards deployed over the course of 8 days.

While the number of wire down reports was significant and may have been overwhelming at times, this is a critical storm event function that must be done well and

in accordance with the Companies' emergency response plan. Both utilities were not able to secure downed wires reported by municipal officials within 36 hours of notification. NYSEG secured sixty-nine percent and RGE secured seventy-four percent within that time period, both of which violate of section 8.1.3 of the emergency plan.[7]

Staff also identified that the way in which incoming wires down calls are processed requires improvement. There were many instances where incoming wires down calls were not properly coded and other instances where correctly coded calls were not properly prioritized, which likely impacted the Companies' response to higher priority incidents. This coding oversight was predominantly related to wires down incidents reported by first responders and public officials.

In addition, Monroe County 911 reported over one thousand wire down calls on the first day of the event. A representative from Monroe County 911 indicated in his interview with Staff that the RGE ECC was overwhelmed by the 911 wire down calls so Monroe County started typing and faxing in the reports. He went on to say that RGE was forced to try three different fax numbers before finally securing a line that ensured that the wire down information was getting through to the ECC. Once up and running, this process seemed to work well, however, valuable time and possibly many wire down reports were lost due to the inability of RGE to ramp up its efforts to receive such a high volume of reports. There have been occasions in the past when RGE would locate an employee at the 911 Center whose sole job was to transmit this type of information to the ECC as well as conduct follow-up on the reports. The Companies should consider developing a protocol to have a representative at the 911 Center during events that may include a large volume of wire down reports.

Overall, the wires down group was relatively effective in that there were no reported safety incidents. However, in future events, the Companies need to ensure that the wires down group properly assigns severity levels to all reported wires down incidents. This is a critical function of storm management, and serious safety incidents can occur when higher severity wires down are not prioritized accurately.

Additionally, in some instances during the make safe efforts, the

[7] Emergency Response Performance Assessment 16 NYCRR Part 105 Report, pages 47-48.

Companies were deficient in closing the loop and following a consistent approach when responding to incidents reported by first responders and municipal officials. These were mainly in areas with high volume of down wires, which led to first responders guarding wires for extended periods of time and no wire guards available to relieve them. The Companies' wires down management process is critical and must be followed to allow fast and efficient make safe and restoration activities. Staff's investigation found, for the incidents that were properly coded and prioritized in the Companies' outage management systems, the management and dispatch of wire guards appeared to be effective. Wires down updates such as job status, wire guard assigned, resources needed for repair were maintained in the systems and frequently used by the Wires Down Branch Director in prioritizing these wires down incidents.

Wires Down Recommendations

- ***The Companies shall reevaluate and revise the way in which wire down incidents are processed in their respective outage management systems to ensure that appropriate codes are assigned to all reported wire down incidents.***

- ***The Companies shall adhere to the wires down management process set forth in their emergency response plan to ensure incidents are prioritized by severity levels and potential impact to public safety. The Companies shall develop and adhere to a consistent approach when responding to wire down incidents reported by first responders and municipal officials regardless of the volume of wire down incident reports. The Companies shall be able to account for each and every reported wire down incident and respond to large numbers of wire down incidents.***

COMMUNICATIONS

Estimated Times of Restoration (ETR)

ETRs are essential for customers and first responders to plan adequately for the well-being and safety of people and property. The ability to deliver timely and accurate information to customers and key stakeholders following a major outage is critical. During this event, the lack of ETRs during the first days was a concern of

customers and public officials alike. The customers were not able to make appropriate plans because of the Companies' inability to narrow restoration expectations and to provide specific ETR information.

In the case of smaller events, pre-determined variables and set formulas are usually used. For major events, however, utilities must have protocols to extrapolate preliminary damage assessment information and crew numbers to support the timely development of ETR projections. In this instance, RGE failed to recognize this fact and proceeded to implement their normal methodology, as discussed in the Damage Assessment section of this report.

Utilities are required to provide three types of ETRs following a large event: global, regional, and local (municipal). Global estimates are broad projections that indicate the overall extent of damages. The electric utilities are expected to refine their ETRs as restoration progresses using current information. By providing ETRs for smaller geographic areas, the Companies are able to increase the accuracy of the information presented to customers. Considerations when developing an ETR include weather forecasts, the type and category of the storm, the severity of damage incurred, crew availability, the number of circuits locked out, the number of customers without electric service, and the number of trouble cases predicted after the storm has passed.

The Companies' emergency response plan contains ETR protocols in Section 8.2.1 and Appendix C. As indicated in these protocols, for long duration events (greater than 48 hours), the Companies are to establish and make ETR information available to the public within the first 36 hours of the restoration period on a global basis and regional/county ETRs for areas that are expected to be restored in five days or less. Following the windstorm, the Companies failed to release regional ETR information to the public within 36 hours in Lancaster, Lockport and Sodus.[8] NYSEG published ETRs for Lancaster and Lockport on March 10 at 11:47 a.m., which was approximately 38.8 hours within the start of restoration. By this time, more than half of the customers in those areas were already restored. The ETR for the Sodus area did not get published until 36.6 hours from the start of restoration, when approximately 75% of customers in

[8] NYS PSC Emergency Performance Metrics Scorecard, pages 50-54.

the division had already been restored. Staff's findings indicate that the coordination between Area Command and Incident Command resulted in delayed ETR releases in the NYSEG and Sodus areas because of the focus the Rochester area was receiving. Staff's analysis determined that timelier information could have been released for areas outside of Rochester, where better damage assessment would have allowed customers and officials in those areas to make better informed decisions. Area Command should have used and released ETRs developed by local Incident Commanders in these other areas earlier.

Use of the internet has become a prevalent means to interact with the Companies and to provide information to customers. The Companies encourage customers to visit their web sites to obtain information. For the duration of the event, the Companies websites were available to the public. Outage counts and restoration times were refreshed every fifteen minutes and general information provided, such as safety tips, multiple ways to contact the Companies (e.g., phone, email, social media), instructions for reporting an outage, instructions to check the status of an outage, locations and times for dry ice distributions, emergency shelter locations, and copies of all press releases. On March 8 nearly 1,900 NYSEG customers and nearly 5,600 RGE customers reported an outage or electric trouble through an electronic device (computer and/or mobile). According to the Companies, more than double the number of user hits occurred through a mobile device, compared to a computer (NYSEG/RG&E - 104,638 mobile user hits vs. 48,284 computer user hits on March 8).

While the Companies maintained the websites' availability in order to provide emergency information to customers, the ETR information was not adequate. Restoration information on the website was described as "Assessing" for multiple days past the start of the event -- to the point where it became a meaningless term. [9] This is a major deficiency in how the Companies communicated with their customers and was evident early on because the Companies determined the need to add a definition of "Assessing" as part press release on March 9. The Companies need to improve and

[9] The Companies state in the press release that "Assessing" means patrollers are in the field evaluating the damage and sending important information to the local coordinators."

develop a more effective way to communicate restoration information on the website, particularly when the majority of ETRs are unknown. The Companies should use a large "storm mode" banner, as other utilities do, on their outage management map to clearly illustrate that they are responding to a major storm or outage. Simply using the term "assessing" does not provide the proper context to the current operating conditions. Furthermore, the Companies should provide ETR context to customers. Allowing a customer to drill down to a specific address does not provide adequate information to the accuracy of the ETR, global, regional or local. For instance, a customer looking at his or her unique location may not be aware the ETR being provided is on a global basis or more accurately reflects a smaller geography such as a county. More efficient damage assessments will improve the ability to develop better ETRs. This is addressed below.

ETR Recommendations

- ***The Companies shall develop new methodologies to develop ETRs that do not rely on extensive field verifications*.**

- ***The Companies shall revise their communications' processes to ensure that restoration information for lesser impacted regions is delivered in a timelier manner. The Companies shall also modify the restoration information on their websites to include more descriptive phrases in restoration progress updates and include definitions to better inform customers on the Companies' restoration progress.***

Customer Communications

A utility's communication with customers, the general public, local officials and the media is critical during emergency conditions. Timely and accurate information minimizes customer confusion and frustration and keeps the general public safe. This section evaluates NYSEG and RGE's performance in several key areas related to how information was provided to customers and the public during the windstorm.

The Companies issued one general pre-storm press release on March 7, on behalf of both NYSEG and RGE, in anticipation of possible power outages due to the forecasted winds in both service territories. Thereafter, the Companies issued press

releases at least once daily at varying times between 11 a.m. and midnight until all customers were restored. Staff finds these actions to be in accordance with normal industry practice. Once issued, the press releases were distributed to local media and to local and state officials and posted to Twitter and Facebook. Throughout this event, the Companies also responded to 156 media inquiries.

The March 8 press release stated that the event may result in an overnight outage or a multi-day outage in certain areas. Although the Companies were not required to issue this press release based on their damage analysis, this press release aided customers in this widespread event, and therefore, its issuance was a good decision by the Companies. However, listing the affected areas would have better assisted customers in dealing with the outages. Between March 8 and March 14, the Companies issued a total of 13 press releases — nine that addressed both Companies and four issued after service was restored in NYSEG's service territory that were specific to RGE.

Most press releases contained the same information as the previous release, with little updated information. The press releases typically included overviews of the impact of the storm and restoration efforts, the Companies' outage reporting telephone number, dry ice/bottled water distribution information, and generic safety tips.

For example, the Companies' issued a joint press release at 12:38 p.m. on March 9 that included the estimated number of customers without power, the number of crews mobilized, the number of downed wire cases, as well as identifying utilities that were assisting the Companies with restoration. This press release also gave an overview of the restoration process for the event and stated that outages may extend longer than 24 hours or last multiple days in "some areas." Links to the Companies' outage maps and sign-up for outage alerts were also provided, followed by an overview of the Companies' power restoration process, the Companies' power outage reporting phone numbers; and generic safety tips. Although such information is helpful to customers during outages, information that is more specific would have greatly benefitted affected customers during this event; specifically, the hardest-hit areas where restoration crews were focusing their efforts. To assist customers in preparing for a multi-day outage or relocating if necessary, the Companies should have provided more

area- or county-specific information in their press releases, and this information should have been prominent in the press release.

The Companies issued another press release on March 9 at 11:48 p.m. that reiterated that the Companies expected these outages to extend past 24 hours or multiple days, without mention of specific areas or counties affected. In addition, this release contained the definition of "Assessing" that was widely provided on the Companies' outage maps regarding restoration status; dry ice/bottled water distribution information; the Companies' restoration plan for Friday, March 10; and when the Companies anticipated releasing ETRs.

In interviews, the Companies' Public Information Officers described how they developed the information in the press releases: Public Information Officer from the Communications Department attended the Area Command calls, drafted a press release based on the information presented during the call, then sent the draft press release to several Company officials for edits and approval. As revealed during interviews, the press release approval process was not straight-forward, and Staff could not determine who ultimately signed off on each press release before it was widely distributed to the media and the public. This process must be clearly defined for future events and requires approval by someone at the Area Command level to ensure that accurate information, to the best of the Companies' knowledge, is supplied to the public effectively and timely.

The information contained in the press releases is important to the public during an event, and Staff recommends that NYSEG and RGE make improvements to its press releases and social media pages. To limit customer confusion during a widespread event, press releases should be tailored to the individual company and applicable division whenever possible. Further, press releases should include a weather forecast update, restoration efforts in the hardest-hit areas along, and dry ice/bottled water distribution information. Safety tips should be provided that are appropriate to the event and should not be copied from press release to press release. Company contact information, and outage numbers by location, should also be displayed in a prominent location on the release so it is easily accessible to customers and the media. The date and time a press release is issued should also be included on

the release and on links to the releases on the Companies' websites, which should be posted at an easily accessible location on the home page to increase customer awareness. Based on Staff's review of the social media interactions, customers were upset that the outage information on the website was not updated frequently, particularly prior to the issuance of ETRs on March 10. Whenever possible, press releases should state how long the outages are expected to last in the first paragraph of the press release, so customers and the media can easily obtain this important information and be better prepared. In addition, the estimated number of crews in the field should be included with the restoration information.

Providing information on dry ice/bottled water distribution points is also important during multi-day outages so customers can prevent food spoilage and gain access to clean water. The Companies performed well in this area during the event. By March 9, dry ice/bottled water distribution points were established for customers and this information was included in most press releases. NYSEG and RGE distributed approximately 82 tons of dry ice and 9,300 gallons of bottled water to customers in affected areas from March 9 through March 14. The Companies used a total of six distribution centers for dry ice and water, which Staff determined was adequate for this event. Distribution information was provided in news releases, on the Companies' websites, during municipal calls, on Facebook and Twitter, and through the Interactive Voice Response (IVR) system.

Beginning March 9, shelter location updates were posted to a link on the Companies' respective websites, but that information was not widely publicized in news releases, nor was it regularly posted to the Companies' social media, or consistently mentioned during the daily municipal calls. This information should also be publicized through the above-mentioned communication channels.

The Companies' social media efforts on Facebook and Twitter during the event did not meet the intent of their emergency response plan. NYSEG and RGE's individual Facebook and Twitter pages were not updated regularly with the information specified in Section 9.2 of their emergency response plan. Specifically, the following information was not provided as detailed in the emergency response plan: safety information/tips were not posted on social media outside of the press releases; updated

dry ice/bottled water information was not posted regularly; shelter information was not posted regularly; restoration details were not posted regularly; and there were very few retweets/reposts on RGE's social media from elected officials, emergency operations managers and the media, while NYSEG had no retweets or reposts. Global ETRs were provided by NYSEG and RGE on March 10 via Twitter and Facebook, but RGE did not identify the information as a "global estimated time of restoration" and NYSEG did not explain what this means to customers. Both Companies answered many customers' direct messages in a timely fashion on Facebook and Twitter throughout the event; however, it appears that the Companies' staff dedicated most of their time on social media to answering these private messages, rather than addressing the items listed in the emergency response plan.

Communication Recommendations

- ***The Companies shall issue press releases at regular intervals, i.e., every six hours, that provide detailed information on restoration efforts separately for each Company and division when possible. For example, independent press releases for the hardest-hit areas would provide helpful information to specific customers, public officials, and the media.***

- ***The Companies shall use social media more effectively during widespread outages by posting at regular intervals, i.e., after each press release, updates that include more information such as outage and restoration effort updates as well as tailored safety tips, in conformance with their emergency response plan. Similarly, ETRs shall be posted to all social media pages when first available and updated as warranted.***

- ***The Companies shall monitor the social media pages of elected officials represented in the outage area, emergency operations centers, and media outlets, reposting important messages as warranted in conformance with their emergency response plan. This will provide the public with additional current storm-related information.***

- ***Shelter information during a multi-day event in extreme weather shall be included in press releases, posted to social media, and provided during each municipal call.***

Life Support Equipment (LSE) Customers

Once the Companies have identified a customer as an LSE customer, the customer's account is coded and his or her meter is tagged with a medical seal to avoid service disconnection. In a storm event, where outages occur outside the Companies' control, procedures to contact LSE customers daily are vital to ensuring the safety and well-being of customers who require power to operate necessary health equipment in their homes. When LSE customers are impacted during an event, once it is determined that outages will last longer than 24 hours, the emergency response plan activates procedures for contacting these LSE customers. LSE customers require rapid notification during restoration because of their increased vulnerability during a power outage. The utilities should strive to contact all LSE customers as soon as possible during a storm event, and in the event the customer cannot be reached, enlist the assistance of an emergency service agency (ESA) or EOC immediately. The Companies' emergency response plan includes procedures for contacting LSE customers daily to determine if the customer requires assistance relocating and to address any questions or concerns the customer may have. It is important to note that at no time during an outage event where LSE customers are affected does the responsibility for daily contact shift to any other third party, such as an EOC or public service agency. The utility bears the responsibility for all communications with LSE customers, including closing the loop to ensure LSE contact when referrals are made to an EOC or other third party.

In the afternoon of March 8, the Critical Needs Branch Director activated the LSE Coordinator and a list of impacted LSE customers was generated. Once the LSE Coordinator role has been activated, a listing of all impacted LSE customers is generated. The list includes the customer name, the circuit the customer is on, the incident number, and customer's address and phone number. The LSE Coordinator sorts the list by region. As the restoration progresses, a similar list is generated for those LSE customers who have been restored.

The first attempt at contacting LSE customers was completed around 8:00 p.m. that day, and at that point, a second LSE customer outage list was generated to begin making the second attempt to call LSE customers. An interviewee stated that

the employees used to call impacted LSE customers were located in various offices. The LSE Coordinator acknowledged that it would be beneficial to have the LSE Coordinator and Critical Needs Branch Director at the same location during an emergency event; however, she did not feel it was beneficial or necessary to have the call-makers in the same location. Staff believes that coordinators could best achieve efficiency if their team is immediately available on site.

Staff expects that the Companies make at least two attempts to contact each affected LSE customer, and to reach at least 80% of such customers, within 12 hours. The below table indicates, for each of the four divisions listed, the number of LSE customers identified without power on March 8, the number of LSE customers reached within the first 12 hours, the number LSE customers for whom the Companies made two contact attempts within the first 12 hours, and the percentage of LSE customers the Companies either contacted or made two attempts within the first 12 hours.

Division	# of LSE Customers Identified as without Power	# of LSE Customers Reached within 12 hours	# of LSE Customers Attempted Contact twice within 12 hours	% of LSE Customers Reached or Attempted Contact twice within 12 hours
NYSEG Lancaster	78	15	19	43.6%
NYSEG Lockport	23	5	8	56.5%
RG&E Central	298	44	102	49.0%
RG&E Sodus	21	5	7	57.1%

Table 6. LSE Contacts

The Companies decided to suspend call attempts at 1:30 a.m. on March 9 to avoid disrupting these customers at such off-hours. At no point during the evening of March 8 did the Companies involve the EOCs to perform field visits. By not doing so, a valuable opportunity was missed in involving the EOC the day the storm hit. Notwithstanding that Section 9.3.2.2 of the emergency response plan requires field visits or a list of LSE customers not contacted to be provided to an ESA within 24 hours after the start of the event, the Companies' could have provided the list to the EOC after the first attempt to contact LSE customers was completed around 8:00 pm that night, even while attempts to reach these customers by telephone continued. To the contrary, Staff found that the Companies were reluctant to provide LSE customer information

requested by EOC officials due to privacy concerns and potential conflict with the Health Insurance Portability and Accountability Act (HIPAA). This was confirmed in the interview with the Manager for the Monroe County EOC who stated there was resistance from RGE in obtaining the LSE customer list. The Companies' emergency response plan indicates in Section 9.3.2.2 that in the event direct contact (either by phone or a field visit) with an LSE customer is unsuccessful or impractical during an event, the customer is to be referred to a local or county EOC, first responder or other human service entities for further direct contact attempts. This failure to provide information to the EOC was addressed by Staff during the event, and was quickly resolved at that point; however, valuable time had been lost in reaching out to these customers.

Staff finds that the Companies should coordinate with local officials immediately and other first responders to identify and retain the ESA list for each division within its territory, and update this list annually. In addition, although 24 hours is the threshold for referrals to an ESA, time is critical in an emergency event, especially for LSE customers. As a lesson learned from this event, it is never too early to begin making calls or referrals. During large events, the Companies should begin communications with the EOC or other services immediately to identify who can perform field visits, if attempts by the Companies to contact LSE customers have been unsuccessful.

On March 9, the Companies again began making calls to impacted LSE customers without power at 9:30 am. The affected LSE customer list produced that morning still had over 200 LSE customers out of service. In addition, the Companies devoted insufficient resources to this effort. Due to the number of affected customers, the LSE Coordinator requested all available resources to assist in contacting LSE customers; however, assigning only two staff to make these calls was insufficient. The next morning twenty additional staff were assigned to call LSE customers, which demonstrates that the Companies were not prepared for this effort. Since the number of LSE customers affected was known the night before, staffing levels should have been addressed at that time. The Companies' should develop guidance in their emergency response plan for the required minimal staffing levels necessary to make LSE calls

based on the number of LSE customers impacted. Just before noon on March 9, the LSE Coordinator provided the Critical Needs Branch Director two LSE customer lists: one that showed the LSE customers who were not contacted and one that showed the LSE customers who were restored. The updated outage list was then provided to the Public Liaison Officer, and subsequently, went to the county EOCs, where efforts to contact LSE customers continued with emergency services personnel making site visits.

For the remainder of the event and until all LSE customers were confirmed to have power restored, two call attempts to LSE customers were conducted daily, and the balance of the LSE customer list was provided to EOC once a day at approximately 11:30 a.m. All LSE customers impacted in the NYSEG Lockport and Lancaster Divisions had power restored by March 9 and March 12, respectively. In the RGE Sodus and Central Divisions, all impacted LSE customers had power restored by March 11 and March 14, respectively.

The Companies' emergency response plan, Section 9.3.2.2, states: "The Customer Advocate (or designee) will retrieve a listing of all LSE customers impacted via a SAP transaction." Staff's investigation identified discrepancies in how the LSE list was created. The Companies stated that when the LSE customer outage report is generated, the report populates only individuals who have an outage "incident" linked to that particular account. There are instances, however, where a single customer outage is reported that does not necessarily create an incident within the Companies' Outage Management System (OMS). This software gap presented an issue with regard to identifying all LSE customers. In the case where an incident has not been created for a customer, that customer would not be included in the LSE report. This oversight in the report generation for impacted LSE customers resulted in at least one LSE customer who was not contacted or referred to the EOC within the first 24 hours of the event.[10] This omission was identified during the event and subsequently, daily contacts were made with this customer until power was restored. As a temporary fix, a second report was produced that captures individual tickets

Staff noted a lack of follow-up with the EOCs regarding LSE customers.

[10] Emergency Response Performance Assessment 16 NYCRR Part 105 Report page 102

Per Section 9.3.2.2 of the Companies' emergency response plan, in the event the Companies refer LSE customers to an Emergency Services Agency or EOC (in this event referrals went to EOCs), the Public Liaison Officer will work directly with the EOC to process the referral and provide follow up on the status with the EOC to verify the results of its efforts to contact the customers. Once a status has been provided by the EOC, the Public Liaison Officer will provide that update to the LSE Coordinator. One interviewee stated that, due to the severity of the storm, the Companies lacked the resources to perform field visits and instead, provided a list of affected LSE customers that were not contacted by the Companies to the EOC to conduct field visits. The Critical Needs Branch Director stated that once that list was provided to the Public Liaison Officer, the Critical Needs Branch Director was out of that process and little, if any, follow-up was conducted to verify the EOC's efforts. Verification is a critical part of the procedure to ensure all LSE customers have been contacted. For example, none of the interviewees who were asked were aware that four LSE customers were relocated via ambulance while field visits were conducted. The failure of RGE to contact the EOC to verify whether field visits were performed, and the outcome of such visits, is a violation of Section 9.3.2.2.[11]

Staff is also concerned with the sharing of information and reporting up to the Assistant Area Commander of Logistics. The LSE coordinator stated that LSE reports were provided on the daily operations calls, which were held four times a day. However, there was very little communication by the Critical Needs Branch Director or LSE Coordinator with the Assistant Area Commander of Logistics. The Assistant Area Commander of Logistics appeared to have very little involvement with the Critical Needs Branch Director and LSE Coordinator during this event nor did she request any additional information or reports on the efforts to reach the extensive list of LSE customers who lost service. During the interview, the Assistant Area Commander of Logistics indicated a lack of understanding of the role of LSE communications during a storm.

[11] Response to Interrogatory DPS 12

LSE Recommendations

- ***The Companies shall develop procedures to receive and verify results of all LSE customer referrals made to any third party, e.g., EOCs, daily following such referrals. The Public Liaison Officer shall be responsible for coordinating a status report back from any third party for which a summary can be included in the EORS report each day. Confirming the successful completion of LSE communications should be made a formal part of the Assistant Area Commander of Logistics activity checklist.***

- ***The Companies shall develop protocols and procedures for proactive communications with EOCs to determine what assistance those agencies can provide and also establish areas where coordination is possible with the Companies during large outage events, e.g., LSE customer contact referrals.***

- ***The Companies shall clearly define minimum staffing levels based upon the number of impacted LSE customers to contact all impacted LSE customers within the first twelve hours from the start of the event and daily communication thereafter until all LSE customers have been restored.***

- ***The Companies shall implement a permanent solution to their outage management system that will capture single customer outages that are not linked to an incident when creating an outage report.***

- ***During widespread outages, the Companies shall endeavor to co-locate LSE call staff to ensure that any concerns or issues will be handled in the most efficient manner possible. In the event co-location is not possible or practicable, communication procedures shall be developed that ensure timely remediation of any concerns or issues that may arise.***

Call Center Operations

NYSEG and RGE each operate Customer Relation Centers (CRCs) for the handling of incoming calls daily to assist its customers with day-to-day operations, such as customer service and billing inquiries. Each CRC is trained and staffed appropriately to handle the day-to-day inquires in addition to assisting customers with emergency and outage event situations. In an event with a high volume of calls, such as the windstorm, each CRC has established methods to handle the goals outlined in their Electric Utility Emergency Plan §9.1, including staffing during the initial days of an event. Given the large number of customers who were without service, Staff concludes

that NYSEG and RGE performed satisfactorily with the timeliness of call answering. However, the quality of information that callers received by a representative or through the Interactive Voice Response (IVR) system, was often inaccurate and/or incomplete. Additionally, the Companies' reported CRC staffing levels failed to follow their emergency response plan requirements as stated in Section 9.1., Figure 8.[12]

NYSEG's CRC handled incoming calls without using outsourced answering service companies, such as Professional Communications Messaging Service, Inc. or West, Inc. Although the severity of the storm was not anticipated, NYSEG's CRC adequately handled incoming calls through use of live representatives for emergency-related calls by routing all outage reporting calls through the IVR system. Based on the Companies' emergency response plan, the minimum staffing for a Class 3 Event (outages affecting 30,000 – 100,000 customers) was 30 representatives from 7 am to 7 pm.[13] NYSEG's report failed to clearly describe actual staffing levels and only indicated that a total of 87 staff members were present from 7 am to 7 pm on March 8. The data did not indicate if all 87 staff members were on for the entire period or if that was the total number of staff that worked for any portion of the period. Despite the lack of clarity in the data presented, it appears that NYSEG's CRC was adequately staffed 24 hours each day during the storm period (Wednesday, March 8 through Monday, March 13).

The CRC data showed that NYSEG handled 111,410 calls during the storm period. The IVR system received 67,489 self-service outage requests, of which 57,680 (85%) were completed. A total of 16,553 calls (customer service and storm related) were received by the CRC's live representatives, of which 8,928 storm-related calls were offered to live representatives and 8,441 (95%) were completed.

NYSEG's IVR system messaging was updated, by locality, a total of 72 times through the storm period; however, the quality and implementation time of the IVR messaging was not consistent with the press releases as required by Case 13-E-

[12] NYS PSC Emergency Performance Metrics Scorecard, page 7, Appendix H.

[13] Electric Utility Emergency Plan §9.1, Figure 8 (page 42).

0140.[14] As outlined Section 9.1 of the emergency response plan, the purpose of IVR messaging update is to provide callers with concise information related to the Company's restoration progress including (but not limited to): a global ETR, when available, for the area affected; safety information, such as shelter, water, and dry ice locations; and a reference to the Company's website for additional information and updates. IVR updates should be completed as frequently as deemed appropriate by each Company; however, both Companies are required to complete updates of the IVR messaging within one hour of all press releases. NYSEG failed to provide IVR updates consistent with the emergency response plan Section 9.1, nor did it meet the criteria outlined in Case 13-E-0140.[15] Although the Company provided frequent IVR messaging updates, only six of the updates were within one hour (prior to or after) issuance of the nine press releases (66%).[16] Thus, the IVR messaging was often either stale or omitted important information (e.g., dry ice/water locations). The Company's interviewees provided no explanation of why timely updates were not made relative to the other three press releases.

RGE's CRC initially handled incoming calls with its own employees. Just after the onset of the storm, at approximately 2 p.m., RGE implemented use of West, Inc. to handle outage reporting calls because of the drastic increase in incoming calls. Based on the data submitted by RGE, between the hours of 1 pm and 2 pm on March 8, 2017, 69% of customer calls made to the electric outage number were not completed. After implementation of the services provided by West, Inc., the number of incomplete calls between 2 pm and 3 pm was reduced to 20%. After 3 pm, with West, Inc.'s assistance, RGE completed nearly 100% of outage calls received. Although the severity of the storm was not anticipated, RGE's CRC adequately handled live incoming calls after the first hour, by routing routine outage reporting calls through the IVR system, and through the implementation of West, Inc.'s services and use of the

[14] Case 13-E-0140 – Proceeding on Motion of the Commission to Consider Utility Emergency Performance Metrics.

[15] Case 13-E-0140 – Proceeding on Motion of the Commission to Consider Utility Emergency Performance Metrics.

[16] Emergency Response Performance Assessment 16 NYCRR Part 105 Report pages E-37 to E-42

Company's live representatives for emergency-related calls. Based on the Companies' emergency response plan,[17] the minimum staffing for a Disaster Event (outages affecting 100,000 + customers) was 100 representatives from 7 am to 7 pm. RGE's report failed to clearly describe actual staffing levels but indicated that a total of 47 staff members were present from 7 am to 7 pm on March 8.[18] The data failed to indicate if all 47 staff members were on for the entire period. Further, 47 is well below the staffing levels prescribed in the emergency response plan (100 representatives) for an event of this severity. According to the CRC data, the Company handled 171,488 calls during the storm period. The CRC's IVR system received 101,501 self-service outage requests, of which 65,561 (65%) were completed. A total of 47,595 calls (customer service and storm-related) were received by the CRC's live representatives, of which 11,373 storm-related calls were routed to live representatives and 10,865 (96%) were completed. Despite not complying with the required staffing per its emergency response plan, RGE performed satisfactorily regarding the timely answering of calls.[19]

RGE's IVR system messaging was updated a total of 19 times through the storm period; however, the content and timing of the IVR messaging updates was not consistent with the press releases. Although the Company provided some timely IVR messaging updates, only four of the updates were within one hour (prior to or after) issuance of the 13 press releases (30%) as required.[20] Additionally, a period of over 44 hours elapsed between an IVR update on March 8 (at 3:54 pm) until its next update on March 10 (at 12:50 pm).[21] Thus, the information provided in each IVR messaging update was often either stale or omitted important information (e.g. global ETRs, dry ice/water/shelter locations, or the status of the storm restoration or severity of the damage).

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[17] Case 13-E-0140, Item 19 (page 41).

[18] Emergency Response Performance Assessment 16 NYCRR Part 105 Report pages E-11 to E-22.

[19] Emergency Response Performance Assessment 16 NYCRR Part 105 Report page E-2.

[20] Emergency Response Performance Assessment 16 NYCRR Part 105 Report pages E-53 to E-57.

[21] Emergency Response Performance Assessment 16 NYCRR Part 105 Report pages E-53 to E-54.

Call Center Operations Recommendations

- ***RGE shall develop a procedure to monitor calls coming into its Customer Relation Center (CRC or call center) more closely to quickly determine whether additional support, e.g., outsourced calling services, is required.***

- ***The Companies shall evaluate and revise the methods used for reporting call center staff numbers to accurately reflect the actual number of call center staff available at various times, rather than the total number of staff members that worked during the period.***

- ***The Companies shall review the CRC Representative Staffing Guide found in Section 9.1, Figure 8, to evaluate if staffing levels are appropriate, particularly when both Companies are engaged in storm response.***

- ***The Companies shall develop more proactive protocols and procedures to update Interactive Voice Response (IVR) messages with quality information that is complete and timely. Each IVR message update shall include storm restoration status, a global estimated time of restoration (when available), dry ice/water/shelter information, and a reference to the Companies' websites for additional information or updates. The IVR messages shall be updated within one hour of each press release issuance to ensure consistency with the information provided in such releases*.**

Municipal Calls

During multi-day events, utilities are required to hold conference calls with municipal officials to provide updates on the weather forecast, LSE customer outreach, dry ice/bottled water distribution, restoration efforts and road-clearing activities. These calls provide consistent and timely information to a large audience of municipal officials, and allows utilities to directly answer officials' questions. Both Companies complied with their emergency response plan requirements to hold municipal calls.

From March 9 through March 15, NYSEG and RGE hosted daily municipal calls for local, county, and state officials, as well as for emergency management officials by Company and affected division. During these calls, which were monitored by DPS Staff, the Companies generally provided baseline information regarding the event; restoration and shelter information were not consistently provided. The Companies

notified officials of upcoming calls by phone and/or email; this notification system appeared to be effective, as many officials were on each call. The NYSEG Lancaster division hosted five conference calls, the NYSEG Lockport division hosted two conference calls; and RGE hosted seven conference calls. Questions and comments from public officials covered many different aspects of the restoration effort, including emergency shelter and warming shelter information; dry ice/bottled water distribution information; restoration times, and the lack of accurate restoration information for various municipalities; concerns about loss of power and restoration times for critical facilities; the priorities for restoration; and concerns over the dropping temperatures and an approaching snowstorm. Some participants on these conference calls expressed appreciation for the support and information provided by the Companies, while other participants voiced frustration and dismay over the lack of restoration information. The Public Liaison Officer leading each call handled all feedback, both positive and negative, professionally.

Staff monitored the conference calls and found that in most instances the calls provided the required baseline information for local officials, including the type and severity of the storm, geographic areas impacted, number of customers out of service, number of crews activated, status of wires down/road-clearing activities, and (after March 10) global ETRs. However, when pressed for local ETR information, participants were told that in some cases area and town-specific ETR information was not available and either referred to the website, which contained stale information still indicating that the Companies were in “assessing” mode even when some areas had already been restored, or they were asked to take their questions off-line. Each call ended with a question-and-answer session, and the Companies also answered some questions with certain officials after the calls, especially when an official requested an ETR update on a specific town or area. An operator-assisted calling system was not utilized. In addition, shelter information was not mentioned during every municipal call.

COMPANIES’ SELF-ASSESSMENT

The report submitted by the Companies focused heavily on presenting a detailed description of the effects on their system infrastructure during the windstorm

and a chronology of the restoration process. The report also contained a self-assessment section that contained both areas the Companies viewed as positive and numerous areas where improvements could be made. In summary, the Companies stated that the preparation phase went well due to the implementation of SOPs and proactive activation of key personnel. They did note that additional leads should be included in situational awareness messaging, calls, and meetings. The Companies also identified that issuing a pre-event news release aided the activation of additional communications. The Companies noted the co-location of Area Command in Rochester was beneficial to their response efforts as was their decision to use line resources to guide crews obtained through mutual assistance. The Companies also noted the use of a vendor to assist in managing high call volumes in the call center, implemented after Superstorm Sandy, was a positive development.

The Companies did identify areas for improvements which included activating a larger number of personnel to assist with logistics, establishing guidelines for determining if pre-event municipal calls are needed, gathering information from crews more effectively to increase awareness for ETR development, formalizing the tracking of requests, streamlining roster data, and coordinating wire down management more effectively. The Companies also identified improvements to ensure LSE customers are properly identified during events, contacted in a timely and appropriate manner, and that a better confirmation/verification process is in place to confirm that LSE customers actually have power after a circuit is restored. With regard to communications, the Companies identified changes to data presented in press releases to increase customer awareness and include information on restoration activities being undertaken by the Companies during an event. The Companies state that they should develop a standard practice for IVR messaging to clearly identify when the Companies are in storm mode as well as routinely updating the IVR messages every four hours. Lastly, the Companies note that social media activities should include additional trained personnel, and appropriate licenses.

Staff found many of the Companies' plans for improvement to be useful and they should be implemented immediately, if the Companies have not already done so. Most of the Companies' recommendations are also reflected in Staff's assessment

and recommendations. Staff, however, believes that the Companies' areas for improvement do not go far enough to ensure better performance in future outage events.

In the first instance, Staff disagrees with the Companies' use of line resources as FCCs, also known as crew guides, to lead mutual aid crews to work locations. The Companies viewed this practice as helpful because the FCCs not only had knowledge of the electric system but also the geographical regions which the Companies claimed improved response time, safety, and communications. Given the extensive damage incurred during this event and the need for large numbers of additional resources, this decision meant valuable line resources were not restoring customers, but rather acting as crew guides. This is an inefficient use of line crews and should not be repeated in the future.

CONCLUSION

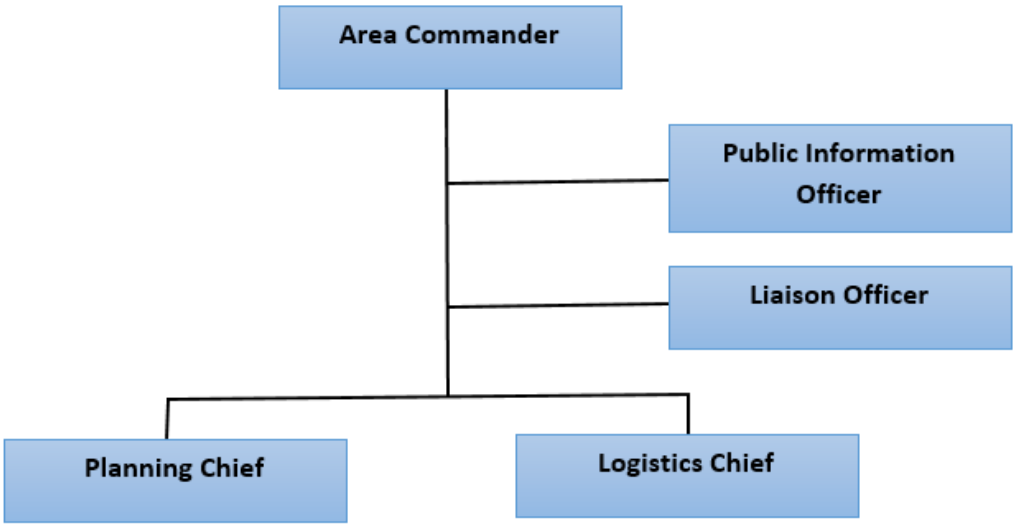
Based on a thorough analysis of the information developed, Staff has identified numerous areas in which NYSEG and RGE need to improve their outage restoration performance. Both Companies need to make improvements in different facets of their communication practices during storm events. During a major storm event, local governments and the public need to make very basic decisions affecting the public's and individuals' well-being and for the protection of property as well. The most relied upon source for information regarding service restoration are the electric utilities. When critical information is not forthcoming in a timely manner, widely disseminated or accurate, inefficiencies in the restoration process are created and public frustration unnecessarily increases.

The Companies need to communicate more frequently and accurately with both government officials and members of the public, fully utilizing all communication assets including websites and public media channels. The Companies also need to improve their processes and procedures for developing accurate information on the nature of storm damage and the estimation of restoration times. Finally, the Companies need to provide more information on the progress of restoration efforts, and must re-evaluate and improve procedures for handling downed wires.

ADDENDUM 1

Area Command

Area Command is established to oversee the management of incidents that are in the same area and usually of the same kind. Area Command should be activated when many incidents are within close proximity to one another, critical lifesaving or property values are impacted by incidents, incidents will continue into the next operational period, and incidents require similar resources and coordination of these resources. The figure below shows the Area Command ICS structure.



Area Command structure and responsibilities consists of the following:

- Area Commander: Overall lead of the organization and responsible for providing authority for incidents, communicates clear messages on mission expectations and goals, ensures incident management personnel organization and assignments are correctly delegated, coordinates and maintains contact with other agencies, officials and groups and coordinates assignments and reassignments of resources as needed for restoration

- Public Information Officer (PIO): Coordinates public information between incident locations and central information system. Serves as the main point of contact for media requests.
- Liaison Officer: Maintains interagency contact and coordination.
- Planning Chief: Responsible for gathering information on incident objectives, recommends priorities for resource allocation, tracks critical resources, prepares Area Command briefings, oversees advanced planning, and coordinates demobilization plans.
- Logistics Chief: Receives briefing from Area Commander, provides facilities, services and materials for Area Command, assists with Area Command decisions, and ensures critical resources are used effectively and efficiently.