

May 1, 2009

VIA HAND DELIVERY & ELECTRONIC MAIL

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

RE: Docket 3628 - 2008 Annual Service Quality Report, Electric Operations

Dear Ms. Massaro:

Enclosed are ten (10) copies of National Grid's¹ performance results for 2008 under its Service Quality Plan ("Plan") as established in the above-captioned docket. Based on actual performance results, the Company has incurred no penalties for calendar year 2008.

The Company's Plan is described in Attachment 1 to the Company's Agreement to Modify Performance Benchmarks ("Agreement") filed on March 14, 2007, 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, 2007.

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 2008 with their related dollar values, and the actual 2008 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 2008. Based on actual performance results for 2008, the Company has incurred no penalties.
- 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) information on

¹ Submitted on behalf of The Narragansett Electric Company, d/b/a National Grid ("Company").

Major Event Days. Section 3 summarizes the results of these reporting requirements.

In the aforementioned Agreement, the Company and Division agreed that it was appropriate to adopt the Institute of Electrical and Electronics Engineers, Inc. ("IEEE") Standard 1366-2003, *Guide for Electric Power Distribution Reliability Indices* ("IEEE Std. 1366-2003") for calculation of Service Quality performance benchmarks for reliability. This included the application of the Major Event Day ("MED") concept. A MED is a day in which the daily System Average Interruption Duration Index ("SAIDI") exceeds a threshold value in minutes (T_{MED}). In Section 1(b) of the Agreement, the Company and the Division agreed to fix the threshold value at a T_{MED} value equal to 5.34 for the years 2007 and 2008, at which time the Company and the Division would review the Company's performance to determine if the threshold value should be re-calculated using the IEEE Std. 1366-2003 MED methodology for the year 2009. The Company has re-calculated the threshold for 2009, and the new threshold would be 5.21. The Company will discuss the new threshold with the Division in the weeks ahead to obtain their support to implement this threshold going forward.

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,



Thomas R. Teehan

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 electronically transmitted, sent via U.S. mail or hand-delivered to the individuals listed below.



Joanne M. Scanlon

April 30, 2009

Date

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

2008 Service Quality Report

May 1, 2009

Submitted to:
Rhode Island Public Utilities Commission
RIPUC Docket 3628

Submitted by:

nationalgrid

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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 Major Event Days and are excluded from the calculation of reliability performance standards for the purpose of penalty and offset assessment. Section 3 discusses the Major Event Days that occurred during 2008.

2008 Frequency (SAIFI) Standard

2008 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 1.18	(\$916,000)		
1.06-1.18	linear interpolation		
0.84-1.05	\$0	1.00	\$0
0.75-0.83	linear interpolation		
Less than 0.75	\$229,000		

2008 Duration (SAIDI) Standard

2008 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 89.9	(\$916,000)		
72.0-89.9	linear interpolation		
45.9-71.9	\$0	64.4	\$0
36.7-45.8	linear interpolation		
Less than 36.7	\$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.

2008 Customer Contact Standard

2008 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		
81.5%-83.7%	linear interpolation	83.1%	\$34,000
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>2008 Calls Answered Standard</u>		<u>2008 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	72.6%	\$0
90.5%-100.0%	linear interpolation, to a maximum of \$46,000		

National Grid
2008 Results of Service Quality Plan
Calculation of Penalty/Offset

Performance Standard	Potential Penalty (a)	Potential Offset (b)	2008 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	1.00	1.18	1.05	0.94	0.84	0.75	\$0
Reliability - Duration	\$ 916,000	\$ 229,000	64.4	89.9	71.9	57.5	45.9	36.7	\$0
Customer Service - Customer Contact Survey	\$ 184,000	\$ 46,000	83.1%	74.5%	76.8%	79.1%	81.4%	83.7%	\$34,000
Customer Service - Telephone Calls Answered	\$ 184,000	\$ 46,000	72.6%	53.5%	65.8%	78.1%	90.4%	100.0%	\$0
Total Penalty/Offset	\$ 2,200,000	\$ 550,000							\$34,000 *

Notes:

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

Column (c) represents the actual 2008 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): $[\text{Column (c) - Column (g)}] \div [\text{Column (e) - Column (d)}] \times \text{Column (b)}$
- If Column (c) is between Column (d) and Column (e): $[\text{Column (e) - Column (c)}] \div [\text{Column (e) - Column (d)}] \times \text{Column (a)}$
- If Column (c) is less than Column (d): 100% of Column (a)
- If Column (c) is greater than Column (h): 100% of Column (b)

*The total penalty/offset calculation results in a net offset of \$34,000. According to the Company's Service Quality Plan, positive performance in one category can be used to offset penalties in other categories only within a given year. Since there were no penalties incurred during the year, the net offset of \$34,000 has no value and cannot be carried over to 2009.

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 2008 feeder ranking results on April 16, 2008, the second quarter results on July 14, 2008, the third quarter results on October 17, 2008, and the fourth quarter results on January 14, 2009.

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: The Company filed the required Trouble, Non-Outage reports on a monthly basis during 2008, with the final report filed on January 21, 2009.

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

Results: During 2008, the Company’s annual meter reading performance (as an average of monthly percentage of meters read) was 97.4%, compared to 99.1% during 2007 and 98.9% during 2006. The following table details the percentage of meters read per month for 2008, 2007, and 2006.

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

	<u>2008</u>	<u>2007</u>	<u>2006</u>
January	98.9%	98.9%	98.8%
February	98.7%	99.0%	98.9%
March	98.6%	99.1%	99.0%
April	98.7%	99.1%	99.1%
May	99.0%	99.2%	99.1%
June	98.9%	99.1%	99.0%
July	98.9%	99.1%	98.5%
August	98.9%	99.1%	98.6%
September	98.9%	99.1%	98.8%
October	98.9%	99.2%	98.9%
November	98.9%	99.2%	98.9%
December	82.1%	99.0%	98.8%

4. **Reporting Requirement:** For each event defined as a Major Event Day, the Company will prepare a report, which will be filed annually as part of the annual SQ filing, detailing the following information:

1. Start date/Time of event.
2. Number/Location of crews on duty (both internal and external crews).
3. Number of crews assigned to restoration efforts.
4. The first instance of mutual aid coordination.
5. First contact with material suppliers.
6. Inventory levels: pre-event/daily/post-event.
7. Date/Time of request for external crews.
8. Date/Time of external crew assignment.
9. # of customers out of service by hour.
10. Impacted area.
11. Cause.
12. Weather impact on restoration.
13. Analysis of protective device operation.
14. Summary of customers impacted.

Results:

IEEE Std.1366-2003 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. The Agreement to Modify Performance Benchmarks fixed the threshold value at 5.34 for 2007 and 2008. During 2008, there were three storms that exceeded 5.34 minutes of SAIDI and thus qualified as Major Event Days. These three storms, which occurred on January 14, 2008, July 23, 2008, and September 6-7, 2008, are described below.

• **January 14, 2008 Snow Storm**

1. Start date/Time of event:

This snow storm started in Rhode Island on Monday morning, January 14, 2008 at approximately 6:00 a.m. EST.

2. Number/Location of crews on duty (both internal and external crews):

Over the course of the restoration effort, the following crew numbers were reported:

Location	Crew Type	# Crews (x2 for headcount)
Rhode Island	Internal Overhead Line (RI)	33
	Internal Trouble Men	8 (x1 for headcount)
	Internal Service Restoration	2
	Internal Substation O&M	4
	Internal Underground	10
	Contractor Overhead Line	16
	Contractor Tree	18

At the time of the storm event, dynamic tracking of crew counts was not possible. Instead, per shift reports were generated for the daytime and nighttime. Since August 2007, the Company has been using Resource on Demand (RoD), a software-based application, to track its resources and lodging functions during a storm in near real-time.

3. Number of crews assigned to restoration efforts:

At the storm's peak (Monday, January 14, 2008 during the daytime shift), the following crews were assigned to assist in the restoration activities:

Overhead Line: 49 crews
Trouble Men: 8
Service Restoration: 2 crews
Tree: 20 crews
Substation O&M: 4 crews
Underground 10 crews

4. The first instance of mutual aid coordination:

The first instance of mutual aid coordination occurred on Monday, January 14, 2008 at 9:30 a.m. when the Company’s divisions (including Rhode Island) were queried at the regional and system levels as to their anticipated resource needs.

Approximately five internal overhead line crews had returned the previous day (Sunday, January 13, 2008) from Northeast Utilities in Connecticut after rendering mutual assistance on January 9, 2008. As a result, the Company had a full crew complement when it started the new work week.

Rhode Island was impacted by the storm throughout the day on Monday. No internal crews from National Grid subsidiaries were transferred to Rhode Island, and the restoration event was managed using daytime staffing levels with extended hours. Additional line resources, which resulted in a total of 16 contractor overhead line crews, reported to Providence and Lincoln by 12:00 noon on Monday to assist in the restoration activities.

5. First contact with material suppliers:

Contact with material suppliers was not required during this storm.

6. Inventory levels: pre-event/daily/post-event:

Inventory levels are summarized in the table below. Please note that the balances represent actual day-end balances for all costed inventory items. They do not include “no cost” items that are already capitalized and not reported as inventory on the balance sheet, such as transformers.

	January 13, 2008	January 14, 2008	January 15, 2008
Inventory Levels	\$2,338,822	\$2,338,822	\$2,338,822

7. Date/Time of request for external crews:

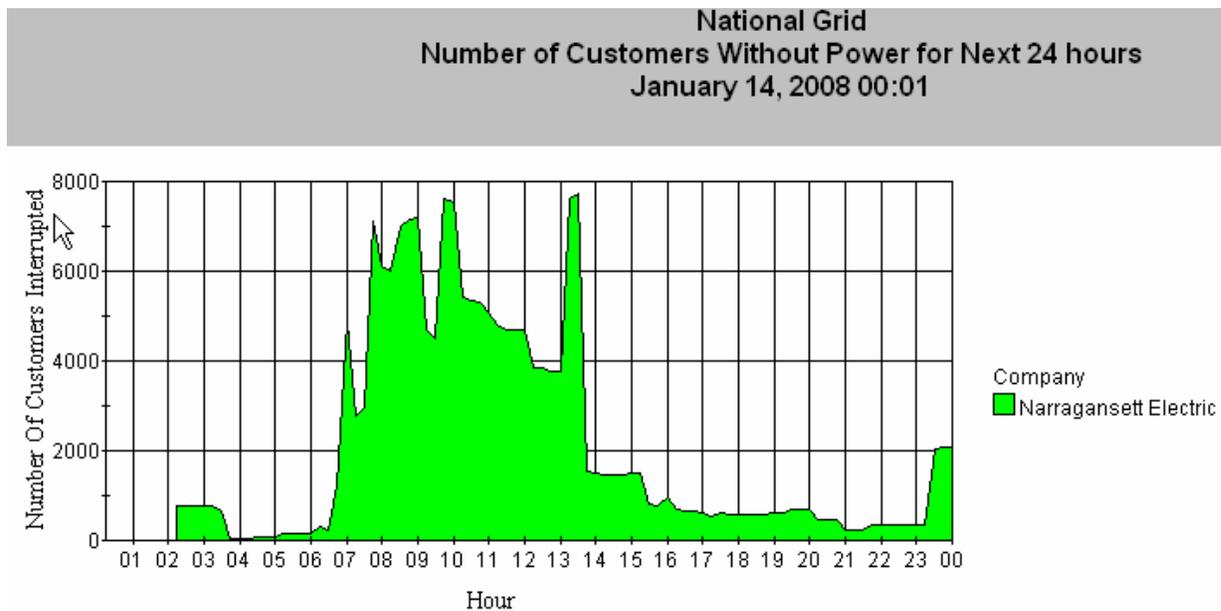
Additional contractor overhead line crews were requested during the system-wide storm conference call held on Monday, January 14, 2008 at approximately 10:00 a.m. These resources were on-site and assigned trouble orders by 12:30 p.m. of the same day.

8. Date/Time of external crew assignment:

See details under numbers 3 and 4 above.

9. # of customers out of service by hour:

The number of customers out of service by hour on January 14, 2008 is shown in the following graph. The peak of customers interrupted was over 7,500 at 10:00 a.m. and 1:30 p.m.



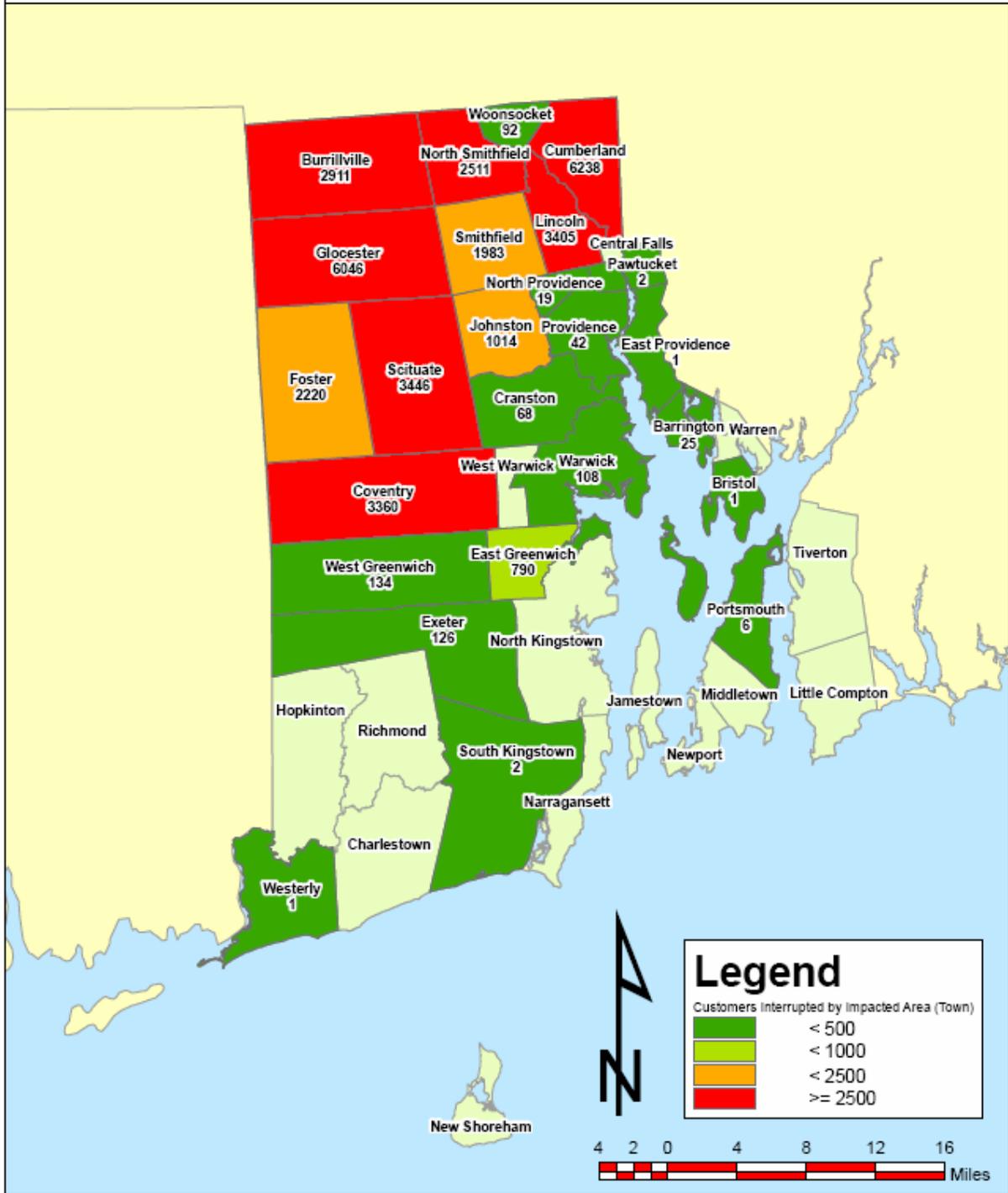
Please note that the above graph shows the number of customers out of service by hour during a 24-hour period starting at 00:01 on January 14, 2008.

10. Impacted area:

The following map shows the towns that were impacted by the storm and the total customers interrupted during the storm. The towns with the highest customers interrupted are shown in red.

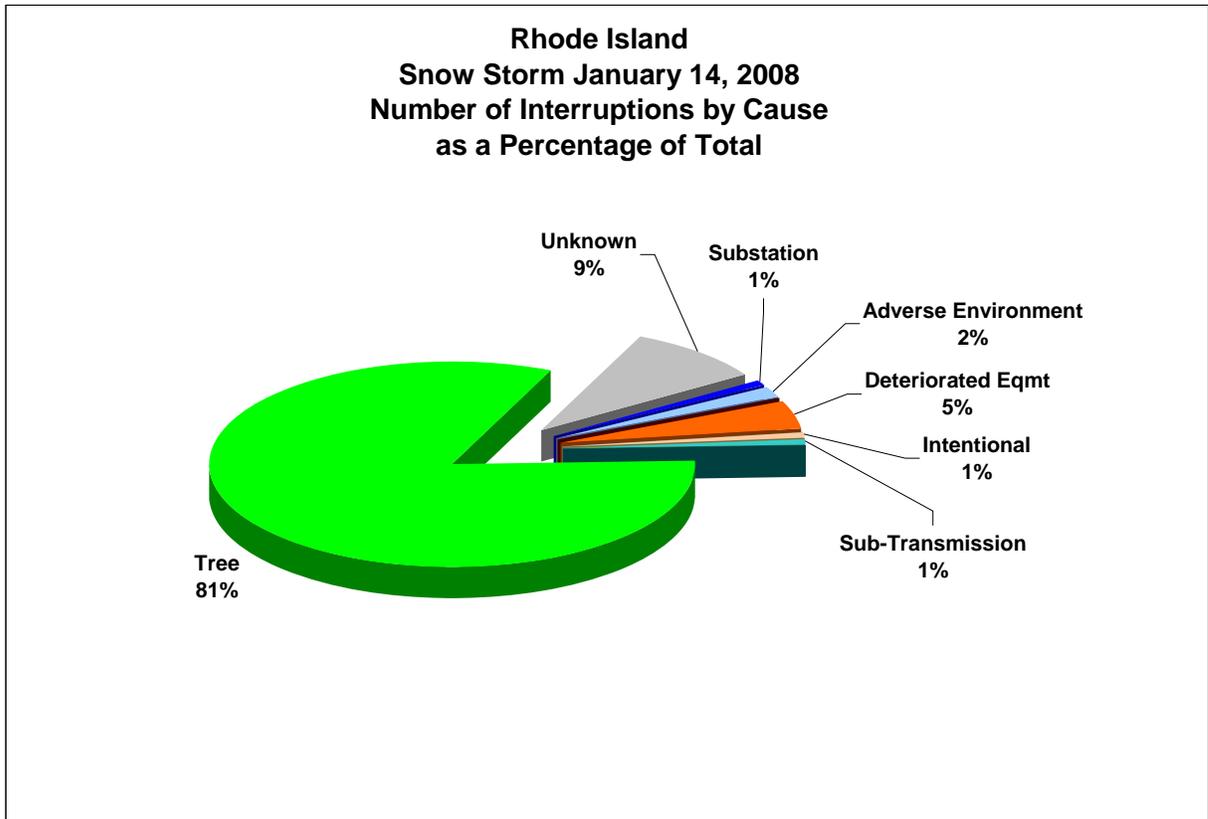
More than 80% of all customers interrupted during the storm were in seven towns: Cumberland, Gloucester, Situate, Lincoln, Coventry, Burrillville, and North Smithfield. Cumberland and Gloucester were hit the hardest with more than 6,000 customers interrupted in each town during the storm. Situate, Lincoln, and Coventry each had more than 3,300 customers interrupted, and Burrillville and North Smithfield each had more than 2,500 customers interrupted.

Rhode Island Snow Storm January 14, 2008



11. Cause:

The following pie chart shows the breakdown by cause of number of interruptions as a percentage of total interruptions during the storm. Trees were the major cause of interruptions on January 14, 2008, accounting for 81% of all interruptions. Broken tree limbs caused by heavy, wet snow accounted for 84% of all tree interruptions during the storm.



12. Weather impact on restoration:

Snow began falling in northern Rhode Island during the early morning hours on Monday, January 14th. This snow was moderately wet to wet in consistency as it fell throughout the late morning hours. Also during this time, the snowfall became moderate to heavy at times. However, as the day progressed, the snow moisture content became drier and the snowfall lighter.

Final snow accumulations were higher in the northern and western portions of the state. Lincoln reported six inches of new snow, Providence had 2.5 inches, and North Kingstown reported only 0.3 inches of new snow. Sustained winds ranged between 11

and 14 mph in Providence and points northwest, but a wind gust of 43 mph was reported in Pawtucket at approximately 6:30 a.m.

13. Analysis of protective device operation:

The following table summarizes the protective device operations during the storm. A "correct operation" means that a protective device (e.g. a fuse, station breaker, recloser, etc.) sensed a problem and opened correctly to protect the rest of the system from the fault, while a "manual operation" means that a protective device did not sense the fault and the device had to be manually opened by crews to protect the system, the public, or property.

Protective Device	Number of Operations		
	Correct Operations	Manual Operations	Total Operations
Distribution feeder circuit breaker or recloser (in substation)	11	0	11
Distribution line fuse	78	1	79
Distribution line recloser	2	0	2
Distribution transformer fuse	4	0	4
Supply line switching device	1	0	1
Sub-Total	96	1	97

14. Summary of customers impacted:

During this storm, Rhode Island experienced a total of 129 interruptions that affected 27,646 customers for 2,694,666 customer minutes of interruption. On average, these interruptions resulted in 0.06 SAIFI, 5.69 minutes of SAIDI, and 97 minutes of interruption per customer affected. Since the SAIDI value of 5.69 minutes exceeded the threshold value of 5.34 minutes, January 14, 2008 qualified as a Major Event Day under the IEEE methodology.

• **July 23, 2008 Lightning Storm**

1. Start date/Time of event:

This lightning storm started in Rhode Island on Wednesday afternoon, July 23, 2008 at approximately 3:00 p.m. EDT.

2. Number/Location of crews on duty (both internal and external crews):

Over the course of the restoration effort, the following crew numbers were reported:

Location	Crew Type	# Crews (x2 for headcount)
Rhode Island	Internal Overhead Line (RI)	35
	Internal Trouble Men	10 (x1 for headcount)
	Internal Service Restoration	6
	Internal Substation O&M	4
	Internal Underground	11
	Contractor Overhead Line	26
	Contractor Tree	20

At the time of the storm event, dynamic tracking of crew counts was not possible. Instead, per shift reports were generated for the daytime and nighttime. Since August 2007, the Company has been using Resource on Demand (RoD), a software-based application, to track its resources and lodging functions during a storm in near real-time.

3. Number of crews assigned to restoration efforts:

At the storm's peak (Wednesday, July 23, 2008 during the nighttime shift), the following crews were assigned to assist in the restoration activities:

Overhead Line:	55 crews
Trouble Men:	8
Service Restoration:	6 crews
Tree:	20 crews
Substation O&M:	6 crews
Underground	8 crews

4. The first instance of mutual aid coordination:

No internal crews from National Grid subsidiaries were transferred to Rhode Island, and the restoration event was managed using daytime staffing levels that were extended into the nighttime hours and with support from contractors. A total of 26 contractor overhead line crews from the Company's Alliance agreements reported to Providence and Lincoln by 7:00 a.m. on Wednesday to conduct their scheduled work. These same resources were used later in the day to assist in the restoration activities.

5. First contact with material suppliers:

Contact with material suppliers was not required during this storm.

6. Inventory levels: pre-event/daily/post-event:

Inventory levels are summarized in the table below. Please note that the balances represent actual day-end balances for all costed inventory items. They do not include “no cost” items that are already capitalized and not reported as inventory on the balance sheet, such as transformers.

	July 22, 2008	July 23, 2008	July 24, 2008
Inventory Levels	\$2,034,426	\$2,020,436	\$2,020,436

7. Date/Time of request for external crews:

The contractor overhead line crews were from the Company’s Alliance agreements. Therefore, these resources switched from scheduled work in Rhode Island to the restoration effort as the storm’s impact resulted in system damage.

8. Date/Time of external crew assignment:

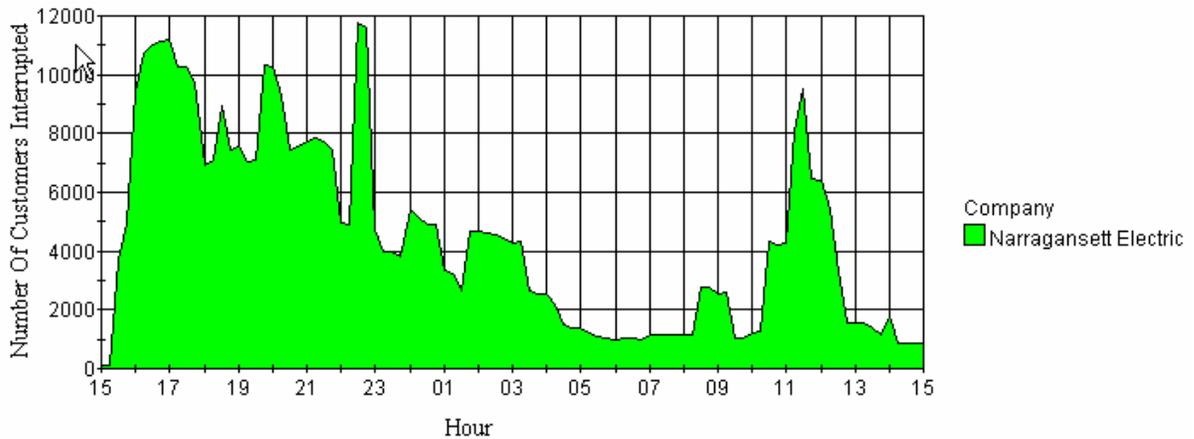
Due to their scheduled work in Rhode Island, the contractor overhead line crews were already on-site at the time of the storm’s impact. Similar to the internal crews, these resources were assigned trouble orders immediately following the passage of the first line of thunderstorms at approximately 4:00 p.m.

9. # of customers out of service by hour:

The number of customers out of service by hour from 3:00 p.m. on July 23, 2008 to 3:00 p.m. on July 24, 2008 is shown in the following graph. The peak of customers interrupted was over 11,500 between 10:30 p.m. and 11:00 p.m.



National Grid
Number of Customers Without Power for Next 24 hours
July 23, 2008 15:00



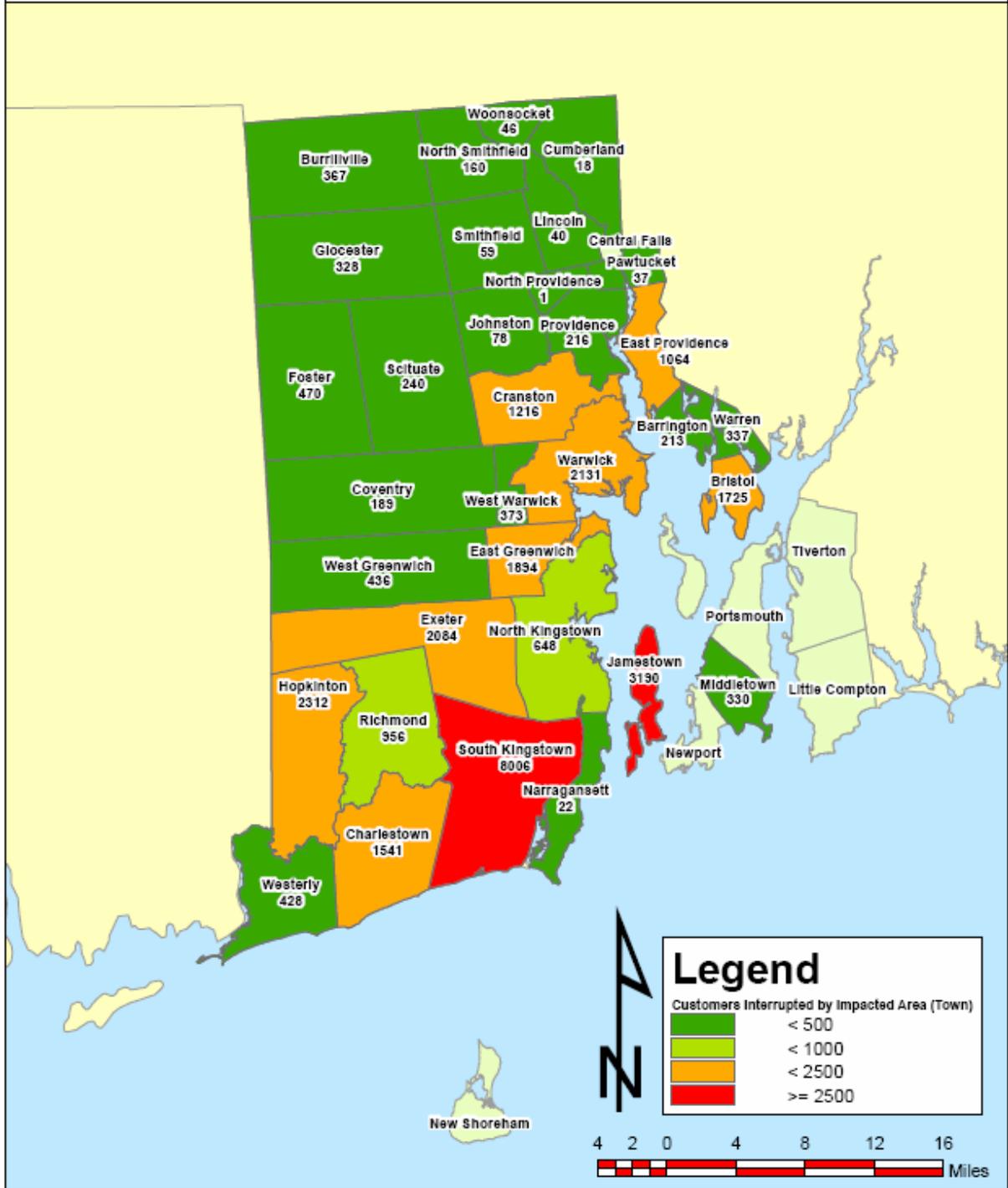
Please note that the above graph shows the number of customers out of service by hour during a 24-hour period starting at 3:00 p.m. on July 23, 2008.

10. Impacted area:

The following map shows the towns that were impacted by the storm and the total customers interrupted during the storm. The towns with the highest customers interrupted are shown in red.

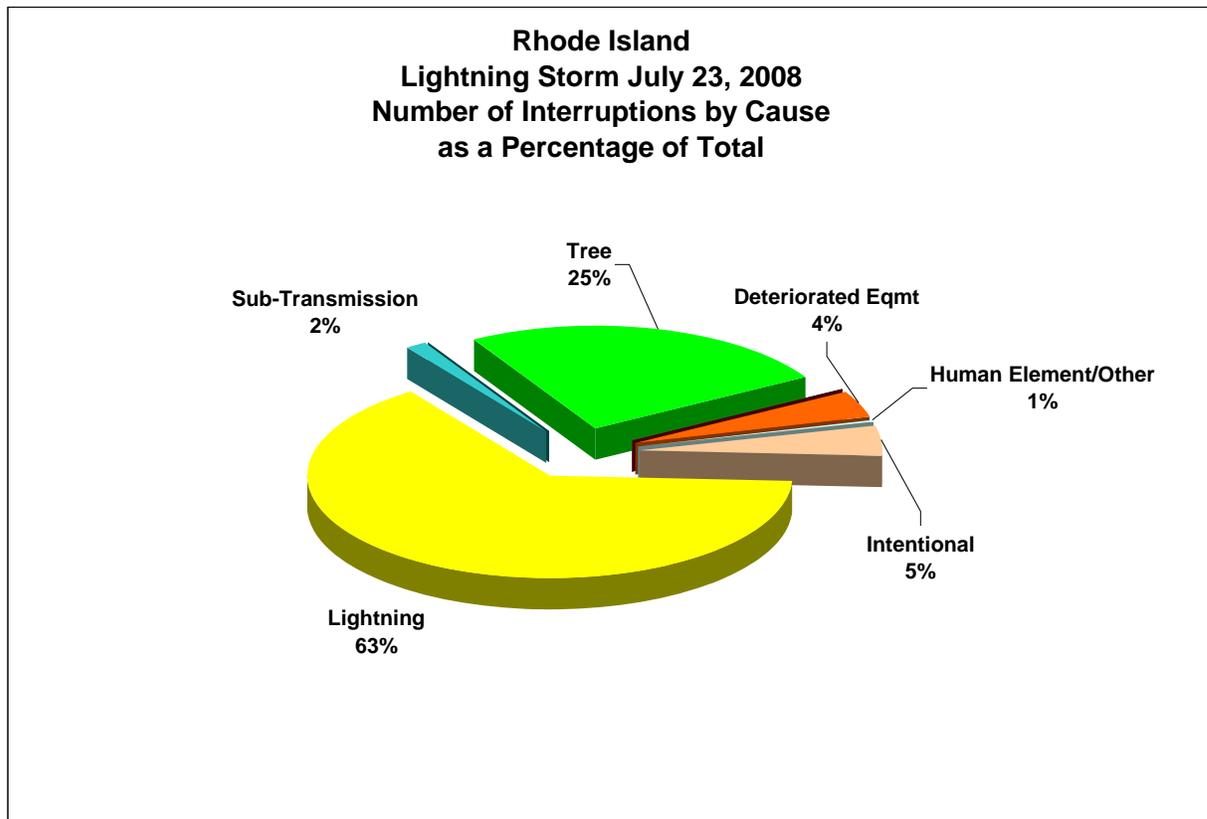
More than 55% of all customers interrupted during the storm were in five towns: South Kingstown, Jamestown, Hopkinton, Warwick, and Exeter. South Kingstown was hit the hardest with more than 8,000 customers interrupted. Jamestown had nearly 3,200 customers interrupted, and Hopkinton, Warwick, and Exeter each had more than 2,000 customers interrupted.

Rhode Island Lightning Storm July 23, 2008



11. Cause:

The following pie chart shows the breakdown by cause of number of interruptions as a percentage of total interruptions during the storm. Lightning was the major cause of interruptions on July 23, 2008, accounting for 63% of all interruptions. Broken tree limbs and fallen trees during heavy rain accounted for 25% of the interruptions during the storm.



12. Weather impact on restoration:

A severe thunderstorm watch/warning was issued for much of Rhode Island on Wednesday, July 23rd at approximately 2:45 p.m. A line of severe thunderstorms traversed the state from southwest to northeast between 3:00 and 5:30 p.m. The warning was later extended through the evening hours for southern portions of the state as a second line of thunderstorms impacted Rhode Island between 9:00 and 11:00 p.m. in a similar direction as the first.

Providence reported a rainfall amount of 2.17 inches, along with a wind gust of 40 mph at approximately 4:10 p.m. Sustained maximum winds of 32 mph were also observed in Providence during the first line of thunderstorms. Elsewhere, rainfall

amounts were generally lower east and south of Providence (e.g., 0.87 inches in Pawtucket); however, the number of reported lightning strikes were higher in the same area, especially during the passage of the second line of thunderstorms.

13. Analysis of protective device operation:

The following table summarizes the protective device operations during the storm. A "correct operation" means that a protective device (e.g. a fuse, station breaker, recloser, etc.) sensed a problem and opened correctly to protect the rest of the system from the fault, while a "manual operation" means that a protective device did not sense the fault and the device had to be manually opened by crews to protect the system, the public, or property.

Protective Device	Number of Operations		
	Correct Operations	Manual Operations	Total Operations
Distribution feeder circuit breaker or recloser (in substation)	9	2	11
Distribution line fuse	99	6	105
Distribution line recloser	3	0	3
Distribution transformer fuse	56	0	56
Substation transformer - high side device	1	0	1
Supply line switching device	3	0	3
Sub-Total	171	8	179

14. Summary of customers impacted:

During this storm, Rhode Island experienced a total of 198 interruptions that affected 30,388 customers for 4,832,089 customer minutes of interruption. On average, these interruptions resulted in 0.06 SAIFI, 10.18 minutes of SAIDI, and 159 minutes of interruption per customer affected. Since the SAIDI value of 10.18 minutes exceeded the threshold value of 5.34 minutes, July 23, 2008 qualified as a Major Event Day under the IEEE methodology.

• **September 6-7, 2008 Tropical Storm Hanna**

1. Start date/Time of event:

Tropical Storm Hanna started in Rhode Island on Saturday evening, September 6, 2008 at approximately 8:30 p.m. EDT.

2. Number/Location of crews on duty (both internal and external crews):

Over the course of the restoration effort, the following crew numbers were reported:

Location	Crew Type	# Crews (x2 for headcount)
Rhode Island	Internal Overhead Line (RI)	39
	Internal Overhead Line (MA)	25
	Internal Trouble Men	14 (x1 for headcount)
	Internal Service Restoration	12
	Internal Substation O&M	18
	Internal Underground	16
	Contractor Overhead Line	28
	Contractor Tree	64
	Support Personnel	178 (x1 for headcount)

At the time of the storm event, dynamic tracking of crew counts was not possible. Instead, per shift reports were generated for the daytime and nighttime. Since August 2007, the Company has been using Resource on Demand (RoD), a software-based application, to track its resources and lodging functions during a storm in near real-time.

3. Number of crews assigned to restoration efforts:

At the storm's peak (Saturday, September 6, 2008 during the nighttime shift), the following crews were assigned to assist in the restoration activities:

Overhead Line:	65 crews
Trouble Men:	10
Service Restoration:	2 crews
Tree:	32 crews
Substation O&M:	14 crews
Underground	12 crews

4. The first instance of mutual aid coordination:

The Company scheduled a series of storm conference calls that began on Thursday, September 4th at 8:00 a.m. Although resource transfers were proposed on Thursday, the decision was actually made by the storm management team on Saturday, September 6th. Internal line crews were sent to Rhode Island and staged from the Providence Service Center.

Also on the same day, 20 contractor lines crews were shifted from National Grid - New York into New England for possible assignment to Massachusetts and/or Rhode Island, depending upon the storm's actual impact. These resources were centrally-staged in Worcester, Massachusetts.

5. First contact with material suppliers:

Contact with material suppliers was not required during this storm.

6. Inventory levels: pre-event/daily/post-event:

Inventory levels are summarized in the table below. Please note that the balances represent actual day-end balances for all costed inventory items. They do not include “no cost” items that are already capitalized and not reported as inventory on the balance sheet, such as transformers.

	September 5, 2008	September 6, 2008	September 7, 2008	September 8, 2008
Inventory Levels	\$1,892,095	\$1,892,095	\$1,892,095	\$1,872,015

7. Date/Time of request for external crews:

The storm management team initially requested external resources on Saturday, September 6th during the 8:00 a.m. storm conference call. At that time, a total of 40 line crews were requested for Rhode Island.

8. Date/Time of external crew assignment:

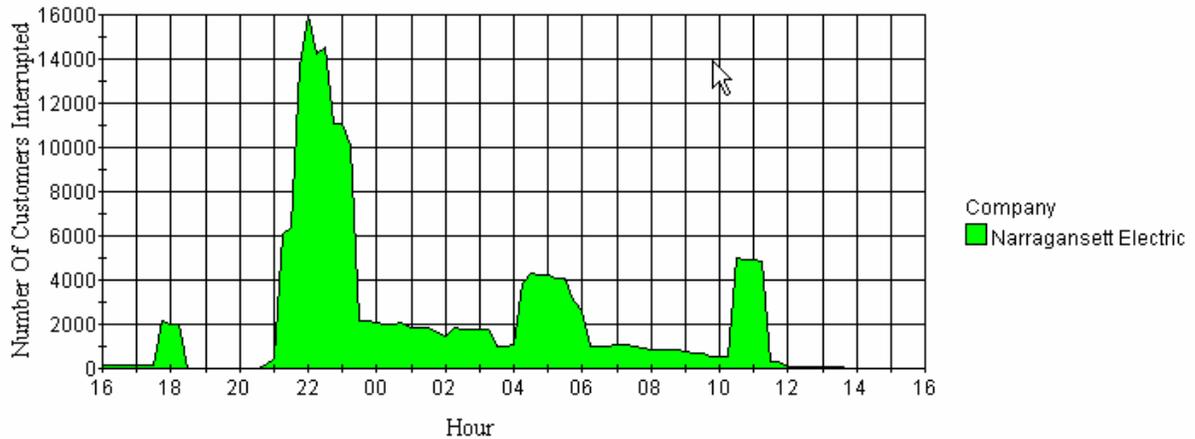
Due to the pre-positioning of both internal and external resources prior to Tropical Storm Hanna’s passage, external crews were assigned trouble orders at the start of the event at approximately 8:30 p.m. on Saturday, September 6th.

9. # of customers out of service by hour:

The number of customers out of service by hour from 4:00 p.m. on September 6, 2008 to 4:00 p.m. on September 7, 2008 is shown in the following graph. The peak of customers interrupted was 16,000 at 10:00 p.m. on September 6, 2008.



National Grid
Number of Customers Without Power for Next 24 hours
September 6, 2008 16:00



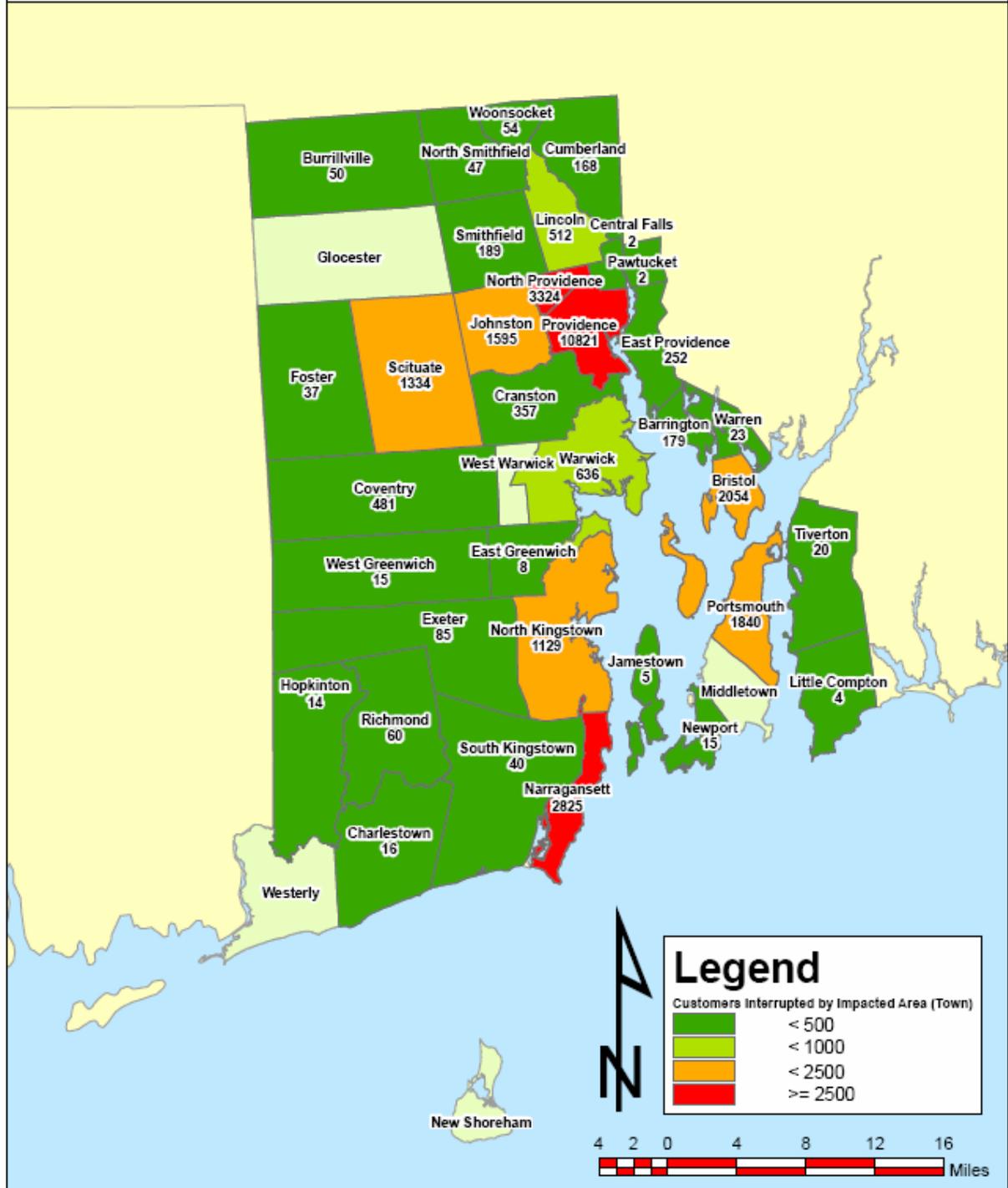
Please note that the above graph shows the number of customers out of service by hour during a 24-hour period starting at 4:00 p.m. on September 6, 2008.

10. Impacted area:

The following map shows the towns that were impacted by the storm and the total customers interrupted during the storm. The towns with the highest customers interrupted are shown in red.

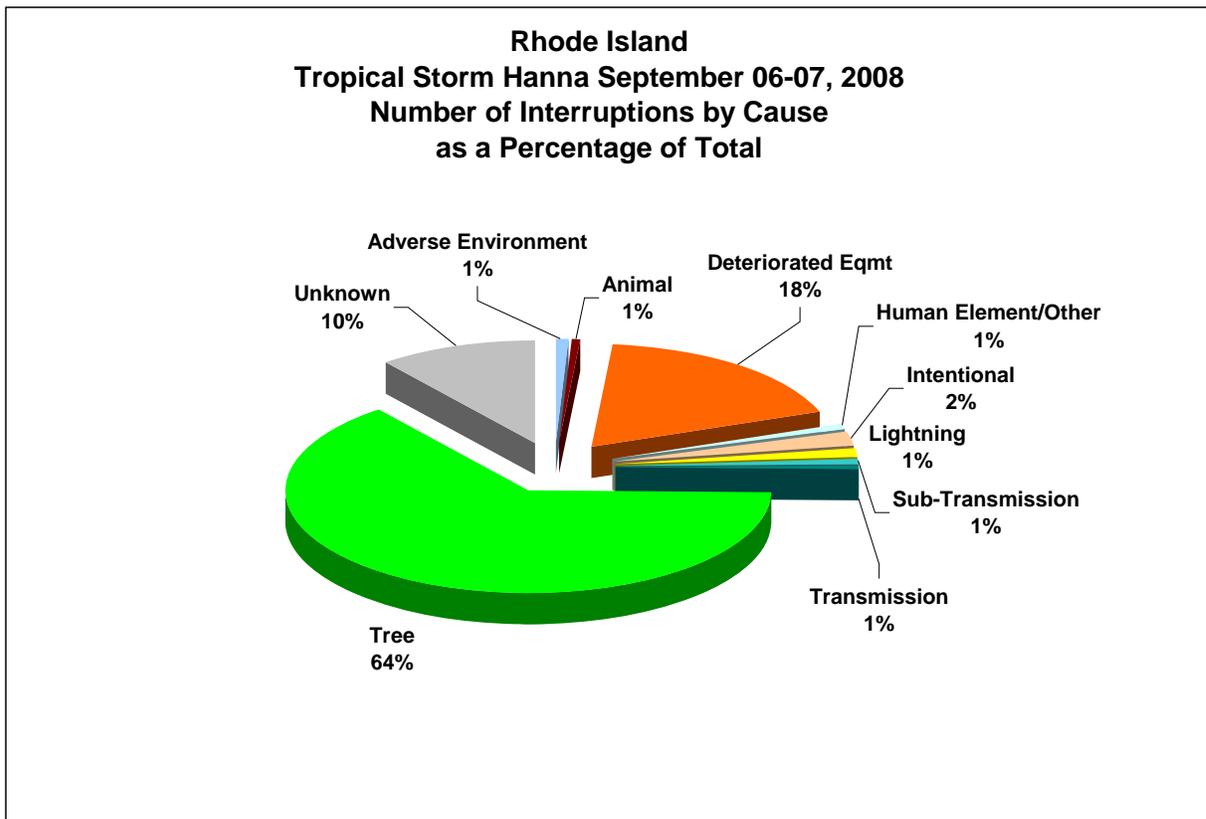
More than 60% of all customers interrupted during the storm were in three towns: Providence, North Providence, and Narragansett. Providence was hit the hardest with nearly 11,000 customers interrupted. North Providence had more than 3,300 customers interrupted, and Narragansett had more than 2,800 customers interrupted.

Rhode Island Tropical Storm Hanna September 6-7, 2008



11. Cause:

The following pie chart shows the breakdown by cause of number of interruptions as a percentage of total interruptions during the storm. Trees were the major cause of interruptions on September 6-7, 2008, accounting for 64% of all interruptions. Broken tree limbs accounted for nearly 75% of all tree interruptions, and fallen trees accounted for 20%. Deteriorated equipment accounted for 18% of all interruptions. Failed cutouts during rainy weather accounted for more than half of the deteriorated equipment interruptions.



12. Weather impact on restoration:

A tropical storm warning was issued for coastal Rhode Island, including portions along the Blackstone, Pawtuxet, and Providence Rivers, at approximately 11:00 a.m. on Saturday, September 6th. The rain shield associated with the fast-moving system started to impact the state around 8:30 p.m. Heavy rain and gusty winds buffeted the state during the overnight hours.

Although Providence set a new rainfall record of 3.95 inches on September 6th, the storm lost its tropical characteristics rather quickly as it moved through New England.

Providence reported a wind gust of 40 mph during the overnight hours with maximum sustained winds of 31 mph. By Sunday, September 7th at 5:00 a.m., coastal tropical storm warnings were discontinued and clear skies moved in.

In the wake of the storm, the Pawtuxet River in Cranston was near flood stage due to the excessive rain associated with Tropical Storm Hanna.

13. Analysis of protective device operation:

The following table summarizes the protective device operations during the storm. A "correct operation" means that a protective device (e.g. a fuse, station breaker, recloser, etc.) sensed a problem and opened correctly to protect the rest of the system from the fault, while a "manual operation" means that a protective device did not sense the fault and the device had to be manually opened by crews to protect the system, the public, or property.

Protective Device	Number of Operations		
	Correct Operations	Manual Operations	Total Operations
Distribution feeder circuit breaker or recloser (in substation)	6	1	7
Distribution line fuse	51	1	52
Distribution line recloser	2	0	2
Distribution transformer fuse	43	0	43
Supply line switching device	1	0	1
Sub-Total	103	2	105

14. Summary of customers impacted:

During this storm, Rhode Island experienced a total of 134 interruptions that affected 28,696 customers for 2,846,136 customer minutes of interruption. On average, these interruptions resulted in 0.06 SAIFI, 6.00 minutes of SAIDI, and 99 minutes of interruption per customer affected. A Major Event Day is typically interpreted to mean a calendar day, but since Tropical Storm Hanna started so late in the day on September 6th, the events on the following day were also considered when determining the storm's impact. Since the SAIDI value of 6.00 minutes for September 6-7, 2008 exceeded the threshold value of 5.34 minutes, Tropical Storm Hanna qualified as a Major Event Day under the IEEE methodology.