

May 1, 2006

VIA HAND DELIVERY & ELECTRONIC MAIL

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

RE: Docket 3628 - 2005 Service Quality Report

Dear Ms. Massaro:

Enclosed are ten (10) copies of the 2005 performance results of The Narragansett Electric Company, d/b/a National Grid (“the Company”) under its Service Quality Plan (“Plan”) as established in the above-captioned docket. Based on actual performance results, the Company has calculated a net penalty of \$174,958 for calendar year 2005.

The Company’s Plan is described in Attachment 1 to the Company’s Service Quality Plan Settlement Agreement filed on December 29, 2004, and approved by the Commission in Docket 3628. The Plan provides for penalties and offsets relating to performance standards in the areas of reliability and customer service. The service quality standards under the Plan became effective as of January 1, 2005. The Plan provides that any penalty amounts that may accrue shall be credited to customers during the following year in a manner approved by the Commission.

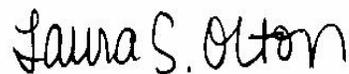
This report is organized as follows:

- Section 1: Provides a summary of each performance standard in the areas of reliability and customer service. Section 1 contains descriptions of each of the performance standards, the targeted performance levels for 2005 with their related dollar values, and the actual 2005 results with the applicable annual penalty or offset.

- Section 2: Provides a summary calculation of the Company's annual penalty or offset for each of the performance standards for 2005. The annual net penalty for 2005 of \$174,958, as shown in Column (i) is comprised of two components. The Company has calculated a \$192,535 penalty related to duration of outages, and an offset of \$17,577 based on the percentage of telephone calls answered within twenty (20) seconds.
- Section 3: The Plan requires the Company to report on additional aspects of service quality, including: (1) worst performing circuits; (2) trouble, non-outage calls received; (3) annual meter reading performance; and (4) additional reliability information. Section 3 summarizes the results of these reporting requirements.
- Section 4: During 2005, the Company experienced six events that it believes are properly excluded from the calculation of reliability performance, because they fall under the category of Extraordinary Events, as defined in the Plan. These six events have been excluded from the calculation of reliability performance and are summarized in Section 4.
- Section 5: Five of the six Extraordinary Events that occurred during 2005 related to severe weather. Section 5 contains detailed information on these five events.

Thank you for your attention to this filing. If you have any questions concerning this report, please do not hesitate to call me at (401) 784-7667.

Very truly yours,



Laura S. Olton

Enclosures

cc: Docket 3628 Service List
Paul Roberti, Esq.
Steve Scialabba, Division

Certificate of Service

I hereby certify that a copy of the cover letter and / or any materials accompanying this certificate has been mailed or hand-delivered to the parties listed below.



Joanne M. Scanlon

May 1, 2006
Date

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cc: Steve Scialabba, RI Division

The Narragansett Electric Company,
d/b/a National Grid

2005 Service Quality Report

May 1, 2006

Submitted to:
Rhode Island Public Utilities Commission
RIPUC Docket No. 3628

Submitted by:

nationalgrid

Section 1

Performance Standards Descriptions,
Targeted Performance Levels, and Actual Results

RELIABILITY PERFORMANCE STANDARDS

Interruption Frequency and Duration

Under the Service Quality Plan, an interruption is defined as the loss of electric service to more than one customer for more than one minute. The interruption duration is defined as the period of time, measured in minutes, from the initial notification of the interruption event to the time when service has been restored to the customers. Interruptions are tracked using System Average Interruption Frequency Index (SAIFI) and System Average Interruption Duration Index (SAIDI). SAIFI is calculated by dividing the total number of customers interrupted by the total number of customers served. SAIFI measures the number of times per year the average customer experienced an interruption. This is an average, so in any given year some customers will experience no interruptions and some will experience several interruptions. SAIDI measures the length of interruption time that the average customer experienced for the year. It is calculated by dividing the total customer minutes of interruption by the total number of customers served.

Certain events are defined as Extraordinary Events and are excluded from the calculation of reliability performance standards for the purpose of penalty and offset assessment. Section 4 further discusses of the Extraordinary Events that occurred during 2005.

2005 Frequency (SAIFI) Standard

2005 Frequency (SAIFI) Results

<u>Frequency of Interruptions per Customer</u>	<u>(Penalty) Offset</u>	<u>Frequency of Interruptions per Customer</u>	<u>Annual (Penalty) Offset</u>
Greater than 1.36	(\$916,000)		
1.20-1.36	linear interpolation		
0.91-1.19	\$0	1.13	\$0
0.80-0.90	linear interpolation		
Less than 0.80	\$229,000		

2005 Duration (SAIDI) Standard

2005 Duration (SAIDI) Results

<u>Duration of Interruptions (minutes)</u>	<u>(Penalty) Offset</u>	<u>Duration of Interruptions (minutes)</u>	<u>Annual (Penalty) Offset</u>
Greater than 93.0	(\$916,000)		
77.4-93.0	linear interpolation	80.6	(\$192,535)
53.4-77.3	\$0		
44.4-53.3	linear interpolation		
Less than 44.4	\$229,000		

CUSTOMER SERVICE PERFORMANCE STANDARDS

Customer Contact Survey

The customer contact survey results are based on responses from National Grid’s Rhode Island customers, from a survey performed by an independent third-party consultant. The consultant surveys samples of customers who have contacted the call center during the year in order to determine their overall level of satisfaction with their contact. Eight types of transactions are included in the survey, and the overall results are weighted based on the number of these transactions actually performed at the call center during the year. The percent satisfied represents the responses in the top two categories of customer contact satisfaction on a seven-point scale, where 1 means extremely dissatisfied and 7 means extremely satisfied.

2005 Customer Contact Standard

2005 Customer Contact Results

<u>Percent Satisfied</u>	<u>(Penalty) Offset</u>	<u>Percent Satisfied</u>	<u>Annual (Penalty) Offset</u>
Less than 74.5%	(\$184,000)		
74.5%-76.7%	linear interpolation		
76.8%-81.4%	\$0	79.8%	\$0
81.5%-83.7%	linear interpolation		
Greater than 83.7%	\$46,000		

Telephone Calls Answered Within 20 Seconds

The calls answered performance standard reflects the annual average of calls answered within 20 seconds. “Calls answered” include calls answered by a customer service representative (CSR) and calls completed within the Voice Response Unit (VRU). The time to answer is measured once the customer makes a selection to either speak with a CSR or use the VRU.

<u>2005 Calls Answered Standard</u>		<u>2005 Calls Answered Results</u>	
<u>% Answered Within 20 Seconds</u>	<u>(Penalty) Offset</u>	<u>% Answered Within 20 Seconds</u>	<u>Annual (Penalty) Offset</u>
Less than 53.5%	(\$184,000)		
53.5%-65.7%	linear interpolation		
65.8%-90.4%	\$0		
90.5%-100.0%	linear interpolation, to a maximum of \$46,000	95.1%	\$17,577

Section 2

Calculation of Penalties/Offsets

National Grid
2005 Results of Service Quality Plan
Calculation of Penalty/Offset

Performance Standard	Potential Penalty (a)	Potential Offset (b)	2005 Results (c)	Maximum Penalty (d)	One Std Dev. Worse Than Mean (e)	Mean (f)	One Std Dev. Better Than Mean (g)	Maximum Offset (h)	Annual (Penalty)/Offset (i)
Reliability - Frequency	\$ 916,000	\$ 229,000	1.13	1.36	1.19	1.04	0.91	0.80	\$0
Reliability - Duration	\$ 916,000	\$ 229,000	80.6	93.0	77.3	64.2	53.4	44.4	(\$192,535)
Customer Service - Customer Contact Survey	\$ 184,000	\$ 46,000	79.8%	74.5%	76.8%	79.1%	81.4%	83.7%	\$0
Customer Service - Telephone Calls Answered	\$ 184,000	\$ 46,000	95.1%	53.5%	65.8%	78.1%	90.4%	100.0%	\$17,577
Total Penalty/Offset	\$ 2,200,000	\$ 550,000							(\$174,958)

Notes:

Columns (a), (b), and (d)-(h) are per the Service Quality Plan, RIPUC Docket No. 3628.

Column (c) represents the actual 2005 annual results for the performance standards listed in the first column.

Column (i) is calculated as follows:

- For Reliability Standards:
 - If Column (c) is between Column (g) and Column (e): \$0
 - If Column (c) is between Column (h) and Column (g): $[\text{Column (g) - Column (c)}] \div [\text{Column (g) - Column (h)}] \times \text{Column (b)}$
 - If Column (c) is between Column (e) and Column (d): $[\text{Column (c) - Column (e)}] \div [\text{Column (d) - Column (e)}] \times \text{Column (a)}$
 - If Column (c) is greater than Column (d): 100% of Column (a)
 - If Column (c) is less than Column (h): 100% of Column (b)
- For Customer Service Standards:
 - If Column (c) is between Column (e) and Column (g): \$0
 - If Column (c) is between Column (g) and Column (h): $[\text{Column (c) - Column (g)}] \div \text{standard deviation} \times \text{Column (b)}$
 - If Column (c) is between Column (d) and Column (e): $[\text{Column (e) - Column (c)}] \div \text{standard deviation} \times \text{Column (a)}$
 - If Column (c) is less than Column (d): 100% of Column (a)
 - If Column (c) is greater than Column (h): 100% of Column (b)

Section 3

Additional Reporting Requirements

ADDITIONAL REPORTING CRITERIA

Under the Company's Service Quality Plan, the following additional reporting criteria are required to be filed with the Commission.

1. **Reporting Requirement:** Each quarter, the Company will file a report of 5% of all circuits designated as worst performing on the basis of customer frequency.

Included in the report will be:

1. The circuit id and location.
2. The number of customers served.
3. The towns served.
4. The number of events.
5. The average duration.
6. The total customer minutes.
7. A discussion of the cause or causes of events.
8. A discussion of the action plan for improvements including timing.

Results: The Company filed its first quarter 2005 feeder ranking results on May 9, 2005, the second quarter results on July 12, 2005, the third quarter results on October 24, 2005, and the fourth quarter results on January 31, 2006.

2. **Reporting Requirement:** The Company will track and report monthly the number of calls it receives in the category of Trouble, Non-Outage. This includes inquiries about dim lights, low voltage, half-power, flickering lights, reduced TV picture size, high voltage, frequently burned-out bulbs, motor running problems, damaged appliances and equipment, computer operation problems, and other non-interruptions related inquiries.

Results: This reporting requirement for 2005 was provided to the Commission under separate cover on January 6, 2006.

3. **Reporting Requirement:** The Company will report its annual meter reading performance as an average of monthly percentage of meters read.

Results: During 2005, the Company’s annual meter reading performance (as an average of monthly percentage of meters read) was 98.6%, compared to 98.6% during 2004 and 2003 and 95.9% during 2002. The following table details the percentage of meters read per month for 2005, 2004, 2003, and 2002.

**Narragansett Electric Company
Monthly Percentage of Meters Read**

	2005	2004	2003	2002
January	98.5%	98.7%	98.9%	96.1%
February	98.5%	98.9%	98.9%	97.2%
March	98.9%	99.0%	99.1%	98.3%
April	99.1%	98.7%	99.1%	98.6%
May	98.9%	98.5%	99.0%	92.6%
June	98.6%	98.5%	98.8%	92.8%
July	98.6%	98.3%	98.5%	94.4%
August	98.4%	98.4%	97.9%	94.6%
September	98.4%	98.7%	98.0%	93.4%
October	98.4%	98.6%	98.4%	96.3%
November	98.6%	98.5%	98.5%	98.2%
December	98.8%	98.5%	98.5%	98.5%

4. **Reporting Requirement:** The Company will also report annually the annual SAIDI and SAIFI values calculated under the Institute of Electrical and Electronics Engineers, Inc. (“IEEE”) Std. 1366-2003 methodology, including the segmentation of those days that would qualify as Major Event Days under that standard.

Results:

The following table summarizes the target bands and 2005 results under the Company's Service Quality Plan, compared to the target bands and results using IEEE Std. 1366-2003 (based on historical data from 1995 to 2004).

	Current SAIFI Target	IEEE SAIFI Target	Current SAIDI Target	IEEE SAIDI Target
Maximum Penalty	More than 1.36	More than 1.23	More than 93.0	More than 87.3
No Penalty or Offset	0.91 – 1.19	0.85 – 1.09	53.4 – 77.3	45.5 – 70.3
Maximum Offset	Less than 0.80	Less than 0.75	Less than 44.4	Less than 36.7
2005 Results	1.13	1.22	80.6	88.3
2005 (Penalty)/Offset	\$0	(\$850,571)	(\$192,535)	(\$916,000)

IEEE Std.1366 identifies reliability performance during both day-to-day operations and Major Event Days. Major Event Days represent those few days during the year on which the energy delivery system experienced stresses beyond that normally expected, such as severe weather. A day is considered a Major Event Day if the daily SAIDI exceeds a threshold value, calculated using the IEEE methodology. For 2005, the threshold value was calculated as 5.85 minutes. Therefore, those days during 2005 with a SAIDI value over 5.85 minutes were considered Major Event Days. There were three days during 2005 that qualified as Major Event Days, and are not included in the IEEE results in the table above.

- July 19, 2005 Lightning Storm
- October 25, 2005 Wind Storm
- December 9, 2005 Snow and Wind Storm

The following table compares the 2005 Extraordinary Events under the Company's Service Quality Plan with the Major Event Days as determined by the IEEE methodology.

Date	Description	Peak # Customers Out	# Customers Interrupted	Accrued Customer Minutes	SAIFI Impact	SAIDI Impact	IEEE Major Event Day?
Jan. 22-23	Blizzard – state of emergency	3,535 on Jan. 23	10,201	772,631	0.02	1.6	No
July 15	Suicide attempt	34,625	34,625	1,109,591	0.07	2.3	No
July 19	Severe lightning storm	37,585	43,925	7,168,950	0.09	15.0	Yes
Oct. 15-17	Flooding – state of emergency	13,368 on Oct. 16	23,496	2,616,865	0.05	5.5	No
Oct. 25	Severe wind storm	37,605	69,693	9,560,904	0.15	20.0	Yes
Dec. 9	Snow and wind storm	24,157	31,593	5,016,232	0.07	10.5	Yes

Section 4

Extraordinary Events

EXTRAORDINARY EVENTS

The Plan defines certain events as Extraordinary Events and excludes these events from the calculation of reliability performance standards for the purposes of penalty and offset assessment. Extraordinary Events are defined in the Service Quality Plan as meeting one of the following three criteria:

- (1) It was the result of a major weather event which causes more than 10% of a district or the total company customers to be without service at a given time; or
- (2) It was due to the failure of other companies' supply or transmission to Narragansett Electric customers and restoration of service was beyond the reasonable control of the Company and its employees; or
- (3) It occurred because of an extraordinary circumstance, including, without limitation, a major disaster, earthquake, wild fire, flood, terrorism, or any other event beyond the reasonable control of the Company.

As described below, the Company experienced six Extraordinary Events during 2005, which were beyond the Company's reasonable control. A summary of each of these events is included below. In addition, Section 5 provides greater detail on five of these six events. Please note that some of the numbers in the following sections have been updated from the letters sent to the Division during the year in order to reflect final 2005 results.

- **January 22-23, 2005 Blizzard:** In a letter to the Division on April 22, 2005, the Company notified the Division that it considered a blizzard that occurred on January 22-23, 2005, an Extraordinary Event. As a result of the impact of heavy snowfall on the State of Rhode Island, Governor Carcieri declared a State of Emergency for these days. As such, the blizzard was considered extraordinary under the Plan because it met criteria (3) above. (More information about the blizzard is included in Section 5.)
- **July 15, 2005 Suicide Attempt:** In a letter to the Division on August 2, 2005, the Company notified the Division that it considered an event that took place on July 15, 2005, an Extraordinary Event. On that date, a person climbed a Company-owned energized transmission tower on School Street in Pawtucket in an attempt to commit suicide. Police and fire officials requested that the Company de-energize the transmission lines on the tower. For safety reasons, the transmission circuits were de-energized for over 30 minutes. As a result of this incident, 34,625 customers were affected for over 30 minutes, resulting in a SAIFI impact of 0.07 and a SAIDI impact of 2.3 minutes. This event was considered extraordinary under the Plan because it met criteria (3) above.

- **July 19, 2005 Lightning Storm:** In a letter to the Division on August 2, 2005, the Company notified the Division that it considered a severe lightning storm that occurred on July 19, 2005, an Extraordinary Event. This storm caused 131 interruptions between 4:00 p.m. and 11:00 p.m. At the height of this event, there were more than 37,000 customers out of service, which resulted in a SAIFI impact of 0.09. During this event, 7,168,950 customer minutes were accrued, which resulted in a SAIDI impact of 15.0 minutes. This event warranted the use of Company crews from outside of the Ocean State Division and contractors in conjunction with local Company personnel to restore service. The Ocean State Division storm plan was activated and storm rooms in all the major Ocean State Division offices were opened (Lincoln, Providence, and North Kingstown) to coordinate around-the-clock restoration efforts. This lightning storm was considered extraordinary under the Plan because it met criteria (3) above. (More information about the lightning storm is included in Section 5.)
- **October 15-17, 2005 Flooding:** In a letter to the Division on December 13, 2005, the Company notified the Division that it considered severe flooding during October an Extraordinary Event. On October 15, 2005, severe flooding occurred in the state of Rhode Island. On October 17, 2005, Governor Carcieri declared a State of Emergency for events occurring from October 15 through October 17, 2005. Typically, the Company's Rhode Island territory experiences approximately 10 interruptions per day. However, during those three days, there were 154 interruptions with a total of 23,496 customers interrupted, resulting in a SAIFI impact of 0.05. During this event, 2,616,865 customer minutes were accrued, which resulted in a SAIDI impact of 5.5 minutes. The flooding was considered extraordinary under the Plan because it met criteria (3) above. (More information about the flooding is included in Section 5.)
- **October 25, 2005 Wind Storm:** In a letter to the Division on December 13, 2005, the Company notified the Division that it considered a severe wind storm that occurred on October 25, 2005 an Extraordinary Event. This storm caused 136 interruptions with a total of 69,693 customers interrupted, resulting in a SAIFI impact of 0.15. At approximately 3:30 p.m. and 5:00 p.m. on that day, there were nearly 38,000 customers out of service. During this event, 9,560,904 customer minutes were accrued, which resulted in a SAIDI impact of 20.0 minutes. This event warranted the use of Company crews from outside of Rhode Island and contractors in conjunction with local Company personnel to restore service. The Company activated its storm plan and opened storm rooms in Lincoln, Providence, and North Kingstown to coordinate around-the-clock restoration efforts. This wind storm was considered extraordinary under the Plan because it met criteria (3) above. (More information about the storm is included in Section 5.)

- **December 9, 2005 Snow and Wind Storm:** In a letter to the Division on January 9, 2006, the Company notified the Division that it considered an unusual snow and wind storm that occurred on December 9, 2005 an Extraordinary Event. This storm caused extensive damage as snow turned to rain, then back to heavy snow, combined with strong wind gusts exceeding 40 miles per hour. During this storm, there were 113 interruptions with a total of 31,593 customers interrupted, resulting in a SAIFI impact of 0.07. During this event, 5,016,232 customer minutes were accrued, which resulted in a SAIDI impact of 10.5 minutes. This storm was considered extraordinary under the Plan because it met criteria (3) above. (More information about the storm is included in Section 5.)

Section 5

Significant Weather Impacts in 2005

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Introduction

National Grid experienced approximately twenty (20) significant storms during 2005 in the State of Rhode Island, which impacted the Company's reliability performance. Five of those storms were unusual enough to warrant a discussion regarding whether they should be treated differently than other storms. This paper presents the weather impacts of those five major storms and the Company's response to them.

Appendix I provides graphics showing the magnitude of these storms by number of individual outage events and the customers impacted. While these storms had a significant impact on National Grid's operations, many additional reports demonstrate that these storms had a significant impact on other entities providing vital services to Rhode Island, including airports and road systems.

Discussion

January 22-23, 2005 Blizzard

The storm on January 22-23, 2005 was an unusual day worthy of discussion. The blizzard that impacted Rhode Island on January 22-23 affected large areas of the northern United States, dropping more than 3 feet of snow in parts of southeastern Massachusetts, as well as much of the Boston metropolitan area.

According to reports, "The storm shut down Logan International Airport in Boston, Massachusetts and T. F. Green Airport in Rhode Island, while also impairing travel..." In addition, "snow piles on street corners were in excess of ten feet high in some locations. Roads were severely narrowed in most congested areas, due to parked cars that were not towed and instead simply plowed in. Most schools in southeastern Massachusetts and Rhode Island remained closed for an extended period of time to allow for clean-up of the debris."

The Governor of Rhode Island declared a State of Emergency (see Rhode Island Executive Order 05-03 (January 23, 2005), attached as Appendix II) due to blizzard conditions, including high winds, snow, and cold temperatures which resulted in dangerous driving conditions, closed roads, and "other potential hazards which pose an imminent threat to public safety as well as damage to public and private property." In his order, the Governor noted that additional time and resources would be required for state and local officials to restore roads. For safety, he also closed all non-essential state offices and ordered the same be done by local officials and school systems. The Rhode Island National Guard was activated and commercial carriers of home heating fuel and liquid natural gas were relieved "from the provisions of 49 CFR 395.3(b) of the Federal Motor Carrier Safety Regulations for interstate motor carriers ..."

Certainly, large winter storms are a familiar occurrence in Rhode Island. However, all of the reports indicate the severity of this storm, even for Rhode Island. This storm had

more impact than usual and created significant and difficult conditions for all. Despite the storm's severity, National Grid's response was rapid and effective.

National Grid used 38 crews in Rhode Island on January 23, 2005. In addition, 20 contract tree crews were used. Figure 1 shows that the electric system was designed to withstand this type of storm and responded fairly well. This is evidenced by the customers interrupted figures in the low thousands, not tens of thousands, despite the storm's severity. When the system did not perform as desired due to the storm, National Grid personnel moved quickly to mitigate the impact to customers. This can be seen in the sharp downward trends following large events; for example, between the hours of 7:00 a.m. and 9:00 a.m.

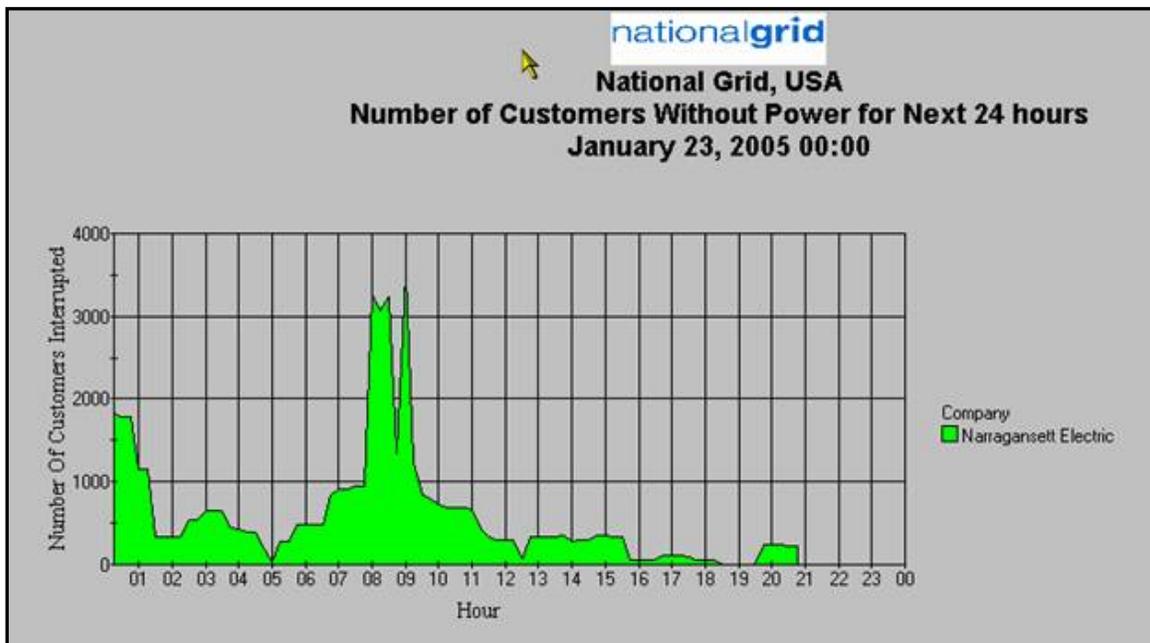


Figure 1: Customers Interrupted by Hour 1/23/2005

July 19, 2005 Lightning Storm

Our Rhode Island service area experienced 24 lightning storms (days with greater than ten strikes) in 2005. These lightning storm days averaged 112 strikes per day. The most significant storm occurred on July 19, 2005, which had 1,442 strikes (more than ten times the typical lightning storm for Rhode Island). The next most severe lightning storm was on August 8, 2005. It had 1,316 strikes; again, more than ten times the typical lightning storm. The next two most severe lightning storms were on May 29, 2005 (437 strikes) and August 5, 2005 (266 strikes). The unusually severe lightning storm of July 19, 2005 impacted northern Rhode Island, as seen in Figure 2.

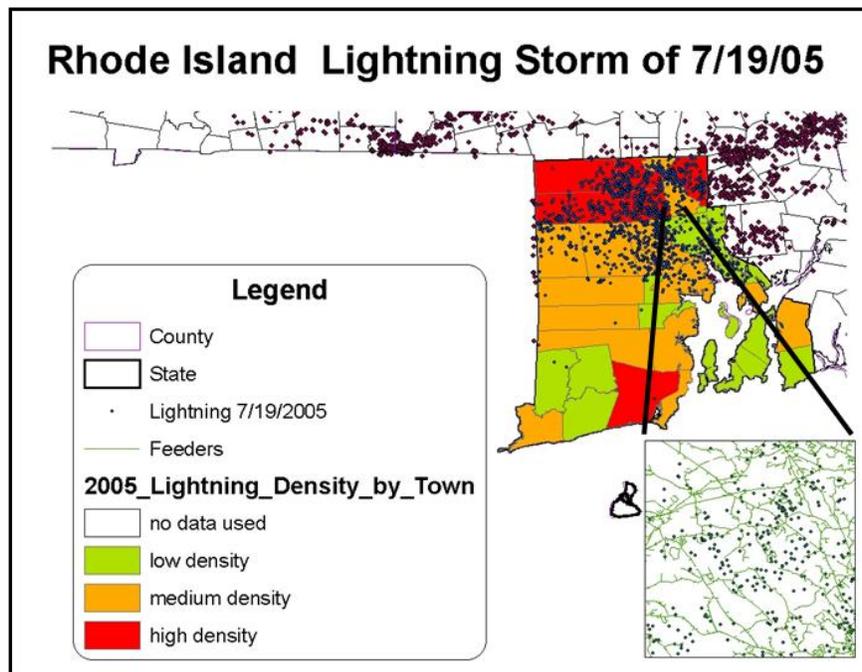


Figure 2: Lightning 7/19/2005

National Grid used 40 crews in Rhode Island on that day, and an additional 4 crews were sent into Rhode Island on July 20 from our Bay State South division. National Grid also used an additional 18 contract crews and 22 contract tree crews. Figure 3 shows the rapid increase in customers interrupted by hour as the storm moved through the state, and the equally rapid decrease in the number of customers interrupted as service was restored. This is indicative of a well-designed system with excellent operational crew and control room personnel response.

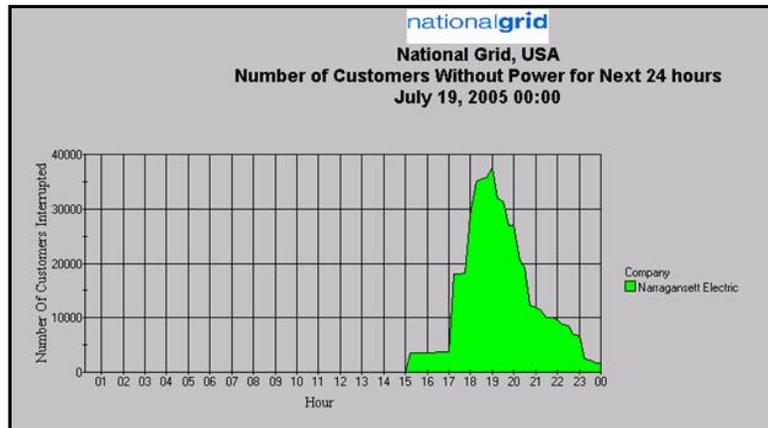


Figure 3: Customers Affected by Hour 7/19/2005

October 15-17, 2005 Storm and Flooding

According to the National Weather Service, October 2005 was the wettest month on record of all time in Rhode Island. Figure 4 below, from the National Oceanic and Atmospheric Agency (NOAA), shows that all of New England experienced much higher than normal rain, with Rhode Island in particular experiencing eight inches to eleven inches more than normal.

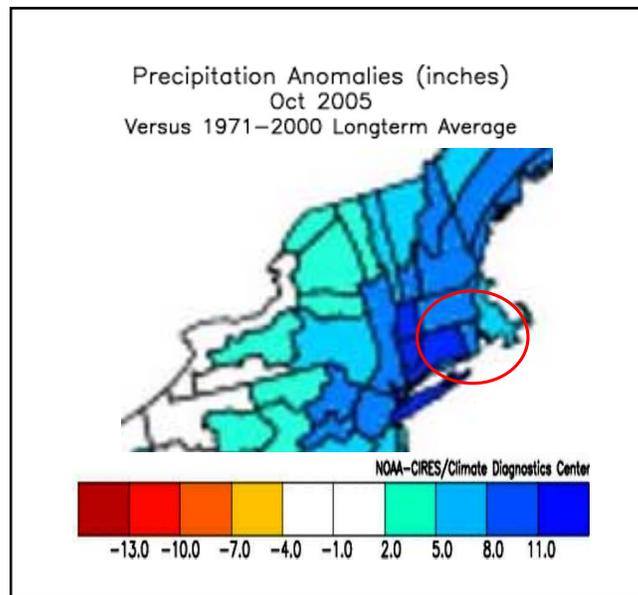


Figure 4: October 2005 Precipitation Anomalies

Figure 5 below, demonstrates that precipitation in inches for October 2005 was about two standard deviations above the typical maximum for previous “wet” years, and three standard deviations above the average for the past nine years.

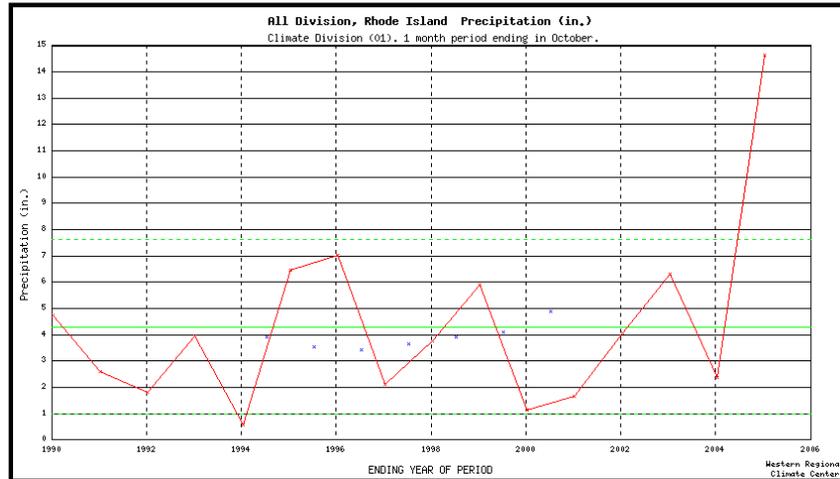


Figure 5: Rhode Island October Precipitation by Year

On October 15, 2005, the Rhode Island Emergency Management Agency (RIEMA) opened its State Emergency Operations Center due to major flooding problems for residents (see Appendix III). The Rhode Island State Police, National Guard, Red Cross, Department of Transportation, Federal Emergency Management Agency, and others were mobilized.

In its annual report to the Governor, the Rhode Island Dam Emergency Management (DEM) reported that the rain was “at or near a 100 year storm event.” (Appendix IV.) At least one dam required emergency mitigation measures, which included lowering water levels and construction of a dam downstream of the failing dam.

The Governor of Rhode Island issued Executive Order 05-20 on October 17, 2005 declaring a State of Emergency for Rhode Island. (Appendix V.) The document referenced the historic rainfall causing extensive flooding in many areas throughout the State and the need for mandatory evacuation in parts of Cranston, Coventry, Richmond, Lincoln, Woonsocket, Central Falls, and Providence.

During the October 15 through 17 storm, National Grid crews took extraordinary measures to minimize interruption of service to its customers. The Riverside Substation flooded to about 4 feet above grade (see photographs in Figures 6 and 7). Quick action by operations crews and the Company’s Lincoln Control Center resulted in 8 feeders transferred to alternative supplies without an outage to a single customer. The Company’s Planning, Engineering, and local Distribution Design departments worked throughout the evening to develop a detailed circuit re-configuration plan. The Company’s Business Services group coordinated for the CVS Data Center to shed load and run generation. These actions minimized the potential for rolling blackouts forecast for the upcoming weekday load.

In addition to National Grid's use of on-site generation and amphibious vehicles, successful partnership and coordination with RIEMA allowed for the use of special equipment required to access the substation and control of the flood gates.

National Grid used 35 in-house overhead line crews in Rhode Island throughout the weekend on limited rest to implement the emergency system changes for the substation flood and to respond to the storm in general. This effort was assisted by 13 outside line crews and an additional 14 tree crews. In parallel with these efforts, National Grid was responding to numerous municipal requests to de-energize supplies to various customers due to dangerous conditions in their facilities caused by flooding.



Figure 6: Riverside Substation Flood



Figure 7: Riverside Substation Flood

With regard to the number of customers interrupted, National Grid had between 100 and 500 customers without service on the first day, depending on the hour. By the morning of the second day, there were no customers without service, but this changed late morning as flooding problems continued in the area. At the peak, about 13,000 customers were interrupted (see Figure 8). This number was quickly reduced over the next three to four hours to less than 2,000 customers, and by the third day to a few hundred customers interrupted. This fast recovery was only possible through the continuous efforts of employees working under difficult conditions.

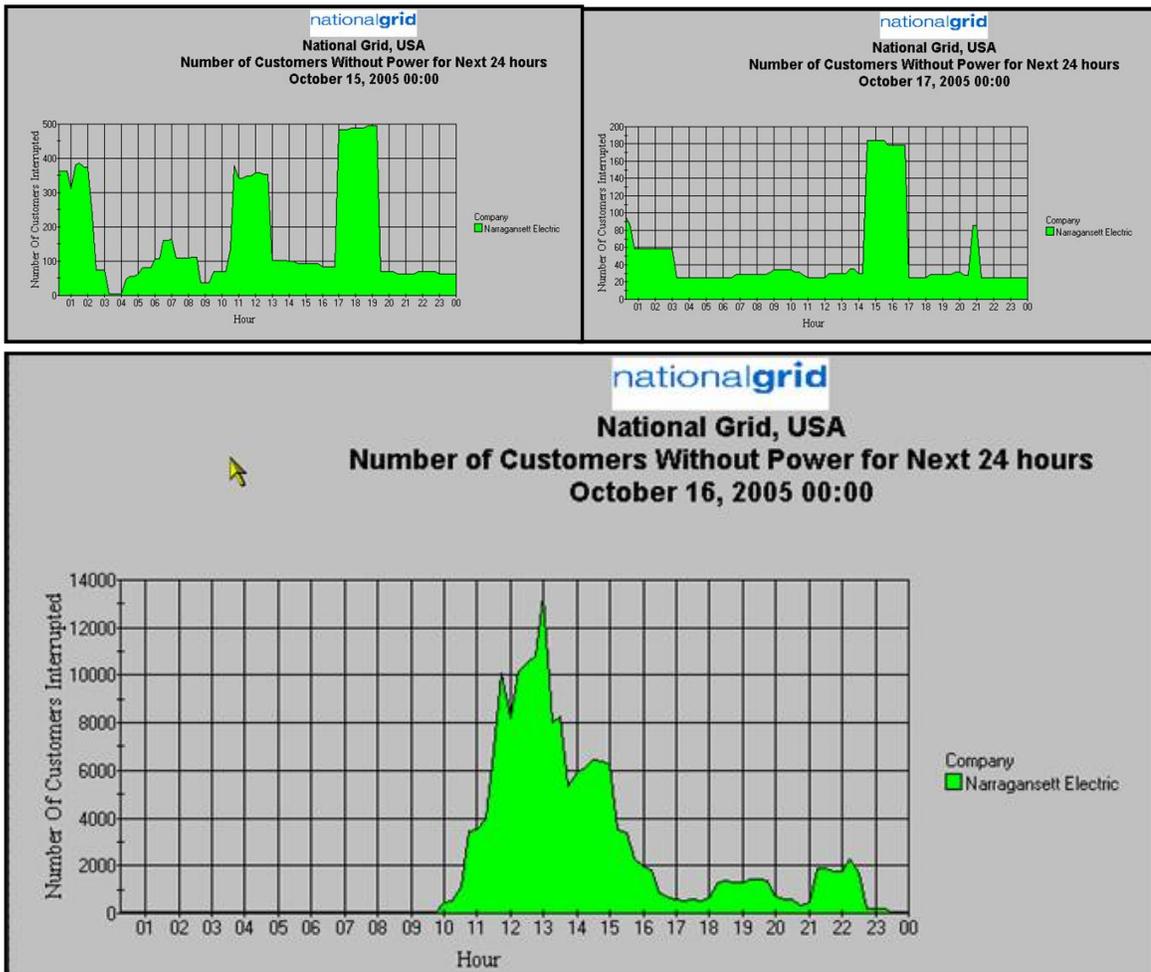


Figure 8: Customers Interrupted by Hour 10/15-17/2005

Figure 9 shows that the greatest customer impact occurred in towns where the most rain fell. In general, the electric system withstood this storm in good order. Performance was reduced only where major rain of a very unusual amount fell and thus flooding was most severe and atypical. Appendices VI, VII, VIII, and IX contain news stories regarding this historical weather event.

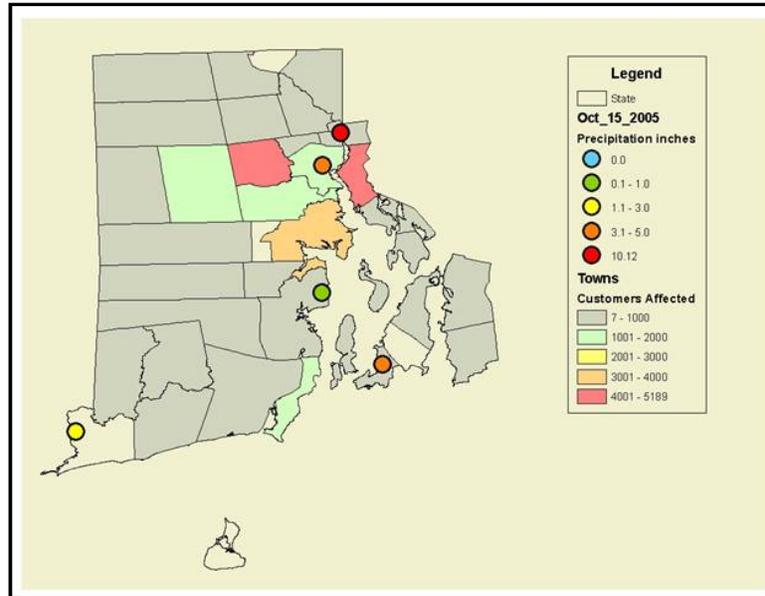


Figure 9: Customers Affected 10/15/2005

October 25, 2005 Wind Storm

The storm on October 25, 2005 was significant because of its severe winds. Several newspaper articles described the events of that day. Three articles in the *Providence Journal* (Appendices X, XI, and XII) reported damage from the winds to trees, which in turn caused damage to the electric system and also blocked roads and damaged automobiles. These transportation system problems inhibited National Grid's ability to move our trucks. News reports indicated that winds exceeded 30 miles per hour, with wind gusts of 47 and 66 miles per hour. Figure 10 contains an additional sampling of wind speed in and near Rhode Island, with National Grid's service territory shaded in green. This data was obtained from the National Oceanic and Atmospheric Administration.

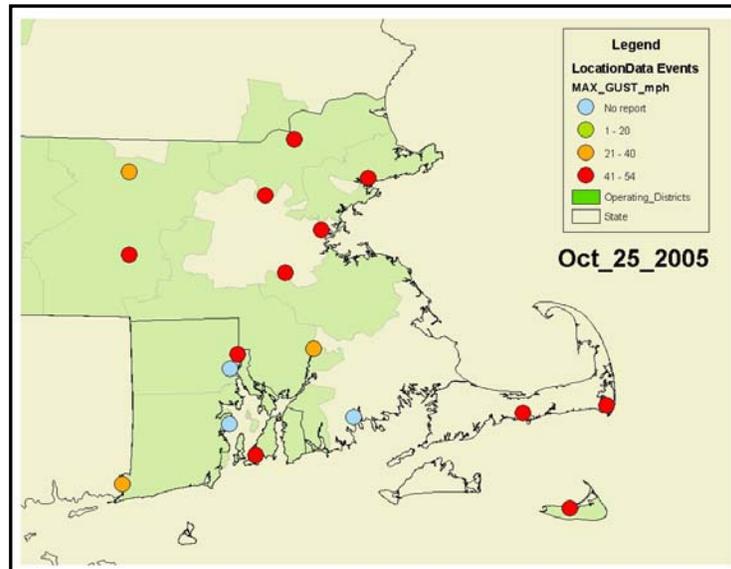


Figure 10: Wind 10/25/2005

The newspapers noted that as soon as repairs to electric and transportation infrastructure were completed, additional trees were blown down creating new problems. Several road intersections were blocked for hours as transportation crews worked to clear them. These articles also described minor flooding to roadways and “numerous accidents and disabled motor vehicles.” State transportation and town public works personnel were busy solving flooding related problems. Sewers backed up from the rain waters. “Downtown Providence was strewn with discarded umbrellas, torn apart and pulled from people’s hands by wind gusts.” “Flights out of T. F. Green Airport were delayed. The Block Island ferry was canceled, again.” Waves washed over the seawall in Narragansett. The National Weather Service issued high-wind warnings for the day and a wind advisory for the late evening hours.

The *Boston Globe* reported that high winds caused disruption to highway travel and airports, and rain fell almost horizontally at times. (Article attached as Appendix XIII) Logan International Airport and airports along the East coast experienced flight delays that averaged nearly two hours. “Rainfall in New England ranged from 1 to 3 inches, with winds of 45 to 55 miles per hour.” “Trees seemed to bear the brunt of the storm, swaying, shredding, and being uprooted from ground that was moist and pliant after this month’s heavy rains.” The *Boston Globe* article also noted roadways and public transportation was “snarled” due to downed trees. “Fallen trees also caused hours of disruption for T passengers on the Green and Orange lines”.

A *Kent County Daily Times* article described widespread problems due to fallen trees (attached as Appendix XIV).

National Grid crews responded to 136 events in Rhode Island on that day. The high volume of events in such a short period of time, coupled with the adverse working conditions and road system problems, increased restoration time on the electric system. Similar delays were reported in news articles for transportation systems.

National Grid is often able to move nearby crews from other areas quickly to improve restoration efforts. However, this storm, combined with the previous week's rain, caused tree problems which impacted a wide portion of our system beyond Rhode Island. Crews from the Bay State South division were responding to interruptions in that area. This required quick and innovative responses from Company personnel coordinating storm efforts. National Grid was able to gather in Rhode Island and use 54 crews. This was supplemented with an additional 21 contract crews plus 25 contract tree crews.

The 136 interruptions caused by this severe wind storm resulted in a total of 70,660 customers interrupted in Rhode Island. Figure 11 shows the number of customers interrupted by hour for October 25, 2005. Figure 12 shows the pattern of customers impacted by town and the maximum wind experienced. Despite adverse conditions continually impacting the system throughout the storm period, constant effort from our crews helped to minimize total customers out in any one hour. This effort can be seen in the downward trend between 11:00 a.m. and 2:00 p.m. The large increase at 2:00 p.m. was the result of a single cause on the transmission system. Even during this time, crews made progress restoring other parts of the system. This can be seen by the steady drop in the top of the curve between 2:00 p.m. and 5:30 p.m. By 5:30 p.m., restoration efforts for the transmission event were completed, and the curve dropped dramatically. Progress continued for the remaining customers throughout the evening.

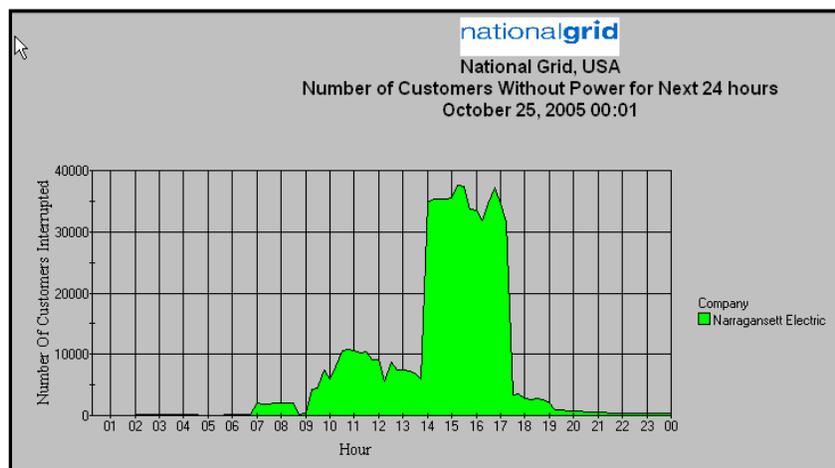


Figure 11: Customers Interrupted by Hour 10/25/2005

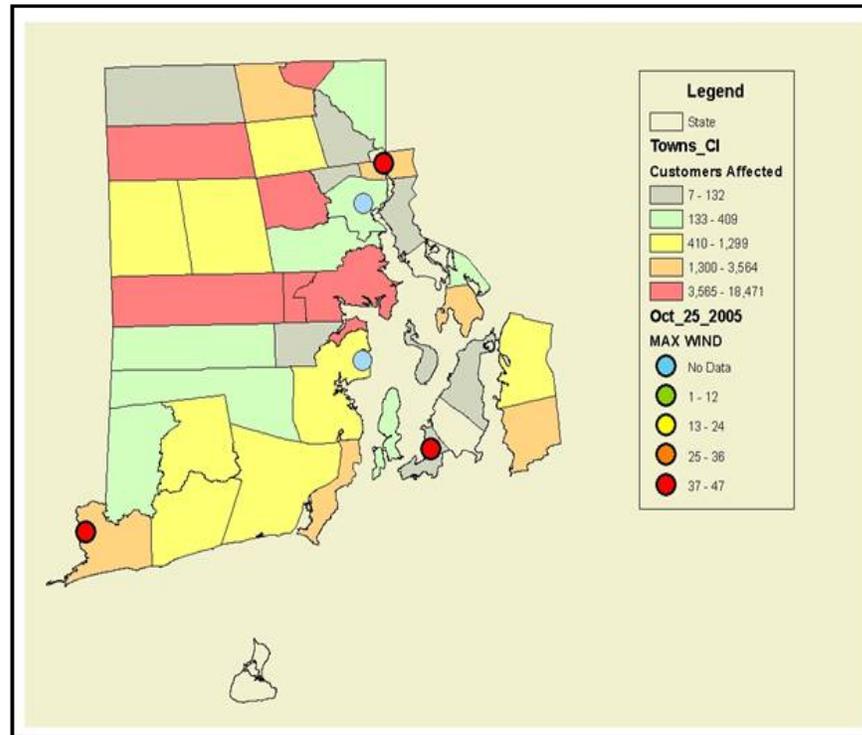


Figure 12: Customers Affected 10/25/2005

The protection system on distribution feeders employs fuses on feeder branches as well as reclosers and substation breaker protection on the main line. This method of protection for the power system ensures that the portions of the system experiencing problems are isolated from the healthy portion of the system and minimizes the number of customers impacted.

During the October 25, 2005 storm, 86% of the interruption events occurred on fused branches, transformers, and secondary/services and accounted for 8% of the customers interrupted and 10% of the customer minutes interrupted. This indicates that the majority of customers that are served on the main line or on other branches were spared an outage due to a problem serving a smaller portion of the system where fewer customers are being served. Thus, the protection system worked as designed. Response time is often longer on branches since additional time is required to patrol and find faults before they can be fixed. This explains the “tail” in the curve in Figure 11 from 5:30 p.m. and later. Again, the downward slope of the curve shows that continuous progress was made in restoring customers.

December 9, 2005 Snow and Wind Storm

The storm on December 9, 2005 was significant for its severe winds, snow, freezing rain,

and lightning. The *Associated Press* reported what the day was like: “Rhode Island police responded to about 50 accidents” and the “Claiborne Pell Bridge linking Jamestown and Newport, R.I., was closed for several hours” (see article attached as Appendix XV). About a foot of snow fell, which was made particularly slippery due to periods of sleet and freezing rain. In addition, high winds caused many problems. Airports closed, including Logan International Airport in Boston, Massachusetts and T. F. Green Airport in Warwick, Rhode Island. Prior to closing Logan, an airplane was struck by lightning as it approached the runway. Figure 13 shows the lightning for the day. While there were not a lot of strikes, the National Weather Service indicated that this was an “uncommon” phenomenon for December (see Appendix XV).



Figure 13: Lightning 12/9/2005

National Grid’s Rhode Island crews responded to 113 events on that day. Figure 14 shows the large geographic nature of these interruptions in Rhode Island.

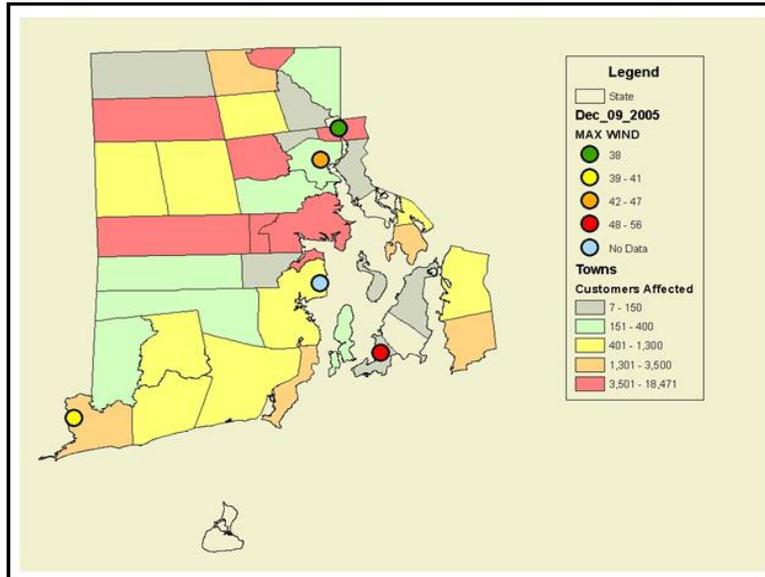


Figure 14: Customers Affected by Town 12/9/2005

To deal with these interruptions and help prevent additional interruptions, National Grid used 39 crews in Rhode Island. On December 10, these crews were supplemented by an additional 18 crews from divisions outside of Rhode Island.

The 113 interruptions resulted in a total of 31,593 customers interrupted. Figure 15 shows that at approximately 1:30 p.m. on that day, there were approximately 24,000 customers out of service. National Grid’s response was rapid, bringing this total down to a third of that number within a couple of hours, and then making steady progress thereafter. This type of curve shape is indicative of a well-designed electric system able to respond to major disruptions, and to a dedicated and well-trained work force committed to customer service.

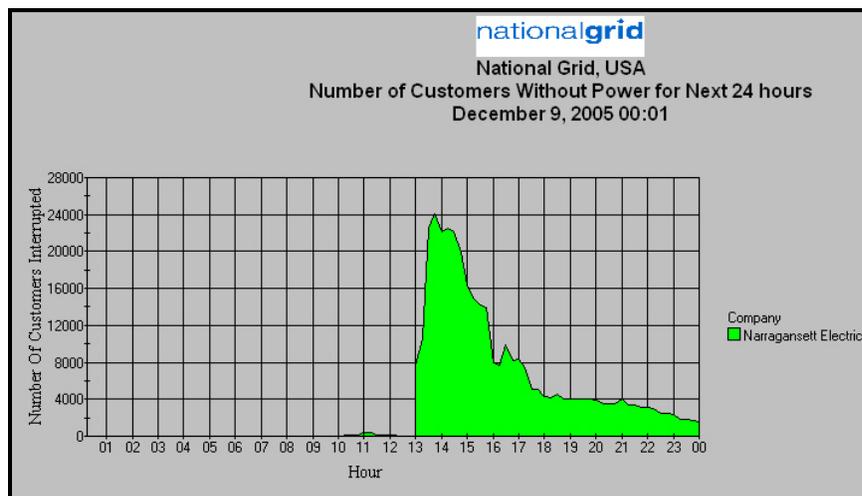


Figure 15: Customers Interrupted by Hour 12/9/2005

Nearly 90% of the events on December 9, 2005 occurred on fused branches, transformers, and secondary/services (see the chart below in Figure 16). This accounted for 24% of the customers interrupted and 41% of the customer minutes interrupted. Response time is often longer on branches since additional time is required to patrol and find faults before they can be fixed.

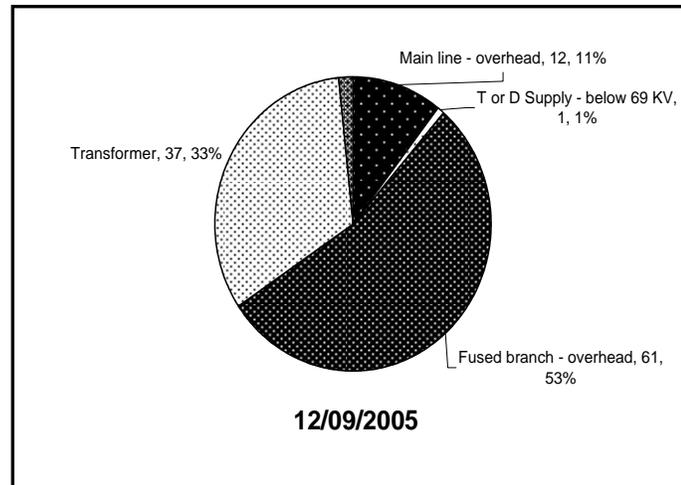


Figure 16: Branched versus Mainline Percent 12/9/2005

Summary

The five storms discussed above are clearly unusual and caused widespread difficulties for a diverse segment of providers of vital services, such as state and local government, airports, roads, and sewer systems. National Grid's electric system responded well to the stresses of each storm. Where problems did occur, they were quickly dealt with in a timely and effective manner. Given the atypical nature of these storms and the quick and effective response provided, National Grid considers these storms to be extraordinary, and thus should be excluded from the reliability performance standards under the Service Quality Plan.

Appendix I: Storm Days

Figures 17 and 18 show the type of impact these storms had on the electric system in terms of interruptions and customers interrupted.

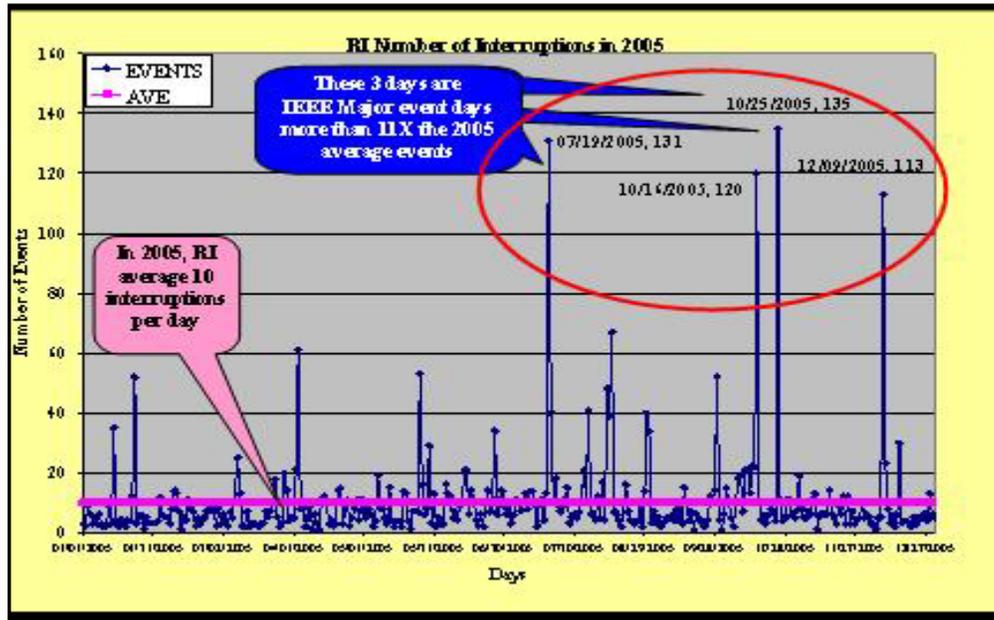


Figure 17: 2005 Interruptions

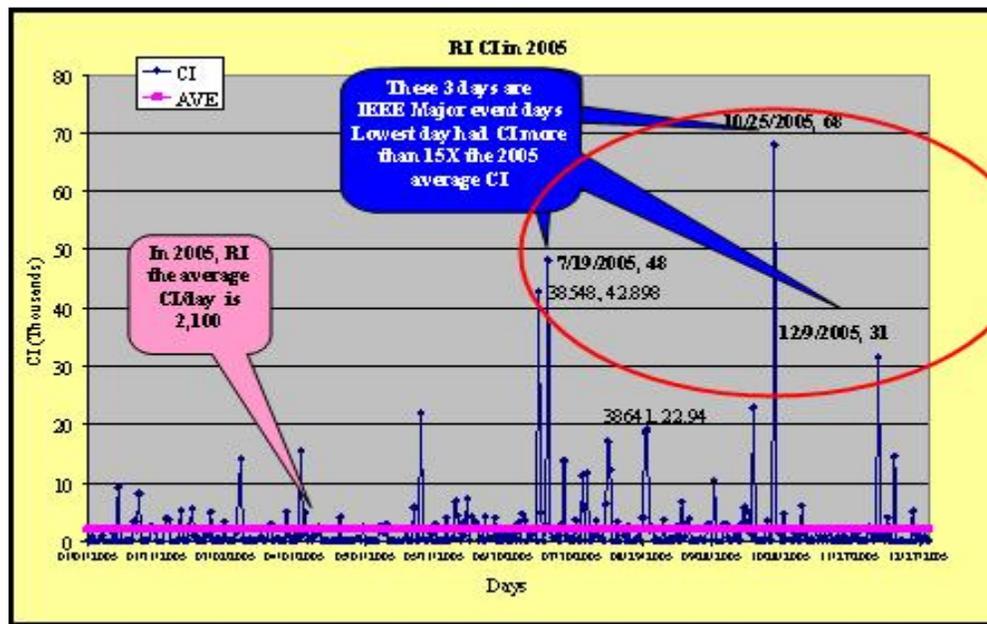


Figure 18: 2005 Customers Interrupted

Appendix II: Rhode Island Executive Order 05-03

**EXECUTIVE ORDER
05-03
January 23, 2005**

PROCLAMATION OF STATE OF EMERGENCY

WHEREAS high winds, snow, cold temperatures and blizzard conditions have been in effect throughout the State of Rhode Island beginning Saturday, continuing overnight and are forecast to continue during the daytime Sunday and through the evening hours; and WHEREAS snow accumulations, high winds and drifting have resulted in dangerous driving conditions, road closures, coastal storm warnings and other potential hazards which pose an imminent threat to public safety as well as damage to public and private property; and

WHEREAS additional time and resources, including state and local assets, will be required to clear roads of snow and storm damage and to allow State and local officials to return the State to normal conditions following the blizzard and to make travel and other activities safe; and

WHEREAS local communities, cities and towns are requesting and will continue to need resources and support from the State's departments and agencies to assist them in dealing with this storm emergency.

NOW, THEREFORE, I, DONALD L. CARCIERI, pursuant to the powers contained in Rhode Island General Laws, including but not limited to Chapter 30-15, and by virtue of authority vested in me by my office, do hereby issue this proclamation that there now exists a State of Emergency within the State of Rhode Island; and further:

1. Pursuant to this Order, I hereby order that non-essential State offices and agencies will be closed, and non-essential personnel will not be required to report to work, through 5:00 P.M. EST on Monday, January 24, 2005; local officials are hereby directed and ordered to similarly close non-essential municipal office, agencies and public schools through 5:00 P.M. EST on Monday, January 24, 2005; and
2. Pursuant to Rhode Island General Laws § 30-2-6, I hereby authorize the adjutant general to order to state active duty Rhode Island National Guard Members to the extent the adjutant general deems necessary after consultation with the Governor to provide emergency assistance to the State of Rhode Island and its citizens; and
3. Pursuant to Rhode Island General Laws §43-3-28, I hereby determine the existence of an emergency brought about by the disruption and or interruption of transportation services and order that, by this proclamation, commercial carriers of home heating fuel and liquid natural gas are afforded relief from the provisions of 49 CFR 395.3(b) of the Federal Motor Carrier Safety Regulations for interstate

- motor carriers while providing liquid natural gas and home heating fuels to customers in Rhode Island during a period of ten (10) days from the issuance of this proclamation of emergency; and
4. Public transportation, including services of the Rhode Island Public Transit Authority (RIPTA) will be curtailed and limited to the so-called RIDE program and other emergency transportation vehicles during the pendency of this Order; and
 5. Pursuant to emergency powers granted by Rhode Island General Laws, and any other applicable provisions of state or federal law, I shall from time to time issue additional recommendations, directions and orders as circumstances require, either written or verbal.

While this proclamation of State Emergency does not presently constitute a complete travel ban, closure of the Rhode Island airports or formal bank holiday pursuant to Rhode Island General Laws 19-13-5 (unless explicitly incorporated in a subsequent Order), private businesses and citizens are encouraged to limit non-essential activities and travel in order to allow state and local officials to respond to and recover from the storm.

This proclamation of State of Emergency is effective as of 9:00 A.M. Eastern Standard time and shall remain in effect until 5:00 P.M. EST on Monday, January 24, 2005, unless extended by me. In the event the emergency continues to exist, in my judgment and discretion, this State of Emergency shall remain in effect for such additional time as I may order from time to time.

So Ordered:

Donald L. Carcieri

Dated: January 23, 2005

Appendix III: RIEMA Web Site Notice 10/15/2005

RIEMA OPENS STATE EMERGENCY OPERATIONS CENTER (EOC)

10-15-2005

Cranston, RI --- The Rhode Island Emergency Management Agency (RIEMA) announced today that the State EOC will be operational 24/7 to assist in issues related to flooding. Continuous rain has caused major problems for residents. Flooding will continue as the rain tapers off. We are asking all citizens to use caution and look out for fallen debris, flooded streets and loose gravel. Rhode Island State Police (RISP), Department of Environmental Management (DEM), National Guard, Red Cross, Department of Transportation (DOT) FEMA are assisting RIEMA in with process. Attached are situational reports from the agencies involved.



NEXT SCHEDULED PRESS CONFERENCE 6:00PM AT RIEMA.

RISP No Major Highways closed

DEM The national Centers for Disease Control offers precautions about flood waters that affected Rhode Islanders should heed. Flood waters may contain fecal material from overflowing sewage systems, and agricultural and industrial byproducts. Although skin contact with flood water does not, by itself, pose a serious health risk, there is some risk of disease from eating or drinking anything contaminated with flood water. If you have any open cuts or sores that will be exposed to flood water, keep them as clean as possible by washing well with soap to control infection. If a wound develops redness, swelling, or drainage, seek immediate medical attention.

Combined sewer overflows which typically occur in the Narragansett Bay Commission and Newport sewer systems

Communities are experiencing excessive sewer system flows leading to sewer system and pump station overflows into local streets, water bodies and homes All waters north of a line from Black Point in Narragansett to Beaver Tail Point in Jamestown to Brenton Point in Newport;

All waters north of a line from Sachusest Point in Middletown to Sakonnet Point, in Little Compton; and,

All waters north of a line from Watch Hill Point in Westerly to Point Judith in Narragansett.

National Guard Transportation vehicles on stand by Sand bags on stand by
RIEMA Local EOC Activations: Smithfield, Coventry, Hopkinton, Burrillville, North Providence Evacuations: Exeter (voluntary below Dorset Mill dam); Providence (Valley St. area); Richmond (voluntary town wide); Lincoln (voluntary); Burrillville (Mandatory of low lying areas adjacent to Harrisville dam); Shelters: Open in Smithfield, Cranston, East Greenwich, Richmond, Exeter, West Warwick, Providence, and North Providence.

Appendix IV: Annual Rhode Island Report on Dam Safety

The following quote is from the State of Rhode Island 2005 Annual Report to the Governor on the Activities of the Dam Safety Program.

“ADVERSE WEATHER

Historic Rainfall

“In October 2005, the state experienced historic rainfall, with parts of the state reportedly receiving amounts at or near a 100 year storm event. In addition, a dam in nearby Massachusetts received much local media coverage. Officials there feared the dam was on the verge of failure and the population downstream of the dam was evacuated. Considerable effort was spent to lower the water elevation behind the dam and to rebuild a safe dam downstream of the failing structure.

“On October 17, 2005, Governor Carcieri issued Executive Order 05-20 declaring a disaster emergency due to the historic rainfall. On November 3, 2005, the Governor instructed DEM to take action to address the six dams which DEM previously determined to be unsafe. Actions required by the Governor included identification of any of the dams which pose an imminent threat to public safety, prosecution of any enforcement actions that have not been complied with, development of remediation plans to repair the dams and coordination with the Rhode Island Emergency Management Agency to develop any emergency response and hazard mitigation plans. See *Unsafe Dams* above for a summary of DEM’s efforts.

“As a result of these events, media, political and public interest in the safety of Rhode Island’s dams swelled. DEM participated in numerous newspaper, television and radio interviews, with the goal of educating the public on dam safety. Political interest involved discussions of shortcomings of the Dam Safety Program. Public interest typically involved concerns with a dam located in a caller’s neighborhood.”

Appendix V: Rhode Island Executive Order 05-20

**EXECUTIVE ORDER
05-20
October 17, 2005**

DECLARATION OF DISASTER EMERGENCY

WHEREAS, during the month of October, the State of Rhode Island has experienced historic rainfall causing extensive flooding in many areas throughout the State; and WHEREAS, Cities and Towns throughout the State, including Cranston, Coventry, Richmond, Lincoln, Woonsocket, Central Falls, and Providence have ordered mandatory evacuations of low lying areas and/or strongly urged voluntary evacuations of homes and businesses; and

WHEREAS, on October 15th 2005, the Rhode Island Emergency Management Agency (the "Agency") was officially notified by the Towns of Hopkinton, Burrillville, Cumberland and Exeter (the "Towns") of a disaster/emergency within the Towns the severity and magnitude of which is believed to be beyond the response and recovery capability of the Towns' resources and that additional resources was required; and

WHEREAS, as a result of this emergency public and private infrastructure, as well as homes and businesses throughout the State has suffered and continues to suffer extensive damage; and

WHEREAS, the health and general welfare of the citizens of the State of Rhode Island requires that State action be taken to help alleviate the conditions caused by this emergency; and

NOW, THEREFORE, I, DONALD L. CARCIERI, by the authority vested in me pursuant to Title 30 Chapter 15 et seq. as Governor of the State of Rhode Island and Providence Plantations, do hereby order as follows:

1. A state of Emergency exists in the State of Rhode Island, the Agency is hereby directed to activate all necessary State emergency response plans and procedures, which plans and procedures includes the emergency management plans of Cities and Towns within the State.
2. All State departments, agencies or quasi-state agencies and boards and commissions performing an executive function shall cooperate fully with the State Director of Emergency Management in all matters concerning this Order. All efforts to provide emergency disaster relief to the affected Cities and Towns shall be coordinated by and through the Agency.
3. All State Department Directors are authorized to: a) enter into contracts and incur obligations necessary to combat the emergency; b) direct that work be undertaken to protect persons and property; c) direct or approve necessary repair work; d) make assessments of soundness regarding occupancy or use of particular

- structures; and e) provide appropriate emergency assistance to victims of the emergency.
4. All State Department Directors are authorized to exercise the acts described in section 3 suspending procedures and formalities prescribed by law as necessary, excepting mandatory constitutional rights, which includes without limitation existing budget limitations, competitive bidding requirements, rental, purchase, contracting, and expenditure policies.
 5. The Commanding General of the Rhode Island National Guard is directed, pursuant to Rhode Island General Laws, § 30-2-6, to stand ready to call to State Active Duty those guardsmen deemed necessary to ensure public safety and to provide necessary assistance to the affected Cities and Towns.
 6. Any acts taken prior to the effective date of this Executive Order that is consistent with the intent and purpose of this Order are hereby ratified and confirmed retroactive to the time of the emergency on or about October 15, 2005.
 7. This Order shall take effect immediately and remain in full force and effect for thirty (30) days unless extended by the issuance of a subsequent written or oral proclamation, which shall follow upon a determination that the extraordinary measures detailed are no longer required for the protection of the public safety and welfare.
 8. If any provision of this Order is determined by a court of competent jurisdiction to be invalid or unenforceable, such determination shall not affect the validity or enforceability of any other part or provision of this Order.
 9. No provision of this Order is intended to alter or amend any compacts, policies, legal authorization or opinions of the federal government regarding emergency management or homeland security.

So Ordered:



Donald L. Carcieri

Dated: October 17, 2005

Appendix VI: Berkshire Eagle News Article on 10/15-17/2005 Flood

***Berkshire Eagle
October 17, 2005
Rain yields to high winds***

Thousands lose power in region

Benning W. De La Mater

PITTSFIELD — First it was the rain, and then the wind ruled the day. Election signs tumbled across yards, streets and more yards. Walkers had a wind-aided spring in their step. Trees splintered and tilted parallel to the ground.

After residents dealt with 11 days of rain that left some areas with more than a foot of water, strong winds engulfed the region yesterday, toppling trees and power lines and causing widespread power outages across Berkshire County and all of New England.

The National Weather Service had issued a high wind warning until 10 p.m. last night for Eastern New York and Western Massachusetts, where gusts were expected to reach 55 mph. At North Adams' Harriman-and-West Airport, gusts were measured as high as 41 miles per hour at around 1. At Pittsfield Municipal Airport, gusts were clocked at 32 mph around noon.

Police across the county reported no injuries from the events and little property damage. At around 2:30, a maple tree snapped in two in front of 30 Onota St., falling on Stanley Pyrzanowski's home, crushing the corner of the roof and precariously lodging itself on the southern edge of the overhang.

"I heard it and felt it," said Pyrzanowski, who was at home with his wife, who recently underwent surgery.

The second part of the tree scraped the front of his neighbors' home at 34 Onota St. and broke a front window. Pyrzanowski said the tree has been there for as long as he's lived there, more than 30 years.

Pittsfield Deputy Fire Chief Ken Spaniol instructed Pyrzanowski to call his insurance company and a tree removal specialist. Firefighters kept people from walking near the dangerous scene as the tree wavered on the edge with each passing gust and power lines dangled on the lawn.

Brian Hillard, an arborist, arrived about 30 minutes later and said due to the high winds, he would be unable to get a basket up to the roof.

"You might want to wait until tomorrow to get someone up there," Hillard told Pyrzanowski. "And we might want to step back while we're talking."

A tree also fell on a house on Bossidy Drive, causing minor damage. Trees and power lines were reported felled across all of the county. A power line that dropped in Hinsdale near the intersection of Routes 8 and 143 cut power to more than 800.

David Graves, a spokesman from National Grid (formerly Massachusetts Electric Co.), reported that at peak, more than 3,000 went without power in Western Massachusetts. The highest percentage of customers affected was in Cheshire and Adams, where a tree fell on a sub station and cut power. Graves added that more than 15,000 across New England suffered similar problems.

"We'll have more than 100 crews working with outages throughout the night," Graves said. "There are outages everywhere."

Dean Nash, a Western Massachusetts Electric Co. spokesman, said the northern end of Berkshires was the worst hit.

"With the amount of rain we've had lately, it just makes the ground soft and easy for the trees to topple," Nash said.

Trees fell and caused power outages on Swamp Road in Richmond, on Maple Avenue in South Egremont, on West Sheffield Road in Great Barrington and on both Blythwood Drive and Holmes Road in Pittsfield. The earliest incident reported was one on Roslyn Drive in Pittsfield at 10:49 a.m.

Meteorologists at the weather service said a combination of a strong, low pressure system heading toward the Canadian maritime provinces mixed with high pressure building east from the Great Lakes brought about the high winds.

The forecast for today calls for a 30-percent chance of showers, a high of around 53 and winds gusting between 15 and 20 mph.

Appendix VII: Woonsocket Call News Article on 10/15-17/2005 Flood

Woonsocket Call
October 17, 2005
Valley starts mopping up

JOHN LARRABEE , Staff Writer

WOONSOCKET -- The Blackstone River's rain-swollen torrents are expected to recede today, ending the threat of floods that kept emergency responders on edge throughout the weekend.

After nine straight days of rain, the sun appeared once again early Sunday morning -- but across the region emergency workers were still busy, pumping water from flooded homes, repairing downed power lines and keeping watch on strained dams and bridges. Authorities believe the deluge claimed more than 10 lives throughout New England over the past week, but no one was reported dead or missing in Rhode Island or Massachusetts.

Blackstone River waters topped 15 feet in Woonsocket Sunday -- 6 feet above the flood stage and the second-highest level ever recorded, according to the National Weather Service.

The rising waters provided an awesome display of nature's force and fury, and throughout the valley, folks gathered along the banks to watch the spectacle.

In Blackstone, hundreds gathered in the parking lot near the Blackstone Gorge to watch torrents of water pour over the horseshoe dam. A police officer was stationed at the site throughout the weekend to keep an eye on the structure and to prevent onlookers from venturing too close to the slippery shores. Police tied yellow-and-black ribbons across trees to warn people to stay clear of the trails.

The Thundermist Dam near Woonsocket's South Main Street was another popular viewing spot. The water poured over the dam with such force it sent up a heavy mist that soaked anyone standing on the nearby bridge. Drivers could be seen turning on their wipers as they crossed.

Woonsocket police and city workers stayed close by as well. A large mobile home, outfitted as an emergency command center, was parked on South Main throughout the weekend.

In North Smithfield, so many drivers stopped to watch water gush over a dam at Slatersville Reservoir they cause a traffic jam on Victory Highway.

The raging river caused its share of injury and damage through the weekend as well. In Uxbridge, state inspectors have ordered the town to close the East Hartford Bridge, part of the Rice City Pond Dam along the Blackstone. The inspectors say the heavy currents have caused cracks and sloughing of the dam embankment.

As a result, all Uxbridge public schools are closed today while school administrators reroute buses and test water pressure in the buildings.

Weekend power outages occurred throughout southern New England. As of 1 p.m. Sunday, the utility National Grid reported 7,000 customers in Massachusetts and 7,300 in Rhode Island were without electricity.

Authorities are now testing drinking water in towns across the state, fearing storm waters may have contaminated wells and reservoirs, A treatment plant in Worcester spilled millions of gallons of sewage into the Blackstone.

In Millville, Town Highway Surveyor John Dean found himself caught in a mudslide when he went to check flood damage to the town's salt shed.

"I was up to my knees, then up to my hips," Dean said. Luckily he'd asked local contractor Joe Lemay to help him shore up the structure, and Lemay arrived in time to pull him out. Firefighters and paramedics then transported Dean to Landmark Medical Center, where he was treated for a sprained knee.

By Sunday evening, several heavily traveled roadways in the area remained closed, including Mendon Road in Cumberland and the Truman Bypass in Woonsocket. In Burrillville, police closed several roads because of flooding and mud slides. Rising waters forced dozens of people to leave their homes in that town over the weekend.

There were evacuations in other Rhode Island communities, as well, affecting more than 450 people in Cranston, Central Falls, Johnston, and the Olneyville section of Providence. Most found shelter with family or friends, but an emergency shelter in Cranston stayed open through the weekend.

In Johnston, news crews filmed police and firefighters navigating River Street in an inflatable boat.

And in Pawtucket, workers quickly built a sandbag dam around City Hall to keep the rising Blackstone River from flooding the basement, where records are stored.

Across the border in Massachusetts, authorities advised hundreds of Southbridge residents to evacuate because they feared a dam might break. In Worcester and other communities rising waters forced families from their homes as well.

Massachusetts Gov. Mitt Romney declared a state of emergency at the start of the weekend, but lifted it Sunday afternoon when rain-swollen rivers began to recede.

Appendix VIII: Reuters News Article on 10/15-17/2005 Flood

Reuters

October 17, 2005

U.S. Northeast dries out, hit by new power outages

By: Jason Szep

BOSTON (Reuters) - Floodwaters receded and clear skies stretched across the Northeastern United States on Sunday after a record week of torrential rain, but a blast of gale-force wind knocked out power to thousands of homes.

Winds of up to 50 mph (80 kph) uprooted trees in the saturated ground, bringing down power lines and leaving nearly 14,000 Connecticut homes without electricity and a peak of about 18,000 in the rest of New England.

By late evening, much of the power had been restored in central and eastern Massachusetts, New Hampshire and Rhode Island. About 2,600 homes there were still without electricity by 10 p.m., a spokesman for the National Grid power utility in Massachusetts said.

Emergency and utility crews worked late on Sunday to repair damage caused by the rain and floods that swamped cities across the Northeast, washed out roads, triggered mudslides and forced more than 1,000 people to flee waterlogged homes.

The driving rain, strong winds and floods killed at least nine people, including a 54-year-old woman whose body was found on the banks of a swollen river in Chaplin, Connecticut, on Sunday after she slipped and fell into the rushing water.

Massachusetts, Connecticut and southern New Hampshire basked in their first sunshine in more than a week, a day after clear skies opened over New York and New Jersey, where about 12 inches of rain had fallen since October 7.

"The floodwaters have receded but it's not totally over yet," said Peter Judge, spokesman for the Massachusetts Emergency Management Agency.

The downpour soaked New York City with its wettest October since 1903, said Matthew Tauber of the local National Weather Service office. It was the wettest on record in New Jersey, Connecticut, central Massachusetts and Rhode Island.

Emergency shelters closed and passenger rail operator Amtrak resumed service that had been suspended because of water on the tracks, including its high-speed Acela Express between Connecticut and Boston.

In Massachusetts, rains swamped the city center of Worcester, about 45 miles west of Boston, under about 4 feet of water. Up to 600 people spent Saturday night in emergency shelters in western and central Massachusetts near Worcester.

Massachusetts Gov. Mitt Romney lifted a state of emergency on Sunday and said the worst was over after estimating the floods likely caused \$6.5 million in damage -- a threshold that would make the state eligible for federal aid.

"The worry now is the wind. With the ground so soggy, trees can come loose easily and bring down power lines," said New Hampshire Bureau of Emergency Management spokesman Jim Van Dongen. "And there is a lot of recovery work to do."

Appendix IX: Associated Press News Article on 10/15-17/2005 Flood

**Associated Press
October 17, 2005
Massachusetts lifts state of emergency, assess flood damage**

By Michael Kunzelman

LAWRENCE, Mass. - Gov. Mitt Romney lifted the state of emergency for Massachusetts on Sunday, but heavy rains and widespread flooding gave way to high winds that brought down trees and knocked out power for thousands of residents.

Romney, who addressed reporters near the banks of the swollen Merrimack River, said by and large the state was returning to "normal" after a day when driving rain and flooding forced about 1,000 people from their homes, swept away cars and closed highways statewide.

With the state of emergency lifted, the Massachusetts National Guard was no longer on standby to help evacuate residents from flooded homes.

"The all clear will be sounded on a local basis," Romney said. "Recognize we were ready for something more substantial than hit. We have to be."

In Rhode Island, emergency management officials were warily monitoring still flooding rivers and checking on dams, a few of which were damaged on Saturday.

The National Weather Service said winds powerful enough to uproot trees and bring down power lines were expected and gusts could reach 55 miles per hour at times. Thousands of power outages were reported by Sunday afternoon.

About 1,850 of National Grid's 1.2 million customers in Massachusetts were without power as of 9:30 p.m., down from a peak of 12,300 customers at 10 a.m., according to company spokesman David Graves. National Grid serves 168 cities and towns in Massachusetts.

An additional 720 National Grid customers in Rhode Island were without power as of 9:30 p.m., down from 7,300 earlier in the day.

Fewer than 100 NStar electric customers in the Boston area remained without power at 10:30 p.m., said company spokesman Walter Salvi. NStar peaked at about 8,000 outages. "We were warned early enough to have crews on hand right away," he added.

All but 131 Western Mass. Electric customers had power back by 9 p.m., down from 1,700 earlier in the day.

There were no reports of widespread damage caused by high winds, said Peter Judge, spokesman for the Massachusetts Emergency Management Agency.

Nobody was reported missing, injured or dead in either Massachusetts or Rhode Island. Bay State officials had been concerned that dams would burst in several communities and had prepared buses to evacuate up to 6,000 people from Southbridge in the south central part of the state.

But Romney said major dams held, despite spilling water into neighborhood streets and parks.

"The impact has been widespread, not Biblical in terms of its depth and the kind of devastation that sometimes is associated with floods," Romney said. The governor said MEMA officials would continue to monitor conditions throughout the day, including the environmental consequences of the downpour.

Romney said a power outage at the Deer Island Sewage Treatment Plant in Boston spilled an unknown amount of sewage into Boston Harbor. In Worcester, he said, a treatment plant spilled millions of gallons of sewage into the Blackstone River.

The governor said about 75 cities and towns experienced extensive flooding Saturday and about 30 communities evacuated residents whose homes were flooded. Romney said most evacuees would be able to return by the end of Sunday.

The Red Cross in Rhode Island said most residents who were evacuated from communities there had found shelter with friends or family, or had returned home by Sunday morning.

About 500 people were evacuated from homes or apartment complexes on Saturday, said Robert Warren, the state's emergency management director. The Red Cross opened 12 shelters statewide, and served about 157 people. Only one of them, in Central Falls, remained open overnight, with 24 people staying there.

Appendix X: Providence Journal First News Article on 10/25/2005 Storm

The Providence Journal
October 26, 2005
Thousands in R.I. lose power

Throughout the state, but particularly in the West Bay region, classes are canceled, flights are delayed, a hospital diverts patients and at least one boat breaks from its mooring.

BY ELIZABETH GUDRAIS

At Rhode Island College, professors conducted classes in the dark. Their students read by light coming in through windows.

In Warwick, Kent Hospital activated backup generators and diverted incoming patients elsewhere.

In Johnston, cars backed up in all directions from the intersection of Atwood and Hartford avenues, where a police officer directed traffic after the signal there lost power. These were but four examples among thousands. In a massive domino effect, high winds downed trees, which fell on power lines and left people all over the region in the dark yesterday.

With new trees falling as soon as crews could repair damage from earlier incidents, numbers were difficult to pin down. It was clear, though, that three things were in high demand: candles, flashlights and National Grid workers.

More than 1,000 customers lost power in Seekonk and Rehoboth. Nearly every community in Rhode Island reported outages.

But things were worst in the West Bay region, where 31,000 residents of Warwick, Coventry and West Warwick lost power for three hours after a tree fell on power lines near an electrical substation in Warwick's Apponaug section.

The Community College of Rhode Island canceled classes at its Warwick campus. The high winds inconvenienced all Rhode Islanders, whether they were studying, working, driving, or just walking.

Downtown Providence was strewn with discarded umbrellas, torn apart and pulled from people's hands by wind gusts. Wind tunnels formed between the rows of office buildings, threatening to send pedestrians the way of Al Roker. (Roker, the Today Show weatherman, was blown off his feet during a live broadcast from Naples, Fla., yesterday morning.)

In Cranston yesterday morning, a cabin cruiser broke loose from its mooring at the Rhode Island Yacht Club and bobbed along the whitecaps in Stillhouse Cove.

Flights out of T.F. Green Airport were delayed.

The Block Island ferry was canceled, again.

At high tide -- around 3 p.m. yesterday -- waves washed over the seawall in Narragansett, drenching the pavement and many passersby.

With winds gusting up to 47 mph in Newport and 66 mph in Milton, Mass., the highest windspeed observed in the region, yesterday's storm may have felt like a hurricane, but it wasn't.

After hitting Florida, Hurricane Wilma headed off into the North Atlantic. This storm was a regular old northeaster that stole some energy and moisture from Wilma, but the two storms never merged, meteorologist Mike Jackson, of the National Weather Service in Taunton, said.

With wind and rain, yesterday's storm delivered a one-two punch. On Benjamin Drive in North Providence, the Public Works Department delivered sandbags to flood-weary and flood-wary residents. Sewers backed up at the Nickerson Community Center, near the Woonasquatucket River in Providence's Olneyville section.

This storm made October 2005 the rainiest month ever in Providence. Not just the rainiest October, mind you. "This month is the wettest, number one, of all time in Rhode Island," Jackson said.

With the 1.58 inches that fell yesterday at T.F. Green, this month's total -- with six days to go -- is 14.51 inches. The previous record was 12.74 inches in April 1983. Conditions here may have been soggy and unpleasant, but they were worse in western Massachusetts, where some places reported three inches of snow last night. With overnight lows safely in the mid 30s, Rhode Island doesn't have to worry about that just yet, Jackson said.

The weather service predicts rain ending this morning, with the sun peeking through in the afternoon, and skies partly cloudy tomorrow.

By yesterday evening, the National Weather Service had removed its high-wind warning and replaced it with a wind advisory.

Even with all the rain, officials weren't predicting massive flooding of the type that occurred earlier this month, when it rained for nine days straight and rivers crested several feet above flood stage.

Last night, the state's Emergency Management Agency office, on New London Avenue in Cranston, was not even staffed. The American Red Cross of Rhode Island put volunteers on alert Monday, but canceled the alert yesterday at 6 p.m.

Those National Grid workers however, weren't able to relax just yet.

As of 8:30 p.m., 750 electric customers in Rhode Island, mostly scattered throughout communities in the southern half of the state, were still without power, a spokeswoman said in a recorded message on the company's media line. The message said 7,500 National Grid customers in Massachusetts had no service, most of them in the Merrimack Valley, along the South Shore and in the Attleboro area.

The message did not give a time for restoration of service. "Our crews have been working since the early morning hours repairing the storm's damage," the spokeswoman said.

"They will continue to work until all customers have been restored."

With reports from Journal staff writers Daniel Barbarisi, Cathleen F. Crowley, Richard Dujardin, Randal Edgar, Laura Meade Kirk, Jennifer Levitz, Peter B. Lord, Katie Mulvaney, Thomas J. Morgan, Jack Perry, Chelsea Phua, Alisha A. Pina, Mark Reynolds, Mike Stanton, Katie Warchut and Karen Lee Ziner.

Appendix XI: Providence Journal Second News Article on 10/25/2005 Storm

The Providence Journal
October 26, 2005
Trees topple, lights out

Yesterday's northeaster leaves many residents in the dark for hours, but the storm didn't carry the punch most forecasters had predicted.

By Katie Warchut

Rain-weary residents are spared major wind and flooding damage A rainstorm that whipped through New England yesterday, charged by the remains of Hurricane Wilma, left its mark on Northwest communities, which are already worn from earlier flood damage.

By evening, David Graves, spokesman for National Grid, the parent company of Narragansett Electric, said every Northwest community suffered blackouts as the wind blasted limbs from trees or shoved the trees across power lines.

Much of the damage took place in the hours just before noon.

Graves outlined the blackouts:

Glocester -- 580 customers were still out of power in early evening

Foster -- 420

Burrillville -- 246

Smithfield -- 67

Scituate -- 93

Johnston -- 1.

"Those numbers have fluctuated throughout the day and will continue to fluctuate as the winds continue," Graves said. He said the low Johnston number did not reflect a true picture, because as many as 1,500 customers there had been without power until the late afternoon.

He said he did not have figures for North Providence, but said there undoubtedly were power failures because just about every community from the south of Providence to the Massachusetts line to the north had problems.

IN GLOCESTER, both elementary schools and Ponaganset High School and Middle School lost power around 10:20 a.m. for about an hour and a half. High school principal Joseph P. Maruszczak said classes were able to continue and the cafeteria improvised by serving a cold lunch. Afternoon kindergarten at elementary schools was canceled, however, while the power was still off in the school administration offices, which adjoin

Town Hall in Chepachet. School and town officials said they were in the dark for almost three hours. Police Chief Jamie A. Hainsworth said trees were down on Huntinghouse, Saw Mill, Chestnut Hill and Cooper roads. A limb fell on a car that was driving on Snake Hill Road near Fogarty Memorial School, but the driver was not injured, he said. "It's nature's way of getting ready for winter I guess," Hainsworth said. JOHNSTON police reported power outages at Hopkins, Hartford, Atwood and Central avenues. The light at Atwood and Hartford avenues malfunctioned, forcing a police officer to direct traffic for at least five hours, said Deputy Chief Gary W. Maddocks Jr.

Traffic was congested in the area, where about 43,000 cars pass through every day, he said.

A huge puddle formed on Atwood Avenue just south of Hartford Avenue, and flooded parts of Central Avenue and Plainfield Pike, which traditionally get flooded. A transformer blew on Hartford Avenue, setting a telephone pole on fire. The police also responded to numerous accidents and disabled motor vehicles.

NORTH PROVIDENCE With flood waters under control and the rain letting up, the need for the sandbags had become questionable, Bradford said.

But after severe flooding on Oct. 15, many residents figured the protection would be worth the effort on Monday and yesterday morning, Bradford said.

Many sandbags were distributed to people from Benjamin Drive, he said. Residents picked them up at the town garage.

"So far nobody's got flooded," he said. "They just want them for the security." The rain did create enormous, pond-like puddles in several places.

A stream of drainage swamped an eastbound travel lane of Mineral Spring Avenue, near Brown Street, in more than a foot of rainwater at about 11 a.m.

Earlier, in the same area, state transportation workers and town public works personnel solved a flooding problem at Brookside and Mineral Spring avenues. Mayor A. Ralph Mollis called in the crews and had them clean out some clogged catch basins.

"The water receded immediately," Mollis said.

"So far, so good," he said. "But I don't know if that's going to be the case all day."

FOSTER Grant said though the last storm washed out Tucker Hollow Road, it remained safe this time around, as did other roads in town.

BURRILLVILLE "We checked flooding spots, but the water has lowered so we don't anticipate any problems," said Lt. Kevin S. San Antonio.

IN SMITHFIELD, "The biggest thing was about half a dozen limbs down, one or two on wires. When they are in the wires we can't cut any limbs until the electric company shuts off the power."

One of those downed trees blocked Seville Road, just off Mountaindale Road. Suzman said a transformer began sparking.

The incident blacked out the nearby Crossing at Smithfield shopping center for several hours.

At police headquarters, about a mile or so away, Sgt. Michael C. Rheume, said the lights flickered but stayed on.

Other than the tree, Mollo said, the Fire Department "had a pretty quiet day." He said firefighters were dispatched to the Smithfield Ice Rink when a fire alarm sounded, but it turned out to be a false alarm caused by water getting into the signal mechanism. Echoing Mollo, Rheume said there was no flooding and no storm-related accidents. "It was just a little windy and rainy," he said.

IN SCITUATE, public works director Richard Iverson said a tree blew down across wires and bent a utility pole along Peck Hill Road, causing a blackout of electric and telephone service. Iverson said utility crews from National Grid and Verizon cut the tree away, but were still working in the evening to erect a new pole. He said it was possible the work might not be finished until morning. He said blackouts also struck the area of St. Mary's Road and Danielson Pike, in North Scituate, and along Knight Hill Road in the Clayville section. "Everything sort of happened at once, in the general area of 11 o'clock," the DPW director said. He reported that there was no flooding, although Tunk Hill Road near the Gainor Dam began to "puddle up." That's a chronic problem, Iverson said. "It's an area where it floods during heavy rains.

There are some drainage issues. I believe the state is going to be doing some reconstruction to help alleviate some of those problems." Tunk Hill Road is state Route 12. -- With reports from Thomas J. Morgan and Mark Reynolds

Appendix XII: Providence Journal Third News Article on 10/25/2005 Storm

***The Providence Journal
October 26, 2005
Storm causes minimal damage beyond downed trees, power lines***

DANIEL BARBARISI

WARWICK -- The downing of electrical lines by a falling tree left more than 31,000 residents in Warwick, Coventry, and West Warwick without power for three hours yesterday afternoon.

Beyond the power failure, the West Bay area appears to have avoided significant damage from the blustery northeaster that melded with the remnants of Hurricane Wilma.

Local authorities had feared a repeat of the weekend of Oct. 15, when heavy rain brought widespread flooding, road closures and numerous evacuations.

What the dying hurricane did bring, however, were power failures. Winds in excess of 30 mph toppled trees which, in turn, downed power lines, with the worst of it in Warwick.

Just after 2 p.m., a tree came down on lines running from an electrical substation in the Apponaug section near Toll Gate Road and Centreville Road, according to National Grid and the Warwick police. The tree brought down four poles.

That left more than 31,000 people in Warwick and Coventry without power, according to National Grid, including, in Warwick, the Hoxsie, Buttonwoods and Apponaug sections. The power loss in Warwick affected the border sections of Coventry, cutting off electricity "down Route 117 as far as the eye can see," said Coventry police Sgt. Stephen Michailides.

Lt. Joseph Gemma, of the West Warwick Police, said that most of the north section of town lost power, and that there were reports of trees falling throughout the community, but no flooding.

National Grid told local officials that the power would probably be out well into the evening, but power came on in Coventry and most sections of Warwick just after 5:30 p.m.

The power failure forced Kent Hospital to activate its backup generators, and the hospital diverted incoming patients to other hospitals. Backup power was provided immediately, and the hospital activated its disaster plan as a routine precaution, according Brian Wallin, director of public relations.

"The good news is that it happened around the time of our shift change," so that operations were not badly disrupted, Wallin said.

In the morning, Coventry police reported that trees knocked down power lines in the area of Read Schoolhouse Road, cutting power to the Read Schoolhouse itself and to nearby Wood Estates.

Cranston took the worst of the flooding Oct. 15. Fletcher Avenue flooded badly, and the Amanda Court and Amanda Street and Davis Avenue areas were all swamped with water.

But yesterday, things appeared close to normal in Cranston. In the morning minor flooding was reported on Fletcher and under the bridge at Route 37 and Pontiac Avenue, according to the police. At midday, water covered parts of Davis Avenue, but as the rain decreased the water levels dropped, according to Robin Muksian-Schutt, the city's deputy director of administration.

A tree came down on Laten Knight Road in Cranston yesterday afternoon, blocking traffic for several hours.

In East Greenwich, a downed tree halted traffic on Division Road yesterday morning for more than an hour, according to East Greenwich Police. A second tree fell at Carrs Pond Road just before 11 a.m., leaving the roadway impassable until noon.

Also in Warwick yesterday morning, a tree fell on a power line at 2053 Elmwood Ave. at 12:45 p.m., causing a minor fire in the basement of the building, the police said.

Appendix XIII: Boston Globe News Article on 10/25/2005 Storm

The Boston Globe
October 26, 2005
Northeaster leaves 70,000 without power

Storm disrupts airports, roads, but flooding is minor

By Raja Mishra and Adrienne P. Samuels

An early season northeaster churned through New England yesterday, less powerful than forecast but still potent enough to leave 70,000 homes and businesses temporarily without power, to disrupt travel at airports and on highways, and to whip up enough wind and rain to cause moments of chaos in coastal towns.

Driven by remnants of Hurricane Wilma, the storm arrived in early morning with high winds that made for a difficult commute with rains falling almost horizontally at times.

As the day unfolded, the northeaster turned out to be as much a wonder as a nuisance: Windsurfers frolicked in massive waves, gawkers gathered on beaches to watch the frothy seas, and, with no deaths or injuries reported, life went on mostly as usual for much of the day.

Last night, a Coast Guard helicopter circled waters off the coast of Plymouth's Whitehorse Beach, searching for a 22-year-old surfer who was reported missing shortly after 9 p.m. It was not clear if the weather contributed to the disappearance of the man, whose name was not released last night.

"The weather is not perfect for someone to be out in the water," said Kelly Newlin, a spokeswoman for the Coast Guard. "We tried to talk to a lot of people and tell them to stay out of the water."

In Boston earlier yesterday, occasional gusts as high as 55 miles per hour forced pedestrians to lean into them, while downed trees snarled public transit. In the Berkshires, heavy snow fell. Along the coast, ocean waves battered beaches and seawalls, but only minor damage and flooding were reported.

"We could have had a lot more wind damage, certainly. And the rain, we ended up on the low end of the scale of what we could have gotten, around 2 inches around the state," said Peter Judge, a spokesman for the Massachusetts Emergency Management Agency. "We managed to avoid the worst-case scenario."

In Hull, David O'Connor stood on his second-floor porch to photograph waves. "Piece of cake. Piece of cake," he said. "I've seen worse."

Though the northeaster fed on energy from Wilma, it failed to merge with the hurricane, decreasing its wallop, meteorologists said. Wilma, which ravaged Mexico and Florida, moved quickly northeast and out to sea, largely staying south of the northeaster. Rainfall in New England ranged from 1 to 3 inches, with winds of 45 to 55 miles per hour. But storm activity was off and on, alternating between storm bursts and long stretches of calm.

Minor street flooding was reported in several coastal towns. In addition, water levels appeared to be rising in several rivers, particularly those connected to the Merrimack River.

Authorities said it would take until the end of today for the rivers to crest, though only minor, isolated flooding was expected. Another factor minimizing the storm's impact was the tides: This time of year features lower-than-average high tides, which muted the 3-foot storm surge caused by the northeaster, meteorologists said.

Trees seemed to bear the brunt of the storm, swaying, shredding, and being uprooted from ground that was moist and pliant after this month's heavy rains. Some of those downed limbs took power lines with them.

More than 70,000 customers in New England lost power, about 47,000 in Massachusetts at the storm's peak. But work crews quickly repaired downed lines, and the number without electricity in Massachusetts dropped to 19,000 by 7 p.m. and to 6,500 by 10 p.m., officials said. Most area homes and businesses were expected to be back to normal by today, Judge said.

Fallen trees also caused hours of disruption for T passengers on the Green and Orange lines, spokesman Joe Pesaturo said. Fallen trees also blocked roadways in Boston, Lynn, Melrose, Winthrop, and elsewhere.

At Logan International Airport, flights were delayed throughout the day, and flights arrived an average of 1 hour 45 minutes late by early evening, as storm-related delays rippled through airports along the East Coast, said Richard Walsh, Massachusetts Port Authority spokesman.

The ocean was dangerous yesterday, with 20-foot seas reported. But the Coast Guard said that most fishermen opted to stay in port during the storm, minimizing the chances of another "Perfect Storm" scenario, as happened in 1991, when several storm systems collided with lethal results.

Still, the towns and cities along the water -- the North and South shores, Cape Cod, Martha's Vineyard, and Nantucket -- had a rough day.

In Winthrop and Revere, waves began cresting into storm walls about 3 p.m., prompting Revere officials to close Winthrop Parkway with a set of steel doors to prevent flooding in low-lying areas.

Local officials appeared to be relieved that the storm was not as brutal as some in the past.

"This is by no means the worst storm we've ever seen," said Winthrop Fire Chief Larry Powers.

In Scituate, Ann McCarthy was preparing her four children for the day, when she said she "heard a big bang." Outside, she found that an old, 50-foot-tall red oak had collapsed into electrical wires, narrowly missing their house.

In Chatham, Harbor Master Stuart Smith said the storm was uneventful.

"It's a quick-moving storm; the wind seems to have laid down quite a bit," he said. "The tide was going out while the wind was coming in, so we didn't lose any boats." Smith said he recorded wind gusts of up to 65 miles per hour at his Stage Harbor office.

Out near the Chatham lighthouse, several windsurfers were taking their chances on what they said were 20-foot waves beyond the sandbar.

"It's just us and the seals out there," said Michael Leon, 44, of South Dennis. "We've been waiting all summer for this."

The parking lot was full of spectators watching waves break. Jane and Charlie Westrope, British tourists, went out to the beach after they had a drink at the bar. "This is like an English summer's day," said Charlie Westrope, laughing. "We love it." His wife, wearing a thoroughly soaked down jacket, proclaimed the wind and surf "invigorating."

Even the seagulls seemed to enjoy the storm. Tumultuous seas dashed mussels and clams into the rocky beaches along the North Shore, cracking them open.

Hovering in the wind, the gulls darted down to slurp up the shellfish, as if at a buffet. Mac Daniel of the Globe staff contributed to this report from the North Shore, John R. Ellement from the South Shore and Lucas Wall from Boston. Globe correspondents Emma R. Stickgold and Benjamin Freed also contributed.

Appendix XIV: Kent County Daily Times News Article on 10/25/2005 Storm

Kent County Daily Times
10/26/2005
Downed tree blacks out Valley

By: Greg Elias, Daily Times Staff

A downed tree in the Apponaug section of Warwick caused power outages to more than 6,000 customers in both Coventry and West Warwick yesterday.

National Grid Spokesman David Graves said that by switching power routes around, National Grid was able to bring most customers' power back up by 6 p.m.

As of 6 p.m., 140 customers in Coventry and five in West Warwick were still without power. At that time, Graves said workers would be at the site in Apponaug for several more hours.

According to Graves, power outages in the Pawtuxet Valley were all tied to a problem in the Apponaug section of Warwick where a large tree came down at approximately 2:20 p.m. He said damage was done to four poles and extensive wires, including primary power lines.

He said that the downed tree knocked out the National Grid substation near the intersection of Route 117 and Interstate 95 on Centerville Road, affecting 30,000 customers in the immediate area.

Graves said that work crews would have to restore poles and rerun wires at the Apponaug substation before all customers' power would be restored.

"The plan of switching customers around was pretty successful," Graves said. Graves said that switching the routing of power was done from National Grid's location in Lincoln, for the most part. He said that from that point, based on looking at the system and damage assessments, workers can see what is possible in terms of rerouting electricity. Graves said the process involves the opening and closing of various devices that allow for the flow of electricity.

He said that National Grid workers also take into consideration the design of the system and the load certain portions are designed to take.

"We don't want to overload the lines," Graves said, describing the process as a "balancing act."

Graves said a handful of customers would not be able to be switched on before repairs were complete at the Apponaug site and that no completion time could be given, although he said he expected all customers to be restored by last night and that work at the source of the problem would continue "as long as it takes."

Firefighter Chris Dalton of the Hopkins Hill Fire District in Coventry said only one call had come in for downed power lines, and that the dispatch log did not show much activity.

Battalion Chief Jerry Tellier of the West Warwick Fire Department said most of the calls fielded by that department were in regards to alarms going off due to a loss of power and the failure of battery backups.

"We're just getting back to normal now," Tellier said at approximately 6 p.m., saying that firefighters were returning from another routine alarm incident. Earlier in the day, Graves said that 6,200 customers were without power in Coventry along with 6,700 in West Warwick.

Appendix XV: Associated Press News Article on 12/9/2005 Storm

**Associated Press
December 9, 2005
First big winter storm sweeps into New England**

By Ray Henry

The first major storm of the winter dumped more than a foot of snow on parts of New England Friday, pelted others with sleet and freezing rain, and even packed jolts of thunder and lightning along with high winds.

The storm, which moved into the Northeast from the Ohio River Valley, intensified as it passed south of Nantucket on Friday morning, said Charlie Foley, a meteorologist with the National Weather Service in Taunton, Mass.

In Boston, a plane was forced to make an emergency landing at Logan International Airport after it was struck by lightning as it approached the runway. No injuries were reported among the 35 passengers and three crew members on board Comair Flight 5437 from Baltimore, but an airport spokesman said the plane suffered minor damage.

Janie Brooks, one of the passengers, said it was a "lovely flight" before the lightning struck.

"There was a large ball of orange something -- very loud and very bright and very bumpy. We were a little scared," Brooks told WBZ-TV.

Logan was closed later in the afternoon amid heavy snow and high winds, leaving travelers stranded. One runway reopened at 5:05 p.m., and another reopened later in the evening, although the cleanup continued.

"We're slipping and slopping," said Phil Orlandella, a spokesman for the Massachusetts Port Authority, which operates Logan.

About 150,000 NStar customers, mostly on Cape Cod and the South Shore, lost power when a major transmission line was knocked out during the storm. But about half had power restored by 10 p.m., said Caroline Allen, a spokeswoman for NStar.

"We've redeployed all available crews from Boston and western suburbs to the Cape to help restore power," she said.

Allen said they'll work through the night to restore power.

Five emergency shelters were opened on Cape Cod, in schools at Provincetown, Chatham, Dennis, Yarmouth and Barnstable, the Red Cross said. Spokesman Alan Pollock said each had fewer than 10 people late Friday night.

National Grid reported about 740 customers still without power as of 10 p.m., spokeswoman Deborah Drew said.

Western Massachusetts Electric had no reported power outages as of 10 p.m. The storm had moved off the coast leaving starlit skies behind by nightfall, but not before leaving much of the region under a thick blanket of snow.

The heaviest snowfall was along Massachusetts-New Hampshire line, where flakes were falling at a rate of two inches per hour for much of the afternoon.

Areas of Cheshire and Hillsborough counties in New Hampshire got about 17 inches. Northern areas of Massachusetts were also hard hit, with National Weather Service reports of 14 1/2 inches in Methuen, nearly 16 inches in Littleton and 12 1/2 inches in Shelburne. Worcester's 12.8 inches was a record for the date there, the National Weather Service said.

"This was some deep stuff," said Duffy Tougas, 36, who spent a busy day shoveling and plowing in Northampton, Mass., for a landscaping company. "Everything has been pretty slow. Lots of people are on the roads who shouldn't be."

As the storm raced northeast into the Gulf of Maine, the clash of warm and cold air spawned the electrical storm, Foley said. "It's uncommon," to have thunder and lightning during a winter storm, he said. "(But) I wouldn't say it's rare." Morning snow in Boston gave way to rain and sleet, but reverted to snow that fell so fast during the afternoon that visibility was near zero.

Cumberland, R.I. got 11 1/2 inches of snow, while Lincoln and Woonsocket got 10, with similar accumulations elsewhere in the state. T.F. Green Airport in Warwick, R.I., closed during the worst of the storm.

Rhode Island State Police responded to about 50 accidents, mostly fender-benders and cars that slipped off the road, said Capt. James Swanberg.

The towering Claiborne Pell Bridge, linking Jamestown and Newport, R.I., was closed for several hours because of the weather.

Massachusetts State Police also reported many spinouts and cars going off the road. The speed limit was lowered to 40 mph on the Massachusetts Turnpike.

The National Weather Service posted a high wind warning for Cape Cod and the Islands, where winds topped 50 mph. The wind downed trees. It also caused damage at Barnstable

Municipal Airport, including flipping a small single-engine plane upside down and onto the back of another small plane. School was canceled in many communities and several declared snow emergencies.

Kathleen Bald of Portland, Ore., who was visiting Providence, R.I., with her family, was among the few who welcomed the storm. Her 2-year-old daughter Maggie ran around a downtown park in pink snow pants and a coat her parents brought from home. Snow is rare in Portland, and Maggie had never played in it before. "We were praying for snow," Bald said.

Around the corner, Chris Harshman strapped an off-road bicycle to the roof of his Subaru. He was competing in an outdoor race at Roger Williams Park Friday afternoon. "You got to be very good to make a turn in the snow," Harshman said. The dreariest weather was reserved for the coast, Foley said. Southern Rhode Island, Cape Cod and the islands reported a mix of rain and freezing rain, while Boston's South Shore saw morning snow, but it turned to rain by late morning.

The National Weather Service expected much of the snow to melt during the weekend, when temperatures were forecast in the mid-40s.