NEW YORK STATE DEPARTMENT OF PUBLIC SERVICE
INVESTIGATION REPORT ON NIAGARA MOHAWK CORPORATION D/B/A NATIONAL GRID'S DECEMBER 23RD 2022 WINTER STORM EVENT AND RESTORATION PERFORMANCE

SEPTEMBER 2023

MATTER 23-00209 – IN THE MATTER OF UITLITY PREPARATION AND RESPONSE TO POWER OUTAGES DURING THE DECEMBER 23-28, 2022, WINTER STORM.

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Section I – Introduction

The Department of Public Service (DPS) Office of Resilience and Emergency Preparedness (OREP) is responsible for executive reporting for emergencies and oversees regulated utility emergency preparedness and response including preparation activities, customer impact, and storm response. As part of assessing utility readiness, OREP Staff (Staff) have the responsibility for the annual review and oversight of the NYS regulated utilities' Emergency Response Plans (ERPs), including monitoring the training and exercising of said plans. OREP engages with subject matter experts within DPS to perform comprehensive reviews of the filed plans to ensure adherence to the applicable Public Service Laws (PSL) and New York Codes, Rules, and Regulations (NYCRR) requirements, as well as Commission Orders and policy. Staff is responsible for the technical review of the processes used by the utilities during emergency response, developing recommendations for corrective actions, and identifying specific areas of concern for potential enforcement of the Office of Investigation and Enforcement (OIE).

Internally, OREP is responsible for the ongoing maintenance and updates to the DPS Emergency Plan (EP), Emergency Management Operations Protocol (EMOP), Continuity of Operations Plan (COOP), and Communicable Disease Plan, including the coordination of department emergency preparedness, training, exercising, and response. These plans define how the Department is organized to respond to emergency events, disruptions in normal operations, and how to integrate into the State's overall response. Additionally, OREP coordinates and provides staffing for the NYS Emergency Operations Center (EOC) during exercises, planned events, and emergencies as the lead coordinating agency of Emergency Support Function (ESF) 12 – Energy. As lead, OREP collects, evaluates, and shares information on energy system damage and restoration with ESF 12 member agencies, including NYS Energy Research and

Development Authority (NYSERDA), the NY Power Authority (NYPA), Long Island Power Authority (LIPA) and the Office of Counterterrorism (OCT).

When a restoration period exceeds three days, 16NYCRR Part 105.4(c) requires utilities to file a report within 60 days following completion of service restoration that reviews all aspects of its preparation and system restoration performance. Additionally, utilities are required to file a scorecard within 30 days of restoration detailing specific information related to performance metrics for events lasting three days or longer. Restoration following the December 23rd, 2022, Winter Storm (also known as Winter Storm Elliott), which left significant outages over the National Grid service territory, primarily in the Buffalo area, triggered these reporting requirements. The following report contains the findings by OREP Staff regarding the performance of National Grid during and following this event. This report has been convened to evaluate the preparation, response and restoration activities and materials submitted as part of the Part 105 report and scorecard to determine whether National Grid acted appropriately based on the situation. Further, this document examines overall Company performance and provides recommendations for improvement, including those identified by after-action reviews following the restoration response.

Section II – Background Summary

The impact of the December 23rd, 2022, Winter Storm occurred over a five-day period, from December 23rd to December 27th, 2022, and significantly affected New York State, particularly in the NY West and NY Central Divisions.[1] Significant snowfall and winds led to several service disruptions across National Grid's service area. The December 23rd, 2022,

[1] While most customers were restored by December 27, 2022, isolated outages remained in the Buffalo area through December 28, 2022.

Winter Storm had a severe and deadly impact to Erie County, with white-out conditions for an extended period, impassable roadways, and hundreds of stranded vehicles.

In preparation for the Winter Storm, National Grid took several proactive measures. Starting on December 18th, 2022, National Grid began monitoring weather forecasts, mobilizing Company personnel, securing external resources, prestaging existing resources, issuing alerts to critical and Life Support Equipment (LSE) customers, and conducting proactive outreach to regulatory officials, elected, municipal, and emergency management officials, including scheduling pre-storm municipal calls in all three divisions. Additional measures included participation in North Atlantic Mutual Assistance Group[2] (NAMAG) calls where they put in requests for resources, notified all Company contractors that they would be scheduled for storm response, opened storm rooms in all divisions, and issued pre-storm press releases. For this event, five (5) NAMAG calls were scheduled, and four (4) calls were ultimately held. The first call was held on December 22nd, 2022, as a situational awareness call. National Grid did not request any resources at that time as they had secured their pre-arranged contract resources to pre-stage for the event. During the next two calls, held on December 23rd and 24th, 2022, National Grid requested 400 FTEs, which were not available to be fulfilled. The request for mutual aid was extended from NAMAG to the other Regional Mutual Assistance Groups[3] (RMAGs). According to National Grid's report, due to almost three quarters of the United States

[2] The mission of the North Atlantic Mutual Assistance Group (NAMAG) is to provide a forum to ensure safe, effective, and coordinated mutual assistance, regional response, and service restoration for customers of member utilities by providing an enhanced line of communications between member companies to share best practices, plan for significant events, and ensure all members are communicating a unified message. Member utilities agree to aid (personnel and equipment) on a not-for-profit basis and agreeing that the requesting companies will reimburse responding companies for all expenses incurred in providing the assistance. NAMAG additionally interacts with other Regional Mutual Assistance Groups (RMAGs) and the Edison Electric Institute Mutual Assistance Committee.

[3] Many mutual aid agreements among Investor-Owned Utilities (IOUs) are managed by the seven (7) Regional Mutual Assistance Groups (RMAGs) across the country. These regional groups of utilities have agreements to offer mutual assistance within the impacted regional area when a request is made. If needed, utilities in one RMAG will assist those in another region.

being under some form of winter weather warning or advisory, all RMAGs contacted were holding onto their resources and unable to provide mutual aid[4]. The final call that was scheduled for December 26th, 2022, was canceled. Ultimately, these resources were not required, as National Grid had secured sufficient external contract crews for the damage incurred.

Based on the December 23rd, 2022, crewing report, National Grid had 2,731 FTEs total in all divisions. Resources consisted of internal line, contract line, tree, service, transmission line, damage assessment, and wire guarding personnel. For the Western Division, the Company initially secured the following:

- 178 internal line FTEs and 299 contractor line FTEs
    - 47 additional contractors arrived on December 24th, 2022, at 1:00 PM
- 207 tree internal FTEs and 76 contractor FTEs
- 27 service FTEs
- 36 damage assessment FTEs
- 50 wire guard FTEs

Following the unprecedented weather impacts, including persistent gusting blizzard conditions, the start of restoration began midday on December 25th, 2022. The following lists the times and dates of 90% restoration for the National Grid divisions:

- NY – West
    - Frontier, on December 27th, 2022, at 12:00 PM
    - Genesee, on December 26th, 2022, at 7:00 AM
- NY – Central
    - Northern, on December 25th, 2022, at 12:00 PM

[4] The IOUs are required to have pre-arranged external contract resources identified and available to augment internal staffing during major events.

Section III – Summary of National Grid's Restoration Activities

All three (3) upstate New York Divisions were impacted by the December 23rd, 2022, Winter Storm, with NY-East being significantly less impacted than the other two Divisions. For NY-West, the "Start of Event" occurred at 09:20 AM on December 23rd, 2022. Due to the extended duration of dangerous blizzard conditions, "Start of Restoration" did not begin until 12:00 PM on December 25th, 2022. Final restoration was at 4:48 PM on December 28th, 2022. Although a significant number of customers in the region were restored prior to the official Start of Restoration, the length of time between National Grid's Start of Event and Start of Restoration of over two (2) days has never happened before in National Grid's history.[5] Customers were able to be restored between these timeframes as Make Safe activities and emergency repairs were made in response to 911 Calls and similar notifications. Access and mobility issues caused by the blizzard conditions prevented National Grid workers and contractors, as well as emergency services and public works from moving across the area.

For this event a total of 202,659 National Grid customers were affected with a peak of 61,388 outages out at once. The NY-West Division had 110,327 customers affected with a peak of 45,341 outages at once. The Frontier Region, which includes the City of Buffalo, had 61,548 customers affected with a peak of 30,064 outages at one time.

During the December 23rd, 2022, Winter Storm, access and mobility issues caused by the storm affected damage assessment and restoration efforts. Despite the severe weather conditions, Phase 1 damage assessment surveys were completed in less than 24 hours from the start of restoration in the NY-Central and NY-West Divisions, however, due to the

[5] A limited number of National Grid crews were able to deploy between the "Start of Event" and the "Start of Restoration" and were able to restore power to about 50,000 customers within Niagara and Erie counties. These actions are not considered by the Company to be part of the restoration phase.

unprecedented duration of the storm, final damage assessment surveys in the most heavily impacted areas were not completed until more than 72 hours after the start of the storm event. A total of 111 feeders were also surveyed during this time. As restoration progressed, the need for damage assessment FTEs decreased and was reduced from 395 on December 23rd, 2022, to 198 on December 28th, 2022. Starting on December 25th, 2022, the West Division was the only division with active damage assessment still occurring and on December 26th, 2022, the overwhelming majority (more than 95%) of damage assessors were working in the Frontier Region.

Damage from the storm primarily occurred in the NY-West and NY-Central Divisions and consisted of downed limbs, fallen trees, downed wires, broken poles, and damaged transformers. There was a total of 256 broken poles and 102 broken transformers throughout the state. The NY-West Division had 148 broken poles, with 82 in the Frontier Region alone. NY-West had 51 transformers broken, with 25 in the Frontier region. NY-Central had 68 broken poles and 34 broken transformers. NY-East had 40 broken poles and 17 broken transformers. No portable sub-stations or generators were determined to be required or used during restoration.

In total, 1,633 outages lasted longer than 72 hours. There were 620 feeders associated with these outages and 126 feeder lockouts. There were three (3) transmission circuits affected, and 56 sub-transmission circuits. In the Frontier region, 604 outages lasted more than 72 hours. There were 300 feeders associated with these outages with 88 feeder lockouts. There were no transmission circuits impacted, however there were 16 sub-transmission circuits impacted.

Throughout this event, there were 92 wires down incidents in the NY-West and NY-Central Divisions, with 31 in the West Division alone. All reports of wires down were responded to within 18 hours by a National Grid representative who arrived at the location with

the intent to fix, make-safe, or stand by the downed wire. The Company dispatched several types of resources to deal with the safety issues presented by the downed wires. These resources included trained and qualified overhead line resources, Customer Meter Services (CMS) resources, and/or trained and qualified contractor resources. They also utilized Wire Guard personnel which consisted of trained CMS representatives, meter readers, revenue collectors, gas mechanics, and trained contractors.

In all three Divisions, National Grid pre-staged crews including line, tree, service, public safety, and damage assessment crews. Before and during the event, crews were obtained from contractors, other Divisions and Companies as they completed restoration, and from National Grid's Massachusetts affiliate. Just as the storm impacted damage assessment, it also impacted all other crews working in the field. National Grid continued to secure and move resources into Western New York and amassed a workforce that was nearly double the size of what would have been required if travel, access and mobility were not issues. The travel and access issues caused significant slowdowns to crews who were able to move, which resulted in many crews having to reach their work locations on foot through blizzard-like conditions. This highlights the additional challenges presented by this winter storm as the additional personnel did not significantly enhance restoration activities until the weather conditions improved.

In many areas of the Western Division, the roads were unplowable and required the use of various types of heavy equipment to provide access for first responders and Utility trucks. The December 23rd, 2022, Winter Storm paralyzed Erie County, which included the city of Buffalo, and rendered all first responders unable to travel. Due to the multi-agency need for a coordinated response, a road clearing task force was established with National Grid and state and local partners to assist with gaining access to areas of Erie County and the city of Buffalo where

repairs were needed. This road clearing taskforce was key to the restoration efforts and in the first communication with the taskforce, National Grid stated that "Priority number one is East Buffalo."[6] Working with the various levels of government, the Company also established a process to request snow removal at locations of equipment damage. The New York State Department of Transportation (NYS DOT) and the City of Buffalo provided the Company access to several front-end loaders to assist with snow removal where snowplows were insufficient.

Four (4) substations serving 12 feeders in the hardest hit areas tripped offline in East Buffalo due to the accumulation of wind-driven snow and ice around external equipment and internal equipment that were exposed to the elements due to ventilation openings. Prior to restoring the substations to service, the substations needed to be dug out from snow-packed drifts that were 12 to 15 feet in height at some substations, as well as packed inside the partially sheltered locations. National Grid used concrete curing blankets, regular tarps, and torpedo heaters to help melt and keep out the snow and ice at the substations. Just over 10,000 customers were affected by the substations that were impacted by the December 23rd, 2022, Winter Storm. These customers were returned to service by 9:00 PM on December 25th, 2022.

During the restoration, the Company continued to contact Critical Facility, LSE, and special needs customers providing them with Estimated Times of Restoration (ETR) updates, as well as checking on their status. Critical Facilities that had not been restored were contacted daily using either automated or direct phone calls as well as emails. LSE customers who had not been restored were also contacted daily by National Grid who had a team dedicated to managing the list of LSE customers out of service and coordinated daily calls to them as well as arranging for wellness checks if the customers could not be reached by phone. During the restoration,

[6] National Grid Winter Storm Elliot December 22nd, 2022, Storm Report, 27 February 2023, Page 28 of 58. Also present in Score Card, Appendix 7, Page 131 of 205

National Grid was able to contact, or refer to Emergency Services, every LSE customer who remained without power. Special needs customers were contacted similarly to Critical Facilities in that they received automated phone calls with information on how to report an outage and how to receive restoration updates from the Company.

National Grid provided frequent press releases, embedded personnel at county Emergency Operations Centers, facilitated nine (9) Community Leader Conference Calls, and distributed dry ice and bottled water. There was a total of 11 press releases distributed statewide during the storm with 6 published specifically for Western NY detailing restoration activities and providing necessary information to customers who were without power. Press releases included dry ice and bottled water distribution locations which National Grid coordinated with county and city officials to set up. Due to difficult road conditions and travel bans there was only one distribution location set up in Western NY and was open to the public on the 26th and 27th. The site, located in Niagara Falls, did not have any customers come to pick up dry ice or bottled water, but National Grid had both available in case the need arrived. National Grid also held Community Leader Conference Calls to provide town, city, and county officials with more detailed restoration information than what was provided in the press releases and gave the opportunity for these leaders to ask any questions they may have had. The calls were also used to provide information such as how many customers were restored, those that remained out of service, hardest hit areas, and damage that Company infrastructure had sustained due to the storm. In addition to these calls, National Grid provided members of their community liaison team to work directly with county Emergency Management officials and staff their county Emergency Operations Center (EOC). The Erie County EOC requested 24-hour presence from the liaison team to staff their facility starting on Sunday, December 25th at 7:00 PM until

Wednesday, December 28th at 11:00 PM. During this time the primary role of the liaison was to provide a point of contact to coordinate road clearing efforts with the NYS Police (NYSP) and NYS DOT. The liaisons also coordinated road closures, critical infrastructure outages and many other issues the county had during the restoration effort.

Section IV – Estimated Time of Restoration Activities

When customers experience a power outage after a storm, it is critical that they are provided with a timeframe for when they can expect power to be restored. This timeframe allows customers to better prepare for what they need to do to keep their household safe until the power comes back on. Estimated Times of Restoration (ETRs) are provided by the utility company and are broken down into three categories with each subsequent category becoming more refined and accurate. These timeframes are critical after any storm but especially after the December 23rd, 2022, Winter Storm, when many customers were unable to leave their residences due to the travel ban caused by the unprecedented weather conditions.

Global ETRs are the first set of ETRs to be released by the utility company; the Global ETR represents the timeframe in which 90% of affected customers are expected to be restored. For storms where restoration is expected to last over two days, a Global ETR is issued 24 hours from the start of restoration, after preliminary damage assessment is completed. Typically, the start of restoration occurs after the storm has subsided and conditions are safe enough for utility crews to go out and begin their work. The December 23rd, 2022, Winter Storm was different in that the start of the storm occurred on Friday, December 23rd at 9:20 AM, however, storm conditions didn't subside until Sunday, December 25th at noon, more than two days later. According to their report, National Grid decided not to publish a Global ETR as they were able to accelerate issuing Regional and Local Level ETRs ahead of the stated times listed in the ETR

Protocol. Both Regional and Local ETRs represent the estimated timeframe in which 95% of affected customers will be restored and are given on a county (regional) and town/municipal (local) level. Once these more refined ETRs are published all references to the Global ETR will be removed. In many cases the regional ETRs were published in less than 24 hours after the start of restoration allowing more customers to have a better idea of when they could expect power to be restored to their homes. This quick turnaround was critical because the storm had lasted over two days and customers needed an accurate ETR as quickly as possible.

As important as publishing an ETR is, the accuracy of the ETR is just as important. Having inaccurate ETRs can lead to customers having to adjust their plans again and causing frustration. The Scorecard measures the accuracy of ETRs by allowing the published Global ETR to be within 24 hours of the actual restoration and Regional and Local ETRs to be within 12 hours of actual restoration. Of the three regions that had Regional ETRs published, only one division, Northern, had its Actual Restoration Time within 12 hours of its published Regional ETR time. More importantly, in the other two divisions, Frontier and Genesee, National Grid was able to restore service to customers much quicker than the original published Regional ETRs. National Grid was able to restore customers in the Frontier division 22 ½ hours earlier and in the Genesee division 16 ½ hours earlier than first projected. This discrepancy may have been due to the Regional ETR being published earlier than expected. For the Frontier division, the Regional ETR was published 19 hours after the start of restoration, and the Genesee division regional ETR was published an hour before restoration had begun rather than the 48 hours the utility is given based on the ETR Protocol. For customers who received Local ETRs, National Grid met all ETRs within 12 hours of the published times according to their Scorecard Report.

The following table displays the times in which ETRs were first posted and when Actual Restoration was achieved as provided in National Grid's Part 105 Storm Report:

The following table illustrates defining points in time associated with our response and ETR information.[7]

			Publication of ETR			
Location	**Starts of Event**	**Start of Restoration**	**ETR**	**Time**	**Published ETR**	**Actual*** Restoration Time**
NY-West	**12/23 – 09:20**	**12/25 – 12:00**	**N/A****	**N/A****	**N/A****	**N/A****
Frontier	12/23 – 09:20	12/25 – 12:00	Regional	12/26 – 19:00	12/28 – 23:30	12/27 – 12:00
Southwest	12/23 – 09:20	12/25 – 12:00	Local ETR	12/24 – 11:00*	Ticket	N/A*
Genesee			Regional	12/25 – 11:00	12/26 – 23:30	12/26 – 07:00
NY-Central	**12/23 – 04:25**	**12/23 – 14:00**	**N/A****	**N/A****	**N/A****	**N/A****
Northern	12/23 – 04:25	12/25 – 13:00	Regional	12/25 – 11:00	12/25 – 23:30	12/25 – 12:00
Central	12/23 – 04:25	12/23 – 14:00	Local ETR	12/24 – 07:00*	Ticket	N/A*
Mohawk Valley			Local ETR	12/24 – 07:00*	Ticket	N/A*
NY -East	**12/23 – 14:30**	**12/24 – 07:00**	**N/A****	**N/A****	**N/A****	**N/A****
Capital	12/23 – 14:30	12/24 – 07:00	Local ETR	12/24 – 07:00*	Ticket	N/A*
Capital West			Local ETR	12/24 – 07:00*		
Northeast			Local ETR	12/24 – 07:00*		

Note:

- *ETR first published at the ticket level or individual customer level
- **National Grid skipped the publishing of a Global ETR, advancing more granular information in the form of the Regional or Local/Ticket Level ETR
- ***Actual Applies to 90% of Affected Customers (Global), 95% of Affected Customers (Regional/Local)

Section V – Utility Performance Metrics

Event Anticipation

National Grid activated appropriate staffing levels, issued press releases, conducted Municipal Conference Calls, alerted LSE customers, contacted Critical Facilities, complied with training programs, participated in pre-event mutual assistance group calls, and verified materials and stockpile levels based on the forecast in accordance with the Company ERP. In preparation and response to the impending storm, National Grid continued to assess resource needs, including securing external contractors, including from pre-arranged contracts required by the

[7] Table retrieved from National Grid's required Part 105 Storm Report, filed February 28th, 2023.

PSC. Staff found that National Grid met the criteria for this performance metric. Future considerations for event preparation should be examined by all NYS Utilities for storms that have the potential to rapidly intensify, including advanced communications and coordination with local, county, and state officials regarding transportation access.

Down Wires

Despite the access and mobility issues presented by the challenging weather, National Grid responded to all incidents within the required 18-hour timeframe and met the performance measure to the satisfaction of the Score Card metrics. In subsequent events, National Grid and all NYS Utilities are encouraged to seek assistance from local, county, and state agencies to safely coordinate snow and debris removal for make-safe, repair, or stand-by a down wire.

Damage Assessment

Phase 1 Damage Assessments were completed within 24 hours of the start of restoration in the NY-Central and NY-West divisions, allowing for the development of work packets and assessments of ETRs. National Grid performed consistently with their ERP and met the criteria for this performance measure.

Crewing

In preparation for the storm, National Grid secured external pre-arranged contract resources and requested additional resources once impacted. Within 48 hours from the start of restoration, National Grid had secured resource commitments satisfying the open request for NY-West. Staff found that National Grid acted consistently with their ERP for requesting and securing ample crews and met the performance metric.

Publication of ETR

National Grid's publication of ETRs were found to be in accordance with established metrics. The Company accelerated the publishing of ETRs beyond the requirements detailed in their ERP and did not publish a Global ETR, as they were able to establish Regional ETRs to provide a more localized restoration picture. No recommendations for improvement were found by Staff given the complex assessment and restoration efforts.

ETR Accuracy

National Grid met all metrics for ETR accuracy within the performance measures and in accordance with the Company ETR protocol within their ERP. No recommendations for improvement were found by Staff.

Municipality Coordination

Communications were provided to municipalities by the National Grid Community Liaison Team regarding safety, coordination of down wires, road closures and clearing activities, outage communications, and critical facilities. Ample outreach and coordination also occurred in advance of the storm including individual and community leader conference calls, responses via mixed media messaging, general email communications, outreach to Critical Facilities, coordination with county emergency management, and liaison back to the National Grid Storm Room leadership. Staff supports the level of engagement with local, county, and state officials conducted by National Grid and encourages all NYS Utilities to remain engaged with all pertinent parties prior to and throughout all events. In addition, these activities must be exercised annually to ensure protocol alignment and current listing of appropriate contact points.

County EOC Coordination

National Grid provided each impacted county a community liaison to work with the county EOC to address road closures, critical infrastructure outages, restoration efforts, and any issues of concern to the counties. Concurrently to these events, DPS' OREP Team staffed the NYS EOC beginning Saturday December 24th, 2022, through Wednesday December 28th, 2022, as the ESF 12 lead coordinating agency. Due to the atypical circumstances, the OREP EOC representative worked with National Grid, EOC Command, ESF 1 Transportation and the NYSP to develop a priority plowing map for the City of Buffalo to coordinate plowing, snow removal, and utility repair and restoration efforts. The National Grid community liaison assigned to Erie County was requested to facilitate communications and synchronize efforts regarding snowplowing coordination within the City of Buffalo, as part of the NYS Snow Removal Task Force led by the NYS Police and NYS DOT, to allow road clearing to take priority in areas where the National Grid needed access to conduct repairs and restoration. This level of coordination successfully accelerated final restoration in the most heavily impacted areas and was subsequently identified by DPS as a best practice that should be replicated in all NYS Utility territories. National Grid is in the process of creating a protocol for coordination with road clearing agencies to expedite this process in the future. DPS has also shared the experience with all NYS Utilities, and they have been asked to adopt similar strategies. DPS intends to make such communications a requirement included in the utility ERPs in 2024.

Utility Coordination

National Grid coordinated with partner infrastructure utilities – including electric, gas, communications, and water, to replace broken poles in accordance with pole ownership agreements, coordinate with Dig Safe to provide for safe excavations to repair damaged

infrastructure, and conduct daily joint-work conversations with telephone, cellular, cable, and fiber suppliers. Additionally, National Grid liaisons were available to the counties and respective public works for coordination at the municipal level as well. No issues were reported in the communications and coordination activities with other utilities. Staff recommends all NYS Utilities to continue to maintain close communications with all utility partners within service territories for future coordination efforts.

Safety

Despite the extreme weather conditions and dangerous travel environment, there were no serious injuries or incidents reported by National Grid during this event. All NYS Utilities are required to continue to communicate messaging, train, and exercise appropriate safety measures pertinent to working in hazardous conditions.

Mutual Assistance

National Grid continued to examine resource needs in the preparation for and response to the December 23rd, 2022, Winter Storm. While all upstate National Grid divisions were impacted by the storm, resources were moved to the more significantly impacted NY-West division as they became available. National Grid continued to increase the number of resources secured and mobilize them to areas determined to have the most need. All NYS Utilities have identified the need to continuously reassess resources and plan for reallocation and mobilization within their service territories.

Restoration Times

As discussed earlier in the document, National Grid provided restoration times and conducted restoration of 90% of affected customers within appropriate timeframes.

Call Answer Rates

National Grid exceeded the metric for answering calls for each day of the event, with greater than 90% of calls answered by a live representative within 90 seconds. The National Grid call center was staffed appropriately for the forecasted weather allowing them to meet this performance measure.

Municipal Calls

National Grid liaisons continued to communicate and coordinate daily throughout the event including Community Leaders Conference Calls which were held until more than 90% of the total affected customers were restored. Communications were also maintained with individual county and municipal officials to provide responses to requests and general information. Liaisons were continuously available to all county EOCs and respective public works for coordination as well. Staff found that these calls were effective and provided the level of information needed to sufficiently meet the performance metric. In accordance with their annual PSC approved ERP, all NYS Utilities are required to conduct municipal calls and coordination with local and county officials to maintain open lines of communication.

Web Availability

National Grid continuously made updated information available on their website throughout the storm with no known interruptions providing outage and restoration information, as well as general safety messaging. During the 2023 National Grid divisional and state exercises, Staff discussed the need to include enhanced safety messaging on the proper use of alternative heating sources, the dangers of carbon monoxide, and avoidance of dangerous alternative lighting and improper heating sources in future messaging. Staff will recommend this added safety messaging to all NYS Utilities.

LSE Customers

National Grid conducted LSE customer outreach in accordance with their ERP and the performance measures outlined in the Score Card. After customers were verified or predicted to be out of service, National Grid began attempting contacts as soon as possible and met the required timeframe from the start of the event and continued daily until power had been restored. Staff recommends all NYS Utilities continue to review their process for LSE contacts, including identification of alternative resources for in-person wellness checks.

PSC Reporting

All required reports were received timely by Staff in accordance with the performance measures. Currently, Staff is examining and refining these reports for future incidents to provide a standardized format across all NYS Utilities in partnership with the Joint Utility Collaborative, comprised of the Emergency Preparedness representatives from each NYS Utility.

Customer Communications

National Grid conducted news releases, published internal messaging to employee communications channels, had available media representatives, released social media messaging, distributed emails to customers, text messaging to registered customers, and provided web messaging on their public website pertinent to the storm. Staff found that messaging was timely and appropriately distributed for the storm conditions, and in accordance with the Company ERP. No further recommendations have been made.

Outgoing Message on Telephone Line

National Grid's outgoing messages were found to be released within the appropriate timeframe and messaging was compliant with the performance measures in the Score Card. Staff has no recommendations on National Grid's outgoing messaging.

Section VI – Company Recommendations

Company Recommendation: Proactive Positioning of Materials and Equipment in Substations for Equipment De-Icing

- Status: National Grid identified proactive positioning of materials and equipment in substations for equipment and de-icing as a recommended activity, which was completed in January 2023 through an evaluation of substations that could be at risk of snow accumulation and icing. National Grid found that seven (7) substations warranted de-icing kits, containing tarps, heaters, anchors, and fastening devices, which have been stored in each respective substation as of January 2023. These kits will be inspected twice per year to ensure readiness for use.
- Staff Comments: Staff agrees with this approach and will recommend as a best practice to all NYS Utilities. In areas across the state such as Buffalo, that have partially enclosed substations, the Utilities should examine methods to close off the substation from outside weather, which would mitigate the driving snow and ice accumulation on the interior portions of the station. Future retrofits or new construction in these areas should include some sort of shutter to be incorporated into the substation plans. To assist in further in expediting any necessary de-icing, proactive positioning of resources, such as concrete

curing blankets, for substations that may be affected by driving snow and ice should be evaluated by all Utilities.

Company Recommendation: Improved State, County, and City Coordination; Road Clearing Task Force

- Status: National Grid found that while in previous storm responses the County dictates the prioritization of roadway clearance, there are times when the Company should be involved to provide direction/guidance in the discussions on the road clearing process. National Grid considers this task complete by discussing and identifying scenarios when road clearing would be needed as part of Company emergency response while maintaining flexibility on the entity leading the effort. National Grid discussed road clearing at each of their required annual Divisional and State exercises conducted prior to June 1st in accordance with regulatory requirements. National Grid will continue to provide requests to Counties for support of road clearing needed to access infrastructure to perform repairs in the future.
- Staff Comments: Staff agrees with this approach and has facilitated partnerships and collaborative efforts with National Grid and transportation authorities. In situations of impassable roadways and inaccessible Company equipment, National Grid will continue to coordinate with local, county, and State transportation officials to refine road clearing taskforce activities utilized during the December 23rd, 2022, Winter Storm. Collaboration should also include discussion and use of specialty equipment, such as front-end loaders and special all-terrain vehicles, to improve access and mobility when conditions do not allow traditional snow removal.

Company Recommendation: New York State Thruway Coordination

- Status: National Grid has identified key contacts at the NYS Thruway Authority who have provided information to continue working with the Company to coordinate emergency travel on the thruway when safe to do so. National Grid reviewed and finalized this process in June of 2023 in a meeting between the NY Joint Utilities, NYS DOT, and NYS Thruway Authority.
- Staff Comments: Staff agrees with this approach and has assisted in facilitating the connections between all NYS Utilities and appropriate contacts at the NYS Thruway Authority. National Grid is in the process of finalizing a procedure to coordinate with transportation agencies in future events, which Staff has recommended to be adopted and amended appropriately by all NYS Utilities.

Company Recommendation: Research Specialty Equipment

- Status: By July 31st, 2023, National Grid had completed research on specialty equipment suited for transportation in severe weather conditions and will be purchasing multiple industrial off-road vehicles to be strategically staged around the service territory in areas traditionally susceptible to blizzard conditions. Vehicles will be able to be moved between Divisions and are intended to be used for transport of personnel, tools, and equipment to perform limited strategic activities during an event. This equipment will not negate the need for road clearing activities to be performed for full restoration activities to begin.
- Staff Comments: Staff agrees with this equipment acquisition initiative. In addition to the value during severe weather events, these units will be available for various

maintenance and repair activities in areas throughout the service territory that are typically difficult to access and/or remote work locations.

Company Recommendation: Service Center Logistics

- Status: National Grid has developed a plan to support employees stranded on company property during weather events for an extended period. The Company will be purchasing emergency provision kits which will include basic sleeping and hygiene items to sustain 4-days of operations for personnel working during abnormal conditions requiring employees to shelter-in-place and when local services are unavailable. These kits will be staged in strategic company warehouse locations throughout the service territory with the ability to be deployed locally or quickly shifted to other areas. The kits will be inspected and maintained on a regular schedule to rotate items due to expire and replenish as necessary.
- Staff Comments: Due to the severity of the weather event, pre-staged onsite and arriving crews became immobilized on Company property, and were required to lodge at their work locations for extended periods of time., immobility of the existing workforce contributed to crews being stranded on Company property for extended periods of time. Staff agrees a plan should be developed to provide support for these employees, including meals and other essential needs for future events.

Company Recommendation: Examine Activities Associated with Public Service Law (PSL) 73 – Customer Bill Credits and Claims for Spoiled Food and Medicine

- Status: National Grid conducted an internal workshop on June 29th, 2023, to review the process and procedure associated with PSL-73 and other key communication protocols. In response to this review, increased staffing will now have employees assigned to an Emergency Response role to support the processing of claims associated with PSL-73.

- Staff Comments: All NYS Utilities were required in the 2023 filing of their respective ERPs to include adoption and procedures for PSL-73. Staff supports providing efficient processing of claims associated with food and/or medicine spoilage as the result of a prolonged outage.

Section VII – After-Action Review and Conclusion

While enduring an unprecedented set of complications caused by the historic blizzard conditions of the December 23rd, 2022, Winter Storm, Staff concludes that National Grid adapted efficiently to provide effective restoration activities where possible given the circumstances.

National Grid utilized multiple weather service providers to ascertain the most accurate forecast and prepared for the worst-case scenario as a good planning principle. However, the unforeseen travel and access issues presented by the relentless high winds and blowing snow could not have been predicted. Staff finds that National Grid had appropriate resources in place prior to the storm and after the impact was known. The greater Buffalo area had recently experienced another historic snowfall event in the previous weeks, which did not present the restoration difficulties associated with this storm. Staff believes that National Grid did well to adapt to the challenges presented as part of this storm to facilitate access to its facilities and restore customers. The Company also communicated effectively during the event to keep its customers and government officials informed.

While the Company performed well overall, some areas for improvement were identified, as well as lessons learned and best practices, which are applicable to memorialize in future operations for all the NYS Utilities. Although the press releases did provide reasonable safety messaging, the Company should examine the use of stronger public messaging on the dangers of

carbon monoxide associated with generators and/or alternative home heating devices during snow events with deep or drifting snow to help reinforce the need for ensuring proper ventilation. Recommendations for enhanced safety messaging are applicable to all NYS Utilities as the changing threat-environment and hazardous weather conditions continue to present unique challenges across all NYS service territories.

Travel, access, and mobility were the largest hindrance to all responders, causing damage assessment and restoration to be likewise affected, impacting the availability and timing of accurate ETRs. Staff finds the Company appropriately coordinated with the NYSP, transportation, and other officials on a taskforce to establish road clearing activities for power restoration – including maps identifying areas needing access, which were then assigned and dispatched to heavy equipment operators. To facilitate this process, highlighted street maps were distributed for use on phones, which avoided distribution of confidential circuit maps to outside entities. Zones were created on the maps which aided in ease of dispatch and provided identifiable areas of prioritization for road clearing. These activities have been identified as best practices to all NYS Utilities and continues to be reinforced internally with ESF 12 and NYS partner agencies.

To mitigate future impacts to Company response activities, increased communication and coordination with local, county, and State transportation officials has been recommended and implemented by the Company. Through the experiences of this event, National Grid developed a process that can be used in future similar situations. Staff reinforced that all Utilities should consider forming a road clearing taskforce in future similar events and should also be discussed between Utility Liaison personnel and emergency management representatives during their annual meetings. Recently, the NYS Joint Utilities Collaborative, comprised of all six (6) NYS

Utilities hosted a meeting with the NYS DOT and NYS Thruway Authority, including NYSP Troop T, to plan for future storm impacts and coordination of information sharing[8]. This best practice was visible in the taskforce created to respond to this storm event and has been recommended by Staff to all NYS Utilities.

To supplement the existing internal workforce, National Grid was able to utilize existing internal, contract, and resource movement to cover their needs. As is common for events of this size and scale, the requests for NAMAG and RMAG resources were unmet due to the companies holding and unable to provide additional personnel after the storm impact. Although additional FTEs were requested through NAMAG and National Grid continued to request additional resources, Staff agrees that National Grid was sufficiently able to respond with existing and secured resources. Additional resources would likely have experienced the same impact on access and movement and would not have significantly contributed to accelerated restoration.

National Grid did not require or utilize any temporary facilities, such as portable sub-stations or generators, during restoration activities. Staff agrees with this approach, as even in the event these resources were pre-staged in difficult to reach areas, the likelihood is they would have also been stranded due to the vehicles required to move them not being able to travel, and/or these resources becoming impacted and unusable due to the blowing snow and icing conditions that disabled the substations.

The unique nature of challenges of the December 23rd, 2022, Winter Storm caused by persistent blowing snow making roadways impassable contributed to significant access issues for

[8] The Joint Utility Collaboratives are held biannually, with sub-collaborative coordination sessions scheduled on an as-needed basis throughout the year, to discuss the requirements and review process for the annual ERP filing. These meetings provide a consistent forum for DPS OREP and the NYS Utilities to share information and best practices, collect feedback, improve processes, and standardize language for implementation in Company ERPs.

the full response community, including local and county emergency personnel, road clearing equipment, and Utility vehicles. All activities that would normally support the emergency response system came to an unprecedented halt which contributed to delaying restoration activities as well. Given these circumstances, National Grid performed well and to the best of their ability given the unique challenges the storm presented. Lessons learned by this event will be implemented not only at the Company level, but across the NYS Utilities in preparation for future winter weather impacts.

Appendix A: DPS Recommendations and Requirements

Staff recommendations have been made following the events of the December 23rd, 2022, Winter Storm individually to National Grid and to the NYS Joint Utilities as best practices and lessons learned for memorialization into company ERPs. Staff recommendations include:

1. Utility Pre-Event Preparation Enhancement: Additional considerations should be examined by all NYS Utilities for future storms that have the potential to rapidly intensify. These considerations should include advanced communications and coordination with local county, and state officials regarding transportation access, resource needs, and specialty equipment needs. To expedite repair and restoration efforts, the proactive positioning of materials and equipment in substations, as well as Logistics support for employees on Company property for extended periods of time, as identified by National Grid, should be evaluated by all NYS Utilities. As the event progresses, all NYS Utilities are recommended to continuously reassess resources and plan for reallocation and mobilization within their service territories.
2. Partner Engagement and Coordination: NYS Utilities are required to engage and exercise with local, county, and state officials as part of their regulated ERP activities. All NYS Utilities have been encouraged to remain engaged with all pertinent parties prior to and throughout events to improve coordinated messaging and information sharing. Additionally, the NYS Utilities are encouraged to engage with municipal and other Utility companies within their respective service territories for future coordination efforts. Partnerships with other agencies, including transportation and law enforcement that may be able to aid with issues such as access and mobility to areas for repair and restoration, assist with LSE wellness checks, and participate in multi-agency task forces,

such as the NYS Snow Removal Task Force, which proved instrumental in aiding National Grid with restoration efforts, should be maintained and memorialized in Utility ERPs.

3. Enhanced Public Safety Messaging: The NYS Utilities provide safety messaging internally to their own employees, and externally to the consumer public. As part of external messaging, all NYS Utilities should include additional messaging during heavy snowstorms on the proper use of alternative heating sources, the dangers of carbon monoxide, and avoidance of dangerous alternative lighting and proper maintenance of existing heating sources (e.g., ensuring snow is cleared from exhaust vents).