

November 2, 2018

VIA HAND DELIVERY & ELECTRONIC MAIL

Luly E. Massaro, Clerk
Rhode Island Division of Public Utilities and Carriers
89 Jefferson Boulevard
Warwick, RI 02888

RE: Docket No. D-17-45 - In Re: Review of National Grid (Narragansett Electric) Storm Preparedness and Restoration Efforts Related to the October 29-30, 2017 Storm National Grid's Supplemental Response to PowerServices Report

Dear Ms. Massaro:

On behalf of National Grid,¹ I enclose five (5) copies of the Company's supplemental response to the Rhode Island Division of Public Utilities and Carriers' Review of National Grid Storm Preparedness and Restoration Efforts Related to the Storm of October 29-30, 2017 dated March 14, 2018 and prepared by Gregory L. Booth, PE, PLS of PowerServices, Inc. in the above-referenced docket.

Thank you for your attention to this transmittal. If you have any questions, please contact me at 781-907-2153.

Very truly yours,



Celia B. O'Brien

Enclosures

cc: Docket No. D-17-45 Service List
Macky McCleary, Administrator
Kevin Lynch
Jonathan Schrag
Thomas Kogut
Christy Hetherington, Esq.

¹ The Narragansett Electric Company d/b/a National Grid ("National Grid" or the "Company").

Certificate of Service

I hereby certify that a copy of the cover letter and any materials accompanying this certificate was electronically transmitted to the individuals listed below.

The paper copies of this filing are being hand delivered to the Rhode Island Public Utilities Commission and to the Rhode Island Division of Public Utilities and Carriers.

Joanne M. Scanlon

November 2, 2018
Date

**Docket No. D-17-45 – National Grid – Storm Fund
Service List as of 3/26/18**

| Name/Address | E-mail | Phone |
|--|--|--------------|
| Celia B. O'Brien, Esq. National Grid 280 Melrose St. Providence, RI 02907 | Celia.obrien@nationalgrid.com ; | 781-907-2153 |
| | Joanne.scanlon@nationalgrid.com ; | |
| Christy Hetherington, Esq. Dept. of Attorney General 150 South Main St. Providence, RI 02903 | CHetherington@riag.ri.gov ; | 401-274-4400 |
| | Dmacrae@riag.ri.gov ; | |
| | jmunoz@riag.ri.gov ; | |
| Kevin Lynch, Deputy Administrator Division of Public Utilities & Carriers | Kevin.lynch@dpuc.ri.gov ; | |
| | John.bell@dpuc.ri.gov ; | |
| | Jonathan.schrag@dpuc.ri.gov ; | |
| | Macky.McCleary@dpuc.ri.gov ; | |
| Greg Booth Robin Blanton Linda Kushner David Taylor | Gbooth@powerservices.com ; | |
| | Rblanton@powerservices.com ; | |
| | Lkushner@powerservices.com ; | |
| | Dtaylor@powerservices.com ; | |
| File an original & 4 copies w/: Luly E. Massaro, Clerk Division of Public Utilities & Carriers 89 Jefferson Blvd. Warwick, RI 02888 | Luly.massaro@puc.ri.gov ; | 401-780-2107 |
| | John.Spirito@dpuc.ri.gov ; | |
| | Thomas.Kogut@dpuc.ri.gov ; | |

National Grid

The Narragansett Electric Company

**Supplemental Response to the
Rhode Island Division of Public
Utilities and Carriers' Review of
National Grid (Narragansett
Electric) Storm Preparedness and
Restoration Efforts Related to the
October 29-30, 2017 Storm**

November 2, 2018

Docket No. D-17-45

Submitted to:
Rhode Island Division of Public Utilities and Carriers

Submitted by:

nationalgrid

I. INTRODUCTION

The Company¹ submits the following supplemental response to the Division of Public Utilities and Carriers' (the "Division") Review of National Grid Storm Preparedness and Restoration Efforts related to the October 29-30, 2017 Storm (the "Storm") dated March 14, 2018 and prepared by Gregory L. Booth, PE, PLS of PowerServices, Inc. (the "Report"). PowerServices, Inc. ("PowerServices") completed the Report as part of the Division's review in Docket D-17-45. On March 26, 2018, the Company submitted its initial response to the Report (the "Initial Response"). The Company's Initial Response (1) highlighted PowerServices' positive findings that demonstrate the Company's significant improvements in storm preparedness, response, and restoration efforts since PowerServices' 2012 review of the Company's preparedness, response, and restoration efforts relating to Tropical Storm Irene; and (2) addressed the challenges that the Company (and other Northeast utilities) faced with the Storm and PowerServices' findings and recommendations set forth in the Report, including several with which the Company disagrees.

The first part of this supplemental response will provide the Company's responses to each of the 11 recommendations identified in the PowerServices Report, along with recommended timeline implementation dates for those recommendations. The second part of this supplemental response will address the inaccuracies contained in the Report and the Company's disagreement with many of the Report's findings, which seem to be primarily unsupported, opinion-based comments.

II. NATIONAL GRID'S RESPONSES TO RECOMMENDATIONS

Division Recommendation No. 1:

The Company should supplement its weather forecasting service with additional tools. The Company should provide the Division with a comprehensive update on the Damage Prediction Modeling tool that was to be implemented in Massachusetts in 2013, and subsequently scheduled for Rhode Island. The update should contain a detailed description of the software performance, expected benefits, rationale for delayed implementation, and all development and implementation costs incurred or forecasted.

Timeline: 60 days.

National Grid Response: *Weather Forecasting Services.* The Company currently uses multiple sources for weather forecasting. The Company presently supplements its primary weather forecasting service, DTN, with regular reports from the National Weather Service/NOAA, multiple web-based weather sources, mobile apps, local television, and radio weather forecasts.

Update on National Grid's Predictive Outage Model. All of the necessary data for Rhode Island has been loaded into the database, including weather logs, landcover mappings, and altitudes. After the data-related tasks were completed, National Grid

¹ The Narragansett Electric Company d/b/a National Grid ("National Grid" or the "Company").

completed altering the code base to integrate the Rhode Island-specific model into the framework of the existing Massachusetts-specific model. The Rhode Island Predictive Outage Model was made operational on June 1, 2018.

Timeline: No changes to the Emergency Response Plan (“ERP”) are required. By November 16, 2018, the Company will provide the Division with a comprehensive update on the Predictive Outage Model for Rhode Island.

Division Recommendation No. 2:

The Company should develop a mechanism and communications process within its ERP that outlines a means to rapidly adjust the ERP incident classification based on actual system impacts resulting from quickly changing weather patterns that increase in severity. The adjustments should foster a proactive program of rapidly intensifying and communicating, both internally and externally, the escalation of event Type. Failure to escalate the severity and event Type classification is one of the most serious deficiencies identified in this storm assessment process. National Grid appears to lack a free flowing and nimble communications system, and protocol which permits and encourages identification, communications, and action steps being implemented when it is clearly known within the operational ranks of the Company that a storm has become far more severe than the classification and plans have indicated. Absent a clear path to make adjustments within the ERP, the Company is prone to inadequate communications to the public, delays in securing mutual assistance, and an overall lower level of urgency that results in subpar restoration.

Timeline: 30 days.

National Grid Response: *Incident Classification Level Adjustments and Communications Process.* The path to make adjustments to incident classification level is already included in the Chapter 4 of the ERP. The Company considers numerous factors in its incident classification severity and complexity analysis and ***does not focus simply on number of customers impacted.*** The ERP already provides for procedures for effective internal and external communications. The Company, however, agrees to add a simplified classification table to the ERP.

Timeline: By November 16, 2018, the Company will develop a simplified classification table to be added to the ERP for the Division’s review and comment.

Division Recommendation No. 3:

The Company should review incident classifications and adjust the ranges of expected outages used to determine an event Type. The current classification system makes a very large outage level change in the last two classifications, which may be contributing to the slow reaching and buildup of needed resources when a storm’s severity escalates and the

internal classification and communication mechanisms are not in place to take timely action. In addition, the Company should define and utilize specific outage metrics, such as lines impacted and regions affected, in assigning incident levels rather than relying on global attributes. The ERP revisions should also incorporate a matrix of planned resources, both internal and external, required for restoration and describe whether multiple staging areas will be utilized. PowerServices recommends that the Company obtain ERPs from at least six (6) New England and New York utilities to review the structure and event classification criteria (examples provided in Appendix D).

The Division and the Company should work together to further adjust and enhance National Grid Rhode Island's ERP to ultimately derive a detailed storm restoration matrix. Specifically, PowerServices suggests the outage levels in Table 8 as a basis for the Company's discussions with the Division, with an objective that the Company complete a comprehensive template with components similar to those within the New England (See Utility 4 example in Appendix D).

Timeline: 90 days – See Other Industry templates/models – Emergency Response Plan/Matrix – current Narragansett Electric D/B/A National Grid model lacks detail/specificity in comparison to neighboring States.

National Grid Response: *Incident Classification Matrix.* The Company will work together with the Division to derive a detailed storm restoration matrix and review the ranges and classification. Note, however, that storms can be dynamic and sometimes are difficult to tie to a single chart or matrix, so an element of judgment is necessary.

Timeline: By November 16, 2018, the Company will meet with the Division to discuss adjustments and enhancements to the ERP with the objective of developing a detailed storm restoration matrix by December 31, 2018.

Division Recommendation No. 4:

The Company should perform a root cause analysis to determine the breakdown in internal communications and processes that resulted in ETR mismanagement, including severe underestimation of restoration times, inadvertent uploading of incorrect ETRs, and multiple revisions to ETRs that only served to confuse and frustrate customers. Concurrently, the Company should incorporate a process to develop initial ETRs based on actual field assessments, rather than rely on default values generated by predictions. The Company should develop an enhanced process of flowing accurate changes in the Estimated Time of Restoration ("ETR") through public communications channels to mitigate the customer frustrations and lack of confidence in the Company's outage restoration process and estimates. The Company should improve external communications by leveraging all forms of social media throughout a storm event, including YouTube videos which may be prerecorded or live stream. The Company should report the results of this ETR management root cause analysis and proposed ERP improvements to the Division. Timeline: 30 days.

National Grid Response: *Estimated Time of Restoration.* The Company agrees to perform the actions described above in the Division’s Recommendation No. 4. The Company will perform a root cause analysis to determine the breakdown in internal communications and processes that resulted during the Storm, including underestimation of restoration times, inadvertent uploading of incorrect ETRs, and multiple revisions to ETRs that may have served to confuse and frustrate customers. Concurrently, the Company will incorporate a process to develop initial ETRs based on actual field assessments, rather than rely on default values generated by predictions. The Company will develop an enhanced process of flowing accurate changes in the ETRs through public communications channels to mitigate potential customer frustrations and potential lack of confidence in the Company’s outage restoration process and estimates.

With regard to external communications, including the use of social media, the ERP already includes processes and activities the Company follows to provide coordinated and effective public information to external stakeholders. The ERP already provides for making YouTube videos available to customers on the Company’s website. The Company shall continue to leverage all forms of social media throughout a storm event, including further use of YouTube videos which may be prerecorded or live stream.

Timeline: By November 16, 2018, the Company will complete the actions described above and provide an update to the Division on these efforts.

Division Recommendation No. 5:

The Company should incorporate results of the ETR management root cause analysis and other storm lessons learned, including dispatching deficiencies into the AMI pilot and implementation process. An AMI system in this storm would have eliminated or *significantly reduced the nearly 600 instances of* crews being dispatched to locations for which power had already been restored. Additionally, AMI will nearly always provide for early outage detection and a far superior indication of outage severity and areas of greatest impact over the current OMS system, which relies on customer notifications. This will often result in improved incident level classification, reduced restoration time, and greater focus on the areas with highest impact first. (See – Section II F. outlines five (5) distinct benefits AMI creates for the storm restoration process).

Timeline: Rate Case/ISR Pilot – TBD.

National Grid Response: *Advanced Metering Infrastructure.* The Company agrees with the Division’s recommendation and that Advanced Metering infrastructure (“AMI”) will provide significant customer and grid side benefits, including enhanced outage management.² It is important to note, however, the challenge of quantifying the benefits of AMI with respect to storm events as compared to the overall/other benefits of AMI. Please also note that, at its March 20, 2018 Open Meeting, the Public Utilities Commission (PUC) voted unanimously to reject the Company’s proposed AMI pilot in

² Company response to data request R-I-40.

Docket No. 4783. The Amended Settlement Agreement in the Company's most recent general rate case (Docket Nos. 4770/4780), which was approved by the PUC at its August 24, 2018 Open Meeting, includes a requirement for the Company to refine and update its advanced metering functionality (AMF) business case for the Company's proposed AMF investments for Rhode Island.³

Timeline: TBD. The Amended Settlement Agreement in Docket Nos. 4770/4780 requires the Company to file the updated AMF business case with the PUC no later than February 1, 2019.

Division Recommendation No. 6:

Although no vegetation management program will mitigate all tree related power outages, National Grid may consider enhancements to protect the system during severe storms with high winds, including "ground to sky" clearing on all circuits, increasing side clearances, and aggressive removal of all hazard trees. In PowerServices' opinion, however, the benefits may not outweigh the cost and public relations impacts. Furthermore, the adverse reaction by property owners and communities which encourage tree preservation and protection would be expected. The Company should begin a community outreach program in order to develop a level of community cooperation for a broader vegetation management clearing area. This is best accomplished immediately after a storm when the impacts of extended outage durations is fresh on the customer and communities mind, and they may be more receptive to increased areas of "GROUND-TO-SKY" clearing that removes all overhead branches, regardless of tree condition, and creates wider clearing zones on either side of the circuit.

Timeline: TBD – Legislation – "Ground to Sky" – review Pending Agreement Verizon.

National Grid Response: *Vegetation Management.* As discussed in the Company's Initial Response to the Report, the Company conducts a "robust and effective" vegetation management program for blue sky days that is designed to protect the electric distribution system during normal weather conditions. The Company, however, agrees to review its current vegetation management program for potential enhancements, which would be reviewed by the Division and PowerServices annually as part of the Company's electric Infrastructure, Safety, and Reliability Plan.

The Company has previously looked into legislation related to vegetation management, and will continue to do so; however, there was insufficient time in this year's legislative session to effectively propose a bill intended to enhance the Company's vegetation management program. The Company expects that any proposed enhancements, through legislation or otherwise, will be controversial, including higher costs, potentially negative customer reactions, and potentially negative reactions among environmental advocates.

Timeline: See above.

³ See Article II, Section C.16.a. of the Amended Settlement Agreement (Docket Nos. 4770/4780).

Division Recommendation No. 7:

National Grid should provide evidence of *Life Support Contacts (LSC)* contact requirements. The Company should improve the consistency and content of its social media outreach to offset customer complaints and situations where customers share incorrect information. National Grid would have been well served by preparing pre-drafted template messages to address the common issues that customers question, allowing for quick and accurate responses.

Timeline: National Grid response dated March 26, 2018.

National Grid Response: *Life Support Customers.* As noted in the Company's Initial Response, the Company contacted life support customers to inform them of the extent of the service interruption and estimated service restoration time. The Company also assigned Community Liaisons to each municipality to expedite the flow of information, which was praised by several municipal authorities.

Social Media Outreach. With respect to social media outreach, the Company recognizes that communicating with customers "necessitates the use of all available media, including popular media and/or technology." The Company already uses pre-drafted template messages to address common issues that customers question quickly and accurately. The Company, however, has taken steps to improve the consistency and content of its social media outreach to offset customer complaints and situations where customers share incorrect information. For example, the Company successfully utilized improvements in its messaging during the March 2018 storm events.

Timeline: Not applicable.

Division Recommendation No. 8:

The Company must accelerate and expand its storm report to encompass a much broader set of factual information and how its report reflects on the actual facts and timelines, including detailed information on the timing of mutual aid additions and the allocation methodology between National Grid's jurisdictions. The report should also be coordinated with the dissemination of other information shared with the Division and other outside parties in order to eliminate obvious discrepancies. The current requirement to deliver a report within ninety (90) days is well beyond the time that comparable utilities filed storm reports with their respective Commissions. (Table 10). PowerServices recommends that the filing requirement for National Grid Rhode Island be reduced to forty-five (45) days. Timeline: 30 days – The consultant and DPUC will provide a template storm report titled: "Recommended Storm Report Enhancements" to improve detail and methodology. Additionally, the Company's current storm report outline, provided in Appendix E, includes recommendations for enhanced components and data that should be included in each filed report. The Division and Company should collaborate to improve the storm report in a way that meaningful information is provided to all interest groups.

National Grid Response: *Storm Summary Report.* The Company agrees to review its storm summary report format in light of the proposed enhancements recommended by PowerServices and present a new format to the Division for its review. Once the Company and the Division agree on the revised report format, the Company will use that format for subsequent major storm events.

With respect to the timeframe in which to file the storm summary report, the Company does not agree to accelerate the current 90-day time frame in which to file its storm summary reports. As set forth in the settlement between the Company and the Division that was approved by the PUC on April 27, 2018, the 90-day time frame remained unchanged. In addition, National Grid's internal staff responsible for storm reporting provide a significant amount of information to multiple jurisdictions at the same time. As a result, at times, there is a challenge to provide information for these reports when there are multiple storms that impact both Rhode Island and Massachusetts, so additional time to prepare and file the reports will be required in those instances. For example, where the Company responds to multiple storms in a short timeframe, such as the multiple storms in early-March 2018, the Company will need extra time to provide all of the required information for the reports.

Timeline: By November 16, 2018, the Company will provide a draft of its revised storm summary report format for the Division's review.

Division Recommendation No. 9:

The Company needs to implement a data collection and processing method which is much more efficient and timely. The excessive delays in responding to the Division's data requests is inexcusable, particularly when placed in the context that a regional utility is able to collect data and delivers a comprehensive storm report within two weeks of storm restoration. PowerServices recommends that going forward, the Company should respond to the Division's data requests within ten (10) business days since most of the information is available, unless otherwise agreed by the Division.

Timeline: 30 days.

National Grid Response: *Data Collection and Processing.* The Company understands the Division's interest in receiving data related to a storm event as quickly as possible; however, it is important that the data is accurate to avoid communicating misinformation to customers and other stakeholders, which creates frustration and dissatisfaction. The Company recommends that any data that the Division requests go through the Company's validation process to remove incorrect data before it is provided to the Division or PowerServices. It is important to note that the information the Company would have available to provide to the Division shortly after a storm occurrence will be unvalidated and, therefore, not accurate. To accommodate the Division's strong interest in obtaining data regarding a storm event as soon as the data becomes available, however, the Company agrees to provide the unvalidated data to the Division, *with the Division's*

express understanding that such data will be unvalidated and not be accurate and the Company will provide the Division with the validated data as soon as it is available.

With respect to the time in which the Company must file responses to Division data requests in a storm review or investigation, the Company agrees to comply with the Division's Rules of Practice and Procedure (815-RICR-00-00-1), particularly Rule 1.21.C.2.

Timeline: Not applicable.

Division Recommendation No. 10:

The Company should quickly implement multiple staging areas in any storm with widespread outages impacting a large area. The ancillary staging areas should be opened much earlier in the process to assure better restoration coordination with local teams. The branch location methods used in Massachusetts should be implemented in Rhode Island.

Timeline: 30 days.

National Grid Response: *Staging Sites.* No action is required because the Company already does this. There is no need to implement the branch location methods used in Massachusetts. The Company's storm room at its Melrose Street office in Providence, which was renovated completely in 2016, is capable of handling storm response activity coordination for the State of Rhode Island and successfully did so during the March 2018 Nor'easters.

Timeline: Not applicable.

Division Recommendation No. 11:

The Division should institute a separate evaluation of the Mutual Aid process and NAMAG to determine if Rhode Island is consistently being provided resources in an appropriate priority scheme and at proportional levels to requests from other regional utilities. Additionally, it should be determined if National Grid in Rhode Island has created the appropriate contractor priority system within its ongoing construction and maintenance contracts with both its tree clearing contract crews and construction contract crews. The Company should require any crews which are embedded at a utility are subject to be held by that utility until released to other utilities. This assures those crews are immediately available for the Company as its own crews.

Timeline: 60 days – Garner a follow-up from LDC on Mutual Aid process – look to maximize response and commitment from ancillary (external) crews.

National Grid Response: *Mutual Assistance and Contractor Acquisition.* The Company agrees to provide a review of the mutual assistance and contractor acquisition process to the Division.

Timing: By December 31, 2018, the Company will meet with the Division to present and discuss the results of the Company's review of the mutual assistance and contractor acquisition process.

III. **INACCURACIES IN POWERSERVICES REPORT**

The following provides some of the more egregious of the numerous inaccuracies contained throughout the PowerServices Report and the Company's disagreement with many of the Report's findings. Many of the Report's findings seem to be primarily unsupported, opinion-based comments, which should not be given any evidentiary consideration in this proceeding.

A. **Pre-Storm**

1. **Weather Predictions**

PowerServices Report: "The forecast from DTN on Sunday, October 29, 2017 at 2:40 p.m. continued to reflect previous information, but that some gusts may increase by 5 mph and reach 70 mph *on the coast.*" [p. 9 of 85, citing Attachment R-I-4-2].

Facts: "Based on what we see at this time, we may increase a few gusts by 5 mph or so, but that should be about it. That being said, the strongest winds of all will occur *off the coast and out into the ocean, where gusts could reach or exceed 70 mph.*" Attachment R-I-4-2.

2. **Storm Classification and Pre-Planning**

PowerServices Report: "In reviewing this chart, *we note a very granular distinction between a Type 5, Type 4, and Type 3 event*, or expected outages of less than 45,000 customers. . . . Essentially, the maximum customer interruptions *from Type 3 through Type 1* events triple in each step." [p. 17 of 85]

Facts: There could be deemed a "granular distinction" between a Type 5 and Type 4 event. There is a 15% jump in customer interruptions from a Type 5 event (approx. 9,839 customers) to a Type 4 event (approx. 14,759 customers); however, the maximum customer interruptions *from Type 4 through Type 1* events triple in each step. For example, the number of customer interruptions for a Type 4 event (approx. 14,759 customers) triples for a Type 3 event (approx. 44,276 customers). Customer interruptions then triple again for a Type 2 event (approx. 147,587 customers), and triple again for a Type 1 event (approx. 491,958 customers).

B. Storm Onset

1. Storm Impacts

PowerServices Report: “The *first outages in Rhode Island were recorded between 1:00-2:00 a.m. on October 29, 2017*, which were feeder-specific and cleared by 4:00 a.m. . . . Several smaller outages, impacting less than 300 customers at any given time, began occurring by 8:00 a.m. . . .” [p. 20, citing Attachment R-I-10].

Facts: The Storm began around 8:00 p.m. on October 29, 2017. Thus, *the Storm had not yet hit as of 1:00-2:00 a.m. on October 29*, so the cited outages were unrelated to the impact of the Storm.

PowerServices Report: “Utilities across the Northeast generally report that planning adjustments and storm classification revisions were initiated at the Storm’s onset, or October 30, 2017, once the unexpected severity was presented.” [p. 22 of 85]

Compare with

PowerServices Report: “The Company monitored the impacts of the Storm, *but it was not until Monday, October 30, 2017 at approximately 1:00 a.m.* that the State Incident Commander elevated the response to a National Grid Type 3 event.” [p. 24 of 85]

Facts: These two statements are inconsistent. The latter statement is written to indicate that the Company did not act quickly enough (1:00 a.m. on October 30), while other utilities across the Northeast made planning adjustments and storm classification revisions initiated “at the Storm’s onset, or October 30, 2017”.

2. Storm Classification Adjustments

PowerServices Report: “. . . their decision to change to a Type 3 response is inconsistent with the parameters of the ERP. Based on customer interruption thresholds, the Storm should have been classified as a Type 2 event, and in actuality it nearly reached the lower threshold of a Type 1 event.” [p. 25 of 85]

and

PowerServices Report: Table 2: Forecasted to Actual Incident Outages Summary, shows only range of customer interruptions; does not show expected restoration period. [p. 25 of 85]

Facts: “A Type 3 event is classified as one where restoration activities are generally accomplished within a 72 hour period *and* typically results in up to 9% of customers interrupted.” Response to R-I-1 at p. 5. A Type 2 event is classified as one where restoration activities are generally accomplished with assistance from other states within

a one week period *and* typically results in up to 30% of customers interrupted. *See* Attachment R-I-2 (Emergency Response Plan) at p. 39 of 688.

Both elements of (1) 30% customers interrupted *and* (2) restoration generally accomplished in one week need to be expected or met to reach a Type 2 event. The report focuses only on the number of customers, and not the expected period of restoration. Here, the Company restored power to 90% of its peak customers impacted in 2.5 days (60 hours, *see* the Company’s Storm Summary Report dated February 1, 2018 (“Storm Report”) at 1), which is within the parameters of a Type 3 event (restoration generally accomplished within 72 hours).

Also, the Report acknowledges: *“PowerServices acknowledges that storm classifications have an element of judgment, and these thresholds are not exact indicators. We also acknowledge that the Company’s ERP takes into account many factors, including the complexity of the storm.”* [p. 27 of 85]

PowerServices Report: “[A] Type 3 event has an expected restoration time of less than 72 hours, or three days. A Type 2 event has an expected restoration of less than seven days. *It is conceivable that National Grid had a high level of confidence in meeting a three-day restoration target when revising to a Type 3 event instead of a Type 2 event, but the outage data made available as the Storm progressed supported a more difficult and complex restoration effort.*” [p. 26 of 85]

Facts: *See above – data indicates the Company restored power to 90% of its peak customers impacted in 60 hours, which is within the parameters of a Type 3 event.*

PowerServices Report: “Complete restoration was not achieved in three days; in fact, it required five days.” [p. 26 of 85]

Facts: Correct; but a Type 3 event is “restoration *generally* accomplished” within 72 hours, *not* “complete restoration achieved” within 72 hours. With 90% of customers restored in 60 hours, it is reasonable to anticipate restoration would be generally accomplished within 72 hours.

C. **Post Storm**

1. **Mutual Aid**

PowerServices Report: “In preparation for the Storm, the Company had planned to pre-stage 58.5 crews and 267 FTE *by 5:00 p.m. October 30, 2017.*” [p. 28 of 85, citing R-I-20]

Facts: The referenced information is planning *for October 30, 2017 at 07:00 (not 17:00, or 5:00 p.m.). See* Attachment R-I-20.

and

Facts: In preparation for the Storm, the Company had pre-staged 59.5 internal OH crews (including doubled up troubleshooters), 29 forestry crews, and 290 FTEs (69 of which were Wires Down FTEs in the field). *See* Attachment R-I-20.

PowerServices Report: Table 3: Comparison of Planned vs. Actual Field Crews (October 30th) includes wrong “Planned” time (10/30/17 @ **17:00**) and wrong “Planned” crew counts (omits several categories). [p. 28 of 85]

Facts: “Planned” time should be October 30, 2017 at **07:00**, not 17:00. Crew counts do not take into account several categories. *See* Attachment R-I-20. This could have been explained to PowerServices easily with a call before preparing their Report, and the Company offered a call on several occasions, but PowerServices never requested a call to go over any of the materials or ask any questions.

PowerServices Report: “In addition to attempts to secure external contractors, National Grid notified NAMAG with a request for resources *at approximately 4:30 a.m.* on October 30, 2017.” [p. 29 of 85]

Facts: “[B]y **4:00 a.m.** [on Monday, October 30], he [the State Incident Commander] initiated a mutual assistance request . . .” *See* the Company’s Storm Report at 7.

PowerServices Report: “National Grid’s request for mutual assistance *at 4:30 a.m.* on Monday appears to have resulted in the first crews arriving on Wednesday, November 1, 2017.” [p. 30 of 85]

Facts: National Grid’s request for mutual assistance was made *by 4:00 a.m.* on Monday, October 30. *See* the Company’s Storm Report at 7.

PowerServices Report: “Although the level of overhead and tree crews reached adequate numbers, *it was unrealistic for the Company to complete restoration within 72 hours, in accordance with a Type 3 event*, when crews were arriving 48 hours after the event.” [p. 30 of 85]

Facts: As noted above, with **90% of customers restored in 60 hours**, it is reasonable to anticipate restoration generally accomplished within 72 hours.

PowerServices Report: “Eversource released a comprehensive storm report and supporting information on November 16, 2017, only 2 weeks after the storm.” [p. 31 of 85]

Facts: The Company does not have access to Eversource’s information. PowerServices’ Report does not give any context as to whether Eversource’s information is comprised of actual numbers or just estimates. The Company informed the Division and PowerServices at the outset of the investigation that it would provide actual information as soon as it became available.

PowerServices Report: “*Eversource’s* preparedness briefings provide a timeline of mutual aid assistance *starting with the first efforts to actively secure additional resources on Monday, October 30, 2017.*” [p. 31 of 85]

Facts: National Grid first secured additional resources *by 1:00 a.m. on Monday, October 30, 2017.*

PowerServices Report: “Our overarching conclusion is that National Grid secured adequate external resources, and, once on site, their efforts assisted in restoration of customer outages. However, *there were significant delays in acquiring resources*, and by the time external crews were mobilized the Company had restored power to a majority of customers. This does not imply that external crews were not necessary; but it is our observation that had the external crews been available earlier, the Company could have accelerated restoration, particularly for the multiple individual outages that lingered for days. In our estimate, the Company could have achieved a complete restoration at least 1 to 1.5 days earlier.” [p. 32 of 85]

and

PowerServices Report: “Lastly, we ask that the Company provide details on its agreement with NAMAG, including any explanation as to why mutual aid resources were *delayed as compared to Eversource Connecticut*, another NAMAG member.” [p. 32 of 85]

and

PowerServices Report: “National Grid, unfortunately, failed to recognize the expanded impact of the storm in a reasonably timely manner and, therefore, neither classified the storm event properly nor took action in a manner that would allow it to have adequate resources in place at the time they were most needed. This resulted in an extended restoration duration of as much as 36 hours. . . . Our report documents how we reached the conclusion that the Company’s full restoration was 36 hours beyond what it should have been.” [pp. 61-62 of 85]

Facts: National Grid first secured additional resources by 1:00 a.m. on Monday, October 30, 2017. By 4:00 a.m., National Grid initiated a mutual assistance request for even more resources. The PowerServices Report compares this to Eversource starting its “first efforts to actively secure additional resources on Monday, October 30, 2017.” PowerServices Report at 31 of 85. Using Eversource’s first request for additional resources as a baseline, as PowerServices does, both National Grid and Eversource made their first request to secure additional resources on Monday, October 30. PowerServices does not provide the time Eversource made its first effort on October 30; however, National Grid made its first effort to secure additional resources at 1:00 a.m., and again at 4:00 a.m. with a mutual assistance request. A request for additional resources *at 1:00 a.m. on the same day Eversource made its first request for additional resources*, and then again at 4:00 a.m. the same morning, does not constitute a “significant delay”.

There is no sound basis on which to conclude that the Company's full restoration was 36 hours beyond what it should have been as the PowerServices Report states.

Specifically, the Company's Storm Report states as follows: "Early in the planning process, the Company prepared for a National Grid Type 4 event in Rhode Island based on the forecasts. The Company's plan remained consistent throughout the pre-event calls on both Saturday, October 28, 2017 and Sunday, October 29. At that time, the Company had 30.5 overhead line crews, 11 forestry crews, and 9 underground and substation resources at its disposal, with additional resources scheduled later that evening.

"At approximately 1:00 a.m., on Monday, October 30, the State Incident Commander elevated the response to a National Grid Type 3 event as he monitored the impacts of the Storm, and requested that additional staff be activated and ordered additional external contractor resources. Specifically, at 1:00 a.m., the State Incident Commander 200 external contractor line crews and, by 4:00 a.m., he initiated a mutual assistance request for a total of 500 line crews and 210 forestry crews for all of National Grid's New England response to the Storm. Of this request, National Grid allocated 175 line crews and 75 forestry crews for the Rhode Island response." National Grid Storm Report at 7.

The foregoing demonstrates that there were no delays in the Company attempting to acquire additional resources. If there were delays in resources arriving in Rhode Island – and there is no evidence of any such delays – then such delays were not the result of National Grid's effort to acquire the additional resources. Also, the comparison is made to a Connecticut utility, which is between 1-3 hours south and/or west of Providence, depending on the location in Connecticut, and closer to any southern external resources.

2. Restoration

PowerServices Report: "Based on outage data, *restoration started by 6:00 p.m. October 30*, 2017 and reached residual, single digits by 6:00 p.m. November 4, 2017, requiring five (5) days for complete restoration." [p. 35 of 85]

Facts: Outage data shows that outages decreased by the hour from 10:00 a.m. on (with one exception of no decrease), after peak outages on October 30 at 9:20 a.m. *See* Attachment R-I-10; *see also* R-I-1. Thus, outage data indicates that restoration started well before October 30 at 6:00 p.m. In fact, the Company dispatched crews to respond to outages out of the Providence Storm Room beginning on Sunday, October 29, 2017 at approximately 6:00 p.m. through the end of the event. *See* Company's Storm Report at 7. Additionally, the Company followed the system of prioritization for restoration found in its Emergency Response Plan, focusing first on public safety and then on the overall goal of maximizing customer restoration when lines became energized. *See* R-I-1.

PowerServices Report: “The Company did not provide a complete time of restoration . . .” [p. 35 of 85]

Facts: “The Company restored power to all customers by November 3, 2017 at 10:38 p.m.” See the Company’s Storm Report at 1, 4.

D. Field Evaluation

PowerServices Report: “The specific areas and circuits examined are not provided in this report, since *the Company failed to release the maps used during the field visit with no explanation as to why they would not provide this information.*” [p. 38 of 85]

Facts: The Company provided maps in response to ***R-I-15*** (indicating the location of all impacted transmission lines, sub-transmission lines, substations, and distribution circuits, as requested); ***R-I-16*** (showing path of normal transmission line paths into RI, as requested); and ***R-I-29*** (sectionalizing map for each circuit impacted, as requested). In addition, ***on January 25, 2018, the Company overnighted to PowerServices*** via overnight courier “***actual copies of maps used for the field visit*** which identifies each area that PowerServices, Inc.[’s] engineers evaluated” during the week of December 11, 2017, as requested. ***On February 2, 2018, the Company overnighted to Power Services*** via overnight courier flash drives containing the electronic versions of “***actual copies of maps used for the field visit*** which identifies each area that PowerServices, Inc.[’s] engineers evaluated” during the week of December 11, 2017, as requested. The February 2 submission included three additional maps. As the Company stated in its February 2 submission, ***National Grid provided to PowerServices all maps used during the field visits.***

E. Communications and AMI

1. ERP & Communication Practices

PowerServices Report: “The ERP provides a framework for communication, but does not have specific requirements for a particular type or level of emergency.” [p. 44 of 85]

Facts: Sections 17 and 18 of the ERP reference communications for particular types of emergencies (i.e., Type 1, 2, or 3).

PowerServices Report: “There is *no indication in the responses from the Company that the Customer Contact Center made daily attempts to inform Life Support Customers* of the extent of the interruption and estimated restoration, and “it appears this occurred only once prior to the event.” [pp. 46 of 85]

Facts: “***The Company continued to conduct proactive calls to its life support customers until all power was restored.***” See the Company’s Storm Report at 10. Additionally, PowerServices did not issue any data requests seeking information

regarding the Company's attempts to inform life support customers during the Storm or otherwise request such information.

PowerServices Report: "Our review indicates that most of the communication channels were used during the event, with the exception of YouTube. There is no indication in the Company's responses that broadcast messaging or Interactive Voice Response ("IVR") announcements were used to communicate information as the ERP states." [p. 47 of 85]

Facts: PowerServices did not issue any specific data requests or otherwise seek information regarding the Company's communications efforts.

2. Estimated Time of Restoration (ETR)

PowerServices Report: "In the early part of this Storm event, National Grid reported the OMS generated ETRs based on the incident classification, or Type 4. *This indicates* that before the OMS uses actual data in an algorithm to determine ETRs, the system assigns a default ETR based on the Company's pre-storm assumptions." [p. 50 of 85]

Facts: "In the early part of the storm event, OMS [Outage Management System] generated ETRs based on a Type 4 event, which was the level of restoration event originally forecasted for this storm." See R-I-38. "*During this initial period following the storm, the Company collected damage information* through surveys, customer complaints, first responder information, municipality information, and crew reports. After the Company collected the damage information and moved from assessment/safety calls to restoration, the general Estimated Restoration Times (ETRs) were provided for all outages." See R-I-37.

PowerServices Report: "We are not able to validate the revised ETRs posted by the Company since outages exceeded predictions, since the Company was unable to produce historical outage maps." [p. 51 of 85]

Facts: The Company provided *all* maps requested in response to **R-I-15** (indicating the location of all impacted transmission lines, sub-transmission lines, substations, and distribution circuits, as requested); **R-I-16** (showing path of normal transmission line paths into RI, as requested); and **R-I-29** (sectionalizing map for each circuit impacted, as requested); as well as in response to the informal request for actual copies of maps used for the field visit which identifies each area that PowerServices, Inc.[']s engineers evaluated. No other outage maps were requested. Thus, it is not clear what maps the Company was "unable to produce."

F. Background

In addition to the PowerServices Report's inaccuracies regarding the merits of the Storm and the Company's response to the Storm, the Report includes the following inaccuracies regarding the Company's cooperation with PowerServices during its review.

PowerServices Report: “The Division arranged a conference call with National Grid on November 30, 2017, *during which a date for PowerServices’ field visit was set as December 11-13, 2017.*” [p. 2 of 85]

Facts: Incorrect. During November 30 meeting among the Company, the Division, and PowerServices, the Company informed the Division and PowerServices that some of the requested information would need additional time and would not be ready by December 12, so therefore it would not make sense to have the field visit on or about December 12. *The Company suggested maybe the parties have the field visits the week after December 12, and the Division responded that sounded “reasonable to the Division.”* A field visit the week of December 12 was never set, and the Company never heard from the Division or PowerServices again about field visits until December 11 when PowerServices was already en route to Rhode Island. Thus, the Company had a complete lack of notice that PowerServices would be conducting a field visit on December 12, yet was still able to accommodate PowerServices on the field visit.

PowerServices Report: “Excluded from the responses were system maps and outage data specifically requested by PowerServices in advance of the field visit.” [p. 3 of 85]

Facts: Correct; *as communicated and agreed* during the November 30, 2017 conference call.

PowerServices Report: On December 11, 2017, the Division contacted National Grid to confirm PowerServices’ kick-off meeting scheduled for December 12, 2017 at the Company’s Melrose office . . .” [pp. 3-4 of 85]

Facts: Correct that the Division contacted National Grid on December 11, 2017; incorrect that PowerServices’ kick-off meeting was scheduled for December 12, 2017. Field visits were never set and never confirmed. Nonetheless, the Company accommodated the Division and PowerServices.

PowerServices Report: “At that time [the morning of December 12, 2017], National Grid had not released service area maps or any outage information to PowerServices that identified which circuits were impacted or visited during the field assessment. This complicated PowerServices’ documentation efforts and added time to the process.” [p. 4 of 85]

Facts: Correct; the Company told the Division and PowerServices on several occasions (including in writing on December 4, 2017) that it would not have such information by the week of December 12, 2017. The Division was in agreement with this.

PowerServices Report: “PowerServices was inadvertently left off of the Service List, and did not receive the responses until January 10, 2017 [sic].” [p. 4 of 85]

Facts: PowerServices was not listed on the Division’s formal service list used for filings, which is what the Company uses when it submits formal filings to the Division. At any

time prior to January 10, 2018, PowerServices could have obtained the Company's responses from the Division.

PowerServices Report: "On January 24-30, 2017 [sic], PowerServices reviewed the data request responses." [p. 4 of 85]

Facts: The Company began providing responses as early as December 8 and provided responses on a rolling basis, as agreed with the Division. The Company had no control over when PowerServices actually reviewed the materials provided.

PowerServices Report: "... PowerServices' repeated requests for actual copies of maps used for the December 12, 2017 field visit, which identified each area our engineers evaluated. The maps, however, did not include any references to circuits impacted by the Storm, nor did the Company indicate the areas assessed during the field evaluation." [pp. 4-5 of 85]

Facts: First, the Company told the Division and PowerServices during the November 30 call that the maps contained *estimated* information and *would not be ready for a field visit by December 12*. Second, the maps during the field visits were informally requested (and provided), even though they were not part of the data requests in the docket. Third, the informal request for the maps did not request any reference to circuits impacted by the Storm. Instead, PowerServices requested "actual copies of maps used for the field visit which identifies each area that PowerServices, Inc.[']s engineers evaluated" during the week of December 11, 2017. The Company produced all such maps in its possession, custody, and control. Fourth, the system maps produced in response to the data requests included references to all circuits impacted by the storm (i.e., R-I-15). Thus, PowerServices had all of the information it requested.

PowerServices Report: "On January 31, 2017, the Company was notified of the *deficiencies* . . ." [p. 5 of 85]

Facts: On January 31, 2017, the Division sent a list of six follow up informal requests from PowerServices; there was no mention whatsoever of "deficiencies".

PowerServices Report: "On February 1, 2017, the Company provided one data request response in executable format and stated that for the production of subsequent responses it would be overly burdensome for National Grid to recreate the materials in the requested format." [p. 5 of 85]

Facts: After production of the materials in response to the data requests, PowerServices subsequently asked that two responses be provided in executable format (one with subparts of the same type of information). On February 1, the Company provided *one of the two* responses in executable format. For the other response, the Company reported that it *does not have the requested information in executable format* and it would be overly burdensome for National Grid to recreate the materials in that format. In lieu of an Excel version, *the Company provided a searchable PDF* of the requested materials.

PowerServices Report: On February 5, 2017, PowerServices received and reviewed additional maps provided by the Company, and again concluded that National Grid was deficient in providing the requested information.” [p. 5 of 85]

Facts: Neither PowerServices nor the Division informed the Company that any information was “deficient.” In any event, *the Company produced all requested maps in its possession, custody, and control.*

PowerServices Report: “All maps received failed to indicate outage information or the specific areas observed during the field visit as guided by the Company’s representatives.” [p. 5 of 58]

Facts: PowerServices’ informal request *never asked* for the Company to indicate outage information. The Company provided the maps requested by PowerServices: “actual copies of maps used for the field visit which identifies each area that PowerServices, Inc.[’s] engineers evaluated.” Additionally, in response to R-I-15, the Company provided system maps indicating the location of all impacted transmission lines, sub-transmission lines, substations, and distribution circuits, as requested.

PowerServices Report: “. . . nor did they make an attempt to include key information that would aid in cross-referencing the field visit notes to impacted circuits.” [p. 5 of 85]

Facts: As discussed earlier, this *was not requested.*

PowerServices Report: “The Company specifically withheld key information, submitting data as late as February 1, 2018.” [p. 6 of 85]

Facts: First, characterization of “specifically withheld key information” is simply not accurate and is wholly inappropriate. Second, data submitted by the Company on February 1 was *informally requested*, and not part of the data requests in the docket. In other words, the Company produced this information as a courtesy, and the information was, in fact, produced.

PowerServices Report: “At a minimum, outage information and maps that correlated to PowerServices’ field evaluation on December 12, 2017 could have been provided at the time of the field visit.” [p. 7 of 85]

Facts: Incorrect; *on November 30, the Company told PowerServices and the Division it would not have actual information by December 12.* Also, the Company had only eleventh-hour notice that PowerServices would actually conduct field visits on December 12, yet quickly pulled together productive plans for the field visits to accommodate PowerServices.

PowerServices Report: “National Grid’s severe delays in producing data can only be interpreted as an effort to create barriers to the investigation. We believe the Company

was delaying and impeding the process to enable the Company to complete its own report prior to the completion of the PowerServices report.” [p. 7 of 85]

Facts: There is no basis for this inaccurate and inappropriate opinion.

PowerServices Report: “The Company’s report on its planning and restoration activities filed on February 1, 2018 barely meets the minimum requirements of what we would consider an adequate storm summary.” [p.7 of 85]

Facts: The 90-day storm report is the Company’s PUC-ordered filing, which it also files with the Division at the same time, and was prepared using the same format that the Company has used for its 90-day storm reports for numerous weather events during the last several years. The Company complied with all of its regulatory requirements with respect to the 90-day storm report for the Storm.

PowerServices Report: This additionally contributes to our overarching concern that the Company was extremely slow to provide responses to our data requests when we believe, like most utilities, the information requested was readily available immediately after the storm.” [p. 7 of 85]

Facts: The information readily available immediately after the Storm was *estimated, unvalidated* information, and the Company informed the Division and PowerServices of this. The Company provided the *actual* information as soon as it became available.