

March 21, 2019

**VIA HAND DELIVERY & ELECTRONIC MAIL**

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

**RE: Docket D-11-94 - Review of Preparedness and Restoration Efforts by the State's Electric Utility Companies Related to Tropical Storm Irene December 21, 2018 Storm Summary Report**

Dear Ms. Massaro:

In accordance with Order No. 20814 (November 20, 2012) in Docket D-11-94, I have enclosed four copies of National Grid's<sup>1</sup> summary report on the planning and restoration activities associated with the December 21, 2018 storm event. Order No. 20814 directs National Grid to file a final written report with the Division within 90 days following major storm events. The December 21, 2018 storm event will likely qualify for inclusion in the Company's Storm Contingency Fund. Accordingly, the Company is filing this summary report simultaneously with the Rhode Island Public Utilities Commission in Docket No. 2509.

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: Kevin Lynch, Division  
John Bell, Division  
Greg Booth, Division  
John Spirito, Esq.  
Christy Hetherington, Esq.  
Leo Wold, Esq.

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

National Grid

The Narragansett Electric Company

**Report on  
December 21, 2018 Event,  
Damage Assessment and  
Service Restoration**

March 21, 2019

Docket No. 2509

**Submitted to:**  
Rhode Island Public Utilities Commission

Submitted by:

**nationalgrid**

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**REPORT ON BEHALF OF  
THE NARRAGANSETT ELECTRIC COMPANY d/b/a NATIONAL GRID  
ON THE DECEMBER 21, 2018 STORM DAMAGE ASSESSMENT AND SERVICE  
RESTORATION EFFORTS**

**I. EXECUTIVE SUMMARY**

The Narragansett Electric Company d/b/a National Grid (National Grid or the Company) presents the following report on the planning and restoration activities associated with the December 21, 2018 Wind and Rain Storm (December 2018 Storm or the Storm), which moderately impacted Rhode Island and other states in New England. For pre-planning purposes, the Company classified the December 2018 Storm as a National Grid Type 4 emergency event, meaning that the Company estimated that restoration activities generally would be accomplished within a 24-hour period and the event typically would result in up to three percent of customers interrupted. The December 2018 Storm was projected to bring heavy rain and hazardous winds, which potentially could cause significant damage to the Company's electric infrastructure. Ultimately, the December 2018 Storm brought rain and strong winds across Rhode Island, Massachusetts, and much of New England. Rhode Island received approximately 1 to 1.5 inches of rainfall across the state, slightly more in some areas. Most of the state experienced gusts in the 30 to 40 mph range, with North Kingstown experiencing a peak wind gust of 46 mph. Although the December 2018 Storm brought heavy rain and high winds to the state, the impact of the Storm was less than anticipated in Rhode Island, interrupting power to 14,356 (approximately 7,412 at peak) of the Company's customers. Overall, just under three percent of the Company's customers in Rhode Island experienced outages, with 28 of the 38 communities served in Rhode Island impacted.

The Company began preparing for the December 2018 Storm on Wednesday, December 19, at 8:30 a.m. by conducting an Operational Planning Call, during which the Company reviewed the weather forecast and began planning for the possibility that the Storm would impact the Company's electric distribution system in New England. The Company held its first and only Pre-Event Stage Briefing Call on Thursday, December 20, at 10:00 a.m. As part of its preparation for the Storm, on Friday, December 21, the Company opened a Branch Storm Room in Providence at approximately 6:00 a.m. and mobilized the Providence wires-down room at approximately 7:00 a.m. Later that same day, the Company conducted its first Restoration Stage Briefing Call at 9:00 a.m. and its second and final Restoration Stage Briefing Call that same day at 5:00 p.m. The Company followed its Emergency Response Plan and mobilized employees and contractors for the restoration using a damage forecast based on its experience in previous storms. As part of its preparation efforts, the Company also utilized contractors from outside the Company's service territory to help with restoration. Using its own crews and contractor resources, the Company restored power to 100 percent of its customers impacted in less than a day from the time of the first customer impacted and in approximately seven hours from the time of peak impact. Power was restored to the final customer impacted by the December 2018 Storm on December 21, 2018, at approximately 10:03 p.m.

The Company is grateful for the support of customers, employees, state and local officials, and public safety officials, who experienced the effects of the December 2018 Storm and were an integral part of the Company's restoration efforts.

## **II. INCIDENT ANTICIPATION**

### **A. Determination of Incident Classification**

For its response to the Storm, the Company established a Branch Storm Room in Providence on Friday, December 21, 2018, at approximately 6:00 a.m. As explained in more detail below, on Thursday, December 20, the Company named a New England Incident Commander, who primarily was responsible for establishing the projected and actual incident classification level for the December 2018 Storm. Consistent with a Type 4 event, the Company did not open the Regional Emergency Operation Center in Worcester, Massachusetts.

As set forth in the Company's Emergency Response Plan, factors considered in initially establishing or revising the expected incident classification level included the following:

- Expected number of customers without service;
- Expected duration of the restoration event;
- Recommendations of the State Planning Section Chief, Transmission and Distribution Control Centers, and other key staff;
- Current operational situation (such as number of outages, resources, and supplies);
- Current weather conditions;
- Damage appraisals;
- Forecasted weather conditions;
- Restoration priorities;
- Forecasted resource requirements; and
- Forecasted scheduling and pace of restoration work crews.

On Thursday, December 20, 2018, at approximately 10:00 a.m., the New England Incident Commander classified the event as a Type 4 event. Through the Operations Storm conference calls, the New England Incident Commander communicated the incident classification to Company leadership and organizations that the Company expected to engage in restoration or support activities.

### **B. Activation of Incident Command System**

The Company utilizes the Incident Command System, a component of the National Incident Management System, which is a comprehensive national approach to incident management applicable at all levels of the Company's Emergency Response Organization and addresses the operation of Company Emergency Operation Centers.

In the days leading up to the December 2018 Storm, prior to activation of the Incident Command System, the Company's Operations management personnel were monitoring the weather forecast closely. The Company held its first Operational Planning call on Wednesday, December 19, at 8:30 a.m. to discuss planning efforts for the possibility of a severe wind and rain storm forecasted to bring hazardous conditions to New England. The Company conducted its first and only Pre-Event Stage Briefing Call on Thursday, December 20, at 10:00 a.m., and continued planning for this event. In accordance with the Company's Emergency Response Plan and anticipated Type 4 event, the Company activated the Branch Level Emergency Response Organization in Rhode Island. At that time, the Company planned to open its Branch Storm Room in Providence on Friday, December 21, at 6:00 a.m. to support Rhode Island restoration. The New England Incident Commander activated the Rhode Island Branch Director, who was in charge of Rhode Island restoration and located in the Providence Storm Room, and several other Branch Directors in Massachusetts. Thereafter, the Company activated a number of other positions at the discretion of the Incident Commander and Branch Directors, considering the level of response expected for the December 2018 Storm in their respective areas, including Rhode Island. As mentioned above, the Company did not plan to open the Regional Emergency Operation Center in Worcester, Massachusetts, consistent with the anticipated Type 4 event level for this storm.

### **C. Determination of Crew Needs and Pre-Staging**

Given the potential magnitude of the December 2018 Storm and forecast of hazardous winds and heavy rain, the Company secured crews in advance from its contractors of choice and other outside contractors to support restoration efforts for all of New England as part of its regional preparation for the Storm, consistent with its Emergency Response Plan. As of Thursday, December 20, at approximately 4:00 p.m., the Company had 45.5 internal overhead line crews, 87 external overhead line crews, 32 external forestry crews, 5 internal underground crews, 23 internal substation resources, 2 internal transmission crews, and 36 internal wires down resources. The Company established one staging site to support restoration across the state at the Community College of Rhode Island in Warwick.

## **III. THE STORM AND ITS IMPACT**

### **A. Forecast**

The Company monitors the weather forecast obtained from its weather provider, DTN, through detailed emails received three times daily. Throughout the day, the Company also monitors the forecast from various weather websites.

On Tuesday, December 18, the weather forecasts began to indicate some potentially hazardous weather for Thursday, December 20, into Friday, December 21, consisting of moderate to heavy rainfall and strong wind gusts, mainly along coastal Rhode Island, the south coast of Massachusetts, and Nantucket. On Wednesday, December 19, the confidence increased regarding the forecast of heavy rainfall and possibility of wind gusts. Rainfall of approximately 1.5 to 2.5 inches was forecast across Rhode Island, with somewhat lesser amounts forecast

across the remainder of the Company's service territory, on Thursday evening through Friday night. Peak wind gusts of 40 to 45 mph were forecast along southern coastal Massachusetts and Rhode Island on Friday, with gusts forecast in the 35 to 40 mph range for the remainder of the Company's service territory. There was also a 50 percent chance of isolated thunderstorms across eastern parts of the territory for Friday.

On Thursday, December 20, the forecast for peak wind gusts along coastal Rhode Island and southern coastal Massachusetts increased to 45 to 60 mph. The rainfall and thunderstorm forecast remained the same. On Friday morning, December 21, the forecast remained essentially the same, with an additional threat added later in the day on Saturday for peak wind gusts associated with a cold front in Rhode Island and eastern Massachusetts in the 40 to 45 mph range and up to 50 mph in Nantucket.

The Storm's impact began in the morning hours of Friday, December 21. Throughout the day, the forecast essentially remained the same as the previous day for Rhode Island. As the winds began to decrease later in the day, forecast peak wind gusts were revised to the 45 to 50 mph range for coastal Rhode Island and 40 to 45 mph across the rest of the state.

## **B. Impact**

The December 2018 Storm was a significant weather event that resulted in moderate damage to the Company's electrical system. The Storm brought widespread rain and gusty winds to the Company's service territory. Most of Rhode Island experienced wind gusts in the 30 to 40 mph range, with a peak gust of 46 mph in North Kingstown. Rhode Island also experienced heavy rainfall of approximately 1 to 1.5 inches, with slightly more in Pawtucket and Providence.

The December 2018 Storm impacted a total of approximately 14,356 customers in the Company's Rhode Island service territory. The Storm impacted approximately 7,412 customers at its peak, which occurred on Friday, December 21, 2018, at approximately 3:02 p.m. The Company restored power to all customers that same day by approximately 10:03 p.m. The Company experienced interruptions in 28 of the 38 Rhode Island communities it serves, with a total of 42 distribution feeders affected. The Towns of Glocester and Coventry were affected most heavily with approximately 27 and 24 percent of their customers impacted, respectively, by the event.

Figure 1 below shows the number of customers interrupted and restored, by hour, for the period December 21 to December 22, 2018.

Figure 1

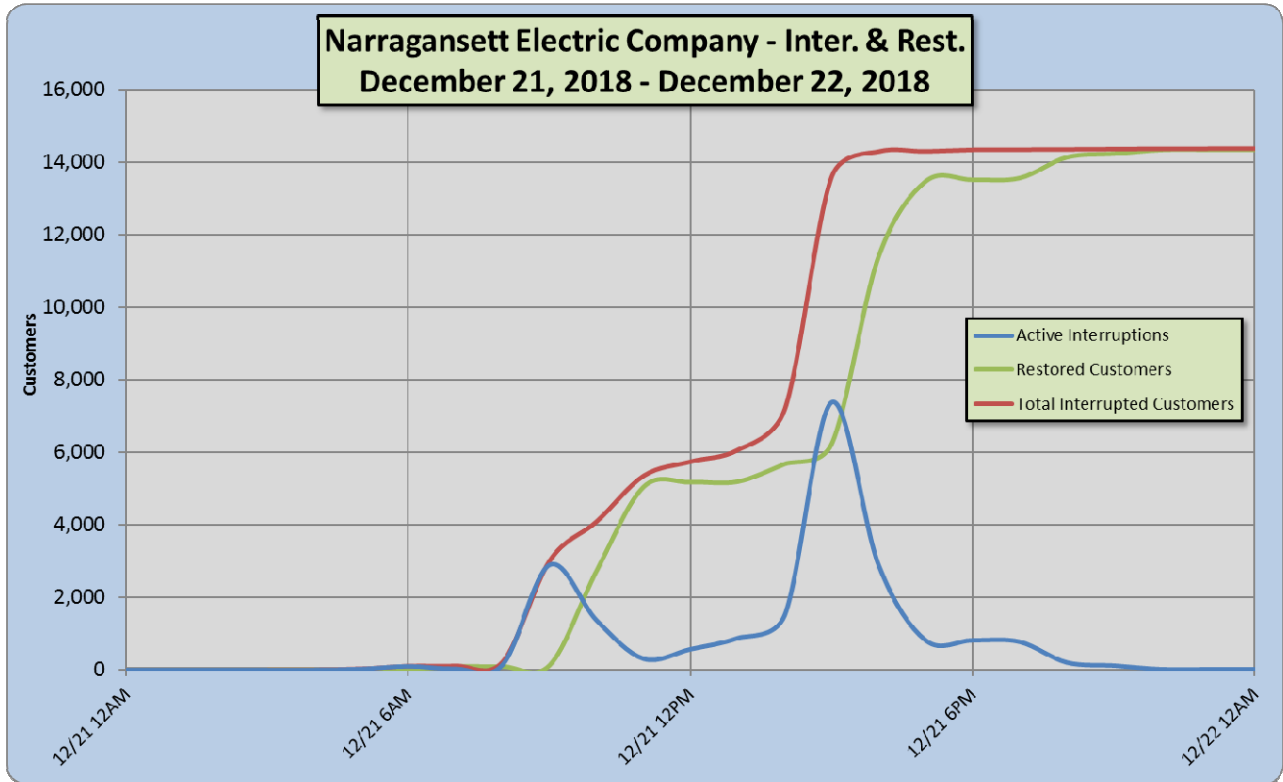


Figure 2 below shows all municipalities that experienced interruptions during the Storm.



**Figure 2**

<b>Town Name</b>	<b>Total Customers Interrupted</b>	<b>Customers Served</b>	<b>Percent of Total</b>
BARRINGTON	312	6,876	4.54%
BURRILLVILLE	14	2,631	0.53%
COVENTRY	3,930	13,843	28.39%
CRANSTON	1,020	31,809	3.21%
CUMBERLAND	355	15,362	2.31%
EAST GREENWICH	697	6,139	11.35%
EAST PROVIDENCE	1	22,241	0.00%
EXETER	27	3,033	0.89%
FOSTER	234	2,032	11.52%
GLOCESTER	1,282	4,632	27.68%
HOPKINTON	101	3,949	2.56%
JAMESTOWN	1	3,335	0.03%
JOHNSTON	338	13,729	2.46%
LINCOLN	39	10,212	0.38%
NARRAGANSETT	1	10,613	0.01%
NORTH KINGSTOWN	14	13,514	0.10%
NORTH SMITHFIELD	2	5,773	0.03%
PAWTUCKET	2,361	33,844	6.98%
PORTSMOUTH	5	9,201	0.05%
PROVIDENCE	41	73,410	0.06%
SCITUATE	292	4,572	6.39%
SMITHFIELD	117	8,934	1.31%
TIVERTON	1	8,239	0.01%
WARREN	12	6,031	0.20%
WARWICK	632	40,532	1.56%
WEST GREENWICH	854	2,733	31.25%
WEST WARWICK	1,149	13,590	8.45%
WOONSOCKET	709	18,987	3.73%

The following sections contain additional details and context regarding the Company's Storm restoration efforts.

## **IV. RESTORATION**

### **A. Timing and Priority of Service**

The Company implemented the system of prioritization for restoration found in its Emergency Response Plan, focusing first on public safety and then on customer restoration that maximized restoration when lines were energized. The Company gave priority and consideration to critical facilities and concentrated efforts to restore service to any life support customers impacted as quickly as conditions warranted, also as set forth in the Emergency Response Plan.

### **B. Restoration Coordination**

The Company dispatched crews to respond to outages from the Branch Storm Room in Providence beginning on Friday, December 21, 2018, at approximately 6:00 a.m. through the end of the Storm. Consistent with the Emergency Response Plan, the Company activated Police and Fire Coordinators for the Storm. These employees reported to the Storm Room Leads and were responsible for communicating the estimated times of arrival on all police and fire calls, with a standby condition noted. The Company also established one staging site to support restoration across the state at the Community College of Rhode Island in Warwick. The Company did not activate Task Force teams for this event because of the limited damage across the Company's service territory.

On Friday, December 21, at approximately 7:00 a.m., the Company also mobilized the Providence wires-down room, with approximately 36 internal resources available plus 7 more on stand-by, including wires-down appraisers, cut and clear restoration resources, and stand-by resources.

### **C. Personnel Resources**

As part of its planning process, the Company prepared for a Type 4 event in Rhode Island based on the forecasts. The Company's plan remained consistent throughout the Pre-Event Stage Briefing Call on Thursday, December 20, 2018, as well as both Restoration Stage Briefing Calls on Friday, December 21.

The Company secured 230.5 internal and external field crews<sup>1</sup> to restore power to customers in Rhode Island, consisting of approximately 119 external crews and 111.5 internal crews. The internal and external field crew numbers included transmission and distribution overhead line, forestry, wires down, substation, and underground personnel.

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<sup>1</sup> Crews typically include two or three people, although there may be some one-person crews in damage assessment, wires down, distribution line (troubleshooters), and substation personnel. Transmission crews typically include 6-10 resources.

## **D. Safe Work Practices**

Safety is always at the forefront of Company operations, including and especially during activities associated with storm restoration. For each storm event, both the System and Regional Incident Command System structure designate a lead position for a Safety, Health, and Environment Officer. Safety messages are delivered on all calls to heighten awareness during preparation and restoration.

As with any storm, for the December 2018 Storm, National Grid assembled a safety team with area responsibilities, established the reporting hierarchy, and prepared and communicated organization charts. The safety team prepared safety notices and delivered them to all Company employees through corporate communications. Safety personnel were deployed to assist in specific geographic areas and delivered on-site safety orientations to National Grid workers and contractors prior to the start of the day. In addition, prior to the start of each new job, the work was reviewed by assigned crews, with a focus on safe working conditions for the specific job. These safety efforts helped the Company experience no injuries during the December 2018 Storm.

## **V. COMMUNICATIONS DURING AND AFTER THE EVENT**

### **A. Communication Regarding Estimated Times of Restoration**

The Company posted Estimated Times of Restoration (ETRs) on its website during the December 2018 Storm using Outage Central, which provided real time ETR updates approximately every 15 minutes.

As crews were assigned and reported ETR updates based on their actual findings in the field, the Company uploaded the updated ETRs into Outage Central. The Company continued to update ETRs throughout the restoration process as information became available to the Company.

### **B. Intra-Company**

The Company began preparing for the December 2018 Storm on Wednesday, December 19, 2018, at 8:30 a.m. by conducting an Operational Planning Call, during which the Company reviewed the weather forecast and began planning for the possibility that the Storm would impact the Company's electric distribution system in New England. The Company held its first and only Pre-Event Stage Briefing Call on Thursday, December 20, at 10:00 a.m. The Company held its first Restoration Stage Briefing Call on Friday, December 21 at 9:00 a.m., and its second and final Restoration Stage Briefing Call that same day at 5:00 p.m. Additionally, the Company issued communications to field crews with both restoration and safety information throughout the Storm.

## **C. Public Officials**

### 1. Governor's Office

The Company's Jurisdictional President communicated with the Governor's office as needed during the December 2018 Storm.

### 2. Rhode Island Public Utilities Commission (PUC), Division of Public Utilities and Carriers (Division), and Rhode Island Emergency Management Agency (RIEMA)

The Company's Manager of Regulatory Affairs first reached out to the Division and the Office of Energy Resources on Thursday, December 20, 2018, regarding the Company's preparation for the December 2018 Storm and provided an update on Friday morning, December 21. The final update was provided early in the evening on Friday, indicating that the Company was continuing to restore the remaining customers without power and would consider transitioning the Providence Storm Room back to normal operations later in the evening after the remaining wind had died down. The Company's Jurisdictional President communicated with RIEMA as needed during the December 2018 Storm. The Company also utilized its RIEMA Liaisons to post outage number updates virtually on RIEMA's WebEOC throughout the day on Friday, December 21.

### 3. Municipalities

Due to the limited impact from this event, the Company did not open a Municipal Room. The Company did activate its Area Community Liaison Coordinators to work with each Rhode Island city or town's emergency, Department of Public Works, and/or public officials as a dedicated liaison. The Company's Area Community Liaison Coordinators served as full-time resources supporting impacted communities and enabled direct communications back into the Company's public information coordinators and Branch operations personnel.

## **D. Customers**

The Company communicated with customers during the December 2018 Storm through its Customer Contact Center, website, and social media. The Company monitored social media channels and posted messages and responded to customer issues. Communications included but was not limited to: information on how customers could stay safe during the Storm; information on what the Company was doing to respond to the Storm; and information on how customers could contact the Company.

On Thursday, December 20, 2018, at 1:00 p.m., the Company made an outbound call to all life-support customers to notify them of the upcoming weather and to recommend taking necessary precautions and preparations to ensure their well-being in the event of an outage. The outbound call also informed life-support customers to contact 911 or their local public safety officials in the event of an emergency. The Company's Customer Contact Center secured additional staffing to respond to incoming life-support calls for those affected by outages, as well

as additional staff to support an expected high call volume. One life-support customer was affected by an outage from the December 2018 Storm.

#### **E. Media**

The Company activated its Public Information Officer (PIO) who participated in the Pre-Event and Restoration Stage Briefing Calls conducted by Company Operations, along with additional PIO support staff for the Storm. The Company engaged both traditional and social media channels to distribute Storm and safety-related information. The Company's Strategic Communications Department received no media requests for information or interviews related to the December 2018 Storm in Rhode Island. There was minimal interest in this storm as feedback and comments from media outlets and social media were received and monitored regularly, and overall sentiment generally was neutral.

### **VI. CONCLUSION**

The December 2018 Storm moderately impacted the Company's electrical system, resulting in power outages to approximately 14,356 of the Company's customers. The damage to the Company's distribution infrastructure was somewhat less than expected because of actual peak wind gusts being lower than forecast. Damage primarily was limited to falling trees and limbs coming into contact with the Company's poles and wires. The Company was fully prepared to respond to the Storm, having secured all necessary resources and outside contractors to aid in the restoration effort required for the forecast predicted and maintained communications with stakeholders through a variety of channels throughout the Storm.

Through use of the Company's own distribution line resources and transmission line crews, contractor distribution line crews, and contractor tree crews, the Company restored power to 100 percent of its customers impacted in less than a day from the time of the first customer impacted and in approximately seven hours from the time of peak impact. The Company restored power to the final customer impacted by the Storm on December 21, 2018, at approximately 10:03 p.m.

The Company understands the impact that electrical outages have on its customers. The Company is proud of the restoration work that it accomplished during the December 2018 Storm and is grateful for the support of customers, employees, state and local officials, and public safety officials, who experienced the effects of the Storm and were an integral part of the Company's restoration efforts.