

Major Events

RESPONSE REPORT



Issue: October 15^h to 16th, 2017 §2.1.4.2 Major Events Response Report

Date Issued: April 18th, 2018

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

Summary

A severe thunderstorm with high winds between 60 and 80 km/h, from October 15th to 16th, 2017, blew from the west to the east in southern Ontario, with wind gusts up to 100km/h in some locations. The hardest hit zones were 1, 2, 3A, 3B and 4. These events impacted ~141,500 (or about 10.2%) of Hydro One's customers.

This is the 6th Major Event in 2017.

1. Prior to the Major Event

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

On October 14th, 2017, warnings were issued with regarding to a cold front approaching, which would bring potential thunderstorms and high winds. At 2:21 pm, a Transmission & Distribution Significant Event Notification System (SENS) was issued, advising of potential thunderstorms and high winds across South/Central Ontario.

- 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.

Yes. Field staff was kept apprised of the approaching high wind event. Field crews were placed on alert, and canvassing of crew availability was also completed. Additional Dispatcher staff was also called into the Distribution Operations Management Centre (DOMC).

- 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?

Yes. Banner notifications were uploaded to the website's outage map and IVR information was made available to incoming calls, advising of the outages in progress.

- 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 141,500 (or about 10.2%) of Hydro One’s customers.

- 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:	2017-03-08 to 2017-03-09		
PRIMARY CAUSE CODE	Number of Interruptions	Customer Interruptions	Customer Hours of Interruption
0. Unknown/Other Customer interruptions with no apparent cause that contributed to the outage.	50	3849	24954.2
1. Schedule Outage Customer interruptions due to the disconnection at a selected time for the purpose of construction or preventive maintenance.	36	10057	21789.3
2. Loss of Supply 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.	5	24279	43496.1
3. Tree Contacts Customer interruptions caused by faults resulting from tree contact with energized circuits.	592	69600	519626.0
4. Lightning Customer interruptions due to lightning striking the distribution system, resulting in an insulation breakdown and/or flash-overs.	0	0	0.0

5. Defective Equipment	241	33188	174460.3
Customer interruptions resulting from distributor equipment failures due to deterioration from age, incorrect maintenance, or imminent failures detected by maintenance.			
6. Adverse Weather	0	0	0.0
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).			
7. Adverse Environment	0	0	0.0
Customer interruptions due to distributor equipment being subject to abnormal environments, such as salt spray, industrial contamination, humidity, corrosion, vibration, fire, or flowing.			
8. Human Element	4	397	1139.0
Customer interruptions due to the interface of distributor staff with the distribution system.			
9. Foreign Interference	24	128	361.4
Customer interruptions beyond the control of the distributor, such as those caused by animals, vehicles, dig-ins, vandalism, sabotage, and foreign objects.			
Total	952	141498	785826.4

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?

No.

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

The Level 1 emergency was declared at 2:38 pm on October 15th, 2017.

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

100% of on-call distributor staff was available and utilized.

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

Yes. ETR notifications were issued to the public through updates via Significant Event Notification System, Proactive Automated ETR notification and social media channels. ETRs were also issued through an auto-dialer, on the Company's Storm Centre Outage website map, phone application and media outlets.

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

The first ETR's were issued to the public on October 16th at 12:30 pm.

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

The ETR was updated throughout the storm. The Automated ETR systems (iNotify and SENS) updated the ETR as event status changes, i.e. starting on October 16th at 4:00 pm.

- 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.

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, hold press conferences or send information to customers through social media notifications? What was the general content of this information?

One press release was issued for this event and social media was used to update followers with restoration efforts regularly along with safety tips.

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

54.1% IVR and 14.5% 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?

Power outage updates were provided every 15 minutes on the Company's Storm Centre Outage website map.

- 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?

141,498 customers, representing about 10.2% 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 11:40 am on Oct 16th, recloser 1901 on the Flynn's Corners DS F3 was restored, energizing 410 customers. This restoration was the 90% threshold, after 35 hours and 40 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:	2016-07-08 to 2016-07-09			
PRIMARY CAUSE CODE		Number of Interruptions	Customer Interruptions	Customer Hours of Interruption
2. Loss of Supply		5	24279	43496.1
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.

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) started in October. This web-based application will be 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 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 continues to develop better early response by field forces, which will utilize weather models and outage prediction tools, so that we can provide better staff planning. Hydro One is also committed to improving ETR outage communications through the use of our Mobile Technology. In addition, we have piloted a project, which will utilize forestry crews from those who have completed switching and grounding qualification on single phase conductors, to safely and efficiently deal with tree impacts to the distribution system.

- 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 twice a year for Major Events.

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?

One press release was issued for this event, and social media was used to update followers with restoration efforts regularly along with safety tips.





Hydro One @HydroOne · Oct 15

To check the status of an outage, download our power outage app.



Jennifer Jilks @jennjilks

That was a wind storm. Lots without power. Danged trees!
@HydroOne

1

6

2



Hydro One @HydroOne · Oct 15

Hydro One customers affected by outages should prepare to be without power overnight. #onstorm



CBC Toronto @CBCToronto

UPDATED: Many will be without power overnight, Hydro One says, citing 'significant damage' to distribution system
bit.ly/2wYozTc



Hydro One @HydroOne · Oct 15

News release: Wind storm causes power outages to Hydro One customers. More than 275 outages affecting over 38,000 ow.ly/idMI30fTrS2



1 6 2

 **Hydro One** @HydroOne · Oct 15

High winds and thunderstorms are starting to cause outages in southern Ontario. Visit ow.ly/Ogik30T6iF for updates



The graphic features a red background with a white lightning bolt icon inside a white triangle on the left. To the right, the text "POWER OUTAGE" is written in white on a black rectangular background, with "• ALERT •" below it in white. The background image shows utility workers in orange safety gear working on power lines.

28 44 24

Facebook

 **Hydro One** Published by Hootsuite [?] · October 15 ·

Winds upwards of 90 km/hr caused significant damage to our distribution system. With more than 40,000 customers without power, we are focusing our efforts on emergency calls, critical services and restoring customers starting with the largest number of people affected by damage. A province-wide coordinated effort is underway to provide supplemental equipment, personnel and air support as needed in affected areas. For local updates, please visit our power outage app.



The graphic features a yellow background with a white lightning bolt icon inside a white triangle on the left. To the right, the text "RESTORATION" is written in white on a black rectangular background, with "• UPDATE •" below it in white. The background image shows a utility tower against a blue sky.



Hydro One added 2 new photos.



Published by Alicia Sayers [?] · October 16 · 🌐

Crews have made significant progress getting the lights back on for about 54,000 customers since the start of yesterday's storm, which had wind gusts in the 100 km/h range. Most of the damage has been caused by fallen trees along with broken poles, such as these photos from the Lambton and Newmarket area. Crews hit the ground working through the night and continue restoration efforts for the remaining 7,200 customers. For continued updates, please visit our power outage app and report outages or hazards to 1-800-434-1235.

