

October 19, 2009

**VIA OVERNIGHT AND ELECTRONIC MAIL**

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New Hampshire Public Utilities Commission  
21 South Fruit Street, Suite 10  
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**Re: New Hampshire December 2008 Ice Storm Assessment Report**

Dear Attorney Fabrizio:

Granite State Electric Company d/b/a National Grid (“National Grid” or “Company”) submits these comments with respect to the *New Hampshire December 2008 Ice Storm Assessment Report* (“report”) prepared by NEI Electric Power Engineering (“NEI”).

**Introduction**

National Grid is proud of its response to the December 2008 ice storm. The amount of devastation wrought by the storm was rare and truly unprecedented. The Company went to great lengths to detail its preparation and response to the storm in its Ice Storm Report and responses to information requests from Staff and NEI. National Grid also participated in a number of interviews with NEI to discuss its performance. Despite these efforts, NEI’s report largely ignores the efforts of National Grid, because it focuses on a broad, overall picture of all the utilities, rather than focusing specifically on each individual utility. This approach unfairly minimizes National Grid’s efforts during the storm and has the potential to create a false impression in the mind of the general public.

For example, NEI’s conclusions and recommendations, which, for the most part, apply to all the utilities, fail to take into account how each utility performed during the storm, along with their respective policies and procedures that were in place. Instead, NEI lumps all of the utilities together in its conclusions/recommendations, which ignores the fact that each utility performed differently during the storm. It also ignores that National Grid had many, if not most, of the recommendations already in place. This is particularly troubling because, in almost all of the sections that precede the conclusions/recommendations, where NEI discusses each individual utility, NEI notes no deficiencies in National Grid’s performance. Yet National Grid is unfairly lumped together with the utilities that NEI did note specific concerns about. Since the conclusions/recommendations are the highlight of the report, this creates the false impression that there were deficiencies in National Grid’s performance, although none were noted.

National Grid also notes that there are many factual inaccuracies in the report. Many of these inaccuracies are noted in National Grid's letter to Mr. Keith Malmedal at NEI, dated October 16, 2009, and which is incorporated herein by reference.

Lastly, while there are many recommendations that National Grid agrees with, there are others that are extremely broad and impractical. There are also others that have no factual support and fail to take into account that the costs outweigh the potential benefits to customers.

National Grid appreciates the ability to comment on the report and thanks the Commission for the opportunity. The following are National Grid's comments in the order that they appear in the report.

### Comments

1. **Page ii, "All of the utilities underestimated the severity of the storm and the extent of damage it would cause. Their response to the storm was generally slow." Page II-59 "Conclusion: All four electric utilities underestimated the expected impact of the storm as well as the extent of the resultant damage."**

National Grid strongly disagrees with this conclusion as it relates to National Grid. This is but one of many examples where NEI lumps National Grid together with the other utilities without noting any facts to support this conclusion. In fact, nowhere in the National Grid section that follows (pages II-60 to II-61) does NEI state any facts to support the conclusion that National Grid underestimated the impact of the storm. More important, this statement is directly contradicted by NEI's findings in the report. Indeed, in contrast to the conclusion, NEI found at page II-44:

National Grid began preparation several days ahead of the December 2008 ice storm by alerting key personnel with advance weather warnings, holding emergency response team conference calls (the first on Wednesday, December 9) and staging company line crews in the Albany, NY, area so they would be available to the National Grid utilities as needed. All four utilities appeared to have similar warnings about the storm, but National Grid acted on these warnings sooner and began its preparation for the storm a full day before the other utilities. This preparation helped it to respond more quickly once the storm occurred and its scope became apparent. The early planning allowed it to allocate more assets per outage than any of the other utilities and the resources directed to New Hampshire caused it to be the first of the four utilities to restore power to all its customers.

Far from underestimating the impact of the storm, NEI documented that National Grid rightly assessed the storm's impact and that its early preparation and planning were keys to it being the first utility in the state to restore its customers. As such, the conclusion should be modified to make clear that it does not pertain to National Grid.

2. **Page I-8, “National Grid has a corporate emergency response organization [that] is responsible for emergency plan development and designing drills and exercises, but does not have any operational responsibility for actual storm restoration. Storm restoration is managed entirely within the company’s operations organizations, which transitions into storm response mode during emergency events. This creates a division between personnel dedicated to planning and preparing for emergencies and those who execute the plan.”**

This statement is a misstatement of the facts, as there is no division between National Grid’s planning personnel and those who execute the plan. Rather, National Grid’s planning and operations organizations work as a team during storm restoration. Each member of the planning organization has a specific assignment/role within the operations organization during storm restoration. NEI’s finding “that if all the utilities could have supplied resources at the same rate and quantity as National Grid, all power would have been restored to the state approximately 4 days sooner than actually occurred” demonstrates the fallacy of this statement. (page II-9). National Grid’s planning and operations organizations work in partnership, with no division, and the statement should be amended to reflect as such.

3. **Page II-34, Table II-8 National Grid Storm Restoration Performance Matrix**

For the categories “Customer call centers should have begun ramping up staffing levels to handle incoming customer calls” and “Calls to mutual assistance utilities and contractors should have been made at earliest moment,” NEI gave National Grid an open circle, indicating that “improvement is required as stated in the report.” The report, however, tells a different story, demonstrating that National Grid should have received an “effective with no improvements noted” rating.

Specifically, at page II-81, NEI stated: “The fact that nearly 100% of all calls received during the storm restoration effort were answered indicates that National Grid’s call center staffing levels were appropriate.” There is no finding *anywhere* in the report that National Grid’s call center staffing levels were inadequate at any time before or after the storm. As such, National Grid believes that the rating is inaccurate and must be changed.

With respect to mutual assistance calls, National Grid participated in the first Northeast Mutual Aid Group (“NEMAG”) call on December 11 and was the utility that requested the participants for the next call be expanded to include the New York Mutual Assistance Group and the Mid-Atlantic Mutual Assistance Groups. National Grid also pre-positioned line crews in Albany, New York ahead of the storm and transferred ten contractor line crews from its Massachusetts service area to New Hampshire during the afternoon of December 11, so that they would be in position to travel to New Hampshire. NEI concluded, at page II-44, that “National Grid began preparation several days ahead of the December 2008 ice storm” and that its “preparation helped it to respond more quickly once the storm occurred and its scope became apparent.” NEI also found that National Grid allocated more assets per outage than the other utilities. The report is replete with similar

references attesting to the fact that National Grid began preparing for the storm days in advance and was able to secure more crews and restore customers faster than the other utilities. The rating should be changed to accurately reflect “effective with no improvements noted.”

4. **Pages II-61 and II-72, “Conclusion: The utilities relied too heavily upon local mutual aid agreements, which delayed the process of securing additional resources,” and “Recommendation No. 3: Each electric utility should adopt storm restoration procedures that require the process of procuring additional crews to begin at the first indication of an impending storm and include utilities and contractors beyond the local area.”**

National Grid disagrees with the conclusion and recommendation as it relates to National Grid. This is another example where NEI lumps National Grid together with the other utilities. Contrary to these statements, National Grid’s New England Electric Emergency Procedures §§ .102 and .109 contain procedures for securing mutual aid crews both locally and from outside the area in advance of a storm. In addition, National Grid maintains contractor crews from outside the area that are ready to travel to New Hampshire prior to a storm, which happened in advance of the December storm.

In fact, in the text following the conclusion and recommendation, NEI noted that National Grid requested and received additional resources from outside the New England area and that it received all the crews it needed. Further, NEI found:

The graphs demonstrate that mutual aid crews that were requested were supplied in a timely manner to National Grid, typically within twenty-four hours. The graphs also suggest that National Grid requested crews more quickly than the other utilities which probably contributed to being able to restore power to its service area before the other utilities.

(page II-68). Since National Grid already has the recommended procedure in place, which it utilized during the storm, it is incorrect and misleading to lump it together with the other utilities in the conclusion and recommendation.

5. **Pages II-72, “Conclusion: Communications with state and municipal government officials emergency response agencies were mostly ineffective. None of the utilities provided details or responded in a timely basis when specific inquiries were made.**

National Grid strongly disagrees with this conclusion as it pertains to National Grid. NEI cites no support for this statement and the text that follows, at page II-75, in which NEI details National Grid’s communications with state and local public officials, directly contradicts it.

National Grid had municipal lines set up exclusively for municipal contacts and emergency responders. Each day the Company held a municipal call at 3:00 p.m. to provide status updates. National Grid also staffed the municipal lines around the clock. Please see pages

11 to 14 of National Grid's December 2008 Ice Storm Report for additional information as to the Company's communications with state and municipal officials during the storm, which further contradicts NEI's conclusion.

6. **Page II-83, "Recommendation No. 5: Each electric utility should modify emergency planning procedures in order to implement a more effective means of estimating resource requirements."**

This recommendation again lumps National Grid together with the other utilities despite the fact that the conclusion which precedes the recommendation specifically excludes National Grid. (page II-78). NEI's conclusion was that the staffing levels at the call centers for the other three electric utilities were inadequate. As to National Grid, NEI stated, at page II-81: "The fact that nearly 100% of all calls received during the storm restoration effort were answered indicates that National Grid's call center staffing levels were appropriate." There is no finding anywhere in the report that National Grid's call center staffing levels were inadequate at any time before or after the storm. Accordingly, this recommendation should be changed to reflect that it does not pertain to National Grid.

7. **Pages III-5 to III-6, "Additionally, comments from hundreds of citizens were solicited by the NHPUC after the storm at a series of ten town hall meetings held to gather input from the public. Those comments point repeatedly to communication failures."**

This statement is misleading because it fails to mention that no one attended the two public hearings held for National Grid in Salem and Derry. Thus, while the comments may have pointed to communication failures as to the other utilities, this was not the case for National Grid and the statement should be changed to reflect as such.

8. **Page III-16, "Conclusion: None of the utilities' emergency plans include procedures for communications with telephone and cable companies" and "Recommendation No. 4: Each electric utility should expand its emergency response plans to include procedures for communicating with telephone and cable companies so vital telecommunications can be restored as quickly as possible."**

This statement is incorrect. Section .118.01 of National Grid's New England Electric Emergency Procedures, a copy of which is attached as Exhibit 1-1 to National Grid's response to Staff 1-1, details procedures for communications with telephone utilities. As such, National Grid requests that it be removed from this conclusion and the accompanying recommendation. This is another example of National Grid being lumped together with the other utilities.

9. **Pages III-16 to III-17, "Conclusion: Security was inadequate during the December 2008 ice storm" and "Recommendation No. 5: Each electric utility should arrange for security services as part of its emergency plan."**

These statements are incorrect. Section .116 of National Grid's New England Electric Emergency Procedures details the Company's security procedures during an emergency,

and includes a specific provision for the arrangement of security services. During the storm, National Grid had security in place at its staging areas and there is no evidence cited by NEI that this security was inadequate. National Grid should be removed from this conclusion and recommendation.

10. **Page III-24, “Conclusion: The electric utilities did not have enough damage assessment personnel available immediately following the storm. This hindered their ability to provide restoration times.”**

National Grid strongly disagrees with this conclusion as it unfairly lumps National Grid with the other utilities. NEI’s findings in the report as to the number and performance of National Grid’s crews directly contradict this statement.

11. **Page III-26, “Conclusion: All of the utilities did a good job of utilizing ‘nontraditional’ resources, but those efforts were not sufficient during the December 2008 ice storm.”**

National Grid disagrees with this statement, as NEI cites no support for it in the report. At National Grid, most employees “wear two hats.” Many employees who do not respond to electric system emergencies on a daily basis have been cross-trained to assist in responding to storms and other electric system disruptions. Non-traditional employees filled a variety of roles during the storm, including: crew guide, outage analysis, damage survey, and logistics coordination. Retirees also supported the Company’s storm restoration effort and supplemented internal employees. In addition, during the storm, a contingent of National Grid’s Transmission Construction and Maintenance crews assisted in repairing damage to distribution facilities, to further expedite the restoration of service to our customers. This is another example of NEI’s broad conclusions which is inaccurate as to National Grid.

12. **Page IV-29, “Recommendation No. 3: Each electric utility should perform a review of substations supplied by sub-transmission lines.”**

Under this recommendation, NEI proposes that the electric utilities “should study and evaluate the costs and benefits of constructing additional transmission lines and upgrading substations to transmission voltages.” National Grid disagrees with this statement. In some areas, there are no transmission lines, and to upgrade substations to transmission voltages would be neither cost effective nor practical.

13. **Page IV-35, “Recommendation No. 5: Each electric utility should replace existing electro-mechanical relays with microprocessor based relays that feature event reporting ability, within the next five years.”**

National Grid appreciates the recommendation, but respectfully disagrees. Currently, as electro-mechanical relays age and become obsolete or unreliable, National Grid replaces them with the latest generation microprocessor based relays, but to require a wholesale replacement within the next five years is neither practical nor cost effective. Further, given the widespread damage and multiple faults on feeders during the storm, microprocessor based relays would not have helped restore customers any quicker.

14. **Page V-5, “Better vegetation management techniques and shorter tree trimming cycles are needed in New Hampshire to prevent the next storm from causing damage similar in extent to that caused by the December 2008 ice storm.”**

National Grid disagrees with this statement. It is well known that ice up to ½” on trees can cause catastrophic failure in healthy trees – a fact NEI acknowledges at page V-18 of its report. No type of vegetation management will completely protect against such conditions, and attempting to do so will be extremely costly and provide marginal benefit.

15. **Page V-9, Table V-3 National Grid Evaluation Matrix**

For the categories “Vegetation management plans are cost-effective with a long term approach” and “The utility’s vegetation management plan is efficient and environmentally sound,” NEI gave National Grid an open circle, indicating that “improvement is required as stated in the report.” National Grid strongly disagrees with this assessment and believes that it should have received an “effective with no improvements noted” rating.

National Grid’s vegetation management plan, which is detailed in National Grid’s response to Staff 1-32, does indeed have a long term approach. The plan includes a five year trim cycle with additional annual expenditures on hazard trees and individual customer requests for trimming. In addition, the plan complies with environmental regulations for chip disposal and preparedness for oil spills that might occur with vendor trucks. Nowhere in the report is there any information or data that justifies National Grid receiving the rating that it did. As such, National Grid believes that the rating is inaccurate and must be changed.

With respect to the category “The utility executes its vegetation management plan,” NEI gave National Grid a half circle, indicating “adequate with minor improvements suggested as stated in the report.” National Grid believes this rating is inaccurate inasmuch as it fully completes its vegetation management plan, including trim cycles, every year. The rating should be changed to reflect “effective with no improvements noted.”

16. **Page V-14, “Recommendation No. 2: Each electric utility should include provisions for rapid restoration of communications in their disaster recovery plans.”**

This statement is inaccurate because National Grid plans for and requires alternate communications capability to sites and/or devices that have been declared as critical for system reliability. In order to provide cost-effective reliable communication solutions, where applicable and in compliance with reliability standards, National Grid has adopted technologies, such as fiber optics, microwave, and spread spectrum radio. National Grid does not agree with NEI’s assertion that redundant communication capability to SCADA and AMR hubs would have a significant impact on electric utilities restoration efforts in the foreseeable future.

17. **Page V-17, “Recommendation No. 3: Each electric utility should ensure that all its poles, including joint use poles, are being properly inspected.**

As indicated in National Grid’s response to NEI 10-2, the Company has instituted a formal inspection program to inspect and record condition information on all distribution line assets, including poles, in a five year cycle, with a target of 20% of the system per year. Seven circuits are scheduled for inspection in National Grid’s New Hampshire service territory in 2010. Prior to the new program, National Grid conducted annual feeder patrols, during which poles would be inspected.

18. **Page V-30, “Within the state, there are many large healthy trees which pose a hazard to power lines and should be considered for removal.”**

National Grid disagrees with this statement. National Grid has an industry leading hazard tree removal program, the goal of which is to adequately assess risk and therefore leave large trees adjacent to power lines that do not pose a risk. The key is to adequately assess health from a biological and mechanical standpoint. The other part of the program is to educate landowners that “green healthy looking trees” are not always healthy trees. This approach promotes power line and tree coexistence. A trend toward large tree removal because of close relation to power lines, as NEI proposes, would be detrimental to the urban forest in New Hampshire.

19. **Page V-32, “Recommendation No. 4: Each electric utility should establish a more comprehensive vegetation management plan.”**

National Grid strongly disagrees with this recommendation as it pertains to National Grid. National Grid’s vegetation management plan, copies of which are attached in its response to Staff 1-32, is extremely comprehensive and detailed. The Company has a documented vegetation management strategy that addresses cycle length and clearance. As discussed in the plan, National Grid’s five year cycle is based on growing conditions and United States Department of Agriculture hardiness zones, and supported by an abundance of data. This application of growing conditions and hardiness zones can be seen on National Grid’s system with the differing cycle lengths from Rhode Island to New Hampshire, where growing conditions vary significantly. The Northeast utilities cited by NEI in the report have very different growing conditions and forest cover and, therefore, should not be used as data to support a four year cycle. Moreover, Commission precedent supports a five year cycle. In 1996, the Commission in Docket 96-125 required National Grid to budget for and maintain a five year cycle.

With respect to NEI’s contention that ground to sky trimming is a “superior” vegetation management practice, National Grid disagrees. Importantly, NEI cites no documentation or research to support this position. National Grid is a leader in researching vegetation management practices and received a grant to research branch failures. The results of this research were published by BioCompliance Consulting in a report entitled, *Development of Risk Assessment Criteria for Branch Failures within the Crowns of Trees*, in July 2009. The research supports the industry recommendation to avoid attempts to achieve ground to

sky clearance in distribution corridors. The report states that branch reduction, rather than branch removal, should be done, because it proves to have branch load increase effects. In addition, the report notes that leaving small diameter branches above lines reduces crown exposure and help decrease whole tree and limb failure. Such an approach avoids the exponential cost of ground to sky pruning and retains the aesthetic look of the trees. Further, in order to perform ground to sky clearance National Grid would need authorization from municipalities and private property owners for this aesthetically unattractive policy – a fact which NEI specifically notes in stating that only NHEC has the rights that are needed. As such, National Grid disagrees with any recommendation that includes ground to sky trimming.

Lastly, National Grid does not understand what NEI means when it states that “[e]ach electric utility should institute a basic tree inventory in an attempt to proactively handle trees which may become a future hazard.” (page V-32). National Grid requires clarification as to this statement.

20. **Page V-34, “Recommendation No. 5: state and local governments should extend laws regarding vegetation management for roads and highways to include electric and communication corridors. Utilities should be assisted by local and state government to streamline the property owner permission process.”**

While National Grid agrees with the general recommendation, New Hampshire RSA 231:172 will *not* make it easier for utilities to perform required trimming, as NEI opines at page V-33. National Grid was involved with the revisions to RSA 231:172 and pushed for a utility exemption clause for qualified utilities. This qualification would have included having a professional arborist on staff, using proper arboricultural practices, having a public education “right tree in the right place” program, and submission of an annual vegetation management plan. These and other National Grid proposed changes were not adopted. Instead, the revisions that were adopted require a 45 day landowner notification before the utility can begin trimming work, which is very restrictive. The main thing that needs to be addressed is giving the utilities the right to perform vegetation management work. Without that right, the recommendations made by NEI are difficult, if not impossible to perform.

21. **Page V-34, “Conclusion: Better vegetation management education is needed for utilities, municipalities, landscapers, and customers.”**

It should be noted that National Grid is involved in many local, state, national, and international professional societies and groups. In addition, National Grid provides “right tree, right place” bill inserts for its customers, and conducts various Arbor Day education programs.

22. **Page V-35, “Recommendation No. 6: Each electric utility should be required to employ at least one system forester or arborist in their New Hampshire service area.”**

This recommendation is inaccurate as to National Grid. National Grid employs (and did so at the time of the storm) a dedicated professional arborist for its New Hampshire service

area. NEI met with and interviewed this individual. As such, National Grid should be removed from this recommendation.

23. **Page V-35, “Recommendation No. 7: Each electric utility should expand its vegetation management program to include the judicious use of herbicides for stump treatment.”**

Currently, National Grid uses herbicides for stump treatment for its subtransmission and transmission assets. National Grid does not recommend expanding the program to roadside distribution given the administration burden associated with the application of herbicides. Until the laws are changed, National Grid does not believe that introducing such a program would be successful or cost effective.

**National Grid’s Internal Actions Following the Ice Storm**

Following the conclusion of restoration activities, National Grid conducted both internal operational reviews and external customer meetings, including three meetings in its New Hampshire service territory. These internally driven reviews produced a *2008 Ice Event – System Critique Report* (a copy of which is attached), which identified both tactical and strategic improvement opportunities, as well as best practices to be implemented not only in New Hampshire, but system wide. National Grid has continued to work to institute policy and procedure changes in several areas since the storm, including storm anticipation procedures, internal and external communication procedures, internal and external resource management, and logistics-related improvements. In addition, National Grid has implemented an end-to-end review and consolidation of all three of its legacy Electric Emergency Procedures. The consolidated Electric Emergency Procedures, which will incorporate the Incident Command Systems (“ICS”) and National Incident Management System (“NIMS”), will be finalized and implemented within 18 months.

National Grid also conducted a system level storm drill, which included New Hampshire, in July, 2009. The tactical and operational level drill involved a category three hurricane scenario, and was used to test and validate many of the procedural changes implemented following the ice storm. A critique review of the system drill also resulted in a report identifying additional improvement opportunities, which are on-track for implementation this year.

National Grid has taken a pro-active approach to identifying, correcting, and validating procedural and process related improvement opportunities following the ice storm. National Grid has held numerous meetings and workgroup sessions with employees, customers, municipalities, government agencies, and non-government organizations. The Company is also working closely with neighboring utilities to identify opportunities to improve the mutual assistance process. National Grid believes these actions will further improve its planning and response to future large scale weather events.

The following is a list of specific improvements that National Grid has implemented since the storm:

**Electric Emergency Procedures/Event Preparation:**

- Standardized and updated Pre-Event Checklists to ensure consistency within each business group and throughout all geographic regions.
- Tested and refined the Company’s alignment between strategic and tactical response teams, through the conduct of multiple “dual level” drills.
- Revised the Electric Emergency Procedures to further define the procedure and responsibility for contacting critical care customers and updating contact data.
- Incorporated recently revised US Transmission Emergency Plan into the overall Electric Emergency Procedures and identified a Transmission liaison for assignment to the Emergency Operations Center.
- Initiated end to end review and consolidation of Electric Emergency Procedures and integration of the Incident Command System (“ICS”) and National Incident Management System (“NIMS”). Note that this is ongoing.

**Communications:**

- Revised storm assignments of Energy Solution Services group (Business Services) in New England. The revised assignments dedicate these essential employees to communication with municipal officials and large customers during a severe weather event.
- Centralized organizational contact lists, including key municipal, governmental, and non-governmental organization contacts, and implemented procedure for updating information.
- Developed standardized procedure for conducting municipal update conference calls during severe weather events.
- Implemented graphical interface with Outage Management System (“OMS”) to allow customers to visualize outage data and restoration efforts. Note that this is ongoing.
- Deployed satellite phones to key locations and personnel as means of alternate communications in the event of cellular phone system failure.
- Developed safety communication handout for customers wishing to install portable generators during extended power outages.
- Developed formal procedure to conduct “blast calls” to identify remaining single customer outages amidst previously restored area outages.

**Resource Coordination / Mutual Assistance:**

- Provided additional training and resources to forestry organization in order to fully integrate the organization into the Company’s resource tracking system.
- Identified and trained additional personnel to assist with resource tracking during large scale events.
- Modified storm assignment database to standardize job titles, roles, and responsibilities in order to facilitate the seamless movement of personnel between geographic regions.

- Revised mutual assistance procedure to establish single resource coordinator and standardize procedure for reporting and requesting resources. Note that this is ongoing.
- Established procedure to identify, train, and deploy personnel from unaffected lines of business (Electric Transmission, Gas Distribution, etc.) during a large scale event.

**Logistics:**

- Validated inventory requirements and inspected pre-staged storm kits and bulk staging site materials.
- Developed procedure to “push” storm kits to pre-designated locations based on operational needs.
- Developed and implemented training program for additional staging site support during large scale events.

Thank you for the opportunity to submit these comments. Should you have any questions or concerns, please do not hesitate to contact me.

Thank you for your time and attention.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Patric R. O'Brien", with a horizontal line extending to the right.

Patric R. O'Brien

cc: Tom Frantz (via electronic mail)  
Randy Knepper (via electronic mail)