

# Major Events

## RESPONSE REPORT



**Issue:** January 10<sup>th</sup> to 12<sup>th</sup>, 2017 §2.1.4.2 Major Events Response Report

**Date Issued:** April 18<sup>th</sup>, 2018

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

### Summary

A winter storm, from January 10<sup>th</sup> to 12<sup>th</sup>, 2017, with extremely high winds, moved across a large part of Ontario, causing widespread customer interruptions from Zones 1 - 6. In some locations, gusty winds upward to 100km/h were reported. This event impacted ~195,000 (or about 14%) of Hydro One's customers.

This is the first 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 Monday, January 9<sup>th</sup>, at 8:03 am, a Transmission & Distribution "Significant Event Notification System" (SENS) was issued to advise of potential weather of heavy snow and strong winds, which could reach 70-80km/h for an afternoon period on January 10<sup>th</sup>. An update to the SENS was sent out on January 10<sup>th</sup> at 4:12pm, advising that strong winds with gusts of up to 90km/h were still expected.***

- 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.

***On Tuesday January 10<sup>th</sup>, arrangements were made to have extra employees in the Distribution Operations Management Centre (DOMC) on January 10<sup>th</sup>, 11<sup>th</sup> and 12<sup>th</sup>, for both day and night 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?

***Media announcements were made through Hydro One's "Media Notifications". Email notices were sent to media outlets and local government officials. We also issued advanced notification solutions through Hydro One's Storm Centre Outage website and social media channels. In the future, in addition to our proactive preparations, Hydro One's Storm Centre Outage website will include an alert banner to provide information of a pending Major Event.***

- 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 centres 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. Niagara Peninsula Energy assisted via our third party mutual assistance agreement.**

**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 195,000 (or about 14%) 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:   | 2017-01-10 to 2017-01-12 |                        |                                |
|---|--------------------------|------------------------|--------------------------------|
| PRIMARY CAUSE CODE  | Number of Interruptions  | Customer Interruptions | Customer Hours of Interruption |
| <b>0. Unknown/Other</b><br>Customer interruptions with no apparent cause that contributed to the outage.  | 66                       | 21678                  | 58211.9                        |
| <b>1. Schedule Outage</b><br>Customer interruptions due to the disconnection at a selected time for the purpose of construction or preventive maintenance.  | 35                       | 1929                   | 3083.3                         |
| <b>2. Loss of Supply</b><br>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. | 0                        | 0                      | 0.0                            |
| <b>3. Tree Contacts</b><br>Customer interruptions caused by faults resulting from tree contact with energized circuits.   | 727                      | 84799                  | 756574.8                       |
| <b>4. Lightning</b><br>Customer interruptions due to lightning striking the distribution system, resulting in an insulation   | 0                        | 0                      | 0.0                            |

breakdown and/or flash-overs.

|   |             |               |                  |
|---|-------------|---------------|------------------|
| <b>5. Defective Equipment</b>   | 428         | 86354         | 425151.0         |
| Customer interruptions resulting from distributor equipment failures due to deterioration from age, incorrect maintenance, or imminent failures detected by maintenance.                      |             |               |                  |
| <b>6. Adverse Weather</b>   | 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). |             |               |                  |
| <b>7. Adverse Environment</b>   | 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.   |             |               |                  |
| <b>8. Human Element</b>   | 6           | 42            | 130.6            |
| Customer interruptions due to the interface of distributor staff with the distribution system.  |             |               |                  |
| <b>9. Foreign Interference</b>  | 18          | 572           | 3261.3           |
| Customer interruptions beyond the control of the distributor, such as those caused by animals, vehicles, dig-ins, vandalism, sabotage, and foreign objects.                                   |             |               |                  |
| <b>Total</b>  | <b>1280</b> | <b>195374</b> | <b>1246412.8</b> |

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 9:35 pm on January 10th, 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?

***On Wednesday, January 11<sup>th</sup>, at 8:40 am, the first ETR was issued to the public through the Media Notification.***

- 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 ETRs were updated throughout the storm. The Automated ETR systems (iNotify and SENS) updated the ETRs three times as event status changed. For example, on January 11th the ETRs were updated at 11:38 am, 4:47 pm and 9:12 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?

***Three press releases were issued, along with numerous social media posts during this timeframe. The up-to-minute content included restoration efforts and safety tips.***

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

***53.3% IVR and 21.6% 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?

***195,374 customers, representing ~14% 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 12:09 pm on January 12th, the Muskoka M1 was restored, energizing 9,906 customers. This restoration was the 90% threshold, after 60 hours and 9 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 |
|---|-------------------------|------------------------|--------------------------------|
| <b>2. Loss of Supply</b><br>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. | 0                       | 0                      | 0.0                            |

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

**Yes, Niagara Peninsula Energy assisted via our third party mutual assistance agreement.**

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) will start 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 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 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?

***Three press releases were issued, along with numerous social media posts during this timeframe. Content was updated on restoration efforts, and Hydro One also provided safety tips.***

**Twitter posts**



 **Hydro One** @HydroOne · Jan 11  
To report a power outage or hazard, call 1-800-434-1235. For outage updates, visit our map at [ow.ly/ke4q307Vc19](https://ow.ly/ke4q307Vc19) or mobile app #ONstorm

2 2 2 ||


 **Hydro One** @HydroOne · Jan 11  
Boots on the ground & booms in the air, crews restore 149,000 customers & continue working. 2,050 expected to remain without power overnight



 **Hydro One** @HydroOne · Jan 11  
Important safety reminder: Stay at least 10 metres or one school bus length away from downed power lines. Report hazards to 1-800-434-1235

**William R. Hunter** @ChiefBillHunter  
Over 9500 residents without power...@HydroOne reporting 194 outages across Ontario.  
Assume all downed wires are live & stay clear. #onstorm

3 1 ||

 **Hydro One** @HydroOne · Jan 11  
Crews restored over 41,000 customers & continue restoration efforts. Visit our app for continued updates. Photo taken near Muskoka #ONstorm



1 4 13 ||

 **Hydro One** @HydroOne · Jan 11  
News Release: High winds knock out power to more than 48,000 Hydro One customers [ow.ly/oQfu307UnS2](https://ow.ly/oQfu307UnS2)

4 ||





Hydro One @HydroOne · Jan 11

Crews continue full restoration efforts on 471 outages affecting 53,703 customers. For updates, visit: [ow.ly/sj2t1307TWgW](https://ow.ly/sj2t1307TWgW) #ONstorm



3 8 3



Hydro One @HydroOne · Jan 11

Damage to our equipment near #Huntsville. Crews continue restoration efforts & assessing damage in areas affected by the wind storm #ONstorm



12 3



Hydro One @HydroOne · Jan 11

All hands on deck to restore power to 48,801 customers affected by 475 outages. Report outages and hazards to 1-800-434-1235 #ONstorm

4 9



Hydro One @HydroOne · Jan 11

ETRs are available through our outage map and app which is updated every 15 minutes as new information comes in from our crews #ONstorm

5 12 3



Hydro One @HydroOne · Jan 11

Strong winds caused more outages throughout the night. Crews continue to work hard this morning to restore power to 59,000 customers.

4 25 22



Hydro One @HydroOne · Jan 10

Hydro One crews are working on restoring power to 13,400 customers affected by snow and high winds across Southern Ontario. #ONstorm

7 47 29

### Facebook

 **Hydro One** Published by Hootsuite [?] · January 11 ·

There are currently 401 outages affecting 57,779 customers across the province with full restoration efforts underway. Our priority is to restore power as quickly and as safely possible to our customers. For local outage updates, including current estimated restoration times and crew status, please visit our outage map at <http://ow.ly/RCyY307TKKF>, or you can download our mobile outage app. To report a power outage or hazard such as a fallen tree, please call 1-800-434-1235.



 **Hydro One** added 3 new photos. Published by Social On-Call Team [?] · January 11 ·

Boots on the ground & booms in the air, crews have restored power to 149,000 customers since the start of yesterday's wind storm that continued into today. Crews have been working since last night and 2,050 customers are expected to remain without power overnight. For outage updates, please visit our online map at <http://ow.ly/GcrV307VccT>, or download our mobile outage app. Remember to keep at least 10 metres or the length of one school bus away from any downed power lines and report it to 1-800-434-1235. These restoration photos from Shining Tree and Bancroft show some of the damage and conditions crews have come across.

