

June 13, 2017

**VIA HAND DELIVERY & ELECTRONIC MAIL**

Luly E. Massaro, Commission Clerk  
Rhode Island Public Utilities Commission  
89 Jefferson Boulevard  
Warwick, RI 02888

**RE: Docket 2509 – Storm Contingency Fund**  
**March 14, 2017 Storm Summary Report**

Dear Ms. Massaro:

In accordance with Rhode Island Public Utilities Commission (PUC) Order No. 15360 (August 19, 1997) and paragraph 4(a) of the Joint Proposal and Settlement in Lieu of Comments Submitted by The Narragansett Electric Company<sup>1</sup> and the Division of Public Utilities and Carriers (the Settlement) approved by the PUC in Docket No. 2509, I have enclosed 10 copies of National Grid's summary report on the planning and restoration activities associated with the March 14, 2017 Winter Storm Stella (Winter Storm Stella or the storm), which will likely qualify for inclusion in the Company's Storm Contingency Fund. Paragraph 4(b) of the Settlement requires the Company to file with the PUC within 90 days after the storm a report providing a description of the storm along with a summary of the extent of the damage to the Company's system, including the number of outages and length of the outages.

A supplemental report detailing the incremental restoration costs caused by Winter Storm Stella will be submitted to the PUC once the total costs have been accumulated by the Company, and final accounting of storm costs has been completed.

Thank you for your attention to this matter. If you have any questions regarding this filing, please contact me at 401-784-7415.

Very truly yours,



Robert J. Humm

cc: Docket 2509 Service List  
Docket D-11-94 Service List  
Leo Wold, Esq.  
Steve Scialabba, Division

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<sup>1</sup> 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

June 13, 2017  
Date

**Docket No. 2509 – National Grid – Storm Fund  
Service List as of 6/13/17**

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**Docket D-11-94 Review of National Grid's Storm Reports**

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National Grid

The Narragansett Electric Company

**Report on  
March 14, 2017 Event, Damage  
Assessment, and Service  
Restoration**

June 13, 2017

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 MARCH 14, 2017 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 March 14, 2017 winter storm Stella (Winter Storm Stella or the Storm) that was forecasted to impact Rhode Island with strong winter storm conditions. For pre-planning purposes, the Company classified the Storm as a Type 3 emergency event (i.e., up to nine percent of customers impacted for less than a 72-hour period). The Storm was projected to bring hazard winds and wet and dense snow that could potentially cause damage to the Company's electric infrastructure. Despite the ominous forecasts, the impact and power outages ultimately were less than anticipated in Rhode Island, but the impact of the Storm nonetheless caused damage to the Company's electrical infrastructure. The power outages impacted approximately 17,778 (approximately 10,029 at peak) of the Company's customers. Overall, 3.6 percent of the Company's customers in Rhode Island experienced outages.

The Company began preparing for the Storm the afternoon of Saturday, March 11, 2017 by monitoring the forecasts and beginning to secure external line workers. The Company held its first pre-event Operations storm call on March 12 at 10:00 a.m. As part of its preparation for the Storm, the Company opened a storm room in Providence the morning of March 14. The Company followed its Emergency Response Plan (ERP) and mobilized employees and contractors for the restoration using a damage forecast based on its experience in previous storms. Using its own crews and contractor resources, including support from National Grid affiliated companies, the Company restored power to over 90 percent of its Rhode Island customers by approximately 3:00 p.m. on March 14, just seven hours after the Storm began, with the final customer restored by approximately 3:00 a.m. on March 15. Given the actual impact of the Storm in Rhode Island and the effectiveness of the Company's restoration efforts, by late afternoon on March 14 the Company was able to send all of its external third-party crews from Rhode Island to areas in Massachusetts hit much harder by the Storm, thereby reducing costs by avoiding the demobilization costs associated with the external crews.

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

**II. INCIDENT ANTICIPATION**

**A. Determination of Incident Classification**

On Tuesday, March 14, 2017 at 7:00 a.m., the Company established an Emergency Operation Center (EOC) in Providence, Rhode Island. As noted below, the Company named a

New England Regional Incident Commander, who was primarily responsible for establishing the projected and actual incident classification level for Winter Storm Stella.

Factors considered in initially establishing or revising the expected incident classification level included:

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

Through the system and operations storm conference calls, the New England Regional Incident Commander communicated the incident classification to Company leadership and organizations that the Company expected to engage in restoration or support activities. A Branch Director in charge of Rhode Island restoration was located in the Providence EOC.

## **B. Activation of Incident Command System (ICS)**

In the days leading up to Winter Storm Stella, prior to activation of the ICS, operational calls were held among operations management personnel to discuss the planning efforts for the possibility of a severe winter storm forecasted to bring hazardous conditions to New England. As a result of these calls, the Company decided to open a storm room in Providence at approximately 7:00 a.m. on Tuesday, March 14, 2017 to support Rhode Island restoration.

In accordance with the ERP and ICS, and in anticipation of the expected significant impact of the Storm, National Grid activated the New England Regional Incident Commander the morning of March 12. The New England Regional Incident Commander then activated the Rhode Island Branch Director and several other Branch Directors in Massachusetts. Thereafter, all Incident Commanders activated a number of positions at their discretion, considering the level of response likely required for the Storm in their respective areas. Throughout the restoration effort, the Company activated additional ICS positions as operating conditions warranted.

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

Given the potential magnitude of Winter Storm Stella and severity of hazard winds with heavy, wet snow, the Company secured crews in advance from its alliance vendors 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 ERP. The Company had a contingent of internal Rhode Island distribution line crews working overnight on Tuesday, March 14 and into the

morning of Wednesday, March 15. Approximately 45 internal distribution line crews were available for restoration on March 14. Additionally, the Company secured a total of 452 external distribution line crews, 135 of which were pre-deployed to Rhode Island before the Storm commenced. Additionally, 152 wires-down crews and 92 external tree crews were pre-deployed to Rhode Island before the Storm commenced. Finally, 140 internal transmission line resources were available to support transmission interruptions in the Rhode Island area.

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

#### **A. Forecast**

On Saturday, March 11, 2017, the weather forecast called for a strong winter system to move across New England beginning the morning of Tuesday, March 14, continuing into Wednesday, March 15. This system was expected to bring hazard level snow with a wet and heavy consistency, along with strong wind gusts coming off the southern and eastern coasts.

On Monday, March 13, the storm track appeared to shift slightly to the west, but still expected hazard level snow and storm conditions. The forecast of the snow consistency appeared to be wetter in areas closer to the coast, but forecasted winds remained in the 45-50 mph sustained range, with gusts in the 55-60 mph range. Snow totals in the Providence area forecasted to be in the range of 14-16 inches, while coastal Rhode Island anticipated 5-8 inches with stronger winds and a rain mix.

#### **B. Impact**

On the morning of Tuesday, March 14, 2017, the forecast projected warmer temperatures than previously forecasted. This resulted in a forecast of slightly less snow, but stronger sustained winds and wind gusts along the coasts. The expected snow rate remained very high in some areas, with two-to-four inches per hour possible. The snow was expected to taper off in New England from west to east, with the worst snow finishing around 3:00 p.m. In Rhode Island, wind gusts peaked at 55 mph along the coast and slightly less inland. Snow totals reached 9-inches along the coast and 11-inches in northern Rhode Island, such as in Woonsocket.

Winter Storm Stella impacted a total of approximately 17,778 customers in the Company's service territory in Rhode Island, with approximately 10,029 customers impacted at the Storm's peak, which occurred on Tuesday, March 14 at approximately 1:00 p.m. The Company restored power to all customers by approximately 3:00 a.m. on Wednesday, March 15.

The Company experienced interruptions in 30 of the 38 communities it serves in Rhode Island, with interruptions to a total of 35 distribution feeders. The winds experienced in the coastal communities were so strong that a small wind turbine was knocked down at the Salty Brine State Beach in Narragansett. Figure 1 below shows the number of customers interrupted and restored during the duration of the Storm.



**Figure 2**

| <b>Town Name</b> | <b>Customers Interrupted<sup>1</sup></b> | <b>Customers Served</b> | <b>Percent of Total</b> |
|------------------|--|-------------------------|-------------------------|
| WOONSOCKET       | 2,758                                    | 18,954                  | 14.55%                  |
| CUMBERLAND       | 2,603                                    | 15,211                  | 17.11%                  |
| PAWTUCKET        | 2,215                                    | 33,463                  | 6.62%                   |
| BRISTOL          | 2,066                                    | 10,421                  | 19.83%                  |
| LINCOLN          | 1,402                                    | 10,162                  | 13.80%                  |
| NEWPORT          | 1,043                                    | 14,959                  | 6.97%                   |
| WARWICK          | 713                                      | 40,348                  | 1.77%                   |
| SOUTH KINGSTOWN  | 647                                      | 14,699                  | 4.40%                   |
| NORTH PROVIDENCE | 577                                      | 16,104                  | 3.58%                   |
| WARREN           | 374                                      | 5,812                   | 6.43%                   |
| NORTH KINGSTOWN  | 303                                      | 13,378                  | 2.26%                   |
| CHARLESTOWN      | 280                                      | 5,698                   | 4.91%                   |
| EAST PROVIDENCE  | 235                                      | 22,058                  | 1.07%                   |
| NARRAGANSETT     | 218                                      | 10,540                  | 2.07%                   |
| CRANSTON         | 144                                      | 31,719                  | 0.45%                   |
| GLOCESTER        | 140                                      | 4,546                   | 3.08%                   |
| PROVIDENCE       | 42                                       | 71,911                  | 0.06%                   |
| BARRINGTON       | 29                                       | 6,856                   | 0.42%                   |
| TIVERTON         | 25                                       | 8,247                   | 0.30%                   |
| PORTSMOUTH       | 24                                       | 9,195                   | 0.26%                   |
| HOPKINTON        | 18                                       | 3,923                   | 0.46%                   |
| SMITHFIELD       | 18                                       | 8,761                   | 0.21%                   |
| NORTH SMITHFIELD | 13                                       | 5,682                   | 0.23%                   |
| FOSTER           | 10                                       | 2,028                   | 0.49%                   |
| MIDDLETOWN       | 8  | 8,283                   | 0.10%                   |
| WEST GREENWICH   | 4  | 2,590                   | 0.15%                   |
| WESTERLY         | 2  | 14,426                  | 0.01%                   |
| COVENTRY         | 1  | 13,715                  | 0.01%                   |
| LITTLE COMPTON   | 1  | 2,563                   | 0.04%                   |
| WEST WARWICK     | 1  | 13,543                  | 0.01%                   |

<sup>1</sup> This value can include multiple outages experienced by the same customer.

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 set forth in the ERP, 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 its life-support customers as quickly as conditions warranted, also as set forth in the ERP.

##### **B. Restoration Coordination**

Outages were dispatched out of the Providence storm room beginning on Tuesday, March 14, 2017 at approximately 11:00 a.m. through the end of the Storm. The Company activated police and fire coordinators for the event. These employees reported to the storm room leads and were responsible for communicating the estimated times for restoration on all police and fire calls, with a standby condition noted. The Company also activated and coordinated Task Forces in accordance with the ERP, consisting of Company and municipal personnel who are utilized to clear roads during emergencies.

In preparation for the Storm, the Company also mobilized the Providence wires-down room on March 14 at 7:00 a.m., with approximately 152 crews available (including wires-down appraisers and cut and clear restoration crews) and 36 office-based employees.

##### **C. Personnel Resources**

Given the potential magnitude of Winter Storm Stella, the Company secured supplemental contractor crews and strategically placed them throughout New England. This deployment plan allowed for the greatest degree of flexibility to move the resources to where they were needed, especially if the storm track or intensity changed. Pre-staging crews and equipment in key locations throughout the region enabled the Company to restore service to customers as quickly and safely as possible.

At peak, the Company secured approximately 452 field crews<sup>2</sup> to restore power to customers, including approximately 227 external crews and 225 internal crews from Rhode Island and other National Grid affiliated companies. This peak number of external and internal crews includes transmission and distribution line, vegetation management, wires down, substation, and underground personnel. By late afternoon on March 14, the Company had restored power to most of its customers, so was able to start sending external third-party crews from Rhode Island to Massachusetts, which was hit much harder by the Storm.

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<sup>2</sup> Crews typically include two or three people, although there are some one-person crews in damage assessment, wires down (appraisers), distribution line (troubleshooters) and substation personnel. Transmission crews typically include 6-10 people.

#### **D. Safe Work Practices**

Safety is always at the forefront of Company operations, including and especially during activities associated with storm restoration. Both the System and Regional ICS 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 Winter Storm Stella 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 Company-wide to all 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 each day. During Winter Storm Stella, safety personnel visited work sites to advise Company personnel and contractors of safety issues and practices. 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. As a result, the Company experienced no injuries during the Storm.

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

##### **A. Communication Regarding Estimated Times for Restoration (ETRs)**

The Company posted ETRs on its website during Winter Storm Stella using Outage Central, which provided real time ETR updates approximately every 15 minutes.

As ETRs changed, the updated restoration information was entered into the system and reflected on Outage Central. Throughout the event, the ETRs for each outage were revised to show the most accurate restoration information.

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

New England Operations pre-event calls were held at least once daily beginning on Sunday, March 12, 2017 at approximately 10:00 a.m. until the Storm occurred. New England Operations Restoration calls were held throughout the Storm beginning on Tuesday, March 14 at approximately 10:00 a.m. The final New England Operations Restoration call was held on Wednesday, March 15 at approximately 5:00 p.m.

Communications were issued to field crews with both restoration and safety information.

## **C. Public Officials**

### **1. Governor's Office**

The Company's Jurisdictional President communicated with the Governor's office during Winter Storm Stella. In addition, the Company's Director of Performance and Strategy for Rhode Island communicated with the Department of Administration during the 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 Jurisdictional President reached out to the PUC, and the Company's Director of Performance and Strategy for Rhode Island and Director of Regulatory Affairs reached out to the Division regarding the Company's storm preparation. Additionally, the Company activated its RIEMA liaisons, who were staffed at the RIEMA's Emergency Operations Center on Tuesday, March 14, 2017 at 6:00 a.m. The Company also participated in communications with Emergency Support personnel via the EOC website at RIEMA.

### **3. Municipalities**

The Company opened a municipal room in Providence on Tuesday, March 14, 2017 at 7:00 a.m. The municipal room was opened to effectively manage and communicate with any potentially impacted communities in Rhode Island. The municipal room was co-located with the Company's branch operations response personnel. This arrangement afforded efficient access to key restoration personnel in researching and communicating the priorities of the municipalities. The municipal room was deactivated on March 14 at 7:00 p.m.

The Company deployed National Grid community liaisons to work with each city or town's emergency, safety, and public officials as a dedicated liaison. These community liaisons were full-time resources supporting specific communities, and enabled direct communications back into the Company's branch municipal rooms, public information coordinators, and branch operations personnel.

## **D. Customers**

On Monday, March 13, 2017 at approximately 9:00 a.m., the Company made an out-bound call to all life-support customers advising them of the upcoming weather and notifying them regarding possible outages. The Company's Call Center secured additional staffing to respond to incoming life-support calls for those affected by outages, as well as securing a back-up vendor to support high call volume. A total of three life-support customers were affected by outages. The Company continued to conduct proactive calls to its life-support customers until all power was restored.

## **E. Media**

The Public Information Officer and its support staff were activated for the event, and participated in all the planning and restoration briefing calls held by Operations. The Company distributed Storm-related news releases on March 12 and 13, 2017 to all Rhode Island news media in advance of the Storm, and again on March 14 and 15 after the Storm commenced. The Company used both traditional and social media channels to distribute the news releases, as well as additional Storm, restoration, and safety-related information. Overall sentiment was positive, as feedback and comments from media outlets and social media were received and regularly monitored.

## **VI. CONCLUSION**

The Company understands the impact that electrical outages have on its customers, and was fully prepared to respond, having secured all necessary crews and other outside contractors to aid in the restoration effort of Winter Storm Stella. Through use of the Company's own distribution line resources, contractor distribution and transmission line crews, and contractor tree crews, the Company restored service to its customers in the wake of the Storm in a safe, and expeditious manner.

The Company is proud of all the work that was accomplished during Winter Storm Stella, and is grateful for the support of customers, employees, state and local officials, and public safety officials, who experienced the effects of this Storm and were an integral part of the Company's restoration efforts.