Thomas R. Teehan
Senior Counsel

May 4, 2011

VIA HAND DELIVERY & ELECTRONIC MAIL

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

RE: Docket 3628 - 2010 Annual Service Quality Report, Electric Operations

Dear Ms. Massaro:

Enclosed are ten (10) copies of National Grid's[1] performance results for 2010 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 $386,991 for calendar year 2010.

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 2010 with their related dollar values, and the actual 2010 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 2010. The annual net penalty for 2010 of $386,991, as shown in Column (i) is comprised of two components. The Company has calculated a $162,062 penalty related to frequency of outages, and a $224,929 penalty related to duration of outages.

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

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

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
Leo Wold, Esq.
Steve Scialabba, Division

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

2010 Service Quality Report

May 1, 2011

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. There were three days in 2010 that qualified as Major Event Days: March 14th, March 30th, and March 31st.

2010 Frequency (SAIFI) Standard		2010 Frequency (SAIFI) Results	
Frequency of Interruptions per Customer	(Penalty) Offset	Frequency of Interruptions per Customer	Annual (Penalty) Offset
Greater than 1.18	($916,000)		
1.06-1.18	linear interpolation	1.07	($162,062)
0.84-1.05	$0		
0.75-0.83	linear interpolation		
Less than 0.75	$229,000		

2010 Duration (SAIDI) Standard		2010 Duration (SAIDI) Results	
Duration of Interruptions (minutes)	(Penalty) Offset	Duration of Interruptions (minutes)	Annual (Penalty) Offset
Greater than 89.9	($916,000)		
72.0-89.9	linear interpolation	76.3	($224,929)
45.9-71.9	$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 (Opinion Dynamics Corporation). ODC surveys samples of customers who have contacted the call center quarterly 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 calendar 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.

2010 Customer Contact Standard		2010 Customer Contact Results	
Percent Satisfied	(Penalty) Offset	Percent Satisfied	Annual (Penalty) Offset
Less than 74.5%	($184,000)		
74.5%-76.7%	linear interpolation		
76.8%-81.4%	$0	78.6%	$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.

2010 Calls Answered Standard		2010 Calls Answered Results	
% Answered Within 20 Seconds	(Penalty) Offset	% Answered Within 20 Seconds	Annual (Penalty) Offset
Less than 53.5%	($184,000)		
53.5%-65.7%	linear interpolation		
65.8%-90.4%	$0	82.4%	$0
90.5%-100.0%	linear interpolation, to a maximum of $46,000		

National Grid

2010 Results of Service Quality Plan
Calculation of Penalty/Offset

Performance Standard	Potential Penalty (a)	Potential Offset (b)	2010 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	1.07	1.18	1.05	0.94	0.84	0.75	($162,062)
Reliability - Duration	$ 916,000	$ 229,000	76.3	89.9	71.9	57.5	45.9	36.7	($224,929)
Customer Service - Customer Contact Survey	$ 184,000	$ 46,000	78.6%	74.5%	76.8%	79.1%	81.4%	83.7%	$0
Customer Service - Telephone Calls Answered	$ 184,000	$ 46,000	82.4%	53.5%	65.8%	78.1%	90.4%	100.0%	$0
Total Penalty/Offset	$ 2,200,000	$ 550,000							($386,991)

Notes:

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

Column (c) represents the actual 2010 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):	[Column (g) - Column (c)] ÷ [Column (g) - Column (h)] x Column (b)
If Column (c) is between Column (e) and Column (d):	[Column (c) - Column (e)] ÷ [Column (d) - Column (e)] x 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):	[Column (c) - Column (g)] ÷ [Column (e) - Column (d)] x Column (b)
If Column (c) is between Column (d) and Column (e):	[Column (e) - Column (c)] ÷ [Column (e) - Column (d)] x 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)

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 2010 feeder ranking results on April 21, 2010, the second quarter results on September 8, 2010, the third quarter results on October 29, 2010, and the fourth quarter results on January 19, 2011.

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 2010, with the final report filed on January 26, 2011.

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

Results: During 2010, the Company's annual meter reading performance (as an average of monthly percentage of meters read) was 98.9%, compared to 98.7% during 2009 and 97.4% during 2008. The following table details the percentage of meters read per month for 2010, 2009, and 2008.

Narragansett Electric Company
Monthly Percentage of Meters Read

	2010	2009	2008
January	98.8%	98.8%	98.9%
February	98.9%	98.9%	98.7%
March	98.9%	98.8%	98.6%
April	98.8%	98.9%	98.7%
May	98.9%	98.8%	99.0%
June	99.0%	98.7%	98.9%
July	99.0%	98.7%	98.9%
August	99.0%	98.7%	98.9%
September	99.1%	98.4%	98.9%
October	99.0%	98.7%	98.9%
November	99.0%	98.8%	98.9%
December	98.6%	98.7%	82.1%

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. For 2010, the T_{MED} value was 4.68 minutes of SAIDI (using IEEE Std. 1366-2003 methodology). There were 2 storms over three days that exceeded this threshold in 2010. These two storms, which occurred on March 14, 2010, and March 30-31, 2010, are described below.

- **March 14, 2010 Rain Storm**

1. Start Date/Time of event:

This high wind and rain event started in Rhode Island early Sunday Morning March 14, 2010 at approximately 1:00 a.m. EST.

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

Location	Crew Type	# Crews (x2 headcount)
Rhode Island	Internal Overhead Line	59
	Internal Trouble Men	4 (x1 for headcount)
	Internal Substation O&M	18
	Internal Underground	5
	Transmission Line Services	16
	Contractor Overhead Line	25
	Contractor Tree	24

3. Number of crews assigned to restoration efforts:

See response to question 2. All crews involved with this Sunday event were assigned to the restoration efforts. Blue Sky Sundays generally have Trouble Men coverage only.

4. The first instance of mutual aid coordination:

Rhode Island was impacted by the storm throughout the day on Sunday. No mutual aid crews were required. The restoration event was managed by internal and contracted line crews.

5. The first contact with material suppliers:

Contact with material suppliers was not required during this storm event.

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

Inventory levels and issues are summarized in the table below. Please note that the balances represent actual day-end totals. The balances do not include "no cost", precapitalized items; these items are not reported as inventory on the balance sheet, such as transformers.

The inventory positions indicate those inventories held in Rhode Island and those allocated to RI stored in National Grids Central Warehouse located in Whitinsville, MA.

There were no materials shipped to RI for the March 13-15 storm from the NEDC.

Date	RI Inventory Locations	Allocated NEDC Inventory	Total Narragansett Electric Inventory
March 13, 2010	1,833,839.91	4,778,241.09	6,612,081.00
March 14, 2010	1,833,839.91	4,778,241.09	6,612,081.00
March 15, 2010	1,833,839.91	4,719,031.93	6,552,871.84

7. Date/Time of request for external crews:

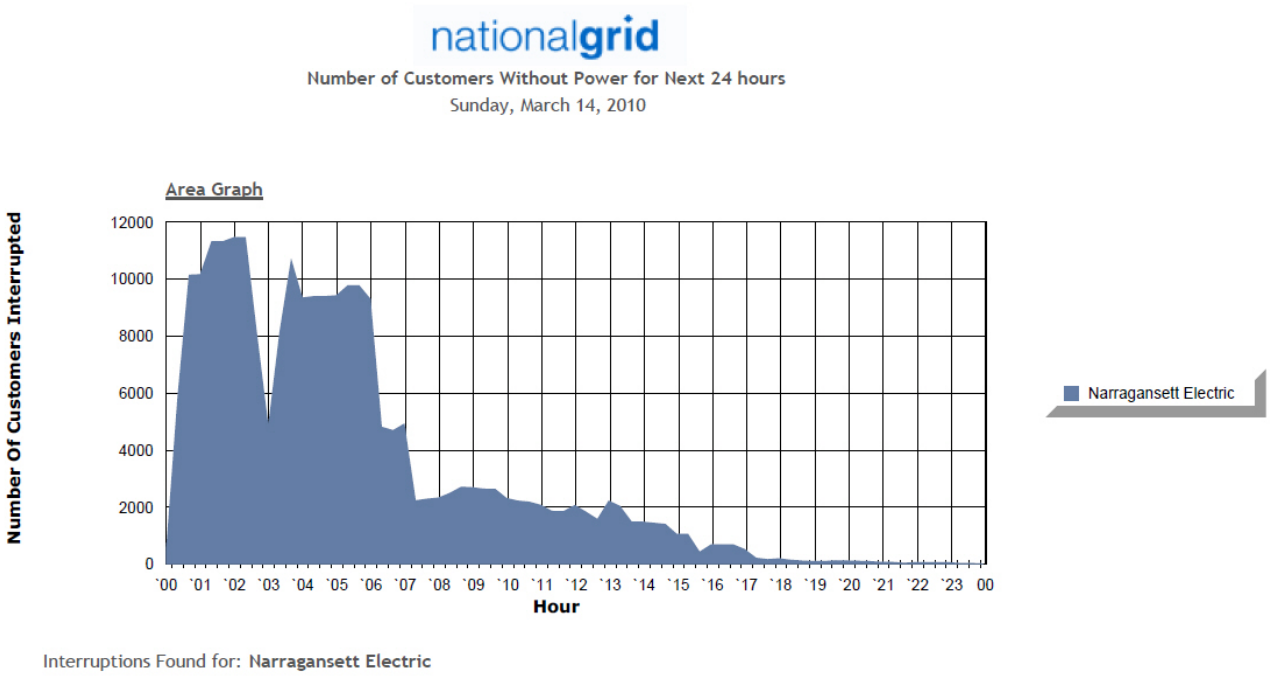
Additional contractor crews were requested during the system-wide storm conference call held at approximately 6 a.m. on Sunday March 14, 2010.

8. Date/Time of external crew assignment:

The requested resources were on-site and assigned by 8:00 a.m. on March 14, 2010.

9. # of customers out of service by hour:

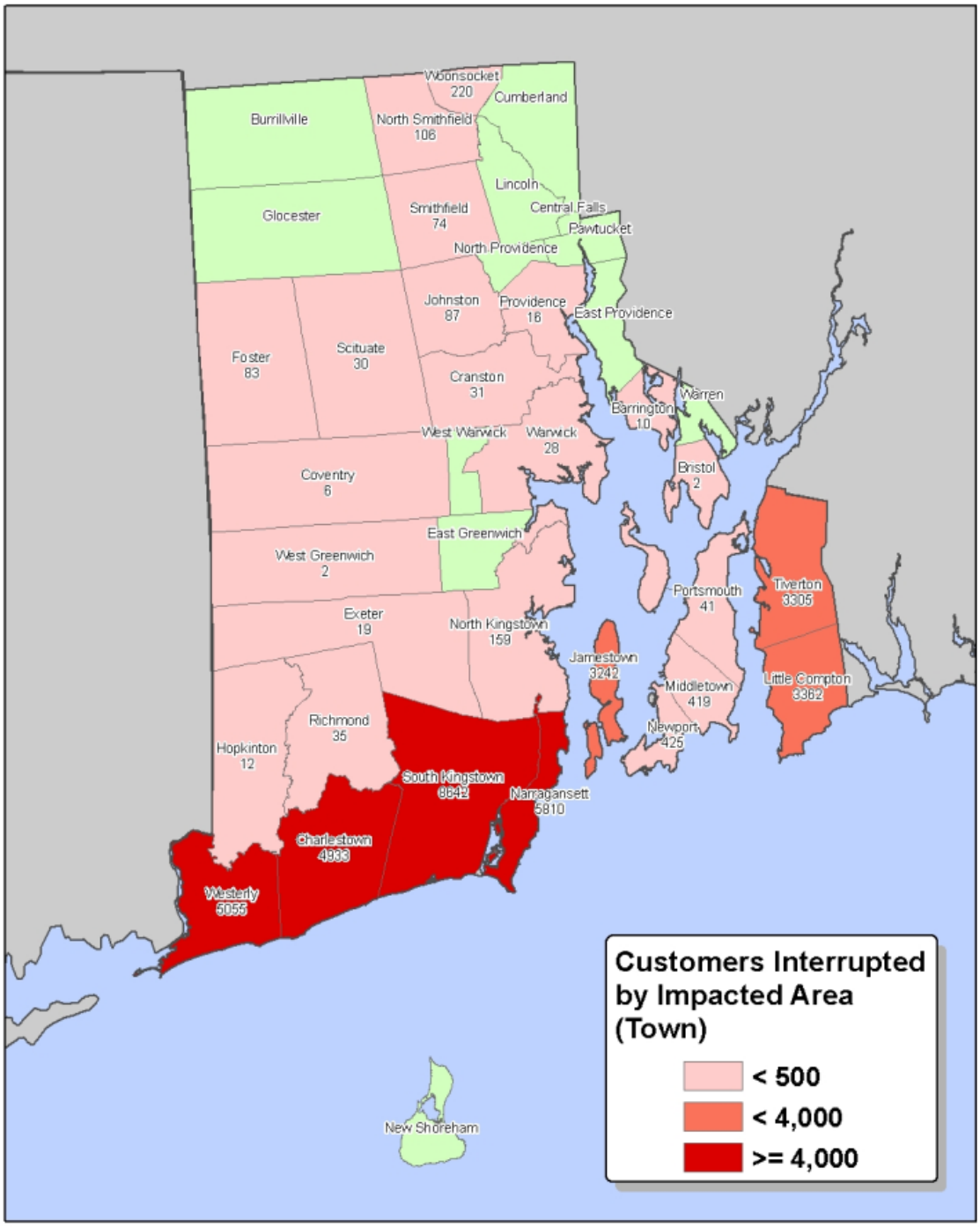
The number of customers out of service by hour on Sunday March 14, 2010 is shown in the following graph.



10. Impacted area:

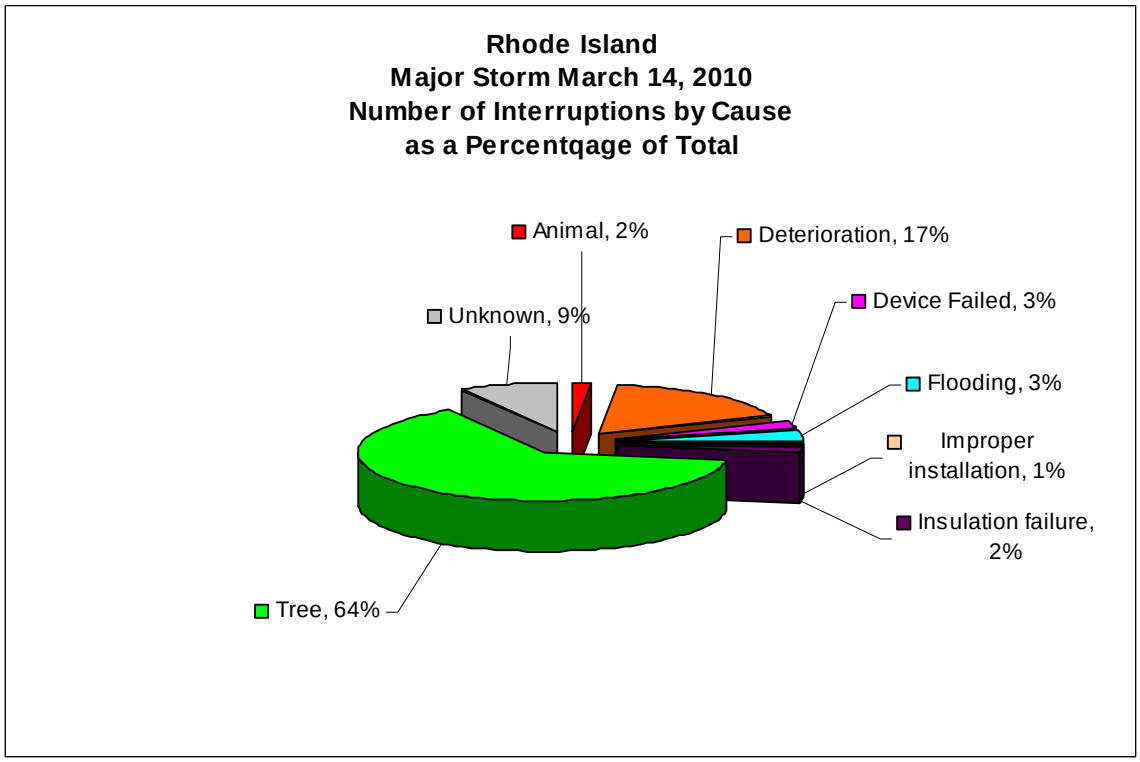
The following map shows the towns that were impacted by the storm and the total customer interrupted during the storm.

Rhode Island Major Storm
March 14, 2010



11. Cause:

The following pie chart shows the breakdown of the number of interruptions by cause as a percentage of total interruptions during the storm.



12. Weather impact on restoration:

High winds, bringing down trees and branches, and heavy rains resulted in multiple power outages in Rhode Island. Sustained winds of 20 mph with gusts up to 30 mph were reported in the area. These strong winds translated to widespread wind damage in the form of numerous downed trees, and broken limbs.

13. Analysis of Protective Device Operation:

It can be noted that the distribution system contains a hierarchy of coordinated protective devices that are intended to interrupt fault current and limit the magnitude of each event in terms of the number of customers interrupted. These devices are indicated

for each event in the attached table. For the March 14, 2010 rain event, all protective devices operated properly during this Major Event Day.

14. Summary of customers impacted:

During this storm, Rhode Island experienced a total of 96 interruptions that affected 21,045 customers for 4,033,502 customer minutes of interruption. On average these interruptions resulted in 0.04 SAIFI, and 8.43 minutes of SAIDI, and 192 minutes of interruption of customers affected. Since a SAIDI value of 8.43 minutes exceeded the threshold value of 4.68 minutes, March 14, 2010 qualified as a Major Event Day under the IEEE methodology.

- **March 30-31, 2010 Rain Storm**

1. Start Date and Time of event:

This high wind and severe rain event in Rhode Island started early Tuesday afternoon March 30, 2010 at approximately 2:00 p.m.., and continued thru Thursday April 1, 2010.

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

Location	**Crew Type**	**# Crews (x2 headcount)**
Rhode Island	Internal Overhead Line	40 crews total
	Internal Trouble Men	4 (x1 for headcount)
	Internal Substation O&M	15 crews total
	Internal Underground	11 crews total
	Contractor Tree	20 crews total

Note: The crews in Question 2 are the counts assigned on the days specified in the question. Additional crews were assigned following those days as the flood waters resided to perform work, and begin other restoration activities. Additionally during the 2 days outlined in this question, several Engineers, Supervisors, and others were assigned to help with damage assessment, and to help put together action plans to respond to the damage.

3. Number of crews assigned to restoration efforts:

Crew Type	**# Crews (x2 headcount)**
Internal Overhead Line	60
Internal Trouble Men	26 (x1 for headcount)
Internal Substation O&M	41
Internal Underground	25.5
Contractor Civil Crews	37
Contractor Tree	20

Note: The majority of the customers were restored by local crews on duty within the 2 day period. Some customers were out for an extensive amount of time, outside of this 2 day window, at the request of the local wiring inspector due to the high water conditions.

4. The first instance of mutual aid coordination:

No mutual aid crews were required, the restoration event was managed by internal and contracted crews.

5. The first contact with material suppliers:

Contact with material suppliers was not required during this storm event.

6. Inventory levels Pre-event/daily/post event

Inventory levels and issues are summarized in the table below. Balances represent actual day-end totals. The balances do not include "no cost", precapitalized items; these items are not reported as inventory on the balance sheet, such as transformers.

The inventory positions indicate those inventories held in Rhode Island and those allocated to RI stored in National Grids Central Warehouse located in Whitinsville, MA.

Date	RI Inventory Locations	Allocated NEDC Inventory	Total Narragansett Electric Inventory
March 29, 2010	1,730,840.44	4,568,681.21	6,299,521.65
March 30, 2010	1,725,881.12	4,558,173.42	6,284,054.54
March 31, 2010	1,723,666.79	4,320,443.18	6,044,109.97
April 1, 2010	1,764,748.73	4,323,130.82	6,087,879.55

7. Date/Time of request for external Crews:

National Grid Crews from Long Island and Internal Affiliate crews were requested to be on site on 4/1/2010, at 6:00AM

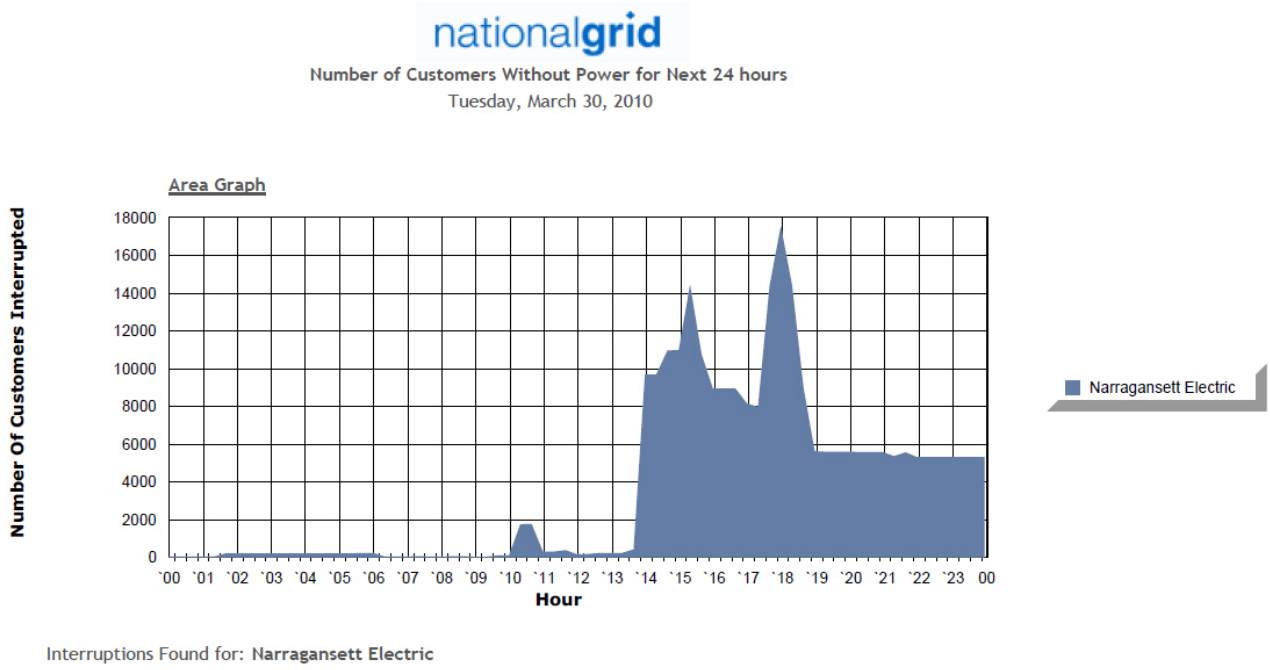
8. Date/Time of request for external Crews assignment

External (Internal Grid Crews from out of state) were assigned work on 4/1/2010 at approximately 7:00 a.m.

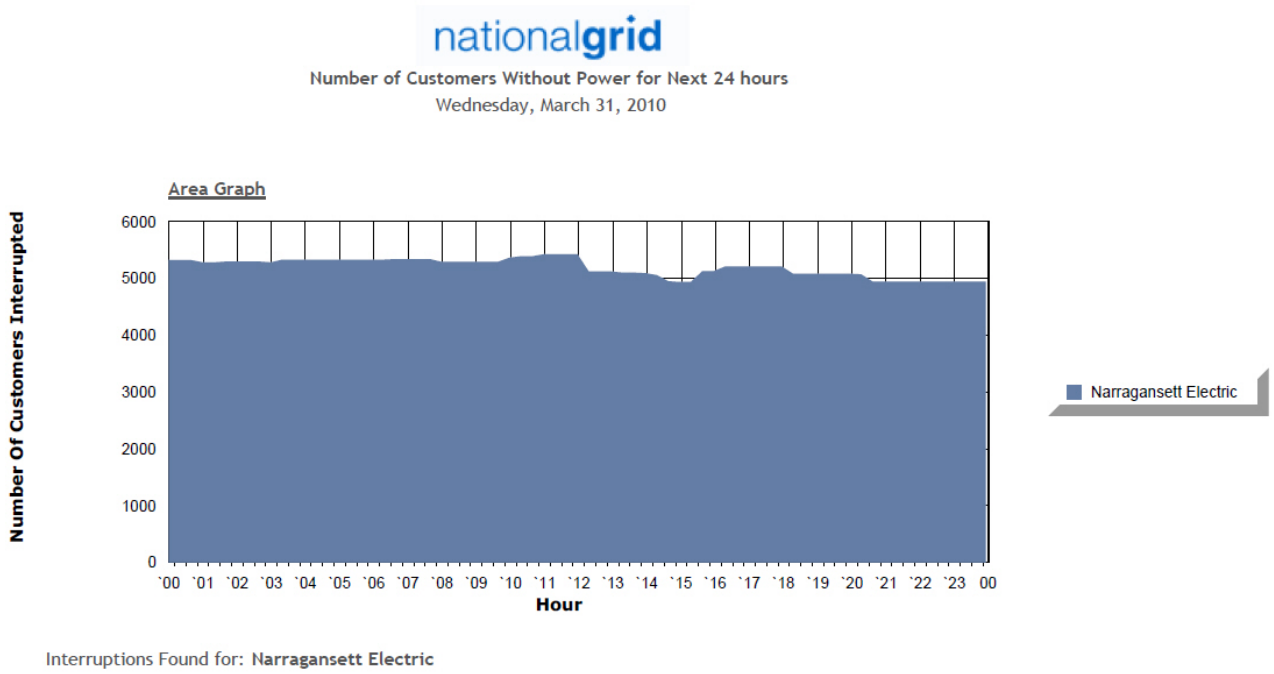
9. # of customers out by hour

The number of customers out of service by hour on Tuesday March 30, 2010 and Wednesday March 31, 2010 are shown in the following graphs.

March 30, 2010 (Tuesday)



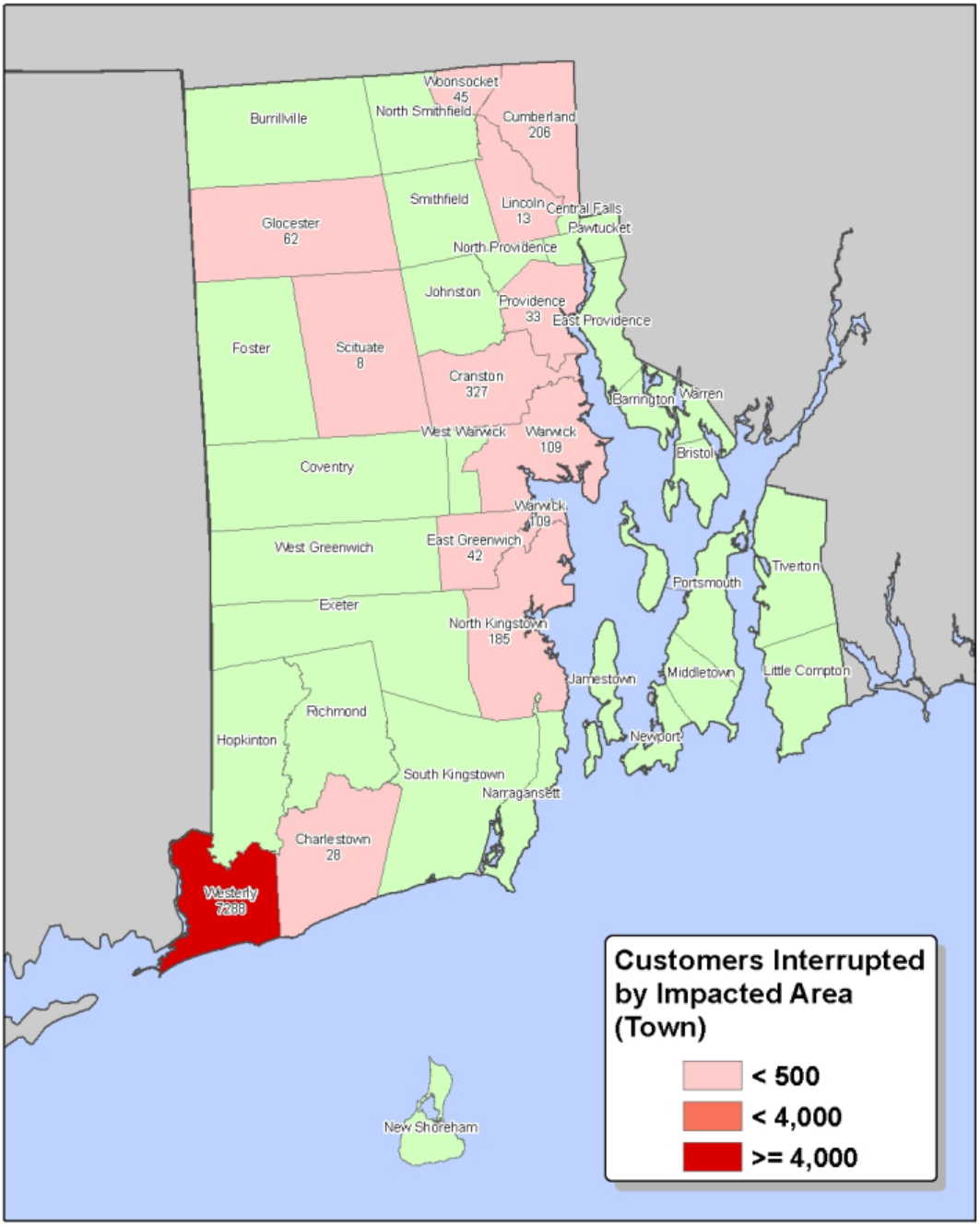
March 31, 2010 (Wednesday)



10. Impacted area

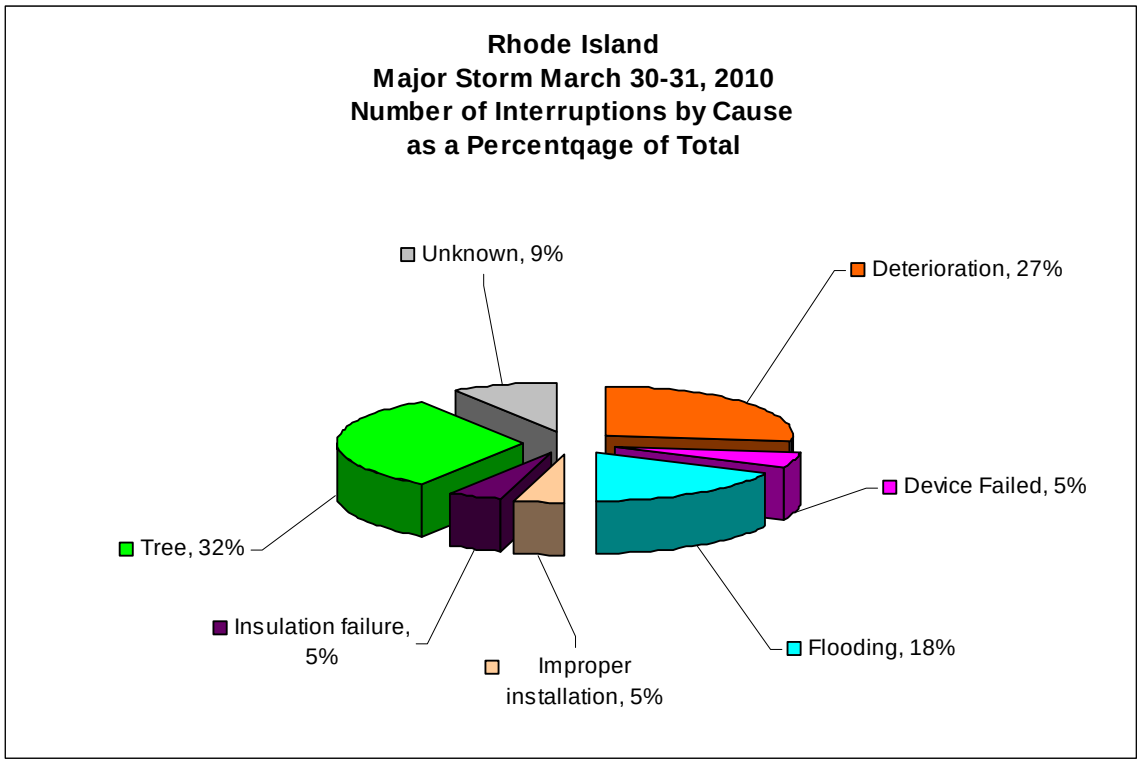
The following map shows the towns that were impacted by the storm and the total customer interrupted during the storm.

Rhode Island Major Storm
March 30-31, 2010



11. Cause

The following pie chart shows the breakdown of the number of interruptions by cause as a percentage of total interruptions during the storm.



12. Weather impact on restoration:

- Three days of rain, followed by severe flooding caused significant damage in Rhode Island and resulted in power outages lasting multiple days. Pounding rain throughout the Northeast sent rivers overflowing to record levels, hitting Rhode Island harder than any other state. Major river flooding occurred at the following locations:
  - Pawtuxet River – Cranston, Warwick 11 feet above historic record
  - Pawcatuck River – Westerly – Tidal flooding – 4 feet above flood stage
  - Blackstone River – Woonsocket – Near record flood stage – least impacted

President Obama declared a disaster in much of the state. Floodwaters submerged 8 substations impacting a large portion of RI. In Warwick and Cranston, where hundreds of homes were flooded, restoring power would have to wait until the homes and businesses were inspected. Several roadways were flooded out which had a negative impact on National Grid's ability to restore power to the area.

13. Analysis of Protective Device Operation:

It can be noted that the distribution system contains a hierarchy of coordinated protective devices that are intended to interrupt fault current and limit the magnitude of each event in terms of the number of customers interrupted. These devices are indicated for each event in the attached table. Due to the widespread flooding that occurred during March 30 and 31, 2010, some backup supplies were not available for certain automatic transfer schemes that would otherwise prevent certain interruptions from happening. However, aside from such instances of unavailability of supply, all protective devices operated properly during Major Event Days March 30 and March 31, 2010.

14. Summary of Customers Impacted:

March 30, 2010

During this storm, on March 30, 2010 Rhode Island experienced a total of 32 interruptions that affected 27,089 customers 22,724,417 customer minutes of interruption. On average these interruptions resulted in 0.06 SAIFI, and 47.47 minutes of SAIDI, and 839 minutes of interruption of customers affected. Since a SAIDI value of 47.47 minutes exceeded the threshold value of 4.68 minutes, March 30,2010 qualified as a Major Event Day under the IEEE methodology.

March 31, 2010

During this storm, on March 31, 2010 Rhode Island experienced a total of 8 interruptions that affected 376 customers 4,779,507 customer minutes of interruption. These interruptions had a minimal impact on SAIFI, however resulted in 9.98 minutes of SAIDI, and 12,711 minutes of interruption of customers affected. Since a SAIDI value of 9.98 minutes exceeded the threshold value of 4.68 minutes, March 31,2010 qualified as a Major Event Day under the IEEE methodology.

Note: This methodology attributes the customer minutes to the start date of the particular event. Due to the extensive flooding, and the need to make residential and commercial properties safe, restoration could not take place until flooding resided.

Information Concerning Individual Events on Major Event Days:
In addition to the summary information above that relates to each Major Event Day, the attached table lists specific events that occurred on each Major Event Day in 2010. The information included in the table indicates the following:

- District in which event occurred
- Event ID
- Start date/time of the event
- Total number of customers interrupted during each specific event
- Total number of customer minutes of interruption during each specific event
- Impacted area:
    - Towns in which customer electric service was interrupted
    - Town which experienced the largest number of customer minutes of interruption
- Cause of the event
- Protective Device that operated resulting in customer interruptions

Events Occurring on Rhode Island Major Storm Days, 2010

Indx	District	EVNT_ID	TIME_OFF	Total CI	Total CMI	All Towns Affected	Town with Max CMI	Cause	Prot Devc
1	Capital	7480292	03/14/2010 12:37:51 AM	63	3591	NORTH SMITHFIELD	NORTH SMITHFIELD	Tree Fell	Distribution line fuse
2	Coastal	7480305	03/14/2010 12:53:05 AM	3241	353269	JAMESTOWN	JAMESTOWN	Tree Fell	Supply Line Switching Device
3	Capital	7480316	03/14/2010 1:34:31 AM	74	7104	JOHNSTON, SMITHFIELD	SMITHFIELD	Tree Fell	Distribution line fuse
4	Capital	7480371	03/14/2010 5:04:54 AM	43	6235	NORTH SMITHFIELD	NORTH SMITHFIELD	Tree Fell	Distribution line fuse
5	Coastal	7480378	03/14/2010 1:59:45 AM	144	43290	NARRAGANSETT	NARRAGANSETT	Tree Fell	Distribution line fuse
6	Coastal	7480390	03/14/2010 6:07:10 AM	1	53	NEWPORT	NEWPORT	Deterioration	Limiter or secondary service fuse
7	Coastal	7480404	03/14/2010 7:47:56 AM	1	43	MIDDLETOWN	MIDDLETOWN	Tree - Broken Limb	Distribution line fuse
8	Coastal	7480413	03/14/2010 1:53:42 AM	24	8328	MIDDLETOWN	MIDDLETOWN	Tree - Broken Limb	Distribution line fuse
9	Coastal	7480420	03/14/2010 8:35:14 AM	39	1365	NEWPORT	NEWPORT	Tree Fell	Distribution line fuse
10	Coastal	7480428	03/14/2010 1:00:59 AM	14	6720	LITTLE COMPTON	LITTLE COMPTON	Tree - Broken Limb	Distribution line fuse
11	Coastal	7480439	03/14/2010 12:53:40 AM	10	4560	MIDDLETOWN	MIDDLETOWN	Deterioration	Distribution transformer fuse
12	Coastal	7480445	03/14/2010 6:59:47 AM	13	2158	NARRAGANSETT	NARRAGANSETT	Tree - Broken Limb	Distribution line fuse
13	Coastal	7480447	03/14/2010 8:30:48 AM	7	665	MIDDLETOWN	MIDDLETOWN	Tree Fell	Distribution line fuse
14	Coastal	7480450	03/14/2010 3:21:14 AM	350	136500	NEWPORT	NEWPORT	Tree Fell	Distribution line fuse
15	Coastal	7480452	03/14/2010 1:58:37 AM	40	20680	LITTLE COMPTON	LITTLE COMPTON	Deterioration	Distribution line fuse
16	Capital	7480459	03/14/2010 7:17:27 AM	83	13529	FOSTER	FOSTER	Deterioration	Distribution line fuse
17	Coastal	7480460	03/14/2010 5:59:13 AM	202	62014	CHARLESTOWN	CHARLESTOWN	Tree Fell	Distribution line fuse
18	Capital	7480469	03/14/2010 5:02:48 AM	11	1078	JOHNSTON	JOHNSTON	Tree Fell	Distribution line fuse
19	Coastal	7480473	03/14/2010 6:53:00 AM	2	436	PORTSMOUTH	PORTSMOUTH	Device Failed	Distribution transformer fuse
20	Coastal	7480483	03/14/2010 8:02:51 AM	34	7718	NEWPORT	NEWPORT	Tree - Broken Limb	Distribution transformer fuse
21	Coastal	7480485	03/14/2010 9:15:02 AM	6	636	COVENTRY	COVENTRY	Tree Fell	Distribution line fuse
22	Coastal	7480488	03/14/2010 7:10:59 AM	144	43488	WESTERLY	WESTERLY	Tree - Broken Limb	Distribution line fuse
23	Coastal	7480489	03/14/2010 8:18:53 AM	1	211	MIDDLETOWN	MIDDLETOWN	Tree - Broken Limb	None operated
24	Coastal	7480498	03/14/2010 4:25:19 AM	151	72480	CHARLESTOWN, SOUTH KINGSTOWN	CHARLESTOWN	Unknown	Distribution line fuse
25	Capital	7480521	03/14/2010 9:41:22 AM	2	360	PROVIDENCE	PROVIDENCE	Tree Fell	None operated
26	Coastal	7480523	03/14/2010 5:10:25 AM	127	55753	NORTH KINGSTOWN	NORTH KINGSTOWN	Unknown	Distribution line fuse
27	Coastal	7480525	03/14/2010 7:25:20 AM	106	21200	NARRAGANSETT	NARRAGANSETT	Tree - Broken Limb	Distribution line fuse
28	Coastal	7480530	03/14/2010 3:47:42 AM	10	5590	CHARLESTOWN	CHARLESTOWN	Tree - Broken Limb	Distribution transformer fuse
29	Coastal	7480541	03/14/2010 7:11:14 AM	3	1143	MIDDLETOWN	MIDDLETOWN	Tree Fell	Distribution transformer fuse
30	Coastal	7480543	03/14/2010 8:26:28 AM	372	56420	MIDDLETOWN	MIDDLETOWN	Unknown	None operated
31	Coastal	7480544	03/14/2010 11:13:02 AM	1	141	NEWPORT	NEWPORT	Tree Fell	None operated
32	Coastal	7480559	03/14/2010 3:26:46 AM	2807	609119	NARRAGANSETT, SOUTH KINGSTOWN	NARRAGANSETT	Tree - Broken Limb	Supply Line Switching Device
33	Coastal	7480566	03/14/2010 12:23:33 AM	1128	395928	NARRAGANSETT, SOUTH KINGSTOWN	SOUTH KINGSTOWN	Tree Fell	Distribution line recloser
34	Coastal	7480567	03/14/2010 12:44:37 AM	1470	211711	NARRAGANSETT, SOUTH KINGSTOWN	NARRAGANSETT	Tree Fell	Distribution line recloser
35	Coastal	7480571	03/14/2010 12:35:50 AM	4135	538430	CHARLESTOWN, SOUTH KINGSTOWN, WESTERLY	CHARLESTOWN	Tree Fell	Distribution Feeder circuit breaker or recloser(in substation)
36	Coastal	7480580	03/14/2010 8:53:58 AM	18	5778	WARWICK	WARWICK	Tree Fell	Distribution transformer fuse
37	Coastal	7480583	03/14/2010 6:21:05 AM	11	5445	RICHMOND	RICHMOND	Tree - Broken Limb	Distribution line fuse
38	Coastal	7480585	03/14/2010 3:18:40 AM	8	5432	RICHMOND	RICHMOND	Tree - Broken Limb	Distribution transformer fuse
39	Coastal	7480589	03/14/2010 5:36:43 AM	356	193308	CHARLESTOWN	CHARLESTOWN	Tree Fell	Distribution line fuse
40	Coastal	7480598	03/14/2010 10:52:47 AM	18	3654	NORTH KINGSTOWN	NORTH KINGSTOWN	Tree - Broken Limb	Distribution line fuse
41	Coastal	7480600	03/14/2010 10:15:55 AM	10	1450	WARWICK	WARWICK	Animal	Distribution transformer fuse
42	Coastal	7480609	03/14/2010 9:53:51 AM	1	126	NORTH KINGSTOWN	NORTH KINGSTOWN	Tree Fell	None operated
43	Coastal	7480616	03/14/2010 1:14:02 PM	630	88830	WESTERLY	WESTERLY	Tree Fell	Distribution line recloser
44	Capital	7480623	03/14/2010 12:23:15 PM	27	3159	WOONSOCKET	WOONSOCKET	Device Failed	Distribution transformer fuse
45	Coastal	7480636	03/14/2010 7:48:02 AM	14	6608	EXETER, SOUTH KINGSTOWN	SOUTH KINGSTOWN	Tree Fell	Distribution line fuse
46	Capital	7480637	03/14/2010 12:23:34 AM	9	3303	CRANSTON	CRANSTON	Unknown	Distribution line fuse
47	Coastal	7480645	03/14/2010 3:02:11 AM	5	985	HOPKINTON	HOPKINTON	Tree - Broken Limb	Distribution line fuse
48	Coastal	7480647	03/14/2010 3:53:21 AM	3305	449480	FALL RIVER, LITTLE COMPTON, TIVERTON, WESTPORT	LITTLE COMPTON	Unknown	Distribution Feeder circuit breaker or recloser(in substation)
49	Coastal	7480649	03/14/2010 1:06:24 PM	29	4756	NARRAGANSETT	NARRAGANSETT	Deterioration	Distribution line fuse
50	Coastal	7480664	03/14/2010 12:20:13 AM	111	102120	NARRAGANSETT	NARRAGANSETT	Tree - Broken Limb	Distribution line fuse
51	Coastal	7480665	03/14/2010 4:08:59 AM	8	6112	NORTH KINGSTOWN	NORTH KINGSTOWN	Tree Fell	Distribution line fuse
52	Coastal	7480669	03/14/2010 9:57:22 AM	2	838	NORTH KINGSTOWN	NORTH KINGSTOWN	Tree Fell	Distribution line fuse
53	Coastal	7480671	03/14/2010 7:55:28 AM	77	41888	WESTERLY	WESTERLY	Unknown	Distribution line fuse
54	Capital	7480672	03/14/2010 8:53:11 AM	193	47671	WOONSOCKET	WOONSOCKET	Insulation failure - other	Distribution line fuse
55	Capital	7480677	03/14/2010 1:30:05 PM	10	110	BARRINGTON	BARRINGTON	Deterioration	None operated
56	Coastal	7480679	03/14/2010 7:38:48 AM	3	1671	LITTLE COMPTON	LITTLE COMPTON	Tree - Broken Limb	Distribution transformer fuse
57	Coastal	7480681	03/14/2010 4:14:43 PM	299	16445	SOUTH KINGSTOWN	SOUTH KINGSTOWN	Tree - Broken Limb	Distribution line recloser
58	Coastal	7480683	03/14/2010 1:13:14 AM	4	3632	SOUTH KINGSTOWN	SOUTH KINGSTOWN	Tree - Broken Limb	Distribution transformer fuse
59	Coastal	7480684	03/14/2010 7:42:01 AM	18	10458	CHARLESTOWN	CHARLESTOWN	Tree Fell	Distribution line fuse
60	Coastal	7480694	03/14/2010 9:17:15 AM	1	488	NARRAGANSETT	NARRAGANSETT	Deterioration	Unknown
61	Coastal	7480702	03/14/2010 5:04:24 PM	38	2280	PORTSMOUTH	PORTSMOUTH	Unknown	Distribution line fuse
62	Coastal	7480704	03/14/2010 5:38:45 AM	5	3740	EXETER	EXETER	Unknown	Distribution line fuse
63	Coastal	7480706	03/14/2010 2:05:02 PM	2	412	WEST GREENWICH	WEST GREENWICH	Tree - Broken Limb	Distribution transformer fuse
64	Coastal	7480726	03/14/2010 6:28:18 AM	21	15477	WESTERLY	WESTERLY	Tree - Broken Limb	Distribution line fuse
65	Capital	7480732	03/14/2010 12:45:19 PM	2	210	JOHNSTON	JOHNSTON	Deterioration	Distribution transformer fuse
66	Coastal	7480733	03/14/2010 12:25:44 PM	1	385	NARRAGANSETT	NARRAGANSETT	Deterioration	Distribution line fuse
67	Capital	7480741	03/14/2010 2:08:54 PM	2	402	BRISTOL	BRISTOL	Tree - Broken Limb	Distribution transformer fuse

Events Occurring on Rhode Island Major Storm Days, 2010

Indx	District	EVNT_ID	TIME_OFF	Total CI	Total CMI	All Towns Affected	Town with Max CMI	Cause	Prot Devc
68	Coastal	7480753	03/14/2010 8:17:54 AM	5	3470	CHARLESTOWN	CHARLESTOWN	Tree - Broken Limb	Distribution line fuse
69	Capital	7480756	03/14/2010 4:07:24 AM	14	6104	PROVIDENCE	PROVIDENCE	Tree Fell	Distribution transformer fuse
70	Coastal	7480772	03/14/2010 6:57:51 AM	8	6568	CHARLESTOWN	CHARLESTOWN	Tree - Broken Limb	Distribution transformer fuse
71	Coastal	7480773	03/14/2010 1:23:40 PM	36	5520	WESTERLY	WESTERLY	Deterioration	Distribution line fuse
72	Coastal	7480777	03/14/2010 4:45:23 PM	1	243	MIDDLETOWN	MIDDLETOWN	Tree Fell	None operated
73	Coastal	7480778	03/14/2010 10:14:08 AM	30	19110	CHARLESTOWN	CHARLESTOWN	Tree Fell	Distribution line fuse
74	Coastal	7480788	03/14/2010 8:55:12 AM	1	693	SOUTH KINGSTOWN	SOUTH KINGSTOWN	Tree - Broken Limb	None operated
75	Coastal	7480791	03/14/2010 10:57:50 AM	1	623	SOUTH KINGSTOWN	SOUTH KINGSTOWN	Tree Fell	None operated
76	Coastal	7480795	03/14/2010 7:34:02 AM	4	1524	CHARLESTOWN	CHARLESTOWN	Tree - Broken Limb	Distribution transformer fuse
77	Coastal	7480800	03/14/2010 4:33:33 PM	1	264	SOUTH KINGSTOWN	SOUTH KINGSTOWN	Animal	None operated
78	Coastal	7480804	03/14/2010 4:42:45 AM	6	3000	HOPKINTON	HOPKINTON	Deterioration	Distribution transformer fuse
79	Coastal	7480807	03/14/2010 12:05:38 AM	8	9080	WESTERLY	WESTERLY	Tree - Broken Limb	Distribution transformer fuse
80	Capital	7480812	03/14/2010 8:31:05 PM	30	1650	SCITUATE	SCITUATE	Deterioration	Distribution line fuse
81	Capital	7480820	03/14/2010 10:03:08 PM	22	1320	CRANSTON	CRANSTON	Deterioration	Distribution transformer fuse
82	Coastal	7480827	03/14/2010 6:00:23 AM	15	15900	SOUTH KINGSTOWN	SOUTH KINGSTOWN	Tree - Broken Limb	Distribution line fuse
83	Coastal	7480830	03/14/2010 3:34:32 PM	4	1600	WESTERLY	WESTERLY	Tree - Broken Limb	Distribution transformer fuse
84	Coastal	7480833	03/14/2010 3:48:32 PM	1	278	JAMESTOWN	JAMESTOWN	Tree - Broken Limb	Distribution line fuse
85	Coastal	7480838	03/14/2010 3:15:37 PM	10	5200	CHARLESTOWN	CHARLESTOWN	Tree - Broken Limb	Distribution transformer fuse
86	Coastal	7480839	03/14/2010 1:45:26 AM	3	3948	CHARLESTOWN	CHARLESTOWN	Tree Fell	Distribution line fuse
87	Coastal	7480845	03/14/2010 1:56:01 AM	1	1339	SOUTH KINGSTOWN	SOUTH KINGSTOWN	Tree Fell	None operated
88	Coastal	7480862	03/14/2010 9:22:10 AM	1	1043	SOUTH KINGSTOWN	SOUTH KINGSTOWN	Tree - Broken Limb	None operated
89	Coastal	7480865	03/14/2010 12:46:35 PM	16	13200	RICHMOND	RICHMOND	Deterioration	Distribution line fuse
90	Coastal	7480872	03/14/2010 8:08:37 AM	1	1177	HOPKINTON	HOPKINTON	Tree Fell	Distribution transformer fuse
91	Coastal	7480875	03/14/2010 11:16:24 AM	1	1020	SOUTH KINGSTOWN	SOUTH KINGSTOWN	Tree Fell	None operated
92	Coastal	7480889	03/14/2010 1:30:39 PM	3	2430	NORTH KINGSTOWN	NORTH KINGSTOWN	Tree Fell	Distribution line fuse
93	Coastal	7480893	03/14/2010 7:20:40 PM	1	609	CHARLESTOWN	CHARLESTOWN	Tree Fell	None operated
94	Coastal	7480895	03/14/2010 11:59:21 AM	1	1132	PORTSMOUTH	PORTSMOUTH	Tree Fell	None operated
95	Coastal	7482110	03/30/2010 1:48:57 AM	175	46725	NORTH KINGSTOWN	NORTH KINGSTOWN	Deterioration	Distribution line fuse
96	Capital	7482112	03/30/2010 5:47:41 AM	25	4700	CRANSTON	CRANSTON	Deterioration	Distribution line fuse
97	Coastal	7482116	03/30/2010 5:43:35 AM	8	1776	NORTH KINGSTOWN	NORTH KINGSTOWN	Tree - Broken Limb	Distribution line fuse
98	Capital	7482118	03/30/2010 8:31:31 AM	10	690	CRANSTON	CRANSTON	Unknown	Distribution transformer fuse
99	Capital	7482132	03/30/2010 7:43:22 AM	3	621	SCITUATE	SCITUATE	Device Failed	Distribution transformer fuse
100	Capital	7482139	03/30/2010 10:44:55 AM	20	1200	CRANSTON	CRANSTON	Improper installation	Distribution transformer fuse
101	Coastal	7482143	03/30/2010 11:53:55 AM	21	714	CHARLESTOWN	CHARLESTOWN	Tree - Broken Limb	Distribution line fuse
102	Capital	7482162	03/30/2010 11:42:08 AM	45	14535	WOONSOCKET	WOONSOCKET	Unknown	Distribution line fuse
103	Capital	7482171	03/30/2010 1:40:47 PM	195	24625	CUMBERLAND	CUMBERLAND	Flooding	Distribution line fuse
104	Capital	7482188	03/30/2010 7:04:05 PM	11	671	CUMBERLAND	CUMBERLAND	Deterioration	Distribution transformer fuse
105	Capital	7482190	03/30/2010 5:13:48 PM	16	1952	PROVIDENCE	PROVIDENCE	Deterioration	Distribution transformer fuse
106	Capital	7482193	03/30/2010 3:00:26 PM	17	2890	PROVIDENCE	PROVIDENCE	Deterioration	Distribution transformer fuse
107	Capital	7482201	03/30/2010 6:36:09 PM	62	11408	GLOCESTER	GLOCESTER	Tree Fell	Distribution line fuse
108	Coastal	7482207	03/30/2010 2:13:19 PM	9293	10630801	WESTERLY	WESTERLY	Flooding	Substation transformer - high side device
109	Coastal	7482209	03/30/2010 7:21:38 PM	42	13398	EAST GREENWICH	EAST GREENWICH	Tree Fell	Distribution line fuse
110	Capital	7482213	03/31/2010 1:57:18 AM	13	624.00	LINCOLN	LINCOLN	Deterioration	Distribution transformer fuse
111	Coastal	7482313	03/30/2010 11:28:46 AM	7	12474.00	CHARLESTOWN	CHARLESTOWN	Tree Fell	Distribution line fuse
112	Coastal	7482315	03/31/2010 6:18:20 PM	2	218	NORTH KINGSTOWN	NORTH KINGSTOWN	Tree - Broken Limb	Distribution transformer fuse
113	Capital	7482316	03/31/2010 5:38:54 PM	5	710	SCITUATE	SCITUATE	Tree - Broken Limb	Distribution transformer fuse
114	Coastal	7482325	03/30/2010 9:58:30 AM	109	145107	WARWICK	WARWICK	Insulation failure - cable	Distribution line fuse
115	Coastal	7482329	03/30/2010 5:58:00 PM	1036	19684	WESTERLY	WESTERLY	Flooding	Distribution line recloser
116	Capital	7483399	03/31/2010 3:55:37 PM	272	4725626	CRANSTON	CRANSTON	Flooding	Distribution line fuse