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March 30, 2020

Via ERF and US Mail

Debra A. Howland, Executive Director
New Hampshire Public Utilities Commission
21 South Fruit Street, Suite 10
Concord, NH 03301-2429

**Re: DG 06-107 Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities
Annual Storm Fund Report – Calendar Year 2019**

Dear Ms. Howland:

In accordance with Commission Order No. 24,777 dated July 12, 2007, enclosed for filing in the above mentioned docket please find Liberty Utilities' Annual Storm Fund Report. Please note this report has been filed via the Commission's Electronic Report Filing system.

Thank you for your attention to this matter. Please do not hesitate to call if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Heather M. Tebbetts".

Heather M. Tebbetts

Enclosure

Liberty Utilities (Granite State Electric) Corp.
d/b/a Liberty Utilities

Annual Storm Fund
Report for Calendar Year 2019

March 30, 2020

Submitted by:



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**Liberty Utilities (Granite State Electric) Corp.
Annual Storm Fund Report
Calendar Year 2019**

Introduction

Liberty Utilities (Granite State Electric) Corp. ("Liberty Utilities" or the "Company") is submitting its Annual Storm Fund Recovery Report for 2019, in compliance with the Settlement Agreement in Docket No. DE 13-063 approved by Order 24,777. Consistent with the Settlement Agreement, this report: (1) provides a description of the three Qualifying Storm Events and three Prestaging Weather Events experienced in 2019; (2) provides a summary of the extent of the damage to the distribution system, including the number of outages and length of outages associated with that storm; (3) details the collections credited to the storm fund; and (4) provides the details of any qualifying storm costs that were charged to the fund during calendar year 2019

Annual Report of Storm Fund Activity

Included in this report is a preliminary report of the annual storm fund activity, pending final approval of storm costs incurred during calendar year 2019. This report shows the opening balance of the storm fund, monthly collections, monthly interest applied, preliminary qualifying storm costs, and the closing balance of the storm fund in Attachment 1.

Attachment 2 shows the monthly detail of the preliminary storm-related charges applied to the storm fund during calendar year 2019 by individual storm event.

Attachment 1 – 2019 Annual Storm Fund Accounting.

Attachment 2 – 2019 Storm Charges by Month

Attachment 3 – 2019 Monthly Accounting for storm events

Attachment 3 – STORM-EXP-1902 & STORM-VGMT-1902 January 9, 2019 Winter Storm, EEI Table (Qualifying event) and Winter Storm Event Outages (1-9-2019 thru 1-10-2019)

Attachment 4 – STORM-EXP-1903 & STORM-VGMT-1903 January 19, 2019 Winter Storm Harper, EEI Table (Pre-stage event) and Storm Planning Report 1-18-2019

Attachment 5 – STORM-EXP-1909 & STORM-VGMT-1909 October 17, 2019 Wind & Rain Storm, EEI Table (Qualifying event) and Wind & Rain Storm Event Outages (10-16-19 thru 10-18-19)

Attachment 6 – STORM-EXP-1910 & STORM-VGMT-1910 October 31, 2019 Wind & Rain Storm, EEI Table (Qualifying event) and Wind & Rain Storm Event Outages (10-31-19 thru 11-1-19)

Attachment 7 – STORM-EXP-1911 & STORM-VGMT-1911 December 2, 2019 Winter Storm Ezekiel, EEI Table (Pre-stage event) and Storm Planning Report 12-02-2019

Liberty Utilities (Granite State Electric) Corp.
Annual Storm Fund Report
STORM-EXP-1902 & STORM-VGMT-1902 Winter Storm – January 9, 2019
(Qualifying Event)

In accordance with the operational reporting requirements found in § 5 of Exhibit GSE-7 of the Rate Plan Settlement in Docket No. DE 13-063, the Company is providing a description of the January 9, 2019, icing, wet snow, and wind gusts and a summary of the extent of the damage to the electric distribution system, including the number of outages and length of outages.

1. Description of the Storm

The January 9, 2019, Winter Storm event was a freezing rain transitioning to wet snow (wintery mix) with peak gusts 40-45 MPH. This event had a total of 6,193 customer interruptions throughout the period and impacted 12 towns in the Liberty Utilities electric service territory. Despite the damage and large number of customer interruptions, Liberty Utilities led a successful storm restoration effort and was able to restore all of its customers by January 10, 2019, 11AM.

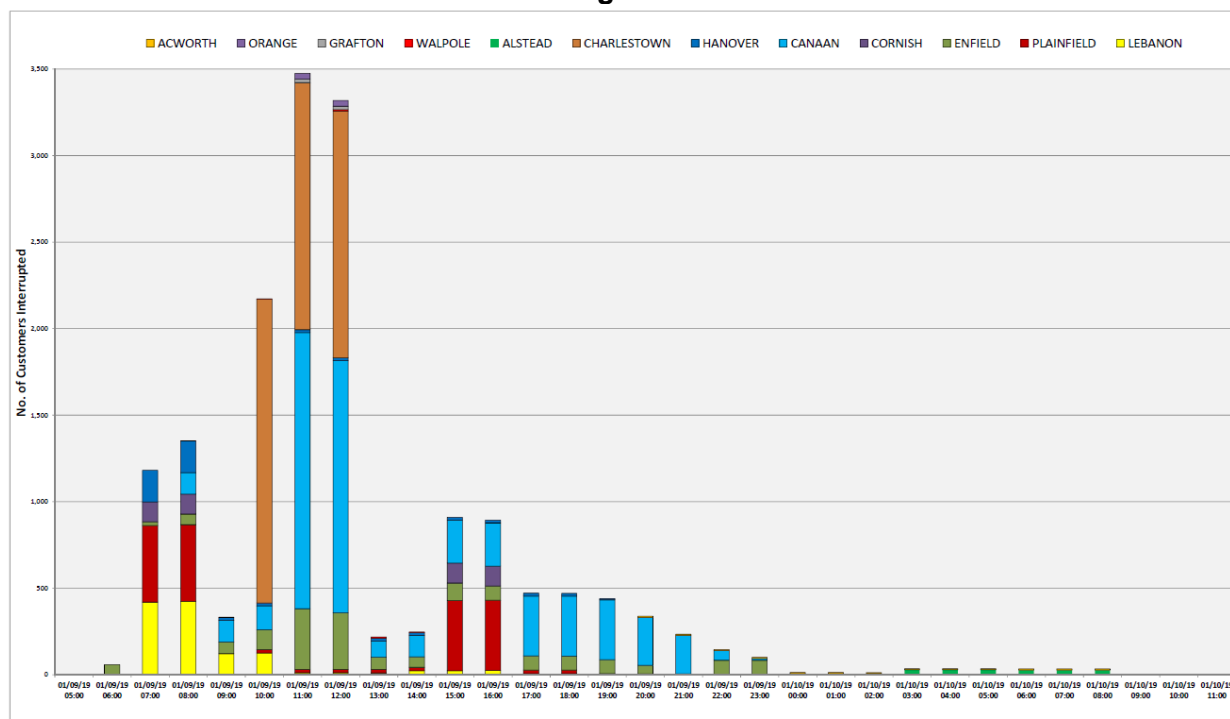
DTN/Telvent (Schneider) Event Index (EEI) Level 1 High was forecasted for this event on Wednesday, January 9th PM with wind gusts 35-40mph and snowfall up to 2 inches impacting Liberty Utilities service territory Lebanon/Charlestown. Strong winds (wind gusts > 50mph) higher than forecasted interrupted service to 6,193 customers in New Hampshire. The strong winds with wet snow toppled trees and broke tree limbs bringing down primary and secondary power lines severely impacting Liberty Utilities electric distribution infrastructure. Electric service outages impacted customers in 12 of the 21 New Hampshire communities serviced by Liberty Utilities, all in the Lebanon/Charlestown area.

2. Summary of the Extent of the Storm Damage

Due to the very strong wind gusts of > 45 mph and wet snow accumulation on trees a number of customers were without power from January 9 through January 10. See Figure 1 for peak outages by town.

At the peak, on January 9, 2019, approximately 3,475 customers were interrupted (see Figure 1). In response to these peak outages, internal line crews responded and additional external contractor line crews were procured. There were a total of 14 restoration crews, which included internal line crews and external contractor line crews. The external contractor line crews were mobilized the morning of January 9, 2019. Liberty Utilities also mobilized a peak of 6 contractor tree crews and 8 assessors working wires and tree down calls. Customer service center was staffed with additional service representatives to support customer trouble calls.

Figure 1



In all, Liberty Utilities experienced 6,193 total customers interrupted during this wind and snow storm event. There were 56 interruption events and 11 reported wires down reported in the outage management system during the 29 hours beginning at 6AM on January 9, 2019, and ending January 10, 2019, 11AM. There were active customer interruptions throughout this period. Liberty Utilities reviewed the interruption data stored in the Responder System and determined that the storm event qualified as a major storm since 56 concurrent troubles occurred. Per PUC definition, a “Major Storm” shall be defined as a severe weather event or events causing 30 concurrent troubles and 15% of customers interrupted, or 45 concurrent troubles (Troubles are defined as interruption events occurring on either primary or secondary lines). The second criteria was met.

Below is a summary of the reliability indices for this storm period.

Jan. 9 – Jan 10	Events	CI	CMI	CS	SAIDI	SAIFI	CAIDI
PUC Major Event	56	6,193	641,432	44,619	14.38	0.14	103.57

Attachment 4 – January 9, 2019, Winter Storm, EEI Table (Qualifying event) and Winter Storm Event Outages (1-9-2019 thru 1-10-2019)

Liberty Utilities (Granite State Electric) Corp.
Annual Storm Fund Report
STORM-EXP-1903 & STORM-VGMT-1903 Winter Snow Storm Harper – January 19,
2019
(Pre-stage Event)

In accordance with the operational reporting requirements found in § 5 of Exhibit GSE-7 of the Rate Plan Settlement in Docket No. DE 13-063, the Company is providing a description of the January 19, 2019, snowstorm and a summary of the extent of the damage to the distribution system, including the number of outages and length of outages.

1. Description of the Storm

For Sunday, January 20, 2019, Winter Storm Harper, DTN/Telvent (Schneider) Energy Event Index (EEI) Level 4 (High Confidence) was forecast for this event with snow accumulations of 5-10 inches of normal/wet snow and wind gusts 25-35 mph, with peak gusts of 40 mph in the Southern Salem/Pelham electric service territory. And snow accumulations of 10 – 20 inches normal/wet and wind gusts 25-35 mph, with peak gusts of 40 mph in the Lebanon/Charlestown electric service territory. In response to the Threat Level 4 issued, Liberty Utilities made available personnel at our operational centers and customer call center. There were a total of 33 restoration line crews of which 19 contractor line crews were staged at the Salem and Lebanon operational centers. Liberty Utilities also mobilized 19 contractor tree crews and staffed our customer call center with customer service representatives to work staggered shifts into the evening and through the end of the event.

2. Summary of the Extent of the Storm Damage

Saturday, January 19, 2019, snow (normal/wet consistency) and winds (12 – 25mph) started in the Salem/Pelham service territory at approximately 11PM and continued throughout the night with snow accumulations < 6 inches. There was minimal impact to the electric distribution system with minimal outages (< 50 customers). Per PUC definition, “the Company shall be entitled to recover planning and preparation activities in advance of severe weather if the weather forecast for the event shows a Schneider Electric Event Index (“EEI”) level 3 or greater with high probability of occurrence.”

Attachment 5 – January 19, 2019, Winter Storm Harper, EEI Table (Pre-stage event) and Storm Planning Report 1-20-2019

Liberty Utilities (Granite State Electric) Corp.
Annual Storm Fund Report
STORM-EXP-1909 & STORM-VGMT-1909 Wind & Rain Storm Event – October 17,
2019
(Qualifying Event)

In accordance with the operational reporting requirements found in § 5 of Exhibit GSE-7 of the Rate Plan Settlement in Docket No. DE 13-063, the Company is providing a description of the October 17, 2019, Wind & Rain Storm and a summary of the extent of the damage to the electric distribution system, including the number of outages and length of outages.

1. Description of the Storm

Starting In the late evening of October 16, 2019, a wind and rain event lasting throughout the night into midmorning had a total of 1,106 customer interruptions throughout the period and impacted 13 towns in the Liberty Utilities electric service territory. Despite the damage and large number of customer interruptions, Liberty Utilities led a successful storm restoration effort and was able to restore all of its customers by October 18, 2019, 10AM.

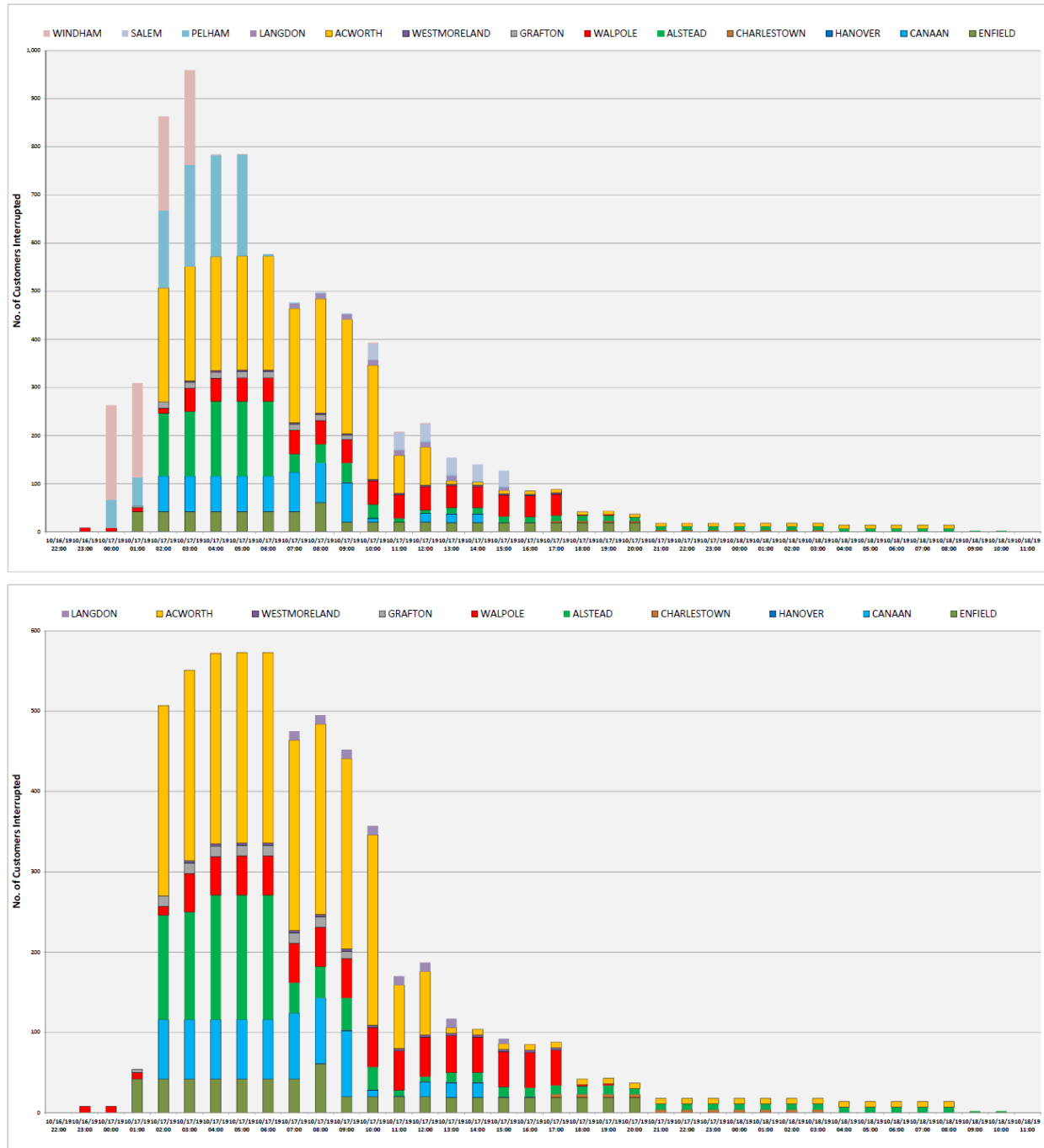
DTN/Telvent (Schneider) Event Index (EEI) with medium confidence Level 2 winds was forecasted for this event on Thursday, October 17, with wind gusts 25-35 mph and peak gusts 45-55 mph, along with heavy rains for all Liberty Utilities service areas. Strong winds (wind gusts > 55mph) higher than forecasted interrupted service to 1,106 customers in New Hampshire. The strong winds with heavy rains toppled trees and broke tree limbs bringing down primary and secondary power lines severely impacting Liberty Utilities electric distribution infrastructure. Electric service outages impacted customers in 13 of the 21 New Hampshire communities serviced by Liberty Utilities.

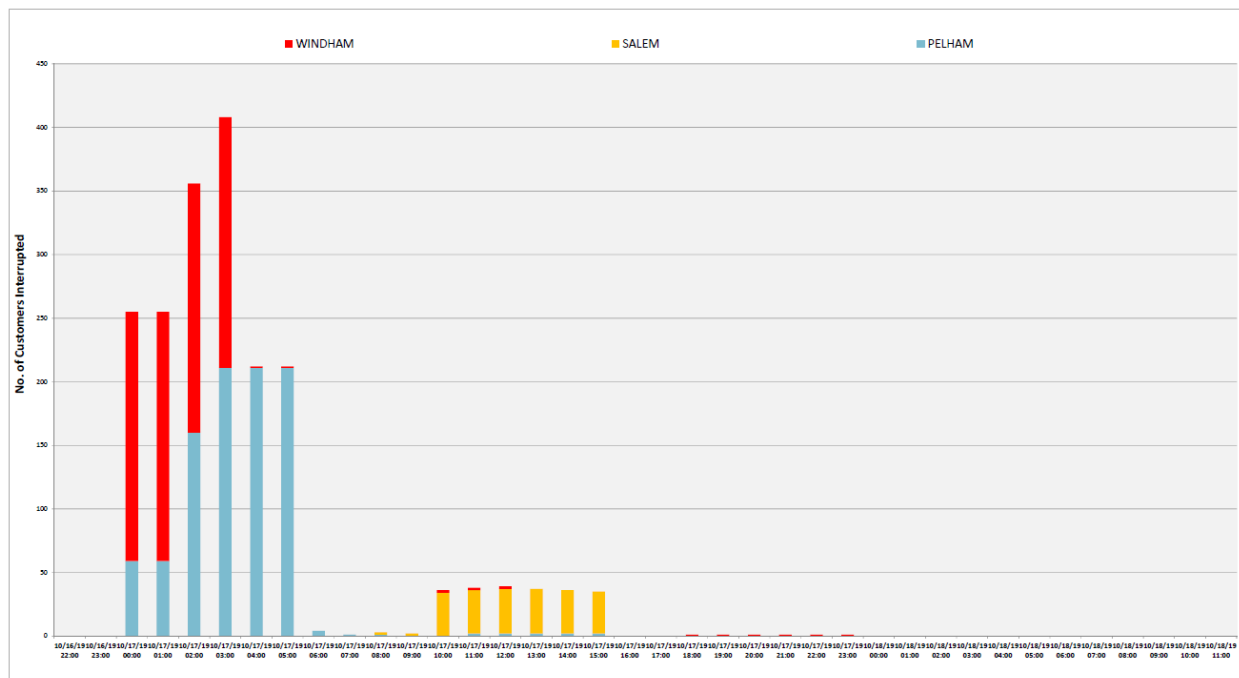
2. Summary of the Extent of the Storm Damage

Due to the very strong wind gusts of > 55 mph and heavy rains, a number of customers were without power from October 16 through October 18. See Figure 1 for peak outages by town.

At the peak, on October 17, 2019, approximately 959 customers were interrupted (see Figure 1). In response to these peak outages, internal on call line crews responded and additional external contractor line crews were procured. There were a total of 15 restoration crews, which included internal line crews and external contractor line crews. The external contractor line crews were mobilized the morning of October 17, 2019. Liberty Utilities also mobilized a peak of 10 contractor tree crews.

Figure 1





The charts provided in Figure 1 above from top to bottom:

- # of Customers Interrupted System Total
- # of Customers Interrupted System West Area
- # of Customers Interrupted System East Area

In all, Liberty Utilities experienced 1,106 total customers interrupted during this wind storm event. There were 46 interruption events during the 36 hours beginning at 11PM on October 16, 2019, and ending October 18, 2019, at 10AM. There were active customer interruptions throughout this period. Liberty Utilities reviewed the interruption data stored in the Responder System and determined that the storm event qualified as a major storm since 46 concurrent troubles occurred. Per PUC definition, a “Major Storm” shall be defined as a severe weather event or events causing 30 concurrent troubles and 15% of customers interrupted, or 45 concurrent troubles (Troubles are defined as interruption events occurring on either primary or secondary lines). The second criteria was met.

Below is a summary of the reliability indices for this storm period.

Oct.16 th – Oct.18 th	Events	CI	CMI	CS	SAIDI	SAIFI	CAIDI
PUC Major Event	46	1,106	399,227	44,840	8.90	0.02	24.04

Attachment 6 – October 17, 2019, Wind & Rain Storm, EEI Table (Qualifying event) and Wind & Rain Storm Event Outages (10-16-19 thru 10-18-19)

Liberty Utilities (Granite State Electric) Corp.
Annual Storm Fund Report
STORM-EXP-1910 & STORM-VGMT-1910 Wind & Rain Storm Event – October 31,
2019
(Qualifying Event)

In accordance with the operational reporting requirements found in § 5 of Exhibit GSE-7 of the Rate Plan Settlement in Docket No. DE 13-063, the Company is providing a description of the October 31, 2019, Wind & Rain Storm and a summary of the extent of the damage to the electric distribution system, including the number of outages and length of outages.

1. Description of the Storm

Starting In the late evening of October 31, 2019, a wind and rain event lasting throughout the night into midday had a total of 2,571 customer interruptions throughout the period and impacted 19 towns in the Liberty Utilities electric service territory. Despite the damage and large number of customer interruptions, Liberty Utilities led a successful storm restoration effort and was able to restore all of its customers by November 1, 2019, 8PM.

DTN/Telvent (Schneider) Event Index (EEI) with high confidence Level 2 winds was forecasted for this event on Thursday, October 31, with wind gusts 35-45 mph and peak gusts 45-55 mph, along with heavy rains (0.75-1.00") for all Liberty Utilities service areas. Strong winds higher than forecasted interrupted service to 2,571 customers in New Hampshire. The strong winds with heavy rains toppled trees and broke tree limbs bringing down primary and secondary power lines severely impacting Liberty Utilities electric distribution infrastructure. Electric service outages impacted customers in 19 of the 21 New Hampshire communities serviced by Liberty Utilities.

2. Summary of the Extent of the Storm Damage

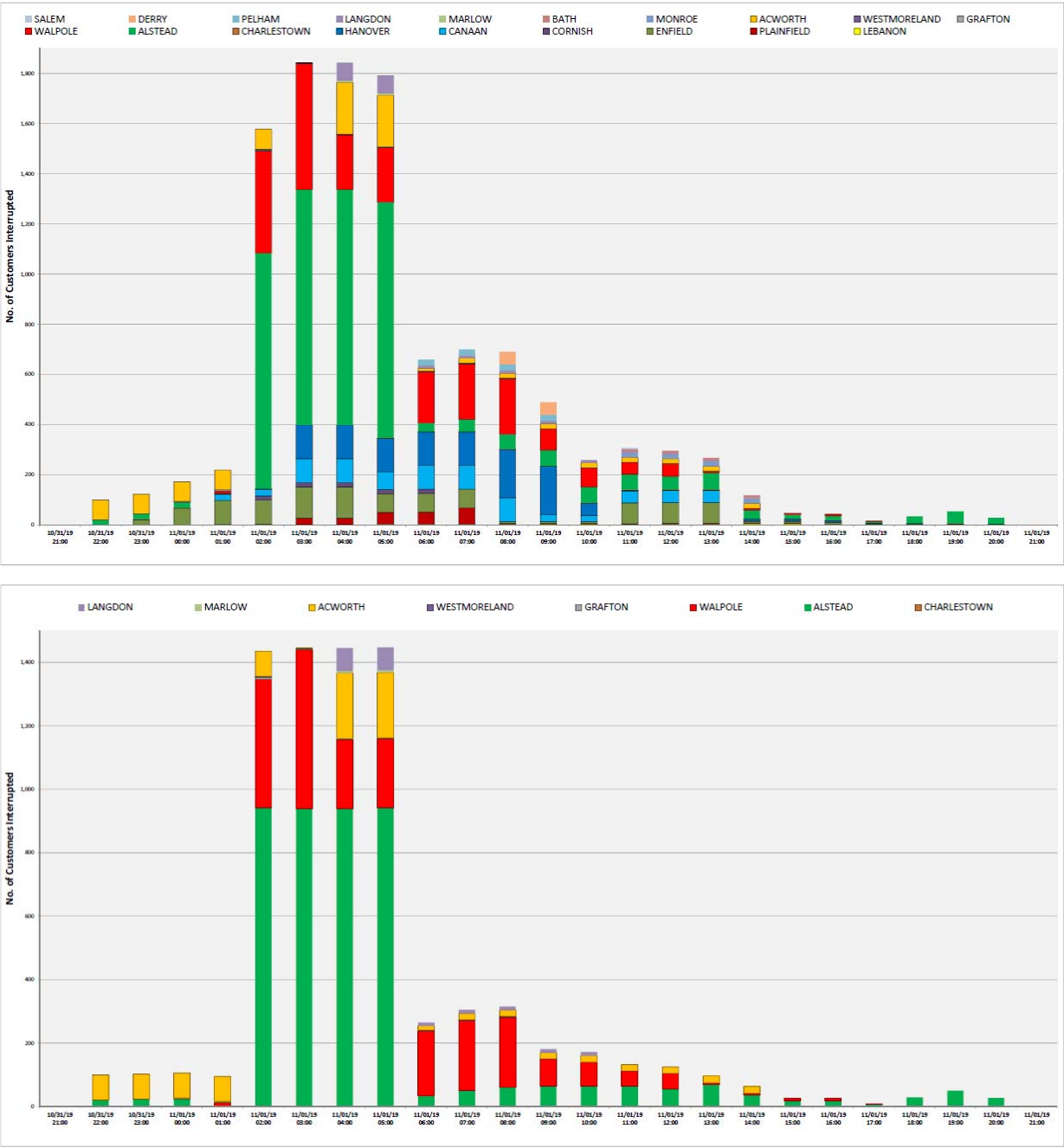
Due to the very strong wind gusts and heavy rain a number of customers were without power from October 31, 2019, through November 1, 2019. See Figure 1 for peak outages by town.

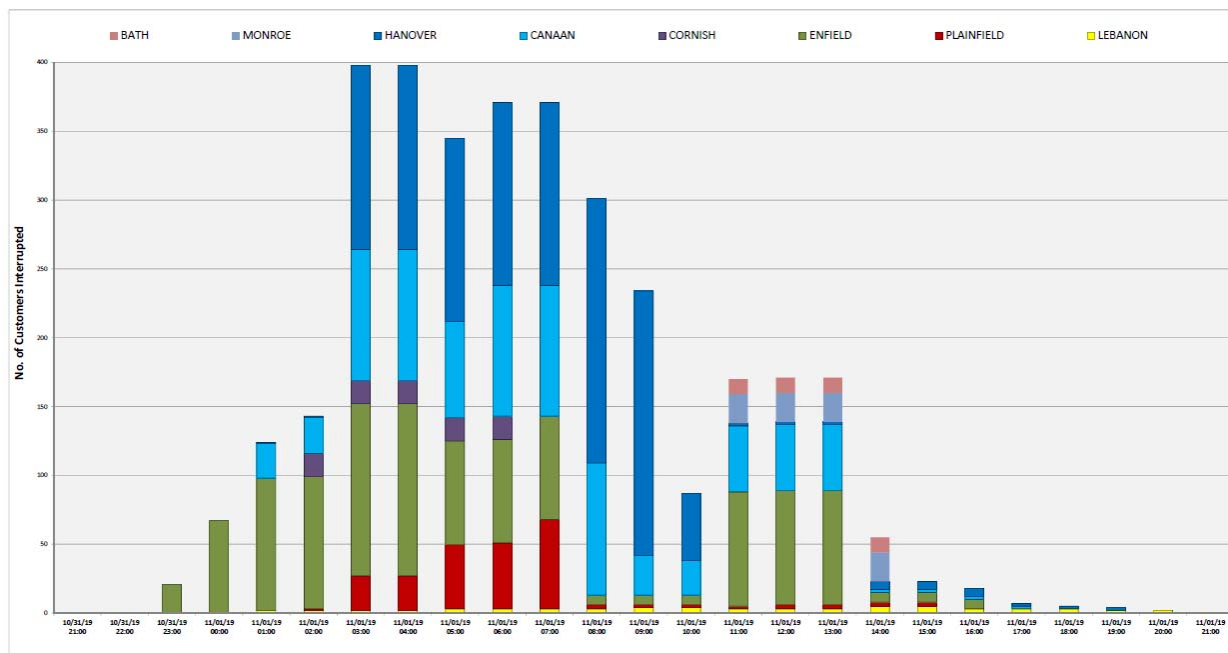
At the peak, on November 1, approximately 1,822 customers were interrupted (see Figure 1). In response to these peak outages, internal on call line crews responded and additional external contractor line crews were procured. There were a total of 15 restoration crews, which included internal line crews and external contractor line crews. The external contractor line crews were mobilized the morning of November 1, 2019. Liberty Utilities also mobilized a peak of 10 contractor tree crews.

The charts provided in Figure 1 below from top to bottom:

of Customers Interrupted System Total (19 towns)
of Customers Interrupted System Charlestown Area
of Customers Interrupted System Lebanon Area

Figure 1





In all, Liberty Utilities experienced 2,571 total customers interrupted during this wind storm event. There were 63 interruption events during the 23 hours beginning at 10PM on October 31, 2019, and ending November 1, 2019, 9:00PM. There were active customer interruptions throughout this period. Liberty Utilities reviewed the interruption data stored in the Responder System and determined that the storm event qualified as a major storm since 63 concurrent troubles occurred. Per PUC definition, a “Major Storm” shall be defined as a severe weather event or events causing 30 concurrent troubles and 15% of customers interrupted, or 45 concurrent troubles (Troubles are defined as interruption events occurring on either primary or secondary lines). The second criteria was met.

Below is a summary of the reliability indices for this storm period.

Oct.31 – Nov. 1	Events	CI	CMI	CS	SAIDI	SAIFI	CAIDI
PUC Major Event	63	2,571	615,027	44,840	13.72	0.06	239.22

Attachment 7 – October 31, 2019, Wind & Rain Storm EEI Table (Qualifying event) and Wind Storm Event Outages (10-31-19 thru 11-01-19)

**Liberty Utilities (Granite State Electric) Corp.
Annual Storm Fund Report
STORM-EXP-1911 & STORM-VGMT-1911 Winter Snow Storm Ezekiel – December
2, 2019**

(Pre-stage Event)

In accordance with the operational reporting requirements found in § 5 of Exhibit GSE-7 of the Rate Plan Settlement in Docket No. DE 13-063, the Company is providing a description of the December 2, 2019, snowstorm and a summary of the extent of the damage to the distribution system, if any, including the number of outages and length of outages.

1. Description of the Storm

For Monday, December 2, 2019, Winter Storm Ezekiel, DTN/Telvent (Schneider) Energy Event Index (EEI) Level 3/4 (High Confidence) was forecast for this event with snow accumulations of 10 – 15 inches Normal/Wet consistency and wind gusts 20-30 mph, with peak gusts of 35 mph in the Southern Salem/Pelham electric service territory. In response to the Threat Level 4 issued, Liberty Utilities available personnel at our operational centers and customer call center, there were a total of 26.5 restoration line crews of which 14 contractor line crews that were staged at the Salem, Lebanon, and Charlestown operational centers. Liberty Utilities also mobilized 17 contractor tree crews and had available 18 wires down personnel and secured 30 damage assessors. Staffed our customer call center with customer service representatives to work through Sunday night until Monday 5:15PM normal close time.

2. Summary of the Extent of the Storm Damage

Sunday, December 1, heavy snow (normal consistency) and winds (12 – 25mph) started in the Salem/Pelham service territory at approximately 6AM and continued into the late evening with snow accumulations > 14 inches. There was minimal impact from the storm to the electric distribution system with outages (< 50 customers). There was a large outage in Salem due to a MVA.

Per PUC definition, “the Company shall be entitled to recover planning and preparation activities in advance of severe weather if the weather forecast for the event shows a Schneider Electric Event Index (“EEI”) level 3 or greater with high probability of occurrence.”

Attachment 8 – December 2, 2019, Winter Storm Ezekiel, EEI Table (Pre-stage event) and Storm Planning Report 12-02-2019

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Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities
Annual Storm Fund Accounting
For the Year Ended December 31, 2019

Line	Beginning Balance	Collections				2019 Storm Costs										Audit / Prior Period Adjustments	Unadjusted Ending Balance	Average Monthly Balance	Interest Rate (3)	Interest Expense (Income)	Adjusted Ending Balance
		Base Rates (1)	SRA Factor (2)	Total		Payroll	Transportation	Outside companies	Materials	Supplies	Employee Expenses	Accrual	Total								
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	(s)			
1 January 2019	\$ (1,617,465.84)		\$ (125,000.00)	\$ -	\$ (125,000.00)	\$ 155,605.60	\$ -	\$ 38,224.75	\$ -	\$ 475.67	\$ 358,930.00	\$ 553,236.02	\$ 506,102.47	\$ (683,127.35)	\$ (1,150,296.60)	5.25%	\$ (5,032.55)	\$ (688,159.90)			
2 February 2019	(688,159.90)		(125,000.00)	-	(125,000.00)	130,783.28	-	195,594.41	-	33.09	(307,970.00)	18,440.78	(794,719.12)	(794,719.12)	(741,439.51)	5.25%	(3,243.80)	(797,962.92)			
3 March 2019	(797,962.92)		(125,000.00)	-	(125,000.00)	20,138.41	-	305,684.71	-	20,721.19	(45,445.16)	301,099.15	(624,969.64)	(624,969.64)	(621,863.77)	5.25%	(3,105.87)	(624,969.64)			
4 April 2019	(624,969.64)		(125,000.00)	-	(125,000.00)	-	-	28,603.22	58.48	-	(5,514.84)	23,146.86	(726,822.78)	(726,822.78)	(675,886.21)	5.50%	(3,097.86)	(729,920.63)			
5 May 2019	(729,920.63)		(125,000.00)	-	(125,000.00)	-	-	-	-	-	-	-	(854,920.63)	(854,920.63)	(792,420.63)	5.50%	(3,631.93)	(858,552.56)			
6 June 2019	(858,552.56)		(125,000.00)	-	(125,000.00)	10,500.84	-	327.43	-	-	-	10,828.27	(972,724.29)	(972,724.29)	(915,638.43)	5.50%	(4,196.68)	(976,920.97)			
7 July 2019	(976,920.97)		(125,000.00)	-	(125,000.00)	-	-	-	-	-	-	-	(1,385,806.45)	(1,385,806.45)	(1,391,221.03)	5.50%	(5,414.58)	(1,391,221.03)			
8 August 2019	(1,391,221.03)		(125,000.00)	-	(125,000.00)	6,648.39	-	-	-	-	-	6,648.39	(1,509,572.64)	(1,509,572.64)	(1,450,396.84)	5.50%	(6,647.65)	(1,516,220.29)			
9 September 2019	(1,516,220.29)		(125,000.00)	-	(125,000.00)	-	-	(261.45)	-	-	-	-	(163,806.85)	(1,805,288.59)	(1,660,754.44)	5.50%	(7,611.79)	(1,812,900.38)			
10 October 2019	(1,812,900.38)		(125,000.00)	-	(125,000.00)	41,747.30	-	(28,471.62)	645.90	17.63	195,976.27	209,515.48	(1,727,984.90)	(1,727,984.90)	(1,770,442.64)	5.25%	(7,745.69)	(1,735,730.59)			
11 November 2019	(1,735,730.59)		(125,000.00)	-	(125,000.00)	233,618.36	-	38,508.47	5,033.29	6,208.83	53,415.07	336,784.02	(10,784.83)	(1,534,731.40)	(1,635,231.00)	5.25%	(7,154.14)	(1,541,885.54)			
12 December 2019	(1,541,885.54)		(125,000.00)	-	(125,000.00)	225,013.40	-	346,318.23	16.86	454.77	(127,688.52)	444,114.74	(9,030.20)	(1,213,740.60)	(1,377,813.07)	5.25%	(6,027.93)	(1,219,768.53)			
13 2020 Activity	(1,219,768.53)					(12,713.92)	-	88,987.61	(5,736.03)	2,671.05	(61,702.82)	11,505.89		(1,208,262.64)	(1,214,015.58)		-	(1,208,262.64)			
14																					
15 Totals			\$ (1,500,000.00)	\$ -	\$ (1,500,000.00)	\$ 811,341.66	\$ -	\$ 1,013,515.76	\$ 18.50	\$ 30,582.23	\$ 60,000.00	\$ 1,915,458.15	\$ 56,655.51				\$ (62,910.46)	\$ (1,208,262.64)			
16																					
17																					

16

17

18 (1) Effective 4/1/14, \$1.5 million annually is in base rates (see Settlement Agreement, 10/30/14, DE 13-063, Order No. 25,738 dated 11/26/14)

19

20 (2) Storm Recovery Adjustment Factor (per kWh) - applied to cancel/rebills and payments on bills for prior periods

21 \$0.00223 effective 1/1/13, \$0.00329 effective 1/1/14, \$0.00221 effective 11/1/14, \$0.00000 effective 11/1/15

22

23 (3) Consistent with the annual storm fund report, interest is calculated each month by taking 1/12th of the annual interest (not based on the number of days in the month) and uses the interest rate in effect on the first of the month preceding the quarter

24

25 (4) See G/L accounts 8830-2-0000-10-1930-1825 and 8830-2-0000-20-2910-2548

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities
Monthly Accounting for Storm Events
For the Year Ended December 31, 2019

Line	Month	Winter Weather 1/9/19	Winter Storm 1/18-1/21/19	Storm 10/16/19	Halloween Wind Storm 10/31/19	Winter Storm Ezekiel 12/2/19	Total Costs
(a)	(b)	(d)	(e)	(f)	(g)	(h)	(k)
1	January 2019	\$ 49,544.85	\$ 503,691.17	\$ -	\$ -	-	\$ 553,236.02
2	February	123,985.76	(105,544.98)	-	-	-	18,440.78
3	March	9,728.72	291,370.43	-	-	-	301,099.15
4	April	516.37	22,630.49	-	-	-	23,146.86
5	May	-	-	-	-	-	-
6	June	3,343.48	7,484.79	-	-	-	10,828.27
7	July	-	-	-	-	-	-
8	August	2,116.85	4,531.54	-	-	-	6,648.39
9	September	-	(261.45)	-	-	-	(261.45)
10	October	(16,207.38)	(13,245.46)	238,383.65	984.67	-	209,915.48
11	November	-	-	33,831.18	301,148.49	1,804.35	336,784.02
12	December	-	-	(16,586.41)	(40,767.02)	501,468.17	444,114.74
13	--2020	(58.48)	-	17,202.55	(133.36)	(5,504.82)	11,505.89
14							
15	Total 2019 Storms	\$ 172,970.17	\$ 710,656.53	\$ 272,830.97	\$ 261,232.78	\$ 497,767.70	\$ 1,915,458.15

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities
Annual Report of All Storm Fund Activity
For the Year Ended December 31, 2019

Table 1

Line No.	Description	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	2020	Total Costs
1	Payroll charges including payroll overheads for GSE Employees	\$ 155,605.60	\$ 130,783.28	\$ 20,138.41	\$ -	\$ -	\$ 10,500.84	\$ -	\$ 6,648.39	\$ -	\$ 41,747.30	\$ 233,618.36	\$ 225,013.40	\$ (12,713.92)	\$ 811,341.66
2															
3	Charges for Transportation on GSE vehicles	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4															
5	Charges from outside companies	38,224.75	195,594.41	305,684.71	28,603.22	-	327.43	-	-	(261.45)	(28,471.62)	38,508.47	346,318.23	88,987.61	1,013,515.76
6															
7	Charges for Materials and Supplies	-	-	-	58.48	-	-	-	-	-	645.90	5,033.29	16.86	(5,736.03)	18.50
8															
9	Charges for employee expenses	475.67	33.09	20,721.19	-	-	-	-	-	-	17.63	6,208.83	454.77	2,671.05	30,582.23
10															
11	Accrual for outside companies	358,930.00	(307,970.00)	(45,445.16)	(5,514.84)	-	-	-	-	-	195,976.27	53,415.07	(127,688.52)	(61,702.82)	60,000.00
12															
13	Total	\$ 553,236.02	\$ 18,440.78	\$ 301,099.15	\$ 23,146.86	\$ -	\$ 10,828.27	\$ -	\$ 6,648.39	\$ (261.45)	\$ 209,915.48	\$ 336,784.02	\$ 444,114.74	\$ 11,505.89	\$ 1,915,458.15

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities
Total O&M Qualifying Costs - Winter Weather January 9, 2019 STORM-EXP-1902 & STORM-VGMT-1902
January 1, 2019 Through December 31, 2019
Table 2

Line No.	Description	Jan-19	Feb-19	Mar-19	Apr-19	Jun-19	Aug-19	Oct-19	Jan-20	Total Qualifying Costs
1	Payroll charges including payroll overheads for GSE Employees	\$ 49,544.85	\$ 43,387.84	\$ 6,412.07	\$ -	\$ 3,343.48	\$ 2,116.85	\$ -	\$ -	\$ 104,805.09
2										
3	Charges for Transportation on GSE vehicles	-	-	-	-	-	-	-	-	-
4										
5	Charges from outside companies	-	79,611.21	(2,010.69)	5,972.73	-	-	(16,207.38)	-	67,365.87
6										
7	Charges for Materials and Supplies	-	-	-	58.48	-	-	-	(58.48)	-
8										
9	Charges for employee expenses	-	26.71	772.50	-	-	-	-	-	799.21
10										
11	Accrual for outside companies	-	960.00	4,554.84	(5,514.84)	-	-	-	-	-
12										
13	Total	\$ 49,544.85	\$ 123,985.76	\$ 9,728.72	\$ 516.37	\$ 3,343.48	\$ 2,116.85	\$ (16,207.38)	\$ (58.48)	\$ 172,970.17

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities
Total O&M Pre-Staging Costs - Winter Storm January 18, 2019 - January 21, 2019 STORM-EXP-1903 & STORM-VGMT-1903
January 1, 2019 Through December 31, 2019

Table 3

Line No.	Description	Jan-19	Feb-19	Mar-19	Apr-19	Jun-19	Aug-19	Sep-19	Oct-19	Total Pre-Staging Costs
1	Payroll charges including payroll overheads for GSE Employees	\$ 106,060.75	\$ 87,395.44	\$ 13,726.34	\$ -	\$ 7,157.36	\$ 4,531.54	\$ -	\$ -	\$ 218,871.43
2										
3	Charges for Transportation on GSE vehicles	-	-	-	-	-	-	-	-	-
4										
5	Charges from outside companies	38,224.75	115,983.20	307,695.40	22,630.49	327.43	-	(261.45)	(13,245.46)	471,354.36
6										
7	Charges for Materials and Supplies	-	-	-	-	-	-	-	-	-
8										
9	Charges for employee expenses	475.67	6.38	19,948.69	-	-	-	-	-	20,430.74
10										
11	Accrual for outside companies	358,930.00	(308,930.00)	(50,000.00)	-	-	-	-	-	-
12										
13	Total	<u>\$ 503,691.17</u>	<u>\$ (105,544.98)</u>	<u>\$ 291,370.43</u>	<u>\$ 22,630.49</u>	<u>\$ 7,484.79</u>	<u>\$ 4,531.54</u>	<u>\$ (261.45)</u>	<u>\$ (13,245.46)</u>	<u>\$ 710,656.53</u>

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities
Total O&M Qualifying Storm Costs - Storm October 16, 2019 STORM-EXP-1909 & STORM-VGMT-1909
January 1, 2019 Through December 31, 2019
Table 4

Line No.	Description	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Total Qualifying Costs
1	Payroll charges including payroll overheads for GSE Employees	\$ 40,762.63	\$ 62,365.62	\$ -	\$ (7,548.96)	\$ -	\$ 95,579.29
2							
3	Charges for Transportation on GSE vehicles	-	-	-	-	-	-
4							
5	Charges from outside companies	981.22	23,506.66	26,538.24	48,039.68	22,018.09	121,083.89
6							
7	Charges for Materials and Supplies	645.90	3,259.46	(1.92)	(3,903.44)	-	-
8							
9	Charges for employee expenses	17.63	6,150.16	-	-	-	6,167.79
10							
11	Accrual for outside companies	195,976.27	(61,450.72)	(43,122.73)	(41,402.82)	-	50,000.00
12							
13	Total	<u>\$ 238,383.65</u>	<u>\$ 33,831.18</u>	<u>\$ (16,586.41)</u>	<u>\$ (4,815.54)</u>	<u>\$ 22,018.09</u>	<u>\$ 272,830.97</u>

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities
Total O&M Qualifying Storm Costs - Halloween Wind Storm October 31, 2019 STORM-EXP-1910 & STORM-VGMT-1910
January 1, 2019 Through December 31, 2019

Table 5

Line No.	Description	Oct-19	Nov-19	Dec-19	Jan-20	Total Qualifying Costs
1	Payroll charges including payroll overheads for GSE Employees	\$ 984.67	\$ 169,448.39	\$ -	\$ (4,610.72)	\$ 165,822.34
2						
3	Charges for Transportation on GSE vehicles	-	-	-	-	-
4						
5	Charges from outside companies	-	15,001.81	73,745.96	3,880.42	92,628.19
6						
7	Charges for Materials and Supplies	-	1,773.83	-	(1,774.11)	(0.28)
8						
9	Charges for employee expenses	-	58.67	52.81	2,671.05	2,782.53
10						
11	Accrual for outside companies	-	114,865.79	(114,565.79)	(300.00)	-
12						
13	Total	<u>\$ 984.67</u>	<u>\$ 301,148.49</u>	<u>\$ (40,767.02)</u>	<u>\$ (133.36)</u>	<u>\$ 261,232.78</u>

Liberty Utilities (Granite State Electric) Corp. d/b/a Liberty Utilities
Total O&M Qualifying Storm Costs - Winter Storm Ezekiel December 2, 2019 STORM-EXP-1911 & STORM-VGMT-1911
January 1, 2019 Through December 31, 2019

Table 6

Line No.	Description	Nov-19	Dec-19	Jan-20	Feb-20	Total Qualifying Costs
1	Payroll charges including payroll overheads for GSE Employees	\$ 1,804.35	\$ 225,013.40	\$ (554.24)	\$ -	\$ 226,263.51
2						
3	Charges for Transportation on GSE vehicles	-	-	-	-	-
4						
5	Charges from outside companies	-	246,034.03	3,844.28	11,205.14	261,083.45
6						
7	Charges for Materials and Supplies	-	18.78	-	-	18.78
8						
9	Charges for employee expenses	-	401.96	-	-	401.96
10						
11	Accrual for outside companies	-	30,000.00	(10,000.00)	(10,000.00)	10,000.00
12						
13	Total	<u>\$ 1,804.35</u>	<u>\$ 501,468.17</u>	<u>\$ (6,709.96)</u>	<u>\$ 1,205.14</u>	<u>\$ 497,767.70</u>

Robert Johnson Jr. - NH

From: DTN <EnergyEventIndex@dtm.com>
Sent: Wednesday, January 9, 2019 1:05 PM
To: DL NH Londonderry Emergency Dispatch
Subject: Energy Event Index

Energy Event Index for ALGONQUIN POWER

Your forecast administrator: robert.mercier@libertyutilities.com

Valid Time: January 9, 2019 1:00 PM EST

Forecaster: john.baranick

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Snow	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Ice	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	High	High	High	High	High	High	High	High	High
	Northern Lebanon Hanover NH	High	High	High	High	High	High	High	High	High	High
	Northwest Monroe Bath NH	High	High	High	High	High	High	High	High	High	High
	Southern Salem Derry NH	High	High	High	High	High	High	High	High	High	High
	Western Alstead Charlestown NH	High	High	High	High	High	High	High	High	High	High

Energy Event Index Definition

No Leaves (Nov 17 - Apr 1)

EEI	Wind Speed	Wind/Gust	Snow	Ice
1	< 40 mph	< 45 mph	< 6 in.	< 1/10 in.
2	>= 40 mph	>= 45 mph	>= 6 in.	>= 1/10 in.
3	>= 50 mph	>= 55 mph	>= 8 in.	>= 3/8 in.
4	>= 60 mph	>= 70 mph	>= 12 in.	>= 1/2 in.
5	>= 70 mph	>= 85 mph	>= 24 in.	>= 1 in.

Confidence Level	
Low	<30% chance the most likely index level remains at that level through the event
Medium	30-60% chance the most likely index level remains at that level through the event
High	>=60% chance the most likely index level remains at that level through the event

*Note: Confidence is NOT a measure of probability of an event occurring; if you have an accompanying forecast discussion, that information can be found there. Confidence is a measure of how likely the forecasted index level will stay at that level from now through the event, or a way to measure the potential for variability in the forecast. So for example, if it is Monday and there are level 2 gusts forecasted on Wednesday with high confidence, and if your customizable threshold for high confidence is set at 60%, it means the following: There is a >=60% chance the most likely forecasted gusts will remain at level 2 with all updates from now through Wednesday.

Date: January 9, 2019

Time: 1:00 PM EST

Forecaster: John Baranick

Zones	SALEM	CHARLESTOWN	LEBANON
Event Starting in 30hrs	NONE	NONE	NONE
Event Begin Time			
Event End Time			
Event Confidence			
TSTM Wind Gusts			
Ltng Intensity			
Storm Mvmt Dir			

Rain Amount			
Snow Accumulation			
Snow Character			
Ice Amount			
Sustained Wind			
Wind Gust			
Temp. Extremes	40/30	35/27	35/26

LIBERTY UTILITIES SERVICE AREA 48 HOUR OUTLOOK:

SALEM: Light snow showers will end by this evening. Snowfall: Up to 1". Snow character: Wet. Gusty winds are likely today. Winds: West-northwest at 15-25 mph, gusting 30-40 mph, peak gusts 40-45 mph possible, weakening to 25-35 mph tonight. On Thursday, a few light snow showers in the morning, then dry and breezy. Snow: Trace-1/2". Winds: Northwest at 15-22 mph, gusting 30-35 mph, peak gusts 35-40 mph possible.

Confidence: Confidence is high that no hazards will occur over the next 48 hours. EEI-2 gust chance: 10% through 7pm today.

CHARLESTOWN: Light snow showers will come to an end this evening, followed by periods of light snow showers and flurries overnight through Thursday. Any snow chances end by noon on Thursday. Snowfall: Up to 2". Snow character: Normal. Gusty winds are likely today. Winds: Northwest at 15-20 mph, gusting 25-35 mph, peak gusts 35-40 mph possible. Breezy conditions are expected again on Thursday. Winds: Northwest at 15-20 mph, gusting 25-35 mph, peak gusts 35-40 mph possible.

Confidence: Confidence is high that no hazards will occur over the next 48 hours.

LEBANON: Light snow showers will come to an end this evening, followed by periods of light snow showers and flurries overnight through Thursday. Any snow chances end by noon on Thursday. Snowfall: Up to 3". Snow character: Normal. Gusty winds are likely today. Winds: Northwest at 15-20 mph, gusting 25-35 mph, peak gusts 35-40 mph possible. Breezy conditions are expected again on Thursday. Winds: Northwest at 15-20 mph, gusting 25-35 mph, peak gusts 35-40 mph possible.

Confidence: Confidence is high that no hazards will occur over the next 48 hours.

LIBERTY UTILITY SERVICE AREA 3-5 DAY OUTLOOK: On Friday, dry. Northwest winds could gust 25-35 mph. On Saturday and Sunday, dry and hazard-free.

Confidence: Confidence is high that no hazards will occur Friday through Sunday.

Go to [WeatherSentry® Online](#) for a complete view of the forecast and other business critical weather information.

Please do not respond to this email.

	ID	Feeder	Date	From	Duration	CI	CMI	Town	Comments	Cause	District
1	51865	1L2	1/9/2019	7:03	821	3	2,463	ENFIELD	BLOWN 25K LINE FUSE P51 EASTMAN HILL RD- TREE LIMBS ON WIRES	TREE - BROKEN LIMB	LEBANON
2	51933	1L2	1/9/2019	7:38	81	995	80,595	LEBANON	PTR P18 SCHOOL ST - LOCKED OUT/ DUE TO LIMB ON WIRE P115 RTE120 & BRANCH ON PRIMARY P50 MERIDEN RD	TREE - BROKEN LIMB	LEBANON
3	51972	16L1	1/9/2019	7:38	66	182	12,012	HANOVER	BLOWN 65K LINE FUSE (B-PHASE) P73 HANOVER CTR RD / MULTIPLE TREE CONTACT AT HANOVER CENTER RD	TREE - BROKEN LIMB	LEBANON
4	51981	16L1	1/9/2019	8:28	36	1	36	HANOVER	RE-ATTACHED SERVICE WIRES P113 HANOVER ST DUE TO FALLEN TREE	TREE FELL	LEBANON
5	51988	12L1	1/9/2019	3:47	297	25	7,425	ALSTEAD	BLOWN 25K LINE FUSE P174 ROUTE 23A, P9 LIBRARY RD- CHANGED 2 SETS OF INSULATORS DUE TO FAILURE	DEVICE FAILED	CHARLESTOWN
6	51993	7L1	1/9/2019	8:07	187	164	30,668	CANAAN	BLOWN 65K LINE FUSE P1 SOUTH RD / TREE BETWEEN P12 & P13 SOUTH RD / WIRE DOWN BETWEEN P35 & P36 SOUTH RD	TREE - BROKEN LIMB	LEBANON
7	51996	12L1	1/9/2019	8:59	276	1	276	WALPOLE	RE-ATTACHED SERVICE WIRES P15 WHITCOMB RD	UNKNOWN	CHARLESTOWN
8	51998	7L2	1/9/2019	9:10	274	1	274	ENFIELD	RE-CONNECTED SECONDARY WIRES BETWEEN P3-4 WELLS ST	UNKNOWN	LEBANON
9	52011	16L1	1/9/2019	9:20	539	9	4,851	HANOVER	BLOWN 25K LINE FUSE P9 RUDDSBORO RD, TREE ON PRIMARY & NEUTRAL	TREE - BROKEN LIMB	LEBANON
10	52020	11L1	1/9/2019	9:05	89	114	10,146	LEBANON	BLOWN 65K (2 OF 3PHASE) LINE FUSE P1 US HWY 4 / TREE ON PRIMARY P14 & P15 WATER ST	TREE - BROKEN LIMB	LEBANON
11	52032	1L2	1/9/2019	10:08	521	1	521	PLAINFIELD	RE-ATTACHED SERVICE WIRES P9 BONNER RD DUE TO FALLEN TREE LIMB	TREE - BROKEN LIMB	LEBANON
12	52035	1L1	1/9/2019	10:03	1144	1	1,144	LEBANON	RE-ATTACHED SECONDARY WIRE AT P6 WESTVIEW LANE	TREE FELL	LEBANON
13	52040	40L3	1/9/2019	10:17	87	1247	108,714	CHARLESTOWN	W149S LOCKED OUT DUE TO FALLEN TREE AT STRUCTURE 293 IN ROW - CORNISH.	TREE FELL	CHARLESTOWN
14	52044	39L2	1/9/2019	10:26	633	1	633	LEBANON	RE-ATTACHED SERVICE WIRES FROM POLE 4 MOSS RD DUE TO BROKEN TREE LIMB	TREE - BROKEN LIMB	LEBANON
15	52053	1L2	1/9/2019	9:07	182	27	4,914	LEBANON	BLOWN 25K LINE FUSE P86 METHODIST-HILL RD / MULTIPLE LIMB & TREE CONTACT	TREE - BROKEN LIMB	LEBANON
16	52058	16L1	1/9/2019	9:42	557	7	3,899	HANOVER	BLOWN 25K LINE FUSE P184 HANOVER CENTER RD/TREE ON LINES	TREE FELL	LEBANON
17	52061	39L2	1/9/2019	10:29	180	1	180	PLAINFIELD	RE-ATTACHED SERVICE WIRES P13 TRUE RD	UNKNOWN	LEBANON
18	52073	40L1	1/9/2019	10:17	102	509	51,918	CHARLESTOWN	W149S LOCKED OUT DUE TO FALLEN TREE AT STRUCTURE 293 IN ROW - CORNISH.	TREE FELL	CHARLESTOWN
19	52075	1L2	1/9/2019	8:52	304	5	1,520	LEBANON	RE-ATTACHED SECONDARY WIRES BETWEEN P5-6 PAYNE RD DUE TO FALLEN TREE	TREE FELL	LEBANON
20	52078	12L2	1/9/2019	11:12	208	1	208	WALPOLE	FAILED TRANSFORMER CUTOFF POLE 151-1 COUNTY RD.	DEVICE FAILED	CHARLESTOWN
21	52085	7L2	1/9/2019	10:16	303	19	5,757	ENFIELD	BLOWN FUSE P62 SHAKER HILL RD DUE TO MULTIPLE TREE LIMBS ALONG SHAKER HILL RD	TREE - BROKEN LIMB	LEBANON
22	52086	16L1	1/9/2019	8:55	309	1	309	HANOVER	25K TRIP SAVER P13 DOGFORD RD LOCKED OUT DUE TO FALLEN TREE	TREE FELL	LEBANON
23	52162	1L2	1/9/2019	6:44	305	58	17,690	ENFIELD	BLOWN LINE FUSE P20 SHAKER BLVD DUE TO FALLEN TREE AND BRANCHES ON WIRES ALONG ROAD	TREE - BROKEN LIMB	LEBANON
24	52171	7L1	1/9/2019	11:31	93	25	2,325	CANAAN	BLOWN 25K TRIP SAVER P88 SOUTH RD, MULTIPLE LIMB CONTACT ON IBEY RD	TREE - BROKEN LIMB	LEBANON
25	52172	7L1	1/9/2019	10:30	65	41	2,665	CANAAN	BLOWN 25K LINE FUSE P88-50 SOUTH RD / TREE LIMB BETWEEN P13 & P16 SOUTH RD	TREE - BROKEN LIMB	LEBANON
26	52174	7L1	1/9/2019	11:38	72	1689	121,608	CANAAN	PTR 754001 P150-50 US ROUTE 4 LOCKED OUT DUE TO FALLEN TREE BETWEEN P79 & P80 RT4	TREE FELL	LEBANON
27	52175	1L1	1/9/2019	10:28	576	3	1,728	LEBANON	BLOWN 25K LINE FUSE P18 JENKINS RD / 5 SPANS OF WIRES DOWN BETWEEN P63 & P64	TREE FELL	LEBANON
28	52178	12L1	1/9/2019	12:03	92	6	552	WALPOLE	BLOWN 65K LINE FUSE (A & B) P1 COLD RIVER RD DUE TO FALLEN TREE LIMB BETWEEN POLE 16.5 AND 17	TREE - BROKEN LIMB	CHARLESTOWN
29	52179	1L2	1/9/2019	11:23	476	32	15,232	ENFIELD	BLOWN 65K LINE FUSE P3 SLOAN RD, TREE LIMB ON WIRES P106 ROUTE 4-A	TREE - BROKEN LIMB	LEBANON
30	52182	1L2	1/9/2019	12:40	469	3	1,407	ENFIELD	BLOWN 25K LINE FUSE P56 EASTMAN HILL RD. TREE LEANING ON WIRES BETWEEN P56 & 56-1	TREE - BROKEN LIMB	LEBANON
31	52188	39L2	1/9/2019	10:48	447	17	7,599	PLAINFIELD	BLOWN FUSE P25 OLD COUNTY RD. CAUSE UNKNOWN	UNKNOWN	LEBANON
32	52199	11L1	1/9/2019	13:21	192	1	192	LEBANON	RE-ATTACHED SERVICE WIRES AT P9 CHURCH ST DUE TO BROKEN TREE LIMB	TREE - BROKEN LIMB	LEBANON
33	52203	1L2	1/9/2019	13:45	1258	1	1,258	ENFIELD	RE-ATTACHED SERVICE WIRES AT P1 BLACKSMITH DR AFTER NEW POLE WAS SET DUE TO BROKEN TREE LIMB.	TREE - BROKEN LIMB	LEBANON
34	52212	7L1	1/9/2019	13:25	160	2	320	CANAAN	MANUALLY OPENED FUSE P6-2 SCHOOL ST TO MAKE REPAIRS FROM FALLEN TREE.	TREE FELL	LEBANON
35	52214	7L1	1/9/2019	14:10	759	2	1,518	ENFIELD	BLOWN LINE FUSE P68 ROUTE 4 DUE TO FALLEN TREE AT TUMBLEWEED LN	TREE FELL	LEBANON
36	52217	11L1	1/9/2019	14:20	114	17	1,938	LEBANON	BLOWN 10K TRANSFORMER FUSE P9 WATER ST- BURNT CUT OUT FROM TREE ON WIRES	TREE FELL	LEBANON
37	52222	16L5	1/9/2019	14:53	92	1	92	LEBANON	2 BLOWN 25K LINE FUSES P6 OLD-ETNA RD /REMOVED BRANCHES BETWEEN P6-1 & P6-2 OLD-ETNA RD	TREE - BROKEN LIMB	LEBANON
38	52224	7L1	1/9/2019	14:05	1140	1	1,140	CANAAN	REATTACHED SERVICE P54 CANAAN ST - TREE LIMB	TREE - BROKEN LIMB	LEBANON
39	52231	7L1	1/9/2019	14:09	470	32	15,040	CANAAN	BLOWN 40K LINE FUSE AT P98 SOUTH RD DUE TO MULTIPLE LIMBS ACROSS LINES	TREE - BROKEN LIMB	LEBANON
40	52233	7L2	1/9/2019	15:36	103	1	103	ENFIELD	RECONNECTED SERVICE FROM P87 SHAKER HILL RD - TREE FELL	TREE FELL	LEBANON
41	52239	1L2	1/9/2019	15:56	5	501	2,505	PLAINFIELD	MANUALLY OPENED PTR759001 P141 RTE 120 TO REMOVE LARGE TREE LAYING ON P226 RTE 120 AND BLOCKING ROAD.	TREE FELL	LEBANON
42	52243	1L2	1/9/2019	13:17	213	1	213	PLAINFIELD	SERVICE REATTACHED P225 ROUTE 120 - TREE FELL P225 ROUTE 120	TREE FELL	LEBANON

43	52245	1L1	1/9/2019	16:13	126	2	252	LEBANON	BLOWN 25K LINE FUSE AT P18 JENKINS RD / PRIMARY REPAIRED P60-P65 HARDY HILL RD / TREE REMOVED BETWEEN P62 & P63 HARDY HILL RD	TREE FELL	LEBANON
44	52259	7L1	1/9/2019	15:33	216	69	14,904	CANAAN	BLOWN 65K LINE FUSE P1 SOUTH RD/ TREE ON WIRE BURNT UP	TREE FELL	LEBANON
45	52262	1L2	1/9/2019	17:49	25	1	25	PLAINFIELD	REATTACHED SERVICE P29-2 MAIN ST - TREE FELL P29-2 MAIN	TREE FELL	LEBANON
46	52263	39L2	1/9/2019	17:42	122	1	122	LEBANON	RE-ATTACHED SERVICE FROM P5 DEER RUN - TREE FELL	TREE FELL	LEBANON
47	52268	7L1	1/9/2019	13:50	435	46	20,010	CANAAN	BLOWN 40K LINE FUSE P53 CANAAN ST - TREE ON LINES P10 & P15	TREE FELL	LEBANON
48	52274	7L1	1/9/2019	13:05	640	8	5,120	CANAAN	BLOWN 25K LINE FUSE P28 PROSPECT HILL RD / DUE TO TREE ON PRIMARY BETWEEN P30 & P31 DERUSH RD / HEAVY TREE ON NEUTRAL BETWEEN P31 & P32 DERUSH RD	TREE FELL	LEBANON
49	52277	7L1	1/9/2019	13:50	433	4	1,732	CANAAN	BLOWN 6K LINE FUSE P53 SWITCH RD (HORSEBACK LN) - LIMB ON PRIMARY	TREE - BROKEN LIMB	LEBANON
50	52278	7L1	1/9/2019	15:33	311	95	29,545	CANAAN	BLOWN 40K FUSE P16 SOUTH RD - TREE FELL P20 SOUTH RD	TREE FELL	LEBANON
51	52284	7L1	1/9/2019	17:53	190	98	18,620	CANAAN	BLOWN 65K LINE FUSE (1 OF 3) P39 ROBERTS RD - MULTIPLE TREES	TREE FELL	LEBANON
52	52286	12L1	1/9/2019	20:40	719	7	5,033	ACWORTH	BLOWN 25K LINE FUSE P161 123A UNKNOWN CAUSE	UNKNOWN	LEBANON
53	52291	7L1	1/9/2019	13:58	471	19	8,949	CANAAN	BLOWN 40K STEP DOWN FUSE P15 BACK BAY RD - TREE ON WIRES P18 BACK BAY RD	TREE FELL	LEBANON
54	52292	7L1	1/9/2019	14:23	510	13	6,630	CANAAN	MANUALLY OPENED CUT OUTS P2 FOLLANSBEE RD TREE LIMB P5 FOLLANSBEE RD/REPAIRS MADE TO PRIM & NEUTRAL	TREE - BROKEN LIMB	LEBANON
55	52293	7L2	1/9/2019	22:10	78	80	6,240	ENFIELD	MANUALLY OPENED LINE FUSE P45-50 LOCKHAVEN RD TO REPAIR NEUTRAL P1-50	TREE - BROKEN LIMB	LEBANON
56	52294	7L1	1/9/2019	13:58	662	1	662	CANAAN	BLOWN 10K LINE FUSE P186-34 BACK BAY RD/ TREE ON WIRES	TREE - BROKEN LIMB	LEBANON

Robert Johnson Jr. - NH

From: DTN <EnergyEventIndex@dtm.com>
Sent: Friday, January 18, 2019 1:05 PM
To: DL NH Londonderry Emergency Dispatch
Subject: Energy Event Index: Threat Level 4

Energy Event Index for ALGONQUIN POWER

Your forecast administrator: robert.mercier@libertyutilities.com

Valid Time: January 18, 2019 1:00 PM EST

Forecaster: Kyle.Schanus

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	1	1	2	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Snow	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	4	4	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	4	4	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	4	4	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	4	4	1	1	1	1	1	1	1
Ice	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	Medium	Medium	High	High	Medium	Medium	High	High	High
	Northern Lebanon Hanover NH	High	High	High	High	High	Medium	Medium	High	High	High
	Northwest Monroe Bath NH	High	High	High	High	High	Medium	Medium	High	High	High
	Southern Salem Derry NH	High	High	High	High	High	Medium	Medium	High	High	High
	Western Alstead Charlestown NH	High	High	High	High	High	Medium	Medium	High	High	High

Energy Event Index Definition

No Leaves (Nov 17 - Apr 1)

EEI	Wind Speed	Wind/Gust	Snow	Ice
1	< 40 mph	< 45 mph	< 6 in.	< 1/10 in.
2	>= 40 mph	>= 45 mph	>= 6 in.	>= 1/10 in.
3	>= 50 mph	>= 55 mph	>= 8 in.	>= 3/8 in.
4	>= 60 mph	>= 70 mph	>= 12 in.	>= 1/2 in.
5	>= 70 mph	>= 85 mph	>= 24 in.	>= 1 in.

Confidence Level	
Low	<30% chance the most likely index level remains at that level through the event
Medium	30-60% chance the most likely index level remains at that level through the event
High	>=60% chance the most likely index level remains at that level through the event

*Note: Confidence is NOT a measure of probability of an event occurring; if you have an accompanying forecast discussion, that information can be found there. Confidence is a measure of how likely the forecasted index level will stay at that level from now through the event, or a way to measure the potential for variability in the forecast. So for example, if it is Monday and there are level 2 gusts forecasted on Wednesday with high confidence, and if your customizable threshold for high confidence is set at 60%, it means the following: There is a >=60% chance the most likely forecasted gusts will remain at level 2 with all updates from now through Wednesday.

Date: January 18, 2019

Time: 1:00 PM EST

Forecaster: Kyle Schanus

Zones	SALEM	CHARLESTOWN	LEBANON
Event Starting in 30hrs	SNOW	SNOW	SNOW
Event Begin Time	7PM SAT	5PM SAT	5PM SAT
Event End Time	6PM SUN	4PM SUN	4PM SUN
Event Confidence	80%	100%	100%
TSTM Wind Gusts			
Ltng Intensity			
Storm Mvmt Dir			

Rain Amount			
Snow Accumulation	10-18"	14-22"	14-22"
Snow Character	NORMAL-DRY	DRY	DRY
Ice Amount			
Sustained Wind			
Wind Gust			
Temp. Extremes	37/18	33/13	33/6

LIBERTY UTILITIES SERVICE AREA 48 HOUR OUTLOOK:

SALEM: Mainly dry and hazard-free through Saturday afternoon. Later Saturday evening into Sunday, a major winter storm will impact the region. See table above. Heaviest snowfall: 12am-1pm Sun. Snow could mix with sleet Sunday morning, highest chance of this from 5am-10am Sun. Winds could gust 20-30 mph late Saturday night/Sunday morning. Winds will become widespread behind this system Sunday afternoon-night with gusts of 25-35 mph likely and isolated peak gust of 35-40 mph possible, strongest Sunday afternoon to mid-evening, weakening slightly after 10pm Sun.

Confidence: Confidence is high that no hazards will occur through Saturday afternoon. Confidence is high in hazard snowfall occurring Saturday evening-Sunday. EEI-2/3/4 chances: 100%/80%/70%.

CHARLESTOWN: Few light snow showers/flurries possible into this evening, then dry and hazard-free through Saturday afternoon. Saturday evening into Sunday, a major winter storm will impact the region. See table above. Heaviest snowfall: 11pm Sat-11am Sun. Winds could gust 20-30 mph late Saturday night/Sunday morning. Winds will become widespread behind this system Sunday afternoon-night with gusts of 25-35 mph likely and isolated peak gust of 35-40 mph possible, strongest Sunday afternoon to mid-evening, weakening slightly after 10pm Sun.

Confidence: Confidence is high that no hazards will occur through Saturday afternoon. Confidence is high in hazard snowfall occurring Saturday evening-Sunday. EEI-2/3/4/5 chances: 100%/100%/80%/5%.

LEBANON: Few light snow showers/flurries possible into this evening, then dry and hazard-free through Saturday afternoon. Saturday evening into Sunday, a major winter storm will impact the region. See table above. Heaviest snowfall: 12am-12pm Sun. Winds could gust 20-30 mph late Saturday night/Sunday morning. Winds will become widespread behind this system Sunday afternoon-night with gusts of 25-35 mph likely and isolated peak gust of 35-40 mph possible, strongest Sunday afternoon to mid-evening, weakening slightly after 10pm Sun.

Confidence: Confidence is high that no hazards will occur through Saturday afternoon. Confidence is high in hazard snowfall occurring Saturday evening-Sunday. EEI-2/3/4/5 chances: 100%/100%/80%/5%.

LIBERTY UTILITY SERVICE AREA 3-5 DAY OUTLOOK: See above for Sunday. On Monday, mostly dry weather is expected, but a few flurries cannot be ruled out. Northwest winds will gust 30-40 mph through the daylight hours, decreasing to 25-35 mph overnight. Isolated stronger gusts could occur. On Tuesday, dry and hazard-free, but a few snow showers could arrive late Tuesday night.

Confidence: See above for Sunday. Confidence is high that no hazards will occur Monday or Tuesday. EEI-2 gust chance Monday: 10%.

Go to [WeatherSentry® Online](#) for a complete view of the forecast and other business critical weather information.

Please do not respond to this email.

STORM PLANNING REPORT

DATE: Sunday, January 20, 2019

TIME: 10:00 AM

Winter Storm - Harper

	<u>Lebanon</u>	<u>Salem</u>	<u>Charlestown</u>	<u>Comments</u>	
Weather Forecast	Snow will continue through the day – an additional 3-6 inches of snow is possible. Winds will diminish through the evening gust up to 40 MPH. Dry weather is predicted for tomorrow.	Rain and Sleet will continue through the day and brining an additional 2-4 inches of wet snow/ice. Winds gust up to 40 mph. Dry weather is predicted for tomorrow.	Snow will continue through the day – an additional 3-6 inches of snow is possible. Winds will diminish through the evening gust up to 40 MPH. Dry weather is predicted for tomorrow.	Snow will continue throughout the day on Sunday in all areas.	
Anticipated EERP Event Type	Type 3	Type 3	Type 3		
Resources				Totals	Customer Service will be staffed Saturday evening through the end of the event. We have a full complement wires down and damage assessors for the duration.
Internal Crews	7	6	1	14	
Contractor Crews	3	12 + 4 diggers		19	
Total Line Crews available	10	22	1	33	
Tree Crews	9	10		19	
Wires Down		14		19	
Other Support		Damage Assessors			
LU Storm Room Status	Open on Saturday Evening at 11:PM				
LU Municipal Room Status	Open on Sunday morning at 7:00 am				
Customer Outage Count	N/A	N/A	N/A	Total	
Estimated Date/Time for Total Restoration	Click here to enter a date. Choose an item.	Click here to enter a date. Choose an item.	Click here to enter a date. Choose an item.		
Planned Storm Conference Calls	Thursday – 2:00 PM first call Saturday – 4:00 PM Sunday – 10:00 AM Sunday – 4:00 PM				
Notifications with Regulators. NHPUC/NH OEM					
EII Event Index & Storm Accounting	Description	GP Expense Job	GP VM Job		
	EEI-Level 4 High Confidence	STORM-EXP-1903	STORM-VGMT-1903		

Robert Johnson Jr. - NH

From: DTN <EnergyEventIndex@dtm.com>
Sent: Thursday, October 17, 2019 7:03 AM
To: DL NH Londonderry Emergency Dispatch
Subject: Energy Event Index: Threat Level 2



Energy Event Index for ALGONQUIN POWER & UTILITIES CORP

Your forecast administrator: kathleen.kelley@libertyutilities.com

Valid Time: October 17, 2019 7:00 AM EDT

Forecaster: john.baranick

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	2	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	2	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	High	High	High	High	Medium	Medium	High	High	High
	Northern Lebanon Hanover NH	High	High	High	High	High	Medium	Medium	High	High	High
	Northwest Monroe Bath NH	High	High	High	High	High	Medium	Medium	High	High	High
	Southern Salem Derry NH	High	High	High	High	High	Medium	Medium	High	High	High
	Western Alstead Charlestown NH	High	High	High	High	High	Medium	Medium	High	High	High

Energy Event Index Definition

With Leaves (Apr 1 - Nov 16)

EEI	Wind Speed	Wind/Gust
1	< 30 mph	< 35 mph
2	>= 30 mph	>= 35 mph
3	>= 45 mph	>= 50 mph
4	>= 60 mph	>= 65 mph
5	>= 70 mph	>= 75 mph

Confidence Level	
Low	<30% chance the most likely index level remains at that level through the event
Medium	30-60% chance the most likely index level remains at that level through the event
High	>=60% chance the most likely index level remains at that level through the event

*Note: Confidence is NOT a measure of probability of an event occurring; if you have an accompanying forecast discussion, that information can be found there. Confidence is a measure of how likely the forecasted index level will stay at that level from now through the event, or a way to measure the potential for variability in the forecast. So for example, if it is Monday and there are level 2 gusts forecasted on Wednesday with high confidence, and if your customizable threshold for high confidence is set at 60%, it means the following: There is a >=60% chance the most likely forecasted gusts will remain at level 2 with all updates from now through Wednesday.

Date: October 17, 2019

Time: 7:00 AM EDT

Forecaster: John Baranick

Zones (Forecast for next 30 hrs)	SALEM	CHARLESTOWN	LEBANON
Event	GUSTS	GUSTS	NONE
Event Begin Time	Ongoing	Ongoing	
Event End Time	8pm Thu	7pm Thu	
Event Confidence	Medium	Medium	
Thunderstorm Wind Gusts			
Lightning Intensity			
Storm Direction			
Rain Amount			
Max Sustained Winds	12-22	12-22	
Wind Gust	30-40	30-40	
Temp. Extremes	55/44	52/39	55/43

LIBERTY UTILITIES SERVICE AREA 48 HOUR OUTLOOK:

SALEM: Scattered showers will continue through the day, ending this evening. Rainfall: 0.10-0.25". Winds may still gust 35-40 mph with slightly better chances this afternoon as the low pressure system pulls away. See table above for details. On Friday, dry and hazard-free.

Confidence: Confidence is medium that hazard gusts will occur today. EEI-2 gust chances: 30%. Confidence is high that hazards will not occur on Friday.

CHARLESTOWN: Scattered showers will continue through the day, ending this evening. Rainfall: 0.40-0.80". Winds may still gust 35-40 mph with slightly better chances this afternoon as the low pressure system pulls away. See table above for details. On Friday, dry and hazard-free.

Confidence: Confidence is medium that hazard gusts will occur today. EEI-2 gust chances: 30%. Confidence is high that hazards will not occur on Friday.

LEBANON: Steady to scattered showers will continue through the day, ending this evening. Rainfall: 0.50-1.00". Winds may still gust 25-35 mph with slightly better chances this afternoon as the low pressure system pulls away. Best timing on gusts is between 12-7pm Thursday. On Friday, dry and hazard-free.

Confidence: Confidence is high that hazard gusts will not occur today. EEI-2 gust chances: 10%. Confidence is high that hazards will not occur on Friday.

LIBERTY UTILITIES SERVICE AREA 3-5 DAY OUTLOOK: Dry and hazard-free Saturday and Sunday. A few rain showers may be possible ahead of the next system Monday night.

Confidence: Confidence is high that hazards will not occur Saturday through Monday.

Go to [WeatherSentry® Online](#) for a complete view of the forecast and other business critical weather information.

Please do not respond to this email.

ID	Feeder	Date	From	To	Duration	CI	CMI	Town	Comments	Cause	District	
1	55039	9L3	10/17/2019	0:52	3:50	177	122	21,594	WINDHAM	OPEN 65K TRIPSAVERS (2 OR 3) P51 W SHORE RD, - TREE LIMB P6-P7 W SHORE RD	TREE - BROKEN LIMB	SALEM
2	55045	9L3	10/17/2019	0:37	3:50	192	24	4,608	WINDHAM	BLOWN 25K FUSE P6 JOHNSON RD - TREE LIMB P4- P5 ROLLING RIDGE	TREE - BROKEN LIMB	SALEM
3	55046	14L2	10/17/2019	0:54	6:25	330	3	990	PELHAM	BLOWN 40K TRANSFORMER FUSE P77 MAMMOTH RD - CAUSE UNKNOWN	UNKNOWN	SALEM
4	55052	14L2	10/17/2019	2:22	8:45	382	1	382	PELHAM	RECONNECTED SERVICE FROM P12 LUANN LANE DUE TO FALLEN TREE LIMB	TREE - BROKEN LIMB	SALEM
5	55070	14L2	10/17/2019	2:01	5:47	225	100	22,500	PELHAM	BLOWN 40K FUSE ON P10 NASHUA RD- TREE ON WIRES ON TENNEY RD	TREE FELL	SALEM
6	55073	12L2	10/17/2019	3:10	19:00	949	2	1,898	WALPOLE	BLOWN 10K LINE FUSE P144 WATKINS HILL RD / TREE DOWN BETWEEN P2 AND P3 DERRY HILL RD / REPLACED INSULATOR AND POLE TOP PIN @ P3 DERRY HILL RD	TREE FELL	CHARLESTOWN
7	55077	9L3	10/17/2019	3:23	5:58	154	1	154	WINDHAM	RECONNECTED SERVICE WIRE DOWN FROM P2 BIRCHWOOD RD / CAUSE: TREE	TREE FELL	SALEM
8	55086	12L2	10/17/2019	3:57	7:00	182	1	182	WALPOLE	TREE LIMB RIPPED DOWN SERVICE, P1 MERRIAM RD,	TREE - BROKEN LIMB	CHARLESTOWN
9	55087	12L1	10/17/2019	4:07	11:00	412	21	8,652	ALSTEAD	BLOWN 15K LINE FUSE P22 OLD SETTLERS RD, TREE TOOK PRIMARY DOWN P27 1/2 NEWELL POND RD 27 3/4 REPLACED 15KV TRANSFORMER.	TREE FELL	CHARLESTOWN
10	55094	14L3	10/17/2019	0:50	5:30	279	56	15,624	PELHAM	BLOWN 40K FUSE P45 OLD GAUGE HILL RD - TREE LIMB BETWEEN P2-3 SUNRISE DR.	TREE - BROKEN LIMB	SALEM
11	55097	14L3	10/17/2019	3:35	5:30	114	51	5,814	PELHAM	BLOWN 65K FUSE P37 OLD GAGE HILL RD - TREE LIMB AND WIRES DOWN BETWEEN P56 - P58 AND OFF INSULATOR AT P57 OLD GAGE HILL RD	TREE - BROKEN LIMB	SALEM
12	55103	12L2	10/17/2019	3:31	17:35	843	45	37,935	WALPOLE	BLOWN 25K LINE FUSE P7 BLACKJACK, BLOWN TRANSFORMER CUTOUT P15 BLACKJACK, TREE ON LINE @ P14 BLACKJACK	TREE FELL	CHARLESTOWN
13	55105	12L1	10/17/2019	2:29	10:55	505	158	79,790	ACWORTH	TRIP SAVER OPEN RTE P123 123A / PRIMARY OFF POLE TOP P158 STATE HWY 123A	UNKNOWN	CHARLESTOWN
14	55106	12L1	10/17/2019	5:49	13:13	444	1	444	WALPOLE	RECONNECTED SERVICE DOWN P9 CENTER STREET DUE TO TREE	TREE FELL	CHARLESTOWN
15	55107	12L1	10/17/2019	2:20	6:20	239	130	31,070	ALSTEAD	BLOWN 40K LINE FUSE P181 FOREST RD, CLEARED TREE OFF PRIMARY & NEUTRAL P32 GILSUM MINE RD	TREE FELL	CHARLESTOWN
16	55114	7L1	10/17/2019	2:30	9:47	436	83	36,188	CANAAN	BLOWN 25K LINE FUSE P24 US ROUTE 4, TREE FELL, PRIMARY DOWN @ P43 GRISTMILL HILL RD	TREE FELL	LEBANON
17	55123	12L1	10/17/2019	7:34	13:35	360	12	4,320	WALPOLE	BLOWN 65K LINE FUSE P1 CHESHIRE TPKE CAUSED BY LIMB ON PRIMARY BETWEEN P15 - P16 COLD RIVER RD	TREE FELL	CHARLESTOWN
18	55125	7L1	10/17/2019	7:27	10:40	192	8	1,536	CANAAN	BLOWN 25K LINE FUSE P1 BALL PARK RD WIRES DOWN P2 & P2-1 ALLEN WAY, TREE FELL ON ALLEN RD	TREE FELL	LEBANON
19	55126	12L2	10/16/2019	23:35	2:59	203	8	1,624	WALPOLE	BLOWN 25K LINE FUSES (2 OF 3) P8 MERRIAM SEVERAL TREE LIMBS DOWN ALONG MERRIAM	TREE - BROKEN LIMB	CHARLESTOWN
20	55128	7L1	10/17/2019	1:20	8:40	439	46	20,194	ENFIELD	BLOWN 25K STEP DOWN P76 POTATO RD, PRIMARY DOWN BETWEEN P75-P76 POTATO RD, NEUTRAL DOWN BETWEEN P77-80 POTATO RD, P83 BROKEN NEUTRAL & SERVICE, CLEARED TREE LIMBS BETWEEN P92-P93 POTATO RD	TREE - BROKEN LIMB	LEBANON
21	55131	12L1	10/17/2019	7:48	15:08	439	1	439	ALSTEAD	BLOWN 15K LINE FUSE P3 DUFFY LN TREE FELL BETWEEN P3-1 & P3-2 DUFFY	TREE FELL	CHARLESTOWN
22	55133	12L2	10/17/2019	2:22	12:25	602	3	1,806	WALPOLE	BLOWN 15K TRANSFORMER FUSE P71 STATE HWY 12 DUE TO VINES	VINES	CHARLESTOWN
23	55134	10L1	10/17/2019	8:13	11:30	196	1	196	SALEM	TREE TOOK DOWN SERVICE @ P19 POND ST - REPAIRED SECONDARY BETWEEN P19 AND 19-1 POND ST.	TREE FELL	SALEM
24	55136	12L1	10/17/2019	7:07	9:55	167	12	2,004	ALSTEAD	BLOWN 25K LINE FUSE P1 HILL RD TREE ON PRIMARY & NEUTRAL P8 COOK HILL RD	TREE FELL	CHARLESTOWN
25	55137	14L4	10/17/2019	8:32	9:51	79	1	79	SALEM	RECONNECTED SERVICE WIRES DOWN P39 BROOKDALE RD DUE TO FALLEN TREE	TREE FELL	SALEM
26	55140	12L1	10/17/2019	8:46	11:30	163	1	163	ALSTEAD	BLOWN 6K LINE FUSE P13 OLD SETTLERS RD, CLEARED TREE LIMB P13-3 OLD SETTLERS RD	TREE - BROKEN LIMB	CHARLESTOWN
27	55145	16L1	10/17/2019	9:20	11:45	144	1	144	HANOVER	RECONNECTED SERVICE WIRES AT P104-1 SAUSVILLE RD - DUE TO FALLEN TREE	TREE FELL	LEBANON
28	55147	7L1	10/17/2019	8:51	20:05	674	19	12,806	ENFIELD	MANUALLY OPENED 25K LINE FUSE P20 LOCKEHAVEN RD.DUE TO TREE FELL AND BROKE POLE P2 GRAHAM RD	TREE FELL	LEBANON
29	55148	12L1	10/17/2019	15:25	15:35	10	6	60	LANGDON	MANUALLY OPENED STEP DOWN TRANSFORMER P1 1/2 TORY HILL RD, TREE ON PHASE BETWEEN P3-P4 TORY HILL RD	TREE FELL	CHARLESTOWN
30	55149	12L1	10/17/2019	9:23	17:10	466	1	466	ALSTEAD	BLOWN 6K TRANSFORMER FUSE P14 MCLEAN RD DUE TO TREE LIMB FALLING ON SERVICE	TREE - BROKEN LIMB	CHARLESTOWN
31	55150	1L2	10/17/2019	9:27	12:54	206	1	206	ENFIELD	RECONNECTED SERVICE WIRES AT P124 ROUTE 4A - TREE FELL	TREE FELL	LEBANON
32	55159	13L1	10/17/2019	10:51	15:09	257	33	8,481	SALEM	BLOWN 40K LINE FUSE P120 N MAIN ST, TREE FELL TOOK PRIMARY & SECONDARY DOWN BETWEEN P6-P8 BALL AVE	TREE FELL	SALEM
33	55170	16L1	10/17/2019	12:22	16:21	238	1	238	HANOVER	TRANSFORMER LEG PULLED OUT P8 DOGFORD RD, TREE ON SERVICE P8 DOGFORD RD	TREE FELL	LEBANON
34	55173	13L1	10/17/2019	12:41	13:50	68	1	68	SALEM	BLOWN 25K LINE FUSE P16-1 WHEELER DAM RD - TREE FELL P16-1	TREE FELL	SALEM
35	55175	13L3	10/17/2019	12:45	14:20	94	1	94	SALEM	RECONNECTED SERVICE, P4 CAPTAINS RD, TREE FELL ON SECONDARY	TREE FELL	SALEM
36	55177	7L1	10/17/2019	12:03	14:59	175	18	3,150	CANAAN	BLOWN 40K LINE FUSE P19 PROSPECT HILL / TREE FELL P26-50	TREE FELL	LEBANON
37	55180	12L1	10/17/2019	13:39	8:20	1120	13	14,560	ACWORTH	BLOWN 25K LINE FUSE P37 FORREST RD / TREE FELL BETWEEN P8 - P9 / PRIMARY AND SECONDARY DOWN FROM P8 - P9 - P10	TREE FELL	CHARLESTOWN
38	55185	7L1	10/18/2019	9:47	10:16	29	1	29	CANAAN	DROPPED SERVICE P105 SOUTH ROAD FOR TREE REMOVAL	TREE FELL	LEBANON
39	55187	12L1	10/17/2019	2:29	12:10	580	79	45,820	ACWORTH	MANUALLY OPENED 40K LINE FUSE P1 HILL ROAD - TREE FELL AT P30 HILL RD AND P52 HILL RD	TREE FELL	CHARLESTOWN
40	55189	14L1	10/17/2019	11:17	15:01	223	2	446	PELHAM	BLOWN 15K LINE FUSE P26 HILLCREST - TREE FELL AND WIRE DOWN BETWEEN P17 AND P18 MELODY LN	TREE FELL	SALEM
41	55190	9L3	10/17/2019	10:14	12:55	161	2	322	WINDHAM	BLOWN 25K LINE FUSE P1 INDIAN ROCK RD/ TREE BETWEEN P3 - P4 / REHUNG PRIMARY AND SECONDARY P3 - P4	TREE FELL	SALEM
42	55192	40L3	10/17/2019	17:03	3:55	651	4	2,604	CHARLESTOWN	BLOWN 6K TRANSFORMER FUSE P4 BLAIR HILL RD / LIMB ON WIRE P3 BLAIR HILL RD	TREE - BROKEN LIMB	CHARLESTOWN
43	55194	14L3	10/17/2019	18:49	23:36	286	1	286	WINDHAM	RECONNECTED SERVICE WIRES P16 CASTLE HILL RD - TREE FELL	TREE FELL	SALEM
44	55196	12L1	10/17/2019	3:08	19:40	991	4	3,964	ALSTEAD	BLOWN 10K FUSE P3-50 PORTER RD DUE TO TREE ON SECONDARY P3-50 PORTER RD	TREE FELL	CHARLESTOWN
45	55197	12L1	10/17/2019	19:42	10:15	872	1	872	ALSTEAD	REATTACHED SERVICE P28 AND REPLACED NEUTRAL	TREE FELL	CHARLESTOWN
46	55201	9L3	10/17/2019	0:52	3:50	177	25	4,425	WINDHAM	BLOWN 40K FUSE P1 WOODVUE RD - TREE LIMBS	TREE - BROKEN LIMB	SALEM

Robert Johnson Jr. - NH

From: DTN <EnergyEventIndex@dtm.com>
Sent: Thursday, October 31, 2019 7:03 AM
To: DL NH Londonderry Emergency Dispatch
Subject: Energy Event Index: Threat Level 2



Energy Event Index for ALGONQUIN POWER & UTILITIES CORP

Your forecast administrator: kathleen.kelley@libertyutilities.com

Valid Time: October 31, 2019 7:00 AM EDT

Forecaster: ryan.niemann

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	2	2	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	2	2	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	2	2	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	2	2	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	2	2	1	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	High	High	High	High	High	High	High	High	High
	Northern Lebanon Hanover NH	High	High	High	High	High	High	High	High	High	High
	Northwest Monroe Bath NH	High	High	High	High	High	High	High	High	High	High
	Southern Salem Derry NH	High	High	High	High	High	High	High	High	High	High
	Western Alstead Charlestown NH	High	High	High	High	High	High	High	High	High	High

Energy Event Index Definition

With Leaves (Apr 1 - Oct 31)

EEI	Wind Speed	Wind/Gust
1	< 30 mph	< 35 mph
2	>= 30 mph	>= 35 mph
3	>= 45 mph	>= 50 mph
4	>= 60 mph	>= 65 mph
5	>= 70 mph	>= 75 mph

Confidence Level	
Low	<30% chance the most likely index level remains at that level through the event
Medium	30-60% chance the most likely index level remains at that level through the event
High	>=60% chance the most likely index level remains at that level through the event

*Note: Confidence is NOT a measure of probability of an event occurring; if you have an accompanying forecast discussion, that information can be found there. Confidence is a measure of how likely the forecasted index level will stay at that level from now through the event, or a way to measure the potential for variability in the forecast. So for example, if it is Monday and there are level 2 gusts forecasted on Wednesday with high confidence, and if your customizable threshold for high confidence is set at 60%, it means the following: There is a >=60% chance the most likely forecasted gusts will remain at level 2 with all updates from now through Wednesday.

Date: October 31, 2019
Time: 7:00 AM EDT
Forecaster: Ryan Niemann

Zones (Forecast for next 30 hrs)	SALEM	CHARLESTOWN	LEBANON
Event	GUSTS	GUSTS	GUSTS
Event Begin Time	10/31 1800	10/31 2000	10/31 2000
Event End Time	11/1 1400	11/1 1500	11/1 1600
Event Confidence	70%	70%	70%
Thunderstorm Wind Gusts			
Lightning Intensity			
Storm Direction			
Rain Amount			
Max Sustained Winds	20-30	20-30	20-30
Wind Gust	40-50	40-45	40-45
Temp. Extremes	69/37	66/34	62/533

LIBERTY UTILITIES SERVICE AREA 48 HOUR OUTLOOK:

SALEM: Today, rain continues throughout the day and increases overnight. Rain could be moderate to heavy overnight. Rainfall: 0.40-0.70". Hazard gusts likely during the evening and overnight, with peak wind gusts up to 40-50 mph. Friday, moderate to heavy rain will end during the morning, with drier weather for the afternoon and overnight hours. Additional rainfall: 0.20-0.40". Gusty winds continue Friday morning, which start to calm down after 10am with common gusts of 40-45 mph. Peak gusts may reach 50 mph at times. Dry and hazard-free weather expected Friday night.

Confidence: Confidence is high that no hazards will occur through 6PM 10/31. Confidence is high that EEI-2 gust will occur from 6PM through 2PM Fri. EEI-2/3 gust chance 50%/20%. Confidence is high that at least EEI-2 gusts will occur on Friday. EEI-2 gust chance: 60%. Confidence is medium that rainfall will exceed 1.00" tonight through Friday afternoon. Chance rainfall > 1.00" tonight into Friday: 50%.

CHARLESTOWN: Today, rain continues throughout the day and increases overnight. Rain could be moderate to heavy overnight. Rainfall: 0.40-0.80". Hazard gusts likely this evening, continuing overnight, with peak wind gusts up to 40-45 mph. Friday, moderate to heavy rain will end during the morning, with drier weather for the afternoon and overnight hours. Additional rainfall: 0.30-0.50". Gusty winds continue Friday morning, which start to calm down after 10am with common gusts of 40-45 mph. Dry and hazard-free weather expected Friday night.

Confidence: Confidence is high that no hazards will occur through 8PM 10/31. Confidence is high that EEI-2 gust will occur from 8PM through 3PM Fri. EEI-2/3 gust chance 50%/20%. Confidence is high that at least EEI-2 gusts will occur on Friday. EEI-2 gust chance: 60%. Confidence is medium that rainfall will exceed 1.00" tonight through Friday afternoon. Chance rainfall > 1.00" tonight into Friday: 50%.

LEBANON: Today, rain continues throughout the day and increases overnight. Rain could be moderate to heavy overnight. Rainfall: 0.40-0.80". Hazard gusts likely this evening, continuing overnight, with peak wind gusts up to 40-45 mph. Friday, moderate to heavy rain will end during the morning, with drier weather for the afternoon and overnight hours. Additional rainfall: 0.30-0.50". Gusty winds continue Friday morning, which start to calm down after 12pm with common gusts of 40-45 mph. Dry and hazard-free weather expected Friday night.

Confidence: Confidence is high that no hazards will occur through 8PM 10/31. Confidence is high that EEI-2 gust will occur from 8PM through 4PM Fri. EEI-2/3 gust chance 50%/20%. Confidence is high that at least EEI-2 gusts will occur on Friday. EEI-2 gust chance: 60%. Confidence is medium that rainfall will exceed 1.00" tonight through Friday afternoon. Chance rainfall > 1.00" tonight into Friday: 50%.

LIBERTY UTILITIES SERVICE AREA 3-5 DAY OUTLOOK: Dry and hazard-free weather expected Saturday. Sunday, dry most of the day with scattered midday showers possible. Mixed in snow showers possible across Lebanon during the afternoon period. There may be snow accumulations of a trace for Lebanon. Slightly breezy conditions are forecast to develop during the afternoon lasting through the evening, expected wind gusts 15-20 mph. Monday, dry and hazard free conditions.

Confidence: Confidence is high no hazards will occur Saturday through Monday.

Go to [WeatherSentry® Online](#) for a complete view of the forecast and other business critical weather information.

Please do not respond to this email.

ID	Feeder	Date	From	To	Duration	CI	CMI	Town	Comments	Cause	District	
1	55355	7L1	11/1/2019	0:53	2:55	121	46	5,566	ENFIELD	BLOWN 25K FUSE P76 POTATO RD DUE TO TREE ON PRIMARY BETWEEN P83-P84 POTATO RD	TREE FELL	LEBANON
2	55356	12L1	11/1/2019	1:00	9:55	534	10	5,340	WALPOLE	BLOWN 65K LINE FUSE P1 COLD RIVER RD (2 OF 3) - TREE FELL P9 COLD RIVER RD	TREE FELL	CHARLESTOWN
3	55359	1L2	11/1/2019	1:11	6:05	293	29	8,497	ENFIELD	BLOWN 65K FUSE P196 RTE 4A - TREE FELL - BROKEN PRIMARY BETWEEN P5-P6 KINGS JAMES RD	TREE FELL	LEBANON
4	55361	6L3	11/1/2019	1:15	11:23	608	1	608	HANOVER	BLOWN 15K FUSE P194 LYME RD DUE TO TREE ON P194-3	TREE FELL	LEBANON
5	55364	7L1	11/1/2019	1:23	6:00	276	25	6,900	CANAAN	BLOWN 25K LINE FUSE P88 SOUTH RD/ CLEARED TREE P17-P18 IBEY RD/	TREE FELL	LEBANON
6	55368	7L1	11/1/2019	2:18	13:07	648	1	648	CANAAN	RE-CONNECTED PRIMARY, P4-55 RIVER RD, TREE FELL ON SERVICE	TREE FELL	LEBANON
7	55372	1L2	11/1/2019	2:30	6:30	239	18	4,302	PLAINFIELD	BLOWN 25K LINE FUSE P23 HOPKINS RD/ REMOVED TREE BRANCHES P26-P27 BURR RD/	TREE - BROKEN LIMB	LEBANON
8	55390	6L2	11/1/2019	3:23	4:55	92	1	92	HANOVER	RE-CONNECTED SERVICE P8 W WHEELOCK ST DUE TO FALLEN TREE	TREE FELL	LEBANON
9	55392	16L1	11/1/2019	3:09	10:12	422	46	19,412	HANOVER	BLOWN 40K LINE FUSE P150 HANOVER CENTER RD DUE TO TREE LIMBS ON WIRE	TREE - BROKEN LIMB	LEBANON
10	55395	1L2	11/1/2019	3:35	7:45	249	24	5,976	PLAINFIELD	BLOWN 25K LINE FUSE, P4 CHELLIS RD. TREE FELL AT P11 & P12 CHELLIS RD. MANUALLY OPENED 15K LINE FUSE P8 CHELLIS RD, PLAINFIELD	TREE FELL	LEBANON
11	55400	12L2	11/1/2019	2:54	9:30	395	37	14,615	WALPOLE	BLOWN 50K LINE FUSE P95 WATKINS RD/ BROKEN LIMBS P202 WATKINS/	TREE - BROKEN LIMB	CHARLESTOWN
12	55408	12L2	11/1/2019	2:33	8:20	549	128	70,316	WALPOLE	TRIP SAVERS P46 (2OF3) WENTWORTH RD LOCKED OUT DUE TO FALLEN TREE AT P83.5 OLD KEENE RD. IN ADDITION PHASE TAP PULLED OUT P77 WILSON	TREE FELL	CHARLESTOWN
13	55414	12L1	11/1/2019	2:27	5:51	204	1227	250,308	WALPOLE	PTR 741026 [P100 WHITCOMB RD, WALPOLE] LOCKED OUT. CAUSE: BRANCH ACROSS PHASES P107 RIVER RD, ALSTEAD.	TREE - BROKEN LIMB	CHARLESTOWN
14	55418	7L1	11/1/2019	3:18	8:45	326	69	22,494	CANAAN	BLOWN 25K LINE FUSE P7 BLACKWATER ST / TREE DOWN BETWEEN P12 AND 13.	TREE FELL	LEBANON
15	55422	40L3	11/1/2019	5:05	20:45	939	2	1,878	CHARLESTOWN	BLOWN 10K TRANSFORMER FUSE AT P13 ACWORTH RD/TREE RIPPED SECONDARY FROM TRANSFORMER	TREE FELL	CHARLESTOWN
16	55426	1L2	11/1/2019	5:26	10:18	291	1	291	LEBANON	BLOWN 3K TRANSFORMER FUSE P24-2 DAISY HILL RD TREE ON SECONDARY	TREE FELL	LEBANON
17	55429	7L2	11/1/2019	3:10	7:06	235	75	17,625	ENFIELD	BLOWN 100K STEP DOWN FUSE P1-50 LOCKHAVEN - MULTIPLE LIMBS ALONG LOCKHAVEN	TREE - BROKEN LIMB	LEBANON
18	55444	1L2	11/1/2019	5:57	7:20	82	22	1,804	PLAINFIELD	BLOWN 40K LINE FUSE P1 HIGH ST. DUE TO FALLEN TREE P16 HIGH ST.	TREE FELL	LEBANON
19	55452	14L1	11/1/2019	6:23	9:02	158	7	1,106	PELHAM	BLOWN 25K TRANSFORMER FUSE P12 ATWOOD RD, POLE FIRE MELTED CUTOUT	DEVICE FAILED	SALEM
20	55454	14L1	11/1/2019	6:42	9:02	139	16	2,224	PELHAM	BLOWN TRANSFORMER FUSE P6 MAIN ST DUE TO BRANCH ON WIRES.	TREE - BROKEN LIMB	SALEM
21	55455	12L1	11/1/2019	6:58	10:30	211	12	2,532	WALPOLE	BLOWN 25K LINE FUSE P1 CHESHIRE TPKE/ TREE FELL P8 COLD RIVER	TREE FELL	CHARLESTOWN
22	55459	1L2	11/1/2019	6:58	8:30	91	1	91	PLAINFIELD	TREE FELL AND DAMAGED SERVICE P 287-2 ROUTE 120	TREE FELL	LEBANON
23	55473	16L1	11/1/2019	3:08	10:00	411	86	35,346	HANOVER	BLOWN 40K LINE FUSE P151 HANOVER CENTER RD / TREE LIMB P178-P179 HANOVER CENTER RD	TREE - BROKEN LIMB	LEBANON
24	55477	14L2	11/1/2019	7:28	9:45	136	1	136	PELHAM	REPLACED SERVICE P3 MCGRATH RD, DUE TO FALLEN TREE LIMB	TREE - BROKEN LIMB	SALEM
25	55483	6L3	11/1/2019	8:08	9:25	77	59	4,543	HANOVER	MANUALLY OPENED 25K LINE FUSE P1 RIVER RD TO CLEAR TREE BETWEEN P25 & P26 RIVER RD	TREE FELL	LEBANON
26	55485	7L1	11/1/2019	8:17	10:20	123	1	123	CANAAN	RE-CONNECTED SERVICE WIRE P4-1 FOX-HILL RD DUE TO TREE LIMB	TREE - BROKEN LIMB	LEBANON
27	55490	13L1	11/1/2019	8:19	9:42	82	50	4,100	DERRY	BLOWN 40K LINE FUSE P9 GOODHUE RD, BRANCH BETWEEN P14-P15 GOODHUE RD	TREE - BROKEN LIMB	SALEM
28	55493	7L2	11/1/2019	8:24	16:50	505	7	3,535	ENFIELD	BLOWN 25K LINE FUSE P52 MOOSE-MOUNTAIN RD DUE TO TREE FALLING BETWEEN P64-65 MOOSE-MOUNTAIN RD	TREE FELL	LEBANON
29	55495	12L1	11/1/2019	7:27	16:15	527	5	2,635	WALPOLE	BLOWN FUSE P27 VALLEY RD DUE TO FALLEN TREE BETWEEN P13 - P12 HAYES RD WALPOLE	TREE FELL	CHARLESTOWN
30	55500	7L1	11/1/2019	6:10	9:38	208	25	5,200	CANAAN	BLOWN FUSE P88 SOUTH RD DUE TO FALLEN TREE AT P12 AND P13 IBEY RD	TREE FELL	LEBANON
31	55506	12L2	11/1/2019	3:11	12:05	533	16	8,528	WALPOLE	BLOWN 40K FUSE P21 PROSPECT HILL - TREE FELL P16 PROSPECT HILL RD	TREE FELL	CHARLESTOWN
32	55508	12L1	11/1/2019	7:12	13:00	347	15	5,205	ALSTEAD	BLOWN 25K LINE FUSE P211 FOREST RD/ TREE LIMB FELL CAUSING DAMAGE AT P23, P24, P25. REMOVED TREE P28 ROGERS RD	TREE FELL	CHARLESTOWN
33	55511	12L2	11/1/2019	2:54	12:05	435	27	11,755	WALPOLE	BLOWN 15K FUSES (2 OF 3) P202 COUNTY RD, MANUALLY OPENED 3RD PHASE - TREE FELL P1 CREHORE RD	TREE FELL	CHARLESTOWN
34	55513	39L2	11/1/2019	9:13	18:15	541	1	541	LEBANON	P107-2 POVERTY LN /MANUALLY DE-ENERGIZED TO REMOVED TREE OFF WIRES AND RECONNECT WIRES	TREE FELL	LEBANON
35	55516	12L1	11/1/2019	8:20	11:20	179	10	1,790	ALSTEAD	BLOWN 15K LINE FUSE P5 HOMESTEAD RD, BRANCH BETWEEN P5-P6 HOMESTEAD RD	TREE - BROKEN LIMB	CHARLESTOWN
36	55519	12L1	11/1/2019	9:50	21:00	669	4	2,676	ALSTEAD	BLOWN 25K LINE FUSE P98 FOREST RD / TREE FELL AND CAUSE PRIMARY DOWN BETWEEN P1 AND P2	TREE FELL	CHARLESTOWN
37	55526	6L2	11/1/2019	10:21	19:39	557	2	1,114	HANOVER	RE-HUNG SERVICE WIRES P9 W WHEELOCK ST DUE TO FALLEN TREE	TREE FELL	LEBANON
38	55531	7L1	11/1/2019	10:21	13:45	204	21	4,284	CANAAN	BLOWN 25K LINE FUSE P43 SAWYER HILL RD/ TREE AT P44-P43 SAYER HILL RD/	TREE - BROKEN LIMB	LEBANON
39	55541	12L2	11/1/2019	10:40	11:00	19	40	760	WALPOLE	BLOWN 50K FUSE (1 OF 3) P95 PROSPECT HILL(WATKINS HILL) - TREE BRANCH P136 WATKINS HILL	TREE - BROKEN LIMB	CHARLESTOWN
40	55545	15H1	11/1/2019	11:02	14:05	182	32	5,824	MONROE	BLOWN 40K LINE FUSE P85 ROUTE-135 DUE TO WIRES DOWN BURNING P4 1/2 ROUTE 135	DEVICE FAILED	LEBANON
41	55547	9L3	11/1/2019	11:10	12:00	49	5	245	SALEM	BLOWN TRANSFORMER FUSE P3 WEBSTER ST, TREE ON LINE BETWEEN P2 - P3 WEBSTER ST	TREE FELL	SALEM
42	55550	1L1	11/1/2019	1:54	20:40	1125	2	2,250	LEBANON	BLOWN 3K LINE FUSE P279 STEVEN RD / TREE ON LINE P41 STEVENS RD	TREE FELL	LEBANON
43	55557	12L1	11/1/2019	6:45	13:50	425	33	14,025	ALSTEAD	BLOWN 25K LINE FUSE P19 NORTH RD / P19 & P22 OLD SETTLERS RD TREE DOWN PRIMARY DOWN	TREE FELL	CHARLESTOWN
44	55561	1L2	11/1/2019	8:37	15:15	397	2	794	PLAINFIELD	BLOWN 3K LINE FUSE P19-84 CHELLIS RD, WIRE FELL OUT OF INSULATOR-REPAIRED PRIMARY	DEVICE FAILED	LEBANON
45	55566	7L1	11/1/2019	11:11	13:30	138	25	3,450	CANAAN	BLOWN 25K LINE FUSE P88 SOUTH RD, TREE TOOK DOWN PRIMARY & NEUTRAL BETWEEN P26-P27 IBEY RD	TREE FELL	LEBANON
46	55567	1L2	11/1/2019	12:06	15:15	188	1	188	PLAINFIELD	PRIMARY CAME OUT OF CONNECTOR P21 CAMP RD	DEVICE FAILED	LEBANON
47	55569	12L1	11/1/2019	19:55	20:51	56	21	1,176	ALSTEAD	P94 PRATT RD BLOWN 40K LINE FUSE /TREE ON PRIM AND SEC AT P4 PRATT RD	TREE FELL	CHARLESTOWN
48	55572	7L1	11/1/2019	11:36	13:10	94	76	7,144	ENFIELD	MANUALLY DE-ENERGIZED P1 WEST FARMS RD / TRANSFERED WIRES P2 W FARMS RD/ POLE REPLACED	TREE FELL	LEBANON
49	55574	12L1	11/1/2019	6:14	14:37	502	12	6,024	ACWORTH	BLOWN STEPDOWN FUSE P4 BALL RD - TREE FELL P7 BALL RD	TREE FELL	CHARLESTOWN
50	55577	12L1	11/1/2019	12:32	17:15	282	2	564	WALPOLE	BLOWN 15K LINE FUSE P13-84 DUE TO PRIMARY AND NEUTRAL SLAPPING TOGETHER	DEVICE FAILED	CHARLESTOWN

51	55579	12L1	11/1/2019	12:51	19:29	397	1	397	ALSTEAD	DISCONNECTED SERVICE WIRES TO MAKE REPAIRS FROM FALLEN TREE AT P8-2 PINE CLIFF RD	TREE FELL	CHARLESTOWN
52	55593	7L1	11/1/2019	9:09	17:59	529	2	1,058	CANAAN	MANUALLY OPENED FUSE P16 LAKE PINE LN/ TREE P4 W FARMS RD	TREE FELL	LEBANON
53	55596	12L1	11/1/2019	13:09	14:35	85	18	1,530	ALSTEAD	BLOWN 15K LINE FUSE P17 GUILSIMINE RD DUE TO FALLEN TREE BETWEEN P1 AND P1 1/2 / PRIMARY DOWN SHADOWLAND RD	TREE FELL	CHARLESTOWN
54	55607	1L2	11/1/2019	14:10	15:45	94	2	188	LEBANON	BLOWN 15K LINE FUSE P16 CROYDON TPKE TREE DOWN BETWEEN P15/5 & P15/6	TREE FELL	LEBANON
55	55608	10L2	11/1/2019	14:15	15:24	68	1	68	SALEM	REPLACED BURNED TAP P49 1/2 S BROADWAY.	DEVICE FAILED	SALEM
56	55616	12L1	11/1/2019	7:33	15:00	446	8	3,568	ACWORTH	BLOWN 25K LINE FUSE P27 DERRY HILL - PRIMARY ON NEUTRAL ON DERRY HILL	DEVICE FAILED	CHARLESTOWN
57	55625	12L1	11/1/2019	13:42	16:30	167	11	1,837	ALSTEAD	Blown fuse P14 Pratt Rd. due to fallen tree limb.	TREE - BROKEN LIMB	CHARLESTOWN
58	55628	6L3	11/1/2019	14:35	16:40	124	4	496	HANOVER	BLOWN 10K TRANSFORMER FUSE P13 LYME RD DUE TO VEGETATION CONTACT	TREE GROWTH	LEBANON
59	55636	12L1	11/1/2019	18:31	19:40	68	22	1,496	ALSTEAD	BLOWN FUSE P22 OLD SETTLERS RD DUE TO FALLEN TREE	TREE FELL	CHARLESTOWN
60	55347	12L1	10/31/2019	22:01	2:00	238	79	18,802	ACWORTH	MANUALLY OPENED 40K FUSE P1 HILL RD, DUE TO TREE DOWN P6 HILL RD.	TREE FELL	CHARLESTOWN
61	55523	40L3	10/31/2019	23:41	2:50	188	2	376	CHARLESTOWN	BLOWN 10K TRANSFORMER FUSE P5 MEADOW RD DUE TO LARGE TREE ON WIRE P6 MEADOW RD	TREE FELL	CHARLESTOWN
62	55351	12L1	10/31/2019	22:04	0:30	145	21	3,045	ALSTEAD	BLOWN 10K LINE FUSE POLE 22 OLD SETTLERS RD DUE TO TREE ON WIRE NEWELL- POND RD	TREE FELL	CHARLESTOWN
63	55353	7L1	10/31/2019	23:58	4:24	266	21	5,586	ENFIELD	BLOWN 25K LINE P43-50 SAWYER HILL DUE TO TREE ON WIRE SAWYER HILL RD	TREE FELL	LEBANON

Robert Johnson Jr. - NH

From: DTN <EnergyEventIndex@dtn.com>
Sent: Sunday, December 1, 2019 1:02 PM
To: DL NH Londonderry Emergency Dispatch
Subject: Energy Event Index: Threat Level 4



Energy Event Index for ALGONQUIN POWER & UTILITIES CORP

Your forecast administrator: kathleen.kelley@libertyutilities.com

Valid Time: December 1, 2019 1:00 PM EST

Forecaster: gregory.loulis

Parameter	Region	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10
Wind Speed	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Wind/Gust	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Snow	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	3	3	3	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	4	4	4	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	4	4	4	1	1	1	1	1	1	1
Ice	Montauk NY	1	1	1	1	1	1	1	1	1	1
	Northern Lebanon Hanover NH	1	1	1	1	1	1	1	1	1	1
	Northwest Monroe Bath NH	1	1	1	1	1	1	1	1	1	1
	Southern Salem Derry NH	1	1	1	1	1	1	1	1	1	1
	Western Alstead Charlestown NH	1	1	1	1	1	1	1	1	1	1
Confidence Level	Montauk NY	High	High	High	High	High	High	High	Medium	Medium	Medium
	Northern Lebanon Hanover NH	High	High	High	High	High	High	High	Medium	Medium	Medium
	Northwest Monroe Bath NH	High	High	High	High	High	High	High	Medium	Medium	Medium
	Southern Salem Derry NH	High	High	High	High	High	High	High	Medium	Medium	Medium
	Western Alstead Charlestown NH	High	High	High	High	High	High	High	Medium	Medium	Medium

Energy Event Index Definition

No Leaves (Nov 1 - Mar 31)

EEI	Wind Speed	Wind/Gust	Snow	Ice
1	< 40 mph	< 45 mph	< 6 in.	< 1/10 in.
2	>= 40 mph	>= 45 mph	>= 6 in.	>= 1/10 in.
3	>= 50 mph	>= 55 mph	>= 8 in.	>= 3/8 in.
4	>= 60 mph	>= 70 mph	>= 12 in.	>= 1/2 in.
5	>= 70 mph	>= 85 mph	>= 24 in.	>= 1 in.

Confidence Level	
Low	<30% chance the most likely index level remains at that level through the event
Medium	30-60% chance the most likely index level remains at that level through the event
High	>=60% chance the most likely index level remains at that level through the event

*Note: Confidence is NOT a measure of probability of an event occurring; if you have an accompanying forecast discussion, that information can be found there. Confidence is a measure of how likely the forecasted index level will stay at that level from now through the event, or a way to measure the potential for variability in the forecast. So for example, if it is Monday and there are level 2 gusts forecasted on Wednesday with high confidence, and if your customizable threshold for high confidence is set at 60%, it means the following: There is a >=60% chance the most likely forecasted gusts will remain at level 2 with all updates from now through Wednesday.

Date: December 1, 2019

Time: 1:00 PM EST

Forecaster: G Loulis

Zones (Forecast for next 30 hrs)	SALEM	CHARLESTOWN	LEBANON
Event	SNOW	SNOW	SNOW
Event Begin Time	4PM SUN	2PM SUN	4PM SUN
Event End Time	2PM TUE	12PM TUE	1PM TUE

Event Confidence	HIGH	HIGH	HIGH
Thunderstorm Wind Gusts			
Lightning Intensity			
Storm Direction			
Rain Amount			
Snow Amount	8-15"	10-15"	7-14"
Snow Character	Normal/Wet	Normal/Wet	Normal/Wet
Ice Amount			
Max Sustained Winds			
Wind Gust			
Temp. Extremes	36/29	30/23	32/25

LIBERTY UTILITIES SERVICE AREA 48 HOUR OUTLOOK:

SALEM: Snow will start this afternoon and continue through early Tue afternoon (see table above). Periods of heaviest snow (rates up to 1 inch per hour): 7pm Sun-1am Mon and 9pm Mon-4am Tue. Sleet and freezing rain could mix with snow from about 11am-4pm Mon but ice amounts will be a trace to none. Snow totals: See table above. Best chance for wet snow is from 1am Mon to 7am Tue, with about 5-10 inches of the total snow being wet snow. Winds during this event: Sustained at 8-20 mph, with common gusts of 20-30 mph. Peak gusts to 35 mph possible between 7am Mon-1pm Tue.

Confidence: Confidence is high that hazard-level snow will occur. EEI-2/3/4 snow chances: 100%/90%/50%. Confidence is medium with the high end of the snow totals, which may be lowered a couple inches. Confidence is high that winds stay EEI-1 for this event.

CHARLESTOWN: Snow will start this afternoon and continue through Tue morning. Periods of heaviest snow (rates up to 1 inch per hour): 6pm Sun-10am Mon and also 5pm-11pm Mon. Snow totals: See table above. Best chance for wet snow is from 4am-12pm Tue, with about 1-3 inches of the total snow being wet snow. Winds during this event: Sustained at 5-15 mph with gusts of 20-30 mph.

Confidence: Confidence is high that hazard-level snow will occur. EEI-2/3/4 chances: 100%/90%/60%. Confidence is high that winds stay EEI-1 for this event.

LEBANON: Snow will start this afternoon and continue through mid-day Tuesday. Periods of heaviest snow (rates up to 1 inch per hour): 9pm Sun-4am Mon and also 6pm-10pm Mon. Snow totals: See table above. Best chance for wet snow is from 4am-12pm Tue, with about 1-2 inches of the total snow being wet snow. Winds during this event: Sustained at 5-15 mph with gusts of 20-30 mph.

Confidence: Confidence is high that at least EEI-2 snow will occur, but only medium for EEI-3 and EEI-4 snow occurring (amounts could stay EEI-2). EEI-2/3/4 chances: 80%/50%/30%. Confidence is high that winds stay EEI-1 for this event.

LIBERTY UTILITIES SERVICE AREA 3-5 DAY OUTLOOK: Tuesday morning/afternoon, see above. Dry weather returns to all areas for Tuesday night, continuing into Wednesday. Thursday will be dry for Salem, with some isolated snow showers possible across Lebanon and Charleston in the afternoon. Snowfall: less than 1/2".

Confidence: Confidence for Tuesday morning/afternoon, see above. Confidence is high no hazards will occur for Tuesday night and into Thursday.

Go to [WeatherSentry® Online](#) for a complete view of the forecast and other business critical weather information.

Please do not respond to this email.

STORM PLANNING REPORT

DATE: Monday, December 02, 2019
TIME: 10:00 AM

Snow Storm Ezekiel

	<u>Lebanon</u>	<u>Salem</u>	<u>Charlestown</u>	<u>Comments</u>
Weather Forecast	Snow will continue through midday Tues. Heaviest 5pm to 10pm. Chance of wet snow between 4am and 12pm Tues. - 1 to 2" of wet snow. Totals 6 to 12"	Snow will continue through midday Tues. Heaviest 9pm to 5am. Chance of wet snow between 9am and 3pm Mon. Trace amounts of ice. 5 – 10" of wet snow worst case – 7-14" total snow fall.	Snow will continue through midday Tues. Heaviest 4pm to 11pm. Chance of wet snow between 4am and 12pm Tues. - 1 to 3" of wet snow. Totals 10 to 15"	
Anticipated EERP Event Type	Type 3	Type 3	Type 3	
Resources				Totals
Internal Crews	6 crews 3 tshooter	4 crews 2 tshooter	See Lebanon	12.5
Contractor Crews	2	8	4	14
Total Line Crews available	10 + 3 tshooter	12 + 2 tshooter	2	26.5
Tree Crews	12	5	See Lebanon	17
Wires Down	3	9 day 5 night		17
Other Support	4	8 mon-9 tues-9-wed		30
LU Storm Room Status	Salem open 12/1 – 7:00 PM			
LU Municipal Room Status	Salem open 12/2 – 7:00 AM			
Customer Outage Count	0	1151	12	1163
Estimated Date/Time for Total Restoration		All customers restored at this time	All customers restored at this time	1111 customers in Salem due to MVA on 12/1
Planned Storm Conference Calls	11/29 – 2:00 pm preplanning call 11/30 – 10:00 am 12/01 – 10:00 am 12/02 – 10:00 am			
Notifications with Regulators. NHPUC/NH OEM				
EII Event Index & Storm Accounting	Description	GP Expense Job	GP Capital Job	GP VM Job
	EEI – 3	STORM – EXP-1911		STORM-VEG-1911