

April 1, 2009

VIA HAND DELIVERY AND ELECTRONIC MAIL

Lynn Fabrizio, Esq.
Staff Attorney
New Hampshire Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, New Hampshire 03301-2429

Re: December 2008 Ice Storm; Granite State Electric Company d/b/a National Grid Storm Report

Dear Attorney Fabrizio:

Enclosed please find on behalf of Granite State Electric Company d/b/a National Grid ("National Grid" or "Company") a report detailing the Company's restoration efforts during the December 2008 ice storm. The ice storm was one of the most significant storm events faced by the Company in recent years. This was an historic storm that impacted National Grid's service territory in three states, affecting hundreds of thousands of customers across these regions.

The Company understands that the Commission is investigating the efforts by the state's electric utilities to prepare for and restore power following the ice storm. As a courtesy, National Grid wishes to provide the Commission with this report, which provides a detailed narrative of the Company's efforts, to supplement its responses to data requests, and also to provide the Commission with a single document to look to should it have any questions.

Also enclosed with the report is a letter to the Commission from Tom King, National Grid USA's president, regarding the Company's restoration efforts.

Under separate cover today, National Grid is also submitting for filing its Annual Storm Fund Report for 2008, in compliance with the requirements set forth in Exhibit GSE-7 of the Company's Rate Plan Settlement in Docket No. DG 06-107.

Thank you for your time and attention. Please contact me at (781) 907-1850 with any questions.

Respectfully submitted,



Patric R. O'Brien

cc: Meredith A. Hatfield, Esq.

April 1, 2009

Lynn Fabrizio, Esq.
Staff Attorney
New Hampshire Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, New Hampshire 03301-2429

Dear Attorney Fabrizio:

Today National Grid is submitting a storm report to provide the Commission with a detailed description of our response to the severe ice storm that occurred in December 2008. Due to the magnitude of this storm, I am providing my own personal message of pride and appreciation as well.

It is rare for a storm to produce the amount of devastation we witnessed last December. In New Hampshire, it affected approximately 24,164 customers over 528 square miles. The storm started on December 11th, and we worked around the clock until the restoration was complete, on December 18th. The storm report speaks for itself, detailing National Grid's efforts.

I am extremely proud of National Grid's response, which was professional, well planned, and well executed. The restoration was a team effort. Over the course of the restoration, National Grid committed 11.5 internal line crews, 29 contractor crews, 8 internal trouble men, and 24 tree crews to work in New Hampshire. In addition, the background support by every line of National Grid's business and function was significant, with approximately 158 back-office workers involved. I offer our thanks to them all.

I also wish to express my gratitude to the people of New Hampshire, especially our customers. They showed remarkable resilience and patience during this event, and their support of our efforts was gratifying. Further, I thank the municipal leaders, government officials, emergency responders, and volunteers from across the region who helped us and our customers with the effort. Finally, I offer thanks to you for remaining in direct and frequent contact with us throughout on behalf of customers.

Very truly yours,





New Hampshire

December 2008 Ice Storm Report

April 1, 2009

1. Introduction

Granite State Electric Company d/b/a National Grid (“National Grid” or “Company”) is submitting the following report to describe its restoration efforts during the December 2008 ice storm. While National Grid has responded to numerous data requests, a formal report will help provide the Commission with a full and complete picture of the Company’s response to the storm and place it in the appropriate context. The December ice storm was a significant event to all that it impacted. National Grid appreciates the opportunity to submit this report to briefly describe its efforts during this historic storm.

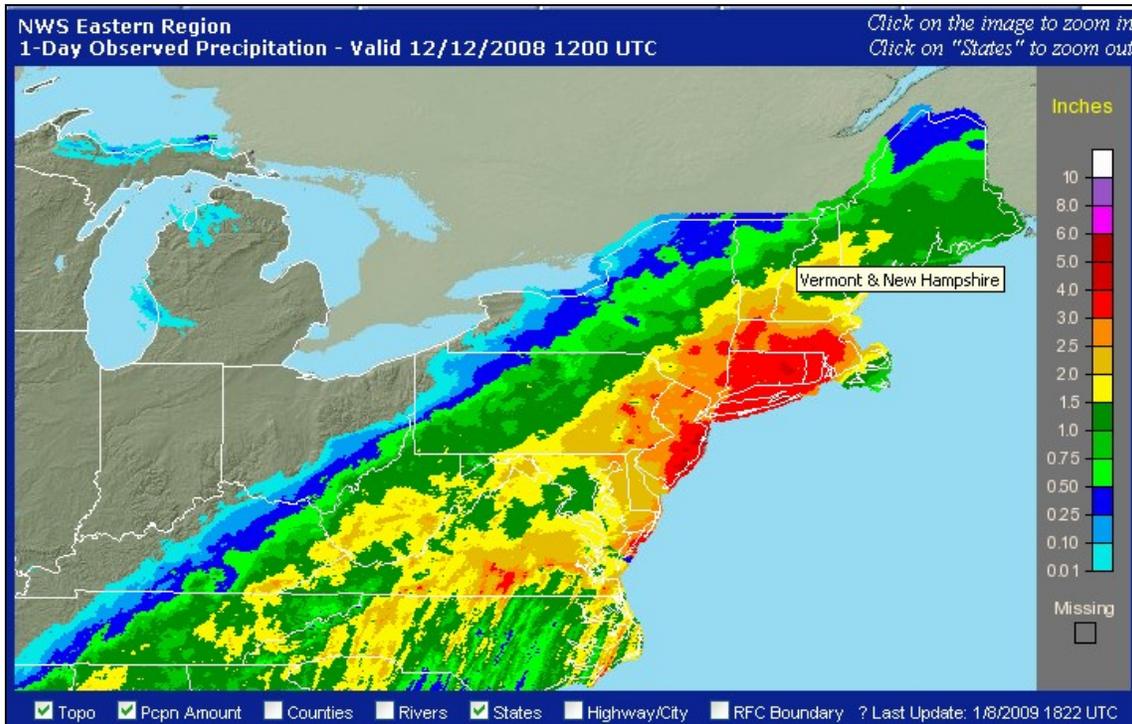
2. The Storm

From 6:00 p.m. on Thursday, December 11, until the late morning hours of Friday, December 12, 2008, a powerful winter storm struck New Hampshire, Massachusetts, and New York. Pouring rain, sleet, and ice from the storm knocked out power to hundreds of thousands of National Grid’s customers across these regions. In New Hampshire, the storm impacted the central, southern, and southwest portions of the state. Hardest hit was southern New Hampshire, where monitoring stations reported between two to three inches of rainfall. The rainfall soon turned to ice, encrusting tree limbs and power lines in sheets of ice over an inch thick in some localities.

Due to the ice buildup, trees and limbs came crashing down, knocking over utility lines and structures. This clutter of debris blocked roads, hindering the ability of National Grid’s crews to gain access to the downed equipment to complete its restoration.

Figure 1 on the following page demonstrates the expansiveness of the storm and its impact to New Hampshire. The orange and red shading depicts the heavy rainfall. What was so unusual about this storm was its expansive coverage. While most ice storms occur along a fairly narrow strip, ranging between 25 to 50 miles, the December 2008 ice storm spread across a range of between 75 to 100 miles. As noted in Figure 1, the storm produced significant rainfall that led to ice accretions across a large portion of New England, New York, and the Mid-Atlantic States.

**Figure 1 – National Weather Service, Observed Precipitation as Inches of Liquid
December 12, 2008 at 7:00 a.m.**



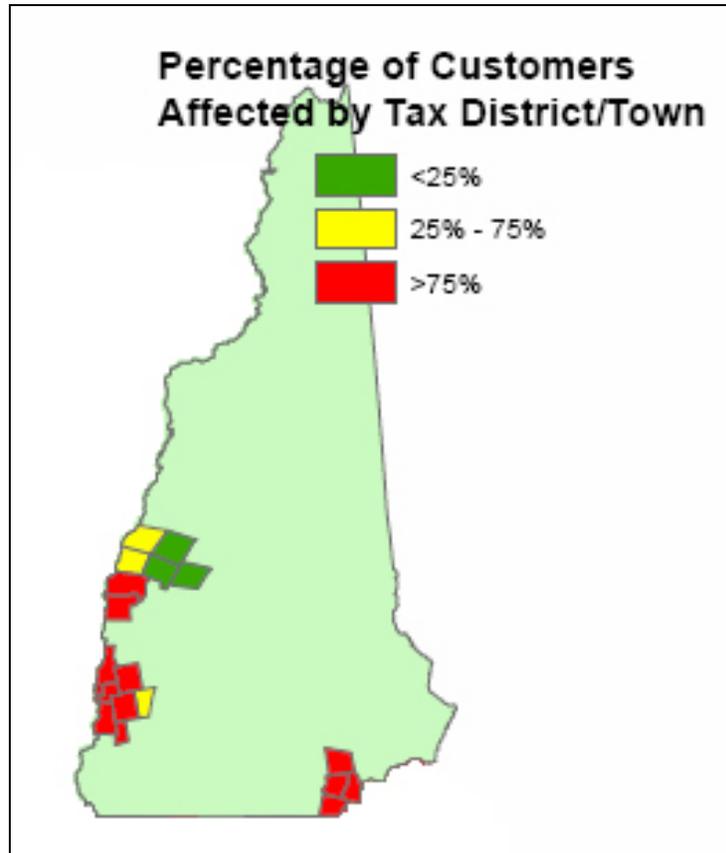
In New England, the devastation from the ice storm was widespread, leading Governor Lynch in New Hampshire and Governor Patrick in Massachusetts to declare states of emergency. This allowed the mobilization of additional emergency response assets to help with debris clearing and provide assistance to impacted communities.

3. The Storm's Damage

The damage from the December 2008 ice storm and the Company's subsequent restoration effort was unprecedented. While the majority of communities served by National Grid were impacted by the storm, in New Hampshire, the storm affected approximately 528 square miles of National Grid's service territory, causing interruptions in 17 of the 21 communities served by the Company. At peak, approximately 24,164 customers in New Hampshire were without power, which represents approximately 63% of National Grid's potentially affected customers in New Hampshire.

In particular, the towns of Pelham, Salem, and Windham experienced customer interruptions in excess of 85% of their respective base, while the towns of Charlestown and Walpole saw customer interruptions of 75% or greater of their base. Figure 2 on the following page details the storm's impact to the New Hampshire towns served by National Grid along with their respective customer impacts.

**Figure 2 – Percentage of Customers Affected by Town
December 12, 2008**



The most common cause of interruptions in National Grid's service territory was fallen trees and limbs, which broke under the weight of the ice, causing damage to utility lines and structures. While some poles and cross-arms required replacement, the majority of damage to the Company's distribution system in New Hampshire was related to the number of primary and secondary spans pulled down by fallen trees and limbs. The photographs on the following page illustrate the magnitude of the storm's damage to the New England area. Of interest, note the presence of the fallen trees and limbs in the photographs.

Photographs 1 through 4



1



2



3



4

To gain a better understanding of the magnitude of the damage and National Grid's efforts, Table 1 provides statistics associated with the storm.

Table 1

December 2008 Ice Storm	
National Grid Customers Affected by the Storm	38,391
National Grid Customers Without Power	24,164
Percentage of National Grid Customers Affected by the Storm Without Power	63%
Transmission Lines Impacted	4
Distribution Circuits Impacted	21
Total Line, Trouble, and Service Crews	55.5

December 2008 Ice Storm	
Total Tree Crews	24
National Grid Support Personnel	81
Customer Calls	13,677
Feet of Cable Replaced	12,980
Poles Replaced	48
Transformers Replaced	29
Cross-arms Replaced	250
Splices Installed	337
Duration of Restoration Effort	100% of customers restored in seven days
Cost of Restoration Effort	Estimated at \$2.8 million

The size and cost of National Grid’s restoration effort dwarfed the Company’s three past costliest storms by threefold on most metrics. Table 2 provides a comparison of the December 2008 ice storm metrics against past storm events and their associated restoration efforts.

Table 2

Storm Date Start	Storm Date End	Storm Type	Total CI ¹	Total CMI ²	Number of events ³	Storm Cost Total
02/17/06	02/18/06	Wind	11,136	3,894,341	105	\$116,927
01/15/07	01/16/07	Ice	26,246	4,473,724	55	\$412,675
04/15/07	04/19/07	Nor’easter	24,260	17,952,422	248	\$837,647
12/11/08 ⁴	12/18/09	Ice	47,642	94,390,906	617	\$2,820,000

Notes:

1. Total CI means Total Customer Interruptions attributed to the December 2008 ice storm.
2. Total CMI means Total Customer Minutes (of service) Interrupted and attributed to the December 2008 ice storm.
3. Number of Events details individual cases of line trouble reported by the outage management system.
4. These values are preliminary and continue to be totaled.

Table 3 on the following page details the peak customer interruptions reported for New Hampshire on December 12 at approximately 5:45 a.m. Several towns served by National Grid reported that all customers (100%) had been impacted. The customer calls reflect those received by the New England Customer Contact Center through 6:00 a.m.

Table 3

Town	Customers Served	Customers Interrupted	Customers Interrupted (%)
Acworth	163	163	100%
Alstead	843	843	100%
Canaan	1,229	13	1%
Charlestown	1,388	1,097	79%
Cornish	110	110	100%
Derry	114	73	64%
Enfield	2,280	96	4%
Hanover	3,403	1,114	33%
Langdon	233	233	100%
Lebanon	7,537	1,759	23%
Marlow	4	4	100%
Pelham	5,087	4,289	84%
Plainfield	553	516	94%
Salem	13,769	11,671	85%
Surry	28	25	89%
Walpole	1,650	1,230	75%
Windham	1,062	928	87%
Totals	38,391	24,164	63%

4. National Grid's Pre-Storm Activities

The weather forecast on the morning of Wednesday, December 10 predicted that southern New Hampshire would likely experience an icing event, with accretions in excess of one-quarter inch. In light of the forecast, National Grid distributed an internal notification email to operating and support organizations, warning about the potential for an ice event, and scheduled a storm conference call for Wednesday afternoon.

A weather briefing during the conference call increased the forecasted ice accretion level to over one-half inch, across much of southern New Hampshire. Following the storm call, National Grid proceeded with storm preparatory actions in accordance with its New England Electric Emergency Procedures.

Wednesday evening's forecast increased the predicted ice accretions to greater than one inch across southern and now central portions of New Hampshire. National Grid continued with the implementation of its pre-storm procedures at that time. This included scheduling a series of conference calls for the ensuing days to ensure all National Grid's

organizations completed their storm preparations, and were ready to respond to the storm's impact.

The first mutual assistance call was requested by a member of the Northeast Mutual Assistance Group ("NEMAG"), a mutual aid organization of which National Grid is a member, on Wednesday, December 10, and scheduled for 8:30 a.m. on the following day, December 11. National Grid, along with other NEMAG member utilities, participated in the call. The December 11 call revealed that all New England utilities anticipated that the forecasted storm would impact their service territories. It also revealed that the forecasted ice accretion amounts had increased to in excess of one inch in some areas.

As a result of this call, National Grid recommended that the list of participants be expanded for the next mutual assistance conference call to include member utilities from two nearby regional mutual assistance groups, the New York Mutual Assistance Group and the Mid-Atlantic Mutual Assistance Group. These member utilities would later assist National Grid with its storm restoration effort.

By midday on Thursday, December 11, National Grid's Customer Operations organization issued orders to pre-position crews and storm kits throughout the northern portions of its New England service territory. A total of ten contractor line crews were transferred to northern New Hampshire (Lebanon) during the afternoon of December 11, in the event that travel on the following day was hampered by the ice.

In addition, National Grid scheduled the divisional storm rooms to open at 12:00 a.m. and the New England Emergency Operations Center in Northborough, Massachusetts to open at 4:00 a.m. on Friday, December 12. The Customer Contact Center in Northborough, Massachusetts increased staffing overnight in anticipation of the storm's impact and also began making outreach calls to the Company's life support customers to notify them of the impending storm.

Moreover, National Grid's Materials Management organization verified an appropriate level of inventory and contacted vendors to arrange for an uninterrupted supply of stock. National Grid's Fleet Services organization fueled all trucks overnight so that line crews could begin to restore service immediately, at daybreak. Further, media and municipal outreach were initiated in advance of the storm's impact.

Table 4 on the following page includes a summary of the actions taken by National Grid in preparation for the storm.

Table 4

Date	Time	Action
Dec 10	8:51 a.m.	National Grid's Emergency Planning organization notified Electric Distribution Operations et al. of a potential ice event on Dec 11 to 12.
Dec 10	12:39 a.m.	National Grid's Emergency Planning organization scheduled the ice event's first system wide storm conference call for Dec 10 at 3:00 p.m. (System means operations in Massachusetts, New Hampshire, New York, and Rhode Island).
Dec 10	2:30 p.m.	National Grid's Emergency Planning organization updated the New Hampshire Office of Emergency Management and other New Hampshire utilities on National Grid's storm plans.
Dec 10	3:00 p.m.	First system wide storm conference call held.
Dec 10	3:11 p.m.	Bangor Hydro scheduled the first NEMAG conference call for December 11 at 8:30 a.m.
Dec 10	3:42 p.m.	National Grid's Emergency Planning organization scheduled the second system wide storm conference call for December 11 at 1:30 p.m.
Dec 11	8:30 a.m.	First NEMAG conference call held.
Dec 11	10:06 a.m.	Base Logistics, a staging site supply vendor, confirmed that they were available to support National Grid's storm restoration efforts.
Dec 11	11:40 a.m.	National Grid's Emergency Planning organization issued staffing report for Divisions in Massachusetts, New Hampshire, New York, and Rhode Island (except Long Island).
Dec 11	11:52 a.m.	National Grid's Emergency Planning organization contacted field assistant strike team members for mobilization assignments in Massachusetts and New Hampshire.
Dec 11	1:30 p.m.	Second storm conference call held system wide; contractor resources pre-positioned in Massachusetts and New Hampshire.
Dec 11	2:21 p.m.	National Grid scheduled second NEMAG conference call for December 12 at 6:00 AM with members from the New York Mutual Assistance Group and Mid-Atlantic Mutual Aid Groups included.
Dec 11	3:25 p.m.	National Grid's Construction Delivery organization issued contractor staffing update for December 12.
Dec 11	10:24 p.m.	National Grid's Emergency Planning organization scheduled a third storm conference call for December 12 at 8:30 a.m.
Dec 11	10:31 p.m.	National Grid's Emergency Planning organization updated New Hampshire Office of Emergency Management and other New Hampshire utilities on National Grid's storm plans to date.
Dec 12	12:00 midnight	National Grid's division storm room opened for New England-North Division.

Date	Time	Action
Dec 12	2:00 a.m.	National Grid's New England Regional and System Emergency Operations Center opened in Northborough, Massachusetts ahead of its scheduled 4:00 a.m. start.

5. Storm Restoration

National Grid began its damage assessment in the early morning hours of December 12. With respect to the distribution system, damage assessment included a public safety phase where available resources were initially focused on wires down, so as to de-energize any unsafe conditions. Damage assessment was initially conducted with supervisors and on-duty line workers. Upon daylight on the morning of December 12, damage assessment teams were operational and were assigned to perform a Phase 1 main line assessment of the circuits that had locked out as a result of the ice damage. Phase 1 survey (within the first 24 hours) is a rapid assessment of the (three-phase) main lines on the impacted feeders. Beginning on the morning of December 13, damage assessment then progressed to Phase 2, which included the entire circuit. Phase 2 survey (within 48-72 hours) is a detailed survey of the entire impacted infrastructure.

Although no customer interruptions from transmission lines were reported, helicopter patrols of National Grid's transmission infrastructure were commenced later on Friday, December 12, when visibility and conditions became suitable for flying.

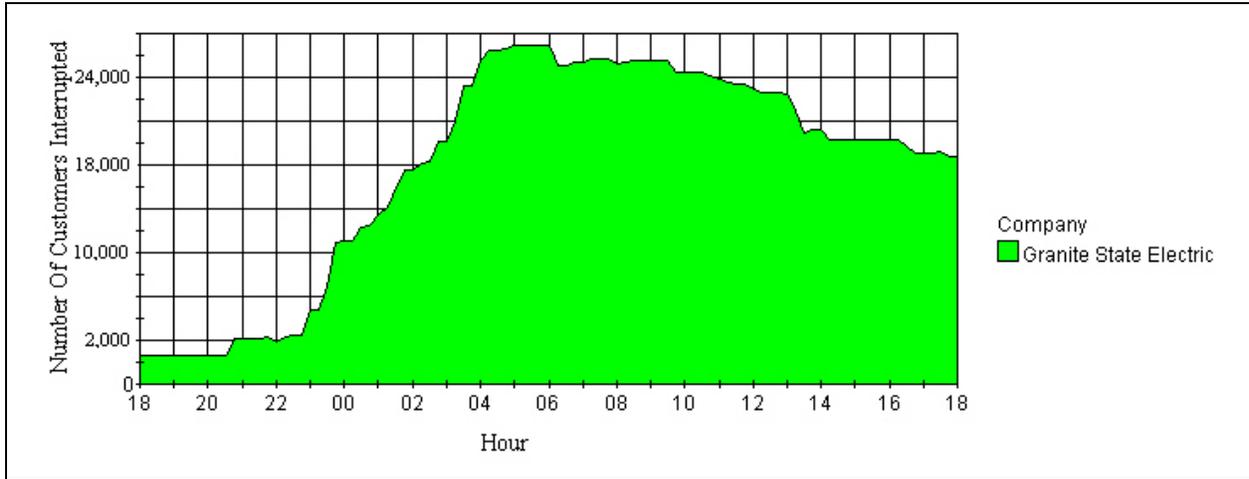
Due to the widespread and extreme nature of the damage observed to the distribution system, the estimated time of restoration feature of the PowerOn outage management system was disabled very early on in the storm. As the restoration effort progressed, damage assessors and line crews were able to project more accurately the expected restoration times for individual neighborhoods and distribution circuits. As estimated restoration days/time became available, that information was added to the outage management system and the Company's web site for communication to customers who called the contact center or accessed the web site.

Over the course of the restoration, National Grid committed 11.5 internal line crews (one crew had three linemen and two vehicles), 29 contractor crews, 8 internal trouble men, and 24 tree crews to work in New Hampshire. While the Company recognizes that even one day without power is difficult for most, the damage to utility lines and poles combined with the widespread debris and blocked roads, which made access to downed equipment difficult, slowed the effort.

Further, the weather refused to cooperate. In addition to the continued cold weather that left the ice intact in the days following the storm, New Hampshire experienced a snow event on December 15 through 16, which buried electric wires in roadside snow banks, requiring the use of additional supply cable to complete fallen spans. The inclement weather made restoration work and travel difficult and sometimes dangerous.

Figure 4 on the following page shows the peak customer interruptions on December 12.

**Figure 4 - Customers without Power, Thursday - Friday, December 11-12, 2008
 (Granite State Electric)**

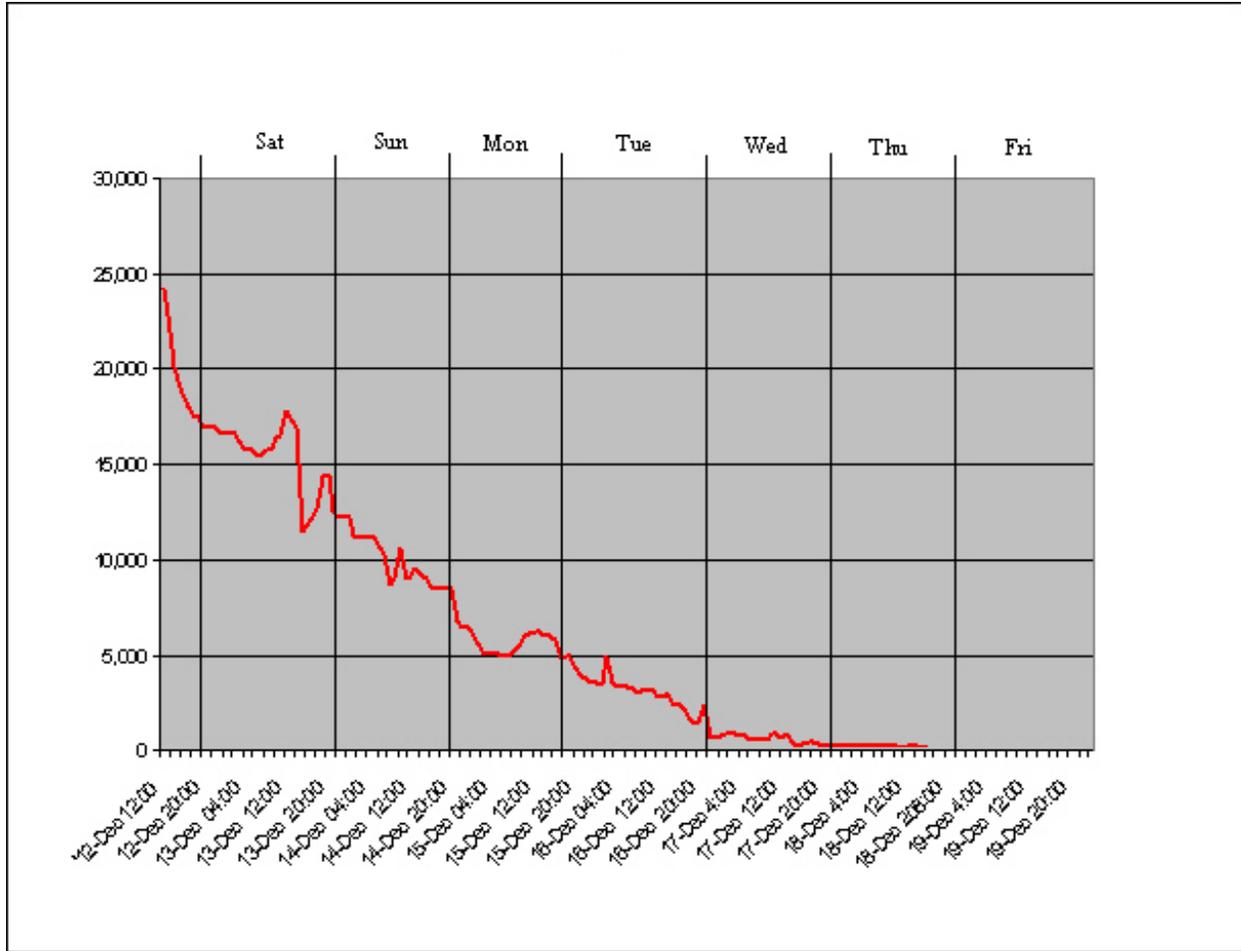


Even with the severe devastation and inclement weather, National Grid’s restoration moved at a steady pace, with service returning to customers every hour of every day. By Thursday, December 18, National Grid restored all of its customers in New Hampshire, despite having a peak interruption of 24,164 customers as of 5:45 a.m. on Friday, December 12, 2008. A summary of the restoration is as follows:

- Thursday December 11 at 11:59 p.m. 15,000 pre-peak
- Friday December 12 24,164 peak
- Saturday December 13 11,995 remaining
- Sunday December 14 5,991 remaining
- Monday December 15 2,695 remaining
- Tuesday December 16 2,816 remaining
- Wednesday December 17 481 remaining
- Thursday December 18 186 remaining
- Thursday December 18 at 10:19 p.m. 0 remaining

Figure 5 on the following page represents the restoration effort and daily customer interruptions graphically.

**Figure 5 - Customer Interruptions Remaining, December 12-19, 2008
 (Granite State Electric)**



National Grid’s response to the December 2008 ice storm demonstrates the effectiveness and flexibility of its emergency planning efforts. The Company’s proactive approach in pre-positioning crews and storm kits and taking part in mutual assistance calls in advance of the storm greatly assisted with the restoration effort. Not only did National Grid complete the restoration of its own customers by Thursday, December 18, despite a significant amount of interruptions, it also provided assistance to another utility in New Hampshire, providing that utility with contractor line resources that National Grid procured for its own restoration effort, but released once its restoration was complete.

6. Communications

State Communications

Prior to the start of the December 2008 ice storm, National Grid’s Emergency Planning organization was in contact with the New Hampshire Public Utilities Commission, the New Hampshire Office of Emergency Management, and the New Hampshire Department

of Homeland Security. The Company distributed to these entities written updates on the weather forecast and its planned response on Wednesday, December 10 and Thursday, December 11. In addition, during the restoration effort, National Grid's New England Emergency Operations Center provided twice daily updates of the Company's status and progress.

Additionally, National Grid's Regulatory Affairs personnel from the New England-North Division were in constant contact with Governor Lynch's office, Public Utilities Commission officials and staff, as well as the Town of Salem Emergency Operations Center.

Local Communications

The Energy Solutions Services department of National Grid is responsible for communicating with state and local public officials during a storm or other emergency. The Energy Solutions Services department for the New England-North Division is headquartered in North Andover, Massachusetts. From this location, communications with communities in southern New Hampshire were established.

The Energy Solutions Services department in North Andover consists of 19 people, the majority of whom were involved in covering the communications activities of the restoration effort for the Merrimack Valley and Southern New Hampshire communities of the New England-North Division. During the ice storm and subsequent restoration effort, at least four people were dedicated to communicating with New Hampshire officials, including the Public Utilities Commission, Governor's office, and the Town of Salem Emergency Operation Center.

The Energy Solutions Services department made various forms of communication during the storm, including but not limited to:

- Notifying officials that the division Municipal Room phone line was activated;
- Hosting conference calls for public officials;
- Face-to-face visits between Company personnel and local officials;
- Proactive outreach to communities on a daily basis; and
- Follow up meetings with police and fire officials.

Activation of Municipal Room Phone Line

On the morning of Friday, December 12 at 6:00 a.m., the Municipal Room in North Andover, Massachusetts was activated and readied to accept calls from the southern communities of the Company's New Hampshire service territory – Pelham, Salem, and Windham. Activating the municipal phone lines is a two step process:

1. National Grid faxed a letter to police, fire, and other public officials notifying them that the Municipal Room was opened. The letter provided the direct phone number and the "wire down" number.

2. The letter was followed up with a phone call to each community asking if they received the faxed information and that they understood that the municipal phone line was activated.

The Energy Solutions Services department staffed the Municipal Room throughout the duration of the storm. At the end of the restoration effort, the procedure was repeated with a faxed letter notifying the same set of officials that the Municipal Room and its phone lines would close shortly. The letter was followed up with a phone call to each community. The Municipal Room was closed on Friday, December 19.

The northern part of the Company's New Hampshire service territory (Charlestown, Lebanon, and Monroe areas), which are located along the Connecticut River, are not part of the Municipal Room's activities due to their remote locations. Instead, the Energy Solutions Services department established contact with these communities by having an account executive reach out to them from the Company's Lebanon, New Hampshire Service Center. This method establishes a direct line of communications at a local level and, historically, has proved effective.

Host Conference Calls with Public Officials

The hosting of frequent conference calls with public officials was recommended following the 2008 system storm drill in July 2008. The December 2008 ice storm represented the first time in New England where this activity was implemented. The regional director of Energy Solutions Services and the vice president of Electric Distribution Operations conducted the conference calls on a daily basis throughout the storm. The calls included a high-level overview of available resources, identified problem areas, and provided an estimate as to when power would be restored. Specific questions were discouraged because of the large number of people participating in the call. Individuals with questions were encouraged to call the Municipal Room with any specific requests.

The Municipal Room conducted five daily conference calls. Although role call was not conducted, several municipal representatives participated in the conference calls' discussions.

Face-to-Face Visits Between Company Personnel and Local Officials

National Grid implemented face-to-face visits with communities that had large numbers of customers interrupted on Sunday, December 14. By this time in the restoration process, National Grid had mostly completed a damage assessment of the impacted areas. Representatives from both the Energy Solutions Services department and the division met with police and fire chiefs at the Town of Salem Emergency Operations Center. An update of the Company's restoration activities and priorities was presented to the officials during the face-to-face visits.

Proactive Outreach to Communities on a Daily Basis

Throughout the restoration process, the Municipal Room made daily calls reminding communities of the following:

- The municipal lines were still open.
- If specific issues or questions exist, the Municipal Room would like to know of them.
- The customer interruptions and estimated restoration times were updated.

Follow Up Meeting with Police and Fire Officials

On Friday, January 9, 2009, a follow up meeting with New Hampshire police and fire officials was conducted at National Grid’s Salem Service Center. During the meeting, the effectiveness of the conference calls in disseminating information was discussed. The outcome of the meeting was to continue the conference calls and conduct critique meetings after a significant storm event. The critiques provide local officials and the Company with the opportunity to identify best management practices and areas for improvement. National Grid agreed to host such meetings, as needed.

Customer Contact Center

At peak, the Customer Contact Center had approximately 165 personnel taking incoming calls. The Center shifted to handling only power outage/emergency calls during the storm event to further streamline customer responses. The IVR messaging explained to customers that due to the storm, power outage/emergency calls were the priority but customers with routine requests could use the IVR menu to enter a request that would be addressed by the Company after the restoration was completed. Table 5 represents the call volume that National Grid representatives managed for New Hampshire during each day of the December 2008 ice storm.

Table 5

Date	Calls Offered	Calls Abandoned	Total Calls Answered	% Calls Answered
Dec 11	802	4	798	99.5%
Dec 12	5,591	77	5,514	98.6%
Dec 13	1,832	40	1,792	97.8%
Dec 14	1,887	6	1,881	99.7%
Dec 15	1,327	10	1,317	99.2%
Dec 16	953	3	950	99.7%
Dec 17	575	8	567	98.6%
Dec 18	395	1	394	99.7%
Dec 19	315	0	315	100.0%

Date	Calls Offered	Calls Abandoned	Total Calls Answered	% Calls Answered
Totals	13,677	149	13,528	98.91%

7. **Conclusions**

National Grid appreciates the opportunity to submit this report to describe its efforts during the December 2008 ice storm. As detailed in this report and the responses to data requests, the employees of National Grid remained steadfast in their mission to restore the service of each and every one of the approximately 24,164 customers in New Hampshire impacted by the storm. Despite a storm that spread destruction in 17 of the 21 communities in New Hampshire served by National Grid, the Company restored the service of each and every one of its customers by Thursday, December 18.

In closing, National Grid is proud of its response to the ice storm and especially thankful to its customers, municipalities, and government officials for their patience and support through this storm. Thank you again for allowing the Company the chance to detail its efforts in this report.