



Unitil Energy Systems, Inc.  
Major Storm Cost Reserve Fund Report  
2010 – 2011

Prepared By: Unitil Service Corp.  
Emergency Management & Compliance  
5/31/2012

## **Introduction**

Unitil Energy Systems, Inc. (“UES” or the “Company”) submits this first annual Major Storm Cost Reserve (“MSCR”) Fund Report for the period ended December 31, 2011. This filing is to comply with the most recent request by the New Hampshire Public Utilities Commission (“Commission”) in compliance with the requirements set forth in the Company’s Rate Plan Settlement Docket No. DE 10-055 and as ordered in the Commission’s Order in DE 11-277 Order No. 25,351 *Order Granting Increase to Storm Recovery Adjustment Factor* (“SRAF”) issued April 24, 2012. The rate levels resulting from the distribution revenue changes specified in Section 2 of DE 10-055 include \$400,000 annually for the MSCR, which will be used to recover costs associated with responding to and recovering from qualifying major storms. The MSCR Fund Balance at December 31, 2011 is (\$435,764) (See *UES MSCR Fund Balance Rollforward Schedule* on page 4. These storm costs have been reviewed for accuracy, completeness and proper classification by Unitil’s Internal Audit staff.

## **MSCR ACCRUAL AND RECOVERY OF CERTAIN STORM RESTORATION COSTS**

The Settlement Agreement in DE 10-055 provides, in part, in Section 8, that:

Qualifying major storms shall include severe weather events causing 16 concurrent troubles (interruption events occurring on either primary or secondary lines) and 15 percent of customers interrupted, or 22 concurrent troubles, in either UES’ Capital or Seacoast regions, as well as costs associated with planning and preparation activities in advance of severe weather if a qualifying major storm is likely to occur. Planning and preparation activities will include pre-staging of crews, standby arrangements with external contractors, incremental compensation of employees, and other costs that may be incurred to prepare for a qualifying major storm. A qualifying major storm will be considered likely to occur if the Power Disruption Index (“PDI”)<sup>1</sup> from the Company’s professional weather forecaster reaches a PDI level of 2 or greater with a “high” (greater than 60 percent) level of confidence. (Section 8.1)

The parties recognize that certain weather events may result in extraordinary expenditures to prepare for, or recover from, storms or natural disasters that do not meet the defined criteria for a qualifying major storm. The Company may petition the Commission to recover the extraordinary costs of such events from the MSCR and has the burden to demonstrate the reasonableness of its expenditures. (Section 8.2)

In DE 10-055, the Settling Parties agree that the MSCR shall be effective for the recovery of costs associated with qualifying major storms occurring on or after July 1, 2010, which was the effective date of temporary rates. The Settling Parties also agreed that the major

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<sup>1</sup> PDI levels are indices developed by Unitil’s previous weather forecast provider, WSI Corporation of North Andover, MA. A PDI level is dependent upon various types of weather impacts and is a qualified indicator of both the possibility and severity of a particular weather event having the potential for customer outages. (Settlement Agreement, DE 10-055, Section 8.1, Footnote 5)

storm events of September 3-4, 2010 (“Hurricane Earl”) and December 26, 2010 (December 2010 Snow Event) qualify as events for which the reasonably incurred costs may be charged to the MSCR. The Settling Parties have not agreed to the amount of cost recovery for these two events, and the Company acknowledges that it has the burden to demonstrate the reasonableness of its expenditures. (Section 8.4)

In addition to the storms charged to the MSCR during the reporting period, there were also two “extraordinary storms” (Tropical Storm Irene 2011 and the October Snow Storm 2011) that have been approved for cost recovery via the SRAF. (DE 11-277, Order No. 25,351, April 24, 2012).

**Unitil Energy Systems, Inc.**  
**Major Storm Cost Reserve (MSCR) Fund - Rollforward**  
**as of December 31, 2011**

Section #	Date	Description	Amount
	7/1/2010	Opening Balance	\$ -
<b>2010 MSCR Activity:</b>			
	7/1 - 12/31/2010	Current Rate Recovery	<b>200,000</b>
1.6	9/3/2010	Hurricane Earl	(235,535)
2.6	12/26/2010	Snow Storm	(182,460)
<b>2011 MSCR Activity:</b>			
	1/1 - 12/31/2011	Current Rate Recovery	<b>400,000</b>
3.6	2/25/2011	Snow Storm	(162,151)
4.6	4/1/2011	Snow Storm	(244,261)
5.6	6/9/2011	Severe Thunderstorms	(32,213)
6.6	11/23/2011	Snow Storm	(162,941)
---	7/1/2010 - 12/31/2011	Carrying Charges	<b>(16,203)</b>
	12/31/2011	MSCR Balance	<b>\$ (435,764)</b>

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Attachments

Attachment A - Notification of Change to Weather Provider Services

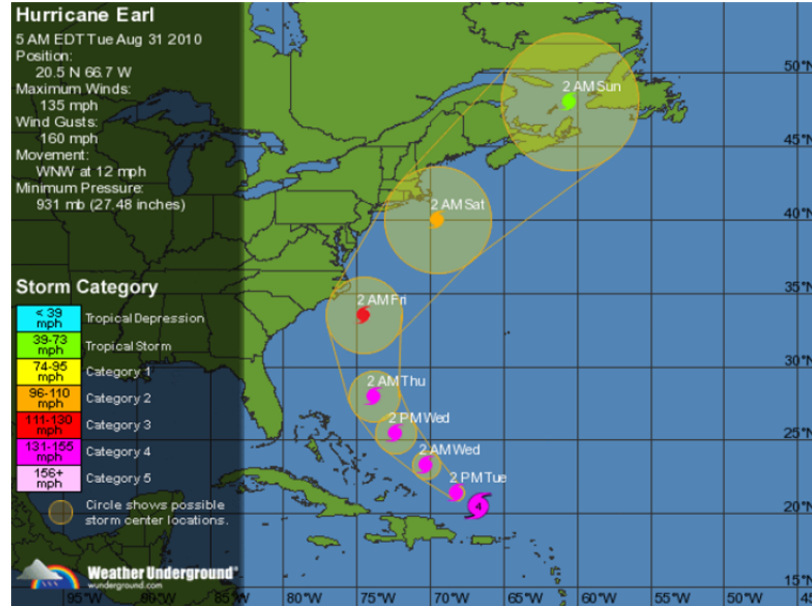
Attachment B - Weather Estimated Impact Indices (EII)

Attachment C - Sample Telvent DTN Weather Forecast

## 1. Hurricane Earl (September 3, 2010)

### 1.1. Description of the Storm

Late on September 3, 2010 a weakened Tropical Storm Earl brushed New England with its center passing roughly 90 miles south-southeast of Nantucket, Massachusetts. The storm brought heavy rains and high wind gusts along the New England coast with minimal impact to the interior parts of the region. Unitil experienced moderate to heavy rain at times with elevated wind gusts between 30-40 mph across the service territories.



Hurricane Predicted Path (August 31, 2010)

### 1.2. Summary of the Extent of the Storm Damage

UES experienced minimal impact to its service territories as the storm system passed to the east of the region and out to sea.

### 1.3. Preparations

Unitil began to monitor the storm's progression days in advance of its predicted impact on the region. Preparation information and notifications were initiated with regulatory, municipal, and emergency management officials beginning on August 31, after the Company initiated system wide conference calls. In addition to other preparatory activities, Unitil received right of first refusals for over 50 line and 15 tree crews, some of which were placed on "standby" service, if needed.

As soon as models predicted a shift in the hurricane's path, greatly reducing the risk of impact to Unitil's service territories, the Company began to release secured crews and did not open the Emergency Operations Centers ("EOCs") as previously planned. The Company issued a PSA regarding the predicted Hurricane weather which triggers

communications with life support customers, regulators, emergency response and municipal officials.

1.4. Restoration

The storm turned out to sea having only a limited impact on the electric system. Only minor repairs were needed to restore service to all customers.

1.5. MSCR Qualifying Criteria

The Settling Parties agreed that this storm qualified as a major storm for which the reasonably incurred costs could be charged to the Major Storm Cost Reserve in the Settlement Agreement in DE 10-055. See page 18 of 26, Section 8.3 of the Settlement Agreement.

1.6. Qualifying Costs Charged to the Storm Reserve

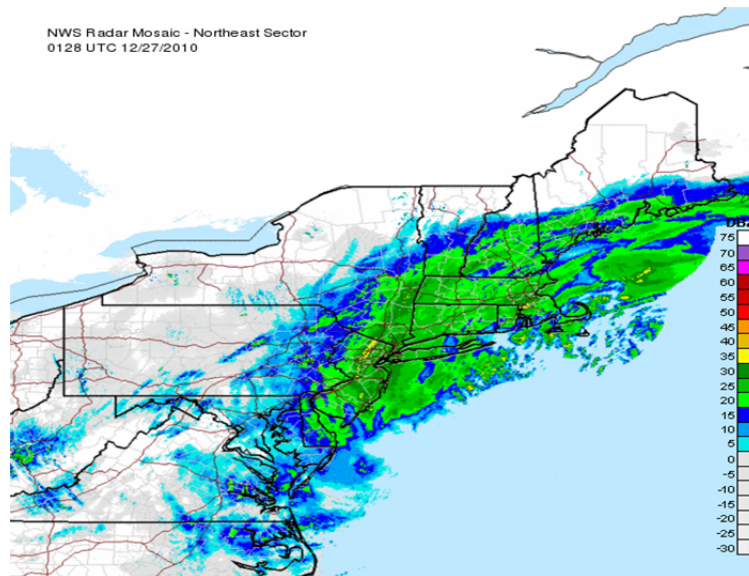
The total amount charged to the storm reserve for this event was:

Contractor Invoices & Other	\$235,535
<hr/>	
Charged to MSCR	\$235,535
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## 2. Snow Storm (December 26, 2010)

### 2.1. Description of the Storm

On December 26, 2010 a major nor'easter passed over the region with record amounts of snow and near hurricane-strength winds. Winter storm and blizzard watches were issued by weather forecasters across the region as the storm moved northeast from the south.



Snowfall Radar (December 27, 2010)

### 2.2. Summary of the Extent of the Storm Damage

Unitil experienced minimal impact to its service territories as the storm system passed north into Maine and Canada.

### 2.3. Preparations

Unitil began to monitor the storm's progression days in advance of its predicted impact on the region. Preparation information and notifications were initiated with regulatory, municipal, and emergency management officials beginning on December 25, after the Company initiated system wide conference calls. In addition to other preparatory activities, Unitil acquired approximately 35 line crews in the region to be ready to respond to outages, if needed. The Company issued a PSA regarding the predicted winter weather which triggers communications with life support customers, regulators, emergency response and municipal officials.

### 2.4. Restoration

As the storm approached the region it weakened and did not cause significant damage or outages across Unitil's service territories.

### 2.5. MSCR Qualifying Criteria



The Settling Parties agreed that this storm qualified as a major storm for which the reasonably incurred costs could be charged to the Major Storm Cost Reserve in the Settlement Agreement in DE 10-055. See page 18 of 26, Section 8.3 of the Settlement Agreement. **From:** forecast@wsi.com

**Sent:** Monday, December 27, 2010 6:15 AM

**To:** WSIweather

**Subject:** WSI Forecast

Forecast Service from WSI  
for UNITIL

Date:	December 27, 2010		
Time:	6 AM forecast		
Forecaster:	J. Lettre		
Summary:	ALL OF THE SERVICE AREA REMAINS IN ALERT FOR SNOW AND WINDS. NO MAJOR CHANGES TO THE FORECAST		
Zones:	<b>Fitchburg Nrthrn Worcester Cty</b>	<b>Hampton NH Seacoast East</b>	<b>Kingston NH Seacoast West</b>
Event	Heavy Snow/Wind	Heavy Snow/Wind	Heavy Snow/Wind
PDI		2	
Event Begin Time	ongoing	ongoing	ongoing
Event End Time	Tues aft (winds)	Tues aft (winds)	Tues aft (winds)
Confidence in Event	High	High	High
Thunderstorm Wind Gusts			
Lightning Intensity			
Storm Movement Dir.			
Rain Amount	0.00 in	0.00 in	0.00 in
Snow Amount	12-18 inches	12-18 inches	12-18 inches
Snow Characteristics	Dry	Moderately Wet	Dry
Ice Amount	0.00 in	0.00 in	0.00 in
Sustained Wind	10-20mph	20-30mph	15-25mph
Wind Gusts	30-40mph	45-55mph	35-45mph
Temperature Extremes			
Zones:	<b>Concord NH Capital Area</b>	<b>Portland ME</b>	
Event	Heavy Snow/Wind	Heavy Snow/Wind	
PDI		2	
Event Begin Time	ongoing	ongoing	
Event End Time	Tues aft (winds)	Tues aft (winds)	

Confidence in Event	High	High
Thunderstorm Wind Gusts		
Lightning Intensity		
Storm Movement Dir.		
Rain Amount	0.00 in	0.00 in
Snow Amount	12-18 inches	12-18 inches
Snow Characteristics	Dry	Moderately Wet
Ice Amount	0.00 in	0.00 in
Sustained Wind	10-20mph	15-25mph
Wind Gusts	30-40mph	45-55mph
Temperature Extremes		

2.6. Qualifying Costs Charged to the Storm Reserve

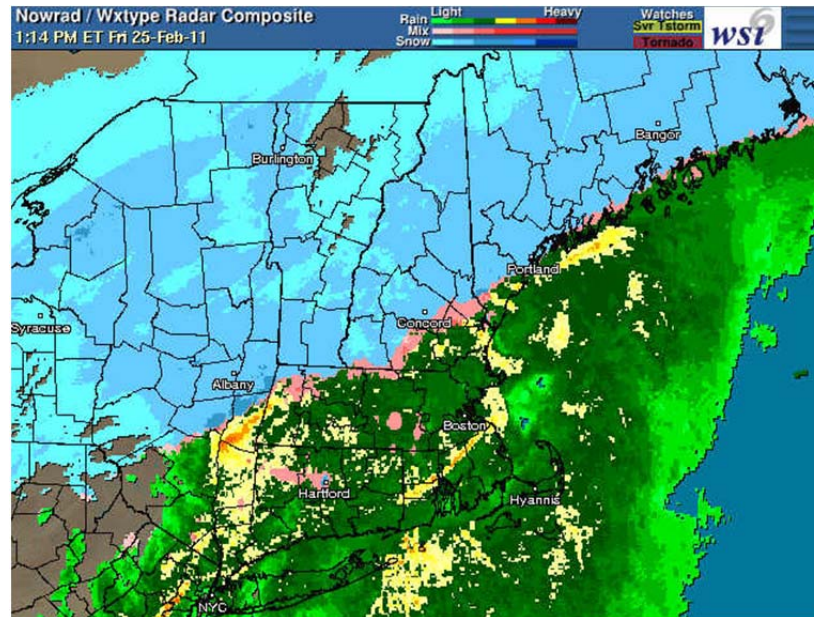
The total amount charged to the storm reserve for this event was:

Payroll	\$ 12,437
Payroll – Overheads	185
Materials & Supplies	1,937
Transportation	478
Contractor Invoices & Other	173,797
UES Salary, USC Time & Expenses	4,376
<b>Total Expenditures</b>	<b>\$ 193,210</b>
<b>Capitalized</b>	<b>(10,750)</b>
<b>Charged to MSCR</b>	<b>\$ 182,460</b>

### 3. Snow Storm (February 25, 2011)

#### 3.1. Description of the Storm

Overnight on Thursday, February 24 into Friday, February 25, 2011 a storm passed over the New England area producing a mix of rain and heavy wet snow. Approximately 10 inches of heavy wet snow fell across the Capital region Friday when the increasing afternoon winds began to impact the system before diminishing throughout the evening. The large amount of heavy wet snow paired with elevated winds and wind gusts caused limb and tree damage across the service territory.



WSI Radar (February 25, 2011)

#### 3.2. Summary of the Extent of the Storm Damage

Customer interruptions began in the Capital region in the early morning hours and had a peak customer impact of 2,082 at approximately 3:30 p.m. UES experienced a total of 14 cases of troubles in the region. Minor customer interruptions were also felt in the Seacoast region which experienced a rainy mix versus the wet snow in the Capital area.

#### 3.3. Preparations

Unitil began its preparations by holding a storm conference call on Thursday, February 24. The company then issued a PSA and initiated contact with life support customers, regulators, emergency response, and municipal officials. UES' Capital EOC was opened at 8:00 a.m. on Friday, February 25.

#### 3.4. Restoration

With the additional resources secured, the Company was able to swiftly repair and restore outages throughout the early evening hours. The Capital EOC was closed the same day (Friday, February 25) at 10:00 p.m.

3.5. MSCR Qualifying Criteria

This storm qualified for MSCR recovery of planning and preparation activities because a qualifying major storm was considered likely to occur when forecasts from the Company's professional weather forecaster reached a PDI Level of 2 with a high level of confidence.

**From:** forecast@wsi.com  
**Sent:** Friday, February 25, 2011 6:07 AM  
**To:** WSIweather  
**Subject:** WSI Forecast

Forecast Service from WSI  
for UNITIL

Date:	February 25, 2011		
Time:	6:00 am EST		
Forecaster:	J. Stearns		
Summary:	SNOW NORTH, MIX RAIN AND SNOW SOUTH CONTINUING THROUGH THIS EVENING.		
Zones:	<b>Fitchburg Nrthrn Worcester Cty</b>	<b>Hampton NH Seacoast East</b>	<b>Kingston NH Seacoast West</b>
Event	Snow/Sleet/Freezing Rain	Snow/Rain	Snow/Rain
PDI	2	2	2
Event Begin Time	Ongoing	Ongoing	Ongoing
Event End Time	6pm-8pm	6pm-8pm	6pm-8pm
Confidence in Event	High	High	High
Thunderstorm Wind Gusts			
Lightning Intensity	Isolated		
Storm Movement Dir.	NE		
Rain Amount	< 1 inch	< 1 inch	< 1 inch
Snow Amount	3-5 inches	4-8 inches	8-12 inches
Snow Characteristics	Wet	Wet	Wet
Ice Amount	< 1/8 inch	0.00 in	0.00 in
Sustained Wind	10-20mph	15-25mph	10-20mph
Wind Gusts	25-35mph	30-40mph	25-35mph
Temperature Extremes			

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Zones:	Concord NH Capital Area	Portland ME
Event	Heavy Snow	Heavy Snow
PDI	2	2
Event Begin Time	Ongoing	Ongoing
Event End Time	6pm-8pm	7pm-9pm
Confidence in Event	High	High
Thunderstorm Wind Gusts		
Lightning Intensity		
Storm Movement Dir.		
Rain Amount	0.00 in	0.00 in
Snow Amount	12-18 inches	8-12 inches
Snow Characteristics	Moderately Wet	Wet
Ice Amount	0.00 in	0.00 in
Sustained Wind	10-20mph	15-25mph
Wind Gusts	25-35mph	30-40mph
Temperature Extremes		

3.6. Qualifying Costs Charged to the Storm Reserve

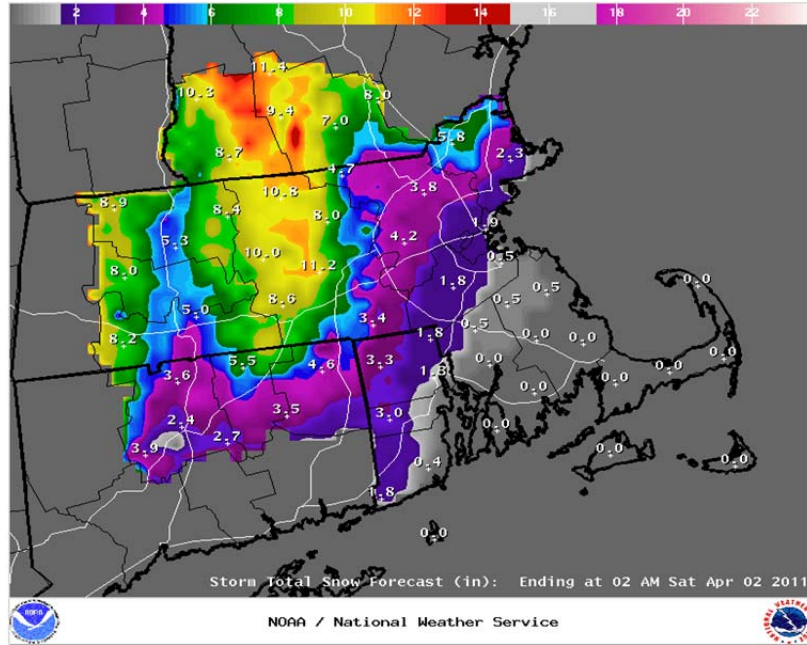
The total amount charged to the storm reserve for this event was:

Payroll	\$ 8,656
Payroll – Overheads	528
Materials & Supplies	1,041
Materials & Supplies - Overheads	2,883
Transportation	1,814
Contractor Invoices & Other	153,342
<b>Total Expenditures</b>	<b>\$ 168,264</b>
Capitalized	(6,113)
<b>Charged to MSCR</b>	<b>\$ 162,151</b>

#### 4. Snow Storm (April 1, 2011)

##### 4.1. Description of the Storm

Overnight March 31 into April 1, 2011 a late season nor'easter storm brought heavy wet snow across Unitil's service territories. Weather forecasts predicted between 5-12 inches of heavy wet snow with elevated PDI levels and a winter weather advisory was issued by the NWS.



Predicted Snowfall Amounts (March 31- April 1 2011)

##### 4.2. Summary of the Extent of the Storm Damage

Unitil's service territories experienced interruptions caused by the storm with UES' Seacoast region hit hardest. UES experienced a total of 38 cases of trouble with peak customer interruptions reaching 1,298.

##### 4.3. Preparations

As soon as the weather forecaster predicted an unusual late season nor'easter, the Company began to make response preparations. The Company issued a PSA regarding the predicted winter weather which triggers communications with life support customers, regulators, emergency response and municipal officials. Additional resources were secured to respond and the System and Regional EOCs were activated Friday, April 1 at 7:00 a.m. to respond to customer interruptions.

##### 4.4. Restoration

With only minor damage from the storm and additional resources secured, the Company was able to swiftly repair and restore outages. The System and Regional EOCs were closed the same day (Friday, April 1) at 1:00 p.m.

4.5. MSCR Qualifying Criteria

This storm qualified for MSCR recovery of planning and preparation activities because a qualifying major storm was considered likely to occur when forecasts from the Company's professional weather forecaster reached a PDI Level of 2 with a high level of confidence. The storm also qualified as a major storm as it resulted in more than 22 concurrent troubles in the Seacoast region of UES.

	Cumulative Customers Affected	Peak Customers Affected	Total # of Troubles	Peak # of troubles
UES Capital	190	170	7	5
UES Seacoast	1,369	1,128	31	15
UES Total	1,559	1,298	38	-

**From:** forecast@wsi.com  
**Sent:** Friday, April 01, 2011 5:50 AM  
**To:** WSIweather  
**Subject:** WSI Severe Weather Alert

**Severe Weather Alert Service from WSI  
for UNITIL**

Date:	April 1, 2011		
Time:	5:45 AM		
Forecaster:	B. Papandrea		
Alert Summary:	PASTY WET SNOW CONTINUES. ACCUMULATING SNOW THROUGH MID-LATE MORNING THEN SNOW SHOWERS THIS AFTERNOON. TOTAL ACCUMULATION OF 6-10". A LITTLE BREEZY ALONG THE COAST, OTHERWISE WINDS WILL BE STRONG.		
Zones:	<b>Fitchburg Nrthrn Worcester Cty</b>	<b>Hampton NH Seacoast East</b>	<b>Kingston NH Seacoast West</b>
Event	Heavy Snow	Heavy Snow	Heavy Snow
PDI	2	2	2
Event Begin Time	ongoing	ongoing	ongoing
Event End Time	10AM-Noon	10AM-Noon	10AM-Noon
Confidence in Event	High	High	High
Thunderstorm Wind Gusts			
Lightning Intensity			
Storm Movement Dir.			
Rain Amount	0.00 in	0.00 in	0.00 in
Snow Amount	5-10 inches	4-8 inches	5-10 inches

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Snow Characteristic	Wet	Wet	Wet
Ice Amount	0.00 in	0.00 in	0.00 in
Sustained Wind	<20 mph	10-20mph	10-20mph
Wind Gusts	<20 mph	20-30mph	20-30mph
Temperature Extremes			
Zones:	<b>Concord NH Capital Area</b>	<b>Portland ME</b>	
Event	Heavy Snow	Heavy Snow	
PDI	2	2	
Event Begin Time	ongoing	ongoing	
Event End Time	10AM-Noon	Noon-2 PM	
Confidence in Event	High	High	
Thunderstorm Wind Gusts			
Lightning Intensity			
Storm Movement Dir.			
Rain Amount	0.00 in	0.00 in	
Snow Amount	5-10 inches	5-10 inches	
Snow Characteristic	Wet	Wet	
Ice Amount	0.00 in	0.00 in	
Sustained Wind	<20 mph	10-20mph	
Wind Gusts	<20 mph	20-30mph	
Temperature Extremes			



4.6. Qualifying Costs Charged to the Storm Reserve

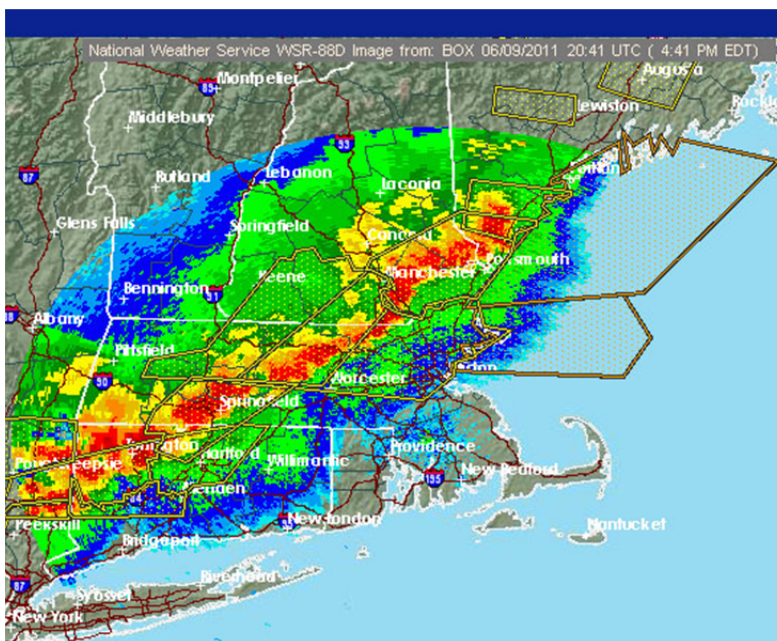
The total amount charged to the storm reserve for this event was:

Payroll	\$ 11,414
Payroll – Overheads	2,235
Materials & Supplies	1,470
Materials & Supplies - Overheads	1,158
Transportation	1,939
Contractor Invoices & Other	234,279
UES Salary, USC Time & Expenses	4,449
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Total Expenditures	\$ 256,944
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Capitalized	(12,683)
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Charged to MSCR	\$ 244,261
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## 5. Severe Thunderstorms (June 9, 2011)

### 5.1. Description of the Storm

Isolated to severe thunderstorms were forecasted for the NH area with expected frequent lightning, heavy downpours, and the possibility of wind gusts up to 60 mph. The storm's effects were felt throughout the day before diminishing during the early evening hours. These storms produced tornadoes in Massachusetts and had the potential for similar events in New Hampshire.



T-Storms Radar (June 9, 2011)

### 5.2. Summary of the Extent of the Storm Damage

Throughout the afternoon, high winds and heavy rain caused scattered outages across Unitil's NH service territories. The majority of outages were caused by downed limbs on wires as well as a number of broken poles. UES experienced a total of 55 cases of trouble with peak customer interruptions reaching 2,700.

### 5.3. Preparations

Once elevated EII<sup>2</sup> levels were forecast by the weather service provider, Unitil began making the necessary preparations and a storm conference call was held with the appropriate parties to coordinate response activities. Each Distribution Operations Center was either partially or fully decentralized with key personnel on the system level also involved. The Company issued a PSA regarding the predicted winter weather which triggers communications with life support customers, regulators, emergency response and municipal officials.

<sup>2</sup> As of April 1, 2011, Telvent DTN has provided weather services for the Company replacing WSI. The same PDI criteria was used in developing Estimated Impact Indices (EII) and are ranged from 1-5 with a level 3 expected to be a major qualifying storm. Details regarding the change in service providers are included in Attachment A and B.

5.4. Restoration

UES employees and contractors worked throughout the night Thursday, June 9 into the early morning hours of Friday, June 10 to restore all customers by 3:00 a.m.

5.5. MSCR Qualifying Criteria

This storm qualified for MSCR recovery of planning and preparation activities because a qualifying major storm was considered likely to occur when forecasts from the Company's professional weather forecaster exceeded a PDI Level of 2 with a high level of confidence. The storm also qualified as a major storm as it resulted in at least 22 concurrent troubles in both the Capital and Seacoast regions of UES.

	Cumulative Customers Affected	Peak Customers Affected	Total # of Troubles	Peak # of troubles
UES Capital	1,526	1,414	23	5
UES Seacoast	1,299	1,286	22	15
UES Total	2,825	2,700	45	-

**Severe Weather Alert Service From Telvent  
For Unitil Service Corp.**

Zones	SEACOAST	CAPITAL	FITCHBURG	PORTLAND
Event	TSTORM	TSTORM	TSTORM	TSTORM
Event Begin Time	4PM-5PM	2PM-3PM	4PM	4PM
Event End Time	7PM	6PM	7PM	7PM
Day 1 Eil	5	5	5	5
Event Confidence	MED	MED	MED	MED
Tstrm Wind Gusts	70	70	70	70
Ltng Intensity	HIGH	HIGH	HIGH	HIGH
Storm Mvmt Dir	ESE	ESE	ESE	ESE
Rain Amount	0.50-1.00"	0.50-1.00"	0.50-1.00"	0.30-0.80"
Snow Amount				
Snow Character				
Ice Amount				
Sustained Wind				
Wind Gust				
Temp. Extremes	93/63	94/63	96/66	90/63

EII	SEACOAST	CAPITAL	FITCHBURG	PORTLAND
Day 2 Snow	1	1	1	1
Day 2 Ice	1	1	1	1
Day 2 Wind	1	1	1	1
Day 2 Gust	1	1	1	1
Day 2 Confidence	High	High	High	High
Day 3 Snow	1	1	1	1
Day 3 Ice	1	1	1	1
Day 3 Wind	1	1	1	1
Day 3 Gust	1	1	1	1
Day 3 Confidence	Medium	Medium	Medium	Medium

5.6. Qualifying Costs Charged to the Storm Reserve

The total amount charged to the storm reserve for this event was:

Payroll	\$ 18,671
Materials & Supplies	2,648
Materials & Supplies - Overheads	1,476
Transportation	1,638
Contractor Invoices & Others	33,415
<u>Total Expenditures</u>	<u>\$ 57,848</u>
Capitalized	(25,635)
<u>Charged to MSCR</u>	<u>\$ 32,213</u>

## 6. Snow Storm – UES Capital Only (November 23, 2011)

### 6.1. Description of the Storm

During the morning on Wednesday, November 23, 2011 into the afternoon hours, a wintery mix of heavy wet snow and rain impacted the New England area. While some areas in southern and eastern New England received mostly rain, the more northern areas, including UES' Capital region received many inches of a wet snow with an ice mix which affected the system in the morning hours of November 23.



Snowfall Totals (November 23, 2011)

### 6.2. Summary of the Extent of the Storm Damage

UES' Seacoast region experienced mostly rain with little to no customer impacts felt, however the heavy wet snow occurring in UES' Capital region brought down tree limbs and wires causing a number of outages. Customer interruptions were felt mainly in the towns of Concord, Penacook, and Boscawen with 35 cases of trouble affecting 3,748 customers at peak.

### 6.3. Preparations

On Tuesday, November 22, the Company began making preparations for the forecasted weather and held a coordination conference call with the regions. Due to the forecasted weather, UES' Capital EOC was opened at 6:00 a.m. on Wednesday, November 23 to respond to any outages with 22 additional crews retained. The Company issued a PSA regarding the predicted winter weather which triggers communications with life support customers, regulators, emergency response and municipal officials.

6.4. Restoration

Peak interruptions occurred at approximately 6:40 a.m. on Wednesday, November 23 and despite over 30 cases of trouble, UES was able to restore power to all affected customers by the late afternoon of the same day.

6.5. MSCR Qualifying Criteria

This storm qualified as a major storm as it resulted in more than 22 concurrent troubles in the Capital region of UES.

	Cumulative Customers Affected	Peak Customers Affected	Total # of Troubles	Peak # of troubles
UES Capital	4,420	3,748	35	22
UES Seacoast	0	0	0	0
UES Total	4,420	3,748	35	22

6.6. Qualifying Costs Charged to the Storm Reserve

The total amount charged to the storm reserve for this event:

Payroll	\$ 9,290
Payroll - Overheads	865
Materials & Supplies	493
Materials & Supplies - Overheads	415
Transportation	1,609
Contractor Invoices & Others	156,565
Tree Trimming	(1,898)
UES Salary, USC Time & Expenses	195
<b>Total Expenditures</b>	<b>\$ 167,534</b>
Capitalized	(4,593)
<b>Charged to MSCR</b>	<b>\$ 162,941</b>

Attachment A

To: NHPUC

Topic: Change in Weather Provider Services at Unitil Service Corp.

During the technical sessions of UES most recent rate case , the Company asserted that it had worked with its weather provider, Weather Systems Inc. (WSI), to develop a Power Disruption Index (PDI) that better reflects the potential impact of adverse weather conditions. As an outcome of that discussion and for conditions with a PDI of 2 with a high confidence level, the Company may recover its preparation cost.

Recently, WSI abruptly notified its electric utility clients that it would no longer offer weather services as of April 1, 2011. As a result, the Company reviewed several, alternate weather providers and selected Telvent DTN (“DTN”).

Over the past, couple months, we have worked with DTN to perfect a methodology for delivering the same level of service we enjoyed with WSI. DTN has created an Estimated Impact Indices (EII) similar to the PDI (see Attachment A for the criteria composing the EII). The Company worked closely to ensure the same criteria discussed at the technical sessions continue to apply to the DTN equivalent.

Below are the specific levels associated with the EII; however, to better align the EII levels with the operational levels in Unitil’s Emergency Response Plan (ERP), we began the EII at Level 1, which differs from the former PDI that began at Level 0. Therefore, an EII Level 3 is equivalent to the PDI Level 2.

The Estimated Impact Indices or EII is summarized by day as a table within a typical weather forecast (see Attachment B).

- Five levels starting at 1. Estimates the impact for forecasted Wind Speeds, Wind Gusts, Ice Accretions, and Snow Amounts and the forecast’s Confidence Level (Low, Medium, or High) to calculate the EEI:
  - Level 1 (Normal Operations/Blue Sky Day, None or Few Outages)
  - Level 2 (Moderate Weather, Isolated Outages)
  - Level 3 (Moderate-Severe Weather, Scattered Outages)
  - Level 4 (Moderate-Severe Weather, Widespread Outages)
  - Level 5 (Severe Weather, Extensive Outages)

Attachment B

**Estimated Impact Indices (EII)**

Forecasted Wind Speed/Wind Gusts \*WITH LEAVES\* (April 1 - October 31)

Level	Wind Speed	Wind Gusts
EII = 2	> 30 mph	> 35 mph
EII = 3	> 45 mph	> 50 mph
EII = 4	> 60 mph	> 65 mph
EII = 5	> 70 mph	> 75 mph

Forecasted Wind Speed/Wind Gusts \*WITHOUT LEAVES\* (November 1 - March 31)

Level	Wind Speed	Wind Gusts
EII = 2	> 40 mph	> 45 mph
EII = 3	> 50 mph	> 55 mph
EII = 4	> 60 mph	> 70 mph
EII = 5	> 70 mph	> 85 mph

Forecasted Ice Accretion (assumes "normal" wind speed)

Level	Ice Accretion
EII = 2	> 1/10 inch
EII = 3	> 3/8 inch
EII = 4	> 1/2 inch
EII = 5	> 1 inch

Forecasted Snow Amounts (assumes dry snow consistency). These amounts are factored with wind speed more so than actual accumulation.

Level	Snow
EII = 1	> 6 inches
EII = 1	> 12 inches
EII = 2	> 18 inches
EII = 3-5	> 24 inches

Forecasted Snow Amounts (assumes wet snow consistency). Season will modify amount within level – A fall storm (with leaves) will have a significantly increased impact.

Level	Snow (Without Leaves)	Level	Snow (With Leaves)
EII = 2	> 6 inches	EII = 2	> 4 inches
EII = 3	> 8 inches	EII = 3	> 6 inches
EII = 4	> 12 inches	EII = 4	> 12 inches
EII = 5	> 24 inches	EII = 5	> 24 inches

Forecast Confidence Levels

Low	Medium	High
< 30% Chance	≥ 30 ≤ 60% Chance	> 60% Chance



Attachment C

**Weather Forecast with EII Table**

Severe Weather Alert Service From Telvent  
For Unitil Service Corp.  
Date: May 26, 2011  
Time: 6:00 PM  
Forecaster: J deJong

Zones	SEACOAST	CAPITAL	FITCHBURG	PORTLAND
Event	NONE	TSTORM	NONE	NONE
Event Begin Time		2AM		
Event End Time		6AM		
Event Confidence		LOW		
Tstrm Wind Gusts		35		
Ltng Intensity		LOW		
Storm Mvmt Dir		NE		
Rain Amount				
Snow Amount				
Snow Character				
Ice Amount				
Sustained Wind				
Wind Gust				
Temp. Extremes	75/60	83/61	85/64	65/56
EII	SEACOAST	CAPITAL	FITCHBURG	PORTLAND
Day 2 Snow	1	1	1	1
Day 2 Ice	1	1	1	1
Day 2 Wind	1	1	1	1
Day 2 Gust	3	3	3	3
Day 2 Confidence	Low	Low	Low	Low
Day 3 Snow	1	1	1	1
Day 3 Ice	1	1	1	1
Day 3 Wind	1	1	1	1
Day 3 Gust	2	2	2	2
Day 3 Confidence	Med	Med	Med	Med

**TODAY**

A frontal boundary will produce scattered showers and thunderstorms this afternoon across portions of Vermont, northern New Hampshire, and northern Maine. A few isolated storms across Vermont may end up severe with frequent lightning, damaging wind gusts, and large hail. Otherwise, winds could gust to 40 mph with small hail in thunderstorms this afternoon. These showers and storms should continue in these locations and they may sneak into western Massachusetts during the evening hours. There is a slim chance of an isolated stronger storm across western Massachusetts

during the evening with gusty winds and sizeable hail. Otherwise, thunderstorms should decrease in strength through the night. Dry weather is expected elsewhere today and tonight. Temperatures will be above normal for most and near normal along the south facing coasts.

TODAY'S Forecast Confidence: Medium - High

Highs and lows generally look okay today across the region. Highs may trend 1-4 degrees cooler in the far north if showers and storms are more widespread than expected. Lows look okay tonight with fair model agreement.

CAPITAL: Dry conditions are expected this evening and during the first part of the overnight. Thunderstorms that are currently moving across northern New York and northern Vermont. Some of these storms could make their way into the area after 2am. The storms should be on the diminishing side of things, with low amounts of lightning and an isolated wind gust to 35 mph possible. Risk for thunderstorms will persist through 6am. Another chance for storms will work its way into the area on Friday.

FITCHBURG: Look for dry weather this afternoon through tonight. Occasional wind gusts up to 25 mph are possible through the afternoon hours, with winds diminishing after sunset.

SEACOAST / PORTLAND: Latest guidance indicates that the thunderstorm risk should stay off to the west of the area. Only showers will be possible tonight after 4am. Some of the showers could have wind gusts to 25-30 mph.

### **TOMORROW**

Tomorrow, any ongoing showers and thunderstorms across areas close to the Canadian Border will end during the morning. Scattered showers and thunderstorms will be likely across Maine, Vermont, New Hampshire, western Massachusetts, and western Connecticut during the afternoon. A few isolated storms could be strong to severe with frequent lightning, damaging wind gusts, and large hail as threats. Showers and storms will remain possible tomorrow night across these areas. Storm intensity should begin to decrease tomorrow evening. There is a slight risk that a few of these could sneak into the rest of southern New England after midnight. No strong storms are expected. Otherwise, dry weather is expected. Temperatures will be above normal across most of the region and near normal along the Canadian Border.

TOMORROW'S Forecast Confidence: Medium - Low

Highs could trend 2-4 degrees in either direction across northern and western New England tomorrow, depending on the coverage of showers and storms. Model guidance shows exhibits disagreement on this, so a middle of the road solution is in place. Highs look okay across the rest of the region. Lows look reasonable tomorrow night.

### **3-5 DAY EXTENDED OUTLOOK**

Scattered showers and thunderstorms will remain possible across portions of northern and western New England on Saturday and Saturday night. Isolated severe storms will be possible across western areas. Dry weather is expected closer to the coast. Expect a risk of showers and storms across northern New England on Sunday and Sunday night. Dry weather will occur elsewhere. A cold front will bring a risk of showers and storms to the entire region on Monday. Temperatures will generally be near to above normal.