

# Major Events

## RESPONSE REPORT



**Issue:** April 4<sup>th</sup> to 6<sup>th</sup>, 2018 §2.1.4.2 Major Events Response Report

**Date Issued:** **Tuesday, August-21-2018**

**Prepared for:** Publication and Electronic Filing with the Ontario Energy Board (OEB)

### Summary

A storm system, from April 4<sup>th</sup> to 6<sup>th</sup>, 2018, with freezing rain and high wind gusts from 80 to 100 km/h hit the province, caused widespread customer interruptions in large part of southern Ontario: from the West in Lambton-Kent right out to the East in Brockville and from the South in Niagara areas goes north into Muskokas. Ice Accretion of approximate 5 to 6 mm was also reported in the areas from Huntsville through Ottawa. This event impacted ~236,000 (or about 17%) of Hydro One customers.

This is the first Major Event in 2018.

### 1. Prior to the Major Event

- 1) Did the distributor have any prior warning that the Major Event would occur?

***Yes, prior warning was given by the weather provider of possible Thunder Storms with heavy rain 20–30 mm and wind gusts to 70-80 km/h in the Southwestern Ontario and the Niagara areas. A Significant Event Notification System (SENS) was subsequently sent out by the Distribution Operations Management Centre (DOMC) on Tuesday April 3<sup>rd</sup>, advising of a pending significant weather.***

- 2) If the distributor did have prior warning, did the distributor arrange to have extra employees on duty or on standby prior to the Major Event beginning? If so, please give a brief description of arrangements.

***DOMC developed a Storm Restoration Contingency Staffing plan on Wednesday April 4<sup>th</sup> and Thursday April 5<sup>th</sup>. Additional staff was added to assist for all shifts.***

- 3) If the distributor did have prior warning, did the distributor issue any media announcements to the public warning of possible outages resulting from the pending Major Event? If so, through what channels?

***No media announcement was issued. Notifications of a pending significant weather were posted and updated regularly on the Customer Outage map, which began on Wednesday April 4<sup>th</sup>, 2018 at 9:32 AM.***

- 4) Did the distributor train its staff on the response plans for a Major Event? If so, please give a brief description of the training process.

***Yes, the response plan for a Major Event is reviewed once a year with the Distribution dispatchers. The work instruction for storm management is posted on the DOMC internal website for quick reference during storm events. In addition, a Storm Team visits various operation centers throughout the year***

**to go over response plans for major events, simulate past major events to gain experience and implement best practices.**

- 5) Did the distributor have third party mutual assistance agreements in place prior to the Major Event? If so, who were the third parties (i.e., other distributors, private contractors)?

**Hydro One’s response to the Major Event consisted of regular staff and staff from Hydro One’s Hiring Hall. Although the Company has mutual assistance agreements with other local distribution companies (LDCs) and contractors throughout the Province, those other parties were not called upon.**

**2. During the Major Event**

- 1) Please explain why this event was considered by the distributor to be a Major Event.

**Hydro One categorizes a Major Event as one that impacts 10 per cent or more of its customers. This event impacted approximately 236,000 customers, or about 17 per cent.**

- 2) Was the IEEE Standard 1366 used to identify the scope of the Major Event? If not, why not?

**No. Hydro One used the fixed percentage method to identify the scope of a Major Event. Hydro One categorizes a Major Event as one that impacts 10 per cent or more of its customers. The OEB provides guidance to utilities with three different methods to identifying a Major Event. The fixed percentage method is the one that Hydro One has selected. Hydro One does not use the IEEE1366 method because Hydro One’s interruption data does not follow log-normal distribution as required by the IEEE1366 method.**

- 3) Please identify the Cause of Interruption for the Major Event as per the table in section 2.1.4.2.5.

Date Range:	2018-04-04 to 2018-04-06		
PRIMARY CAUSE CODE	Number of Interruptions	Customer Interruptions	Customer Hours of Interruption
<b>0. Unknown/Other</b> Customer interruptions with no apparent cause that contributed to the outage.	41	17809	60551.4
<b>1. Schedule Outage</b> Customer interruptions due to the disconnection at a selected time for the purpose of construction or preventive maintenance.	33	2185	3689.1
<b>2. Loss of Supply</b> Customer interruptions due to problems associated with assets owned and/or operated by another party, and/or in the bulk electricity supply system. For this purpose, the bulk electricity supply system is distinguished from the distributor’s system based on ownership demarcation.	4	4319	4592.8
<b>3. Tree Contacts</b> Customer interruptions caused by faults resulting from tree contact with energized circuits.	827	120680	851525.3

<b>4. Lightning</b> Customer interruptions due to lightning striking the distribution system, resulting in an insulation breakdown and/or flash-overs.	0	0	0.0
<b>5. Defective Equipment</b> Customer interruptions resulting from distributor equipment failures due to deterioration from age, incorrect maintenance, or imminent failures detected by maintenance.	421	88148	426429.7
<b>6. Adverse Weather</b> Customer interruptions resulting from rain, ice storms, snow, winds, extreme temperatures, freezing rain, frost, or other extreme weather conditions (exclusive of Code 3 and Code 4 events).	0	0	0.0
<b>7. Adverse Environment</b> Customer interruptions due to distributor equipment being subject to abnormal environments, such as salt spray, industrial contamination, humidity, corrosion, vibration, fire, or flowing.	0	0	0.0
<b>8. Human Element</b> Customer interruptions due to the interface of distributor staff with the distribution system.	3	926	196.3
<b>9. Foreign Interference</b> Customer interruptions beyond the control of the distributor, such as those caused by animals, vehicles, dig-ins, vandalism, sabotage, and foreign objects.	15	1895	3140.4
<b>Total</b>	<b>1344</b>	<b>235962</b>	<b>1350125.0</b>

**Note: Majority of the interruptions from this Major Event are due to the huge impact of this large storm. The usage of the above cause codes add the level of granularity needed for Hydro One to take corresponding actions only.**

- 4) Were there any declarations by government authorities, regulators or the grid operator of an emergency state of operation in relation to the Major Event?

**A level 2 emergency event for Distribution was declared to activate the emergency response organization, including the establishment of the Incident Command Center.**

- 5) When did the Major Event begin (date and time)?

**The Level 1 emergency was declared at 10:43:29 AM on April 4<sup>th</sup>, 2018.**

- 6) What percentage of on-call distributor staff was available at the start of the Major Event and utilized during the Major Event?

**Calling for additional staff were made in advance for the distribution regions. However, the actual number of staff available during the Major Event was not recorded.**

- 7) Did the distributor issue any estimated times of restoration (ETR) to the public during the Major Event? If so, through what channels?

**Yes, Hydro One provided ETR through the following channels: "Auto Dialer Notification" tool, "Outage Website" map, App and "Outage Alerts" for those customers who had signed up for the notification.**

- 8) If the distributor did issue ETRs, at what date and time did the distributor issue its first ETR to the public?

**On Wednesday April 4<sup>th</sup> at 9:42PM.**

- 9) Did the distributor issue any updated ETRs to the public? If so, how many and at what dates and times were they issued?

**Yes, there were four additional updates: Thursday April 5<sup>th</sup> at 11:10 AM, Thursday April 5<sup>th</sup> at 4:05 PM, Thursday April 5<sup>th</sup> at 8:53 PM and a final one on Friday April 6<sup>th</sup> at 10:42 AM.**

- 10) Did the distributor inform customers about the options for contacting the distributor to receive more details about outage/restoration efforts? If so, please describe how this was achieved.

**Yes, the media notifications included the instruction below as well as a phone number for customers to call into Hydro One's Customer Care Centre. In addition, contact information was also included on the Hydro One's outage map website, media releases and social media posts.**

For up-to-date power interruption information related to [Hydro One's Distribution System](#), please click on the following link, [Power Outage Viewer](#), or download the HydroOne Mobile App.

- 11) Did the distributor issue press releases, hold press conferences or send information to customers through social media notifications? If so, how many times did the distributor issue press releases?

**Yes, there were two press releases. One was sent on April 4<sup>th</sup> and the other was sent on April 5<sup>th</sup>. Social media was also used. Details are available in the appendix below.**

- 12) What percentage of customer calls were dealt with by the distributor's IVR system (if available) versus a live representative?

**65.18% IVR, 26.4% CSR**

- 13) Did the distributor provide information about the Major Event on its website? If so, how many times during the Major Event was the website updated?

**Yes, the website was updated in total of 5 times.**

- 14) Was there any point in time when the website was inaccessible? If so, what percentage of the total outage time was the website inaccessible?

**No.**

- 15) How many customers were interrupted during the Major Event? What percentage of the distributor's total customer base did the interrupted customers represent?

**235,962 customers, representing ~17% of Hydro One’s total customer base, were interrupted during the Major Event.**

16) How many hours did it take to restore 90% of the customers who were interrupted?

**At 12:46 PM on April 5th, the Greely DS F3 feeder was restored, energizing 436 customers. This restoration was the 90% threshold, after 36 hours and 46 minutes from the onset of the event.**

17) Was any distributed generation used to supply load during the Major Event?

**No.**

18) Were there any outages associated with Loss of Supply during the Major Event? If so, please report on the duration and frequency of Loss of Supply outages.

**Date Range: 2018-04-04 to 2018-04-06**

<b>PRIMARY CAUSE CODE</b>	<b>Number of Interruptions</b>	<b>Customer Interruptions</b>	<b>Customer Hours of Interruption</b>
<b>2. Loss of Supply</b>	4	4319	4592.8

Customer interruptions due to problems associated with assets owned and/or operated by another party, and/or in the bulk electricity supply system. For this purpose, the bulk electricity supply system is distinguished from the distributor’s system based on ownership demarcation.

19) In responding to the Major Event, did the distributor utilize assistance through a third party mutual assistance agreement?

**No.**

20) Did the distributor run out of any needed equipment or materials during the Major Event? If so, please describe the shortages.

**No equipment or materials ran out during the event.**

**3. After the Major Event**

1) What steps, if any, are being taken to be prepared for or mitigate such Major Events in the future (i.e., staff training, process improvements, system upgrades)?

**A pilot project (TWC Outage Prediction) had begun in October 2017. This web-based application was used to forecast weather and predict potential impact on the distribution system.**

**Hydro One has also implemented a banner on the external Outage Map to provide customers with a high level overview of the major event that is taking place and the up-to-date information.**

- 2) What lessons did the distributor learn in responding to the Major Event that will be useful in responding to the next Major Event?

***Hydro One proactively prepare for each of these Major Events.***

- 3) Did the distributor survey its customers after the Major Event to determine the customers' opinions of how effective the distributor was in responding?

***Yes, Hydro One surveys customers four times a year for Major Event.***

**APPENDIX**

**During the Major Event - Supporting Information**







11) Did the distributor issue press releases, hold press conferences or send information to customers through social media notifications? If so, how many times did the distributor issue press releases, hold press conferences or send information to customers through social media notifications? What was the general content of this information?







**Links to press releases:**





<http://hydroone.mediaroom.com/2018-04-04-Fierce-winds-cause-outages-across-Ontario-for-Hydro-One-customers>

<http://hydroone.mediaroom.com/2018-04-05-Hydro-One-restores-power-to-more-than-215-000-customers-10-000-remain-without-power>

**Social media**

Twitter		
<p><b>April 4</b></p> <p> <b>Hydro One</b> @HydroOne</p> <p>High winds up to 100 km/h are impacting southern Ontario. Crews are responding to outages affecting over 5,100 customers across the province, and all available staff are on standby. Report outages or hazards to 1-800-434-1235 and visit our map for updates: <a href="http://ow.ly/qPET30jjwEz">ow.ly/qPET30jjwEz</a></p>  <p>12:09 PM - 4 Apr 2018</p>	<p><b>April 4</b></p> <p> <b>Hydro One</b> @HydroOne</p> <p>High winds are causing damage and power outages across Ontario. Crews are working to assess the damage and make repairs as quickly as possible. Visit our outage map for continued updates: <a href="http://ow.ly/qPET30jjwEz">ow.ly/qPET30jjwEz</a>.</p> <p> <b>Anthony Farnell</b> @AnthonyFarnell The number of @HydroOne customers without power has topped 80,000 this afternoon and climbing. Winds and snow subside this evening. #onstorm</p> <p>4:10 PM - 4 Apr 2018</p>	<p><b>April 4</b></p> <p> <b>Hydro One</b> @HydroOne</p> <p>Crews have restored over 100,000 customers after today's windstorm, with 60,000 still without power. High winds could continue to cause outages overnight. Please visit our outage map for the latest information. <a href="http://ow.ly/8XiN30jk6WF">ow.ly/8XiN30jk6WF</a></p>  <p>9:14 PM - 4 Apr 2018</p>

<p><b>April 5</b></p> <p> <b>Hydro One</b> @HydroOne</p> <p>About 20,600 customers are without power as crews continue restoration efforts. Since the start of the storm, our crews have restored power to more than 175,000 customers. Please report any outages or hazards to us at 1-800-434-1235 #ONstorm</p>  <p>11:50 AM - 5 Apr 2018</p>	<p><b>April 5</b></p> <p> <b>Hydro One</b> @HydroOne</p> <p>Crews have made tremendous progress restoring power to more than 215,000 customers. All crews have been mobilized to the hardest hit areas, and some customers should be prepared to be without power overnight. Visit our map for local updates: <a href="http://ow.ly/VMKw30jlqLM">ow.ly/VMKw30jlqLM</a></p>  <p>9:12 PM - 5 Apr 2018</p>	<p><b>April 6</b></p> <p> <b>Hydro One</b> @HydroOne</p> <p>That's a wrap! Today our crews are restoring power to the remaining customers affected by this week's wind storm. While we work to get every last light back on, learn how you can be prepared for any storm: <a href="http://ow.ly/gROg30jmnhM">ow.ly/gROg30jmnhM</a></p>  <p>5:41 PM - 6 Apr 2018</p>
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<p><b>Facebook</b></p>	
<p><b>April 4</b></p> <p> <b>Hydro One</b> April 4 · 🌐</p> <p>Over 75,000 customers across the province are without power due to high winds of up to 100 km/h in some areas. Our crews are working to assess the damage and make repairs as quickly as possible. Additional crews are being deployed to provide support in the most affected areas. Visit our map for continued updates <a href="http://ow.ly/qPET30jwEz">http://ow.ly/qPET30jwEz</a> and report outages or hazards to 1-800-434-1235.</p> 	<p><b>April 5</b></p> <p> <b>Hydro One</b> Published by Alicia Sayers [?] · April 5 · 🌐</p> <p>We excel at power restoration during storms. The wind storm brought down trees and poles, knocking out power to more than 225,000 customers. Bill, a Utility Trades Supervisor, is in Brighton with an update of what crews have faced in the area so far. Our crews will continue restoration efforts until all of our customers have their lights back on. Share your photos from the storm in the comments below!</p>  <p>Hydro One Crews Restoring Power After Severe Storm 00:28</p>

**Instagram**



April 5



hydrooneofficial

hydrooneofficial We're at it again! Our crews are hard at work restoring power to customers after a severe storm knocked out power in areas across the province. Our crews have come across damage such as downed trees and power lines and are making repairs as quickly as possible. Report any outages or hazards to 1-800-434-1235 #Onstorm

hydrooneofficial .  
#storm #stormyweather #damage #hazards #mothernature #wind #poweroutage #hydroone #utility #utilityworker #lines #lineworker #inthefield #field #inlife #arlife #crews #team #ontario #weather #shareyourweather  
cutfirst84 Stay safe guys !!

489 likes  
APR 5