

Major Events

RESPONSE REPORT



Issue: June 30th to July 3rd, 2018 §2.1.4.2 Major Events Response Report

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Summary

The severe thunderstorm, from June 30th to July 3rd, 2018, with heavy rain, high wind gusts between 90-100 km/h, as well as 1-3 cm hail moved across the Central and Eastern Ontario, caused heavy damages. This thunderstorm impacted ~163,000 (or 12%) of Hydro One customers.

This is the 4th FM 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 issued by weather provider of possible strong thunderstorms in Southern, Central and Eastern Ontario with widespread gusts of 80 – 90kph and marginal conditions of tornado activity especially along the Georgian Bay.

- 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.

Additional staff was scheduled by Distribution Operations Management Centre (DOMC) in preparation for this potential “High Incident” event.

- 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, nor was social media used.

- 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, specific 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 plan 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)?

Yes, a total of seven LDC's and one contractor assisted via third party mutual assistance agreement: Alectra, Orillia Power, Midland, Lakeland, Chapleau, North Bay Hydro, Sudbury Hydro and K-Line Contractor.

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 163,000 customers, or about 12 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:	2018-06-30 to 2018-07-03		
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.	125	23814	144777.0
1. Schedule Outage Customer interruptions due to the disconnection at a selected time for the purpose of construction or preventive maintenance.	19	1869	1918.6
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	17638	3137.1
3. Tree Contacts Customer interruptions caused by faults resulting from tree contact with energized circuits.	393	53754	518613.5
4. Lightning Customer interruptions due to lightning striking the distribution system, resulting in an insulation	0	0	0.0

breakdown and/or flash-overs.

5. Defective Equipment	398	58842	275612.6
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	5	5958	30007.6
Customer interruptions due to the interface of distributor staff with the distribution system.			
9. Foreign Interference	80	1434	4323.2
Customer interruptions beyond the control of the distributor, such as those caused by animals, vehicles, dig-ins, vandalism, sabotage, and foreign objects.			
Total	1025	163309	978389.5

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 1 emergency event for Distribution was declared.

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

The level 1 emergency was declared at 08:49:37 AM on June 30th, 2018

- 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 staff was available at the start of the event.

- 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 updates 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 Saturday June 30th at 3:52:21 AM.

- 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 total of six updates: Saturday June 30th at 3:04 PM, Saturday June 30th at 10:36 PM, Sunday July 1st at 5:13 AM, Sunday July 1st at 11:54 AM, Sunday July 1st at 9:45 PM and the final one was on Monday July 2nd at 11:24 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, IVR notification system advised interrupted customers of the outage areas and directed them to Hydro One's outage map website for up-to-date power interruption information of the [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?

No press releases were issued however social media was used in a number of days. 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?

70.74% IVR, 23.55% 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 7 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, the website was accessible during this period.

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

163,309 customers, representing ~12% 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 6:46PM on July 2nd, after 66 hours and 46 minutes from the onset of the event, the recloser M1RC1 on the Chesterville TS M1 feeder was restored, energizing 4,031 customers, bringing a total number of customers restored up to approximate 147,000, which represented the 90% threshold.

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: 2018-06-30 to 2018-07-03

PRIMARY CAUSE CODE	Number of Interruptions	Customer Interruptions	Customer Hours of Interruption
2. Loss of Supply	5	17638	3137.1

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?

Yes, there were seven LCD’s and one contractor who assisted via 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 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)?

TWC Outage Prediction pilot program that was initiated in October 2017 has tested successful. Hydro One has decided to purchase this tool and is now customizing features to enhance our demographic. This web-based application provides ability to forecast weather and predict potential impact on the distribution system, which contains the necessary information to align crews and resources to the expected impacted areas of a storm.

Hydro One has continued to broadcast customer facing banner messaging on the external Outage Map to provide customers with high level overview of a 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 proactively prepare for each Major Event and implements lessons learned from post event learning/discussion sessions, specifically concerning to what we had done well and areas that needed improvements.

- 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?

Social media posts

Twitter		
<p>June 30</p> <p> Hydro One @HydroOne</p> <p>Crews continue to respond to outages affecting over 20,000 customers. All available crews have been mobilized to the hardest hit areas, & we are prepared to respond as the severe weather continues over the next few days. Check our map for updates: ow.ly/Nuv230kK4FM #ONstorm</p>  <p>3:33 PM - 30 Jun 2018</p>	<p>June 30</p> <p> Hydro One @HydroOne</p> <p>Steady progress is being made as crews continue to work through the extreme heat to get the lights back on. Customers in the hardest hit areas of the province should be prepared to be without power overnight. To report outages and hazards, call us at 1-800-434-1235. #ONstorm</p>  <p>9:02 PM - 30 Jun 2018</p>	<p>July 1</p> <p> Hydro One @HydroOne</p> <p>All available teams including lines, forestry, damage assessors and support staff continue to work hard as they restore power to over 8,000 customers. We are ready to respond as the #ONstorm is expected bring more heavy rain and high winds to parts of Ontario today and tomorrow.</p> 
<p>July 1</p> <p> Hydro One @HydroOne</p> <p>Since the beginning of the #ONstorm, crews have restored power to over 80,000 customers. They will work through the night to respond to emergencies and restore power in the hardest hit areas. We appreciate your patience as crews battle extreme heat and humidity to make repairs.</p>  <p>7:53 PM - 1 Jul 2018</p>	<p>July 2</p> <p> Hydro One @HydroOne</p> <p>Crews continue to make progress with #ONstorm relief efforts today, but the high temperatures have caused additional outages. We have all available resources assisting, and additional crews have been mobilized to the hardest hit areas including Parry Sound and Huntsville.</p>  <p>11:18 AM - 2 Jul 2018</p>	<p>July 2</p> <p> Hydro One @HydroOne</p> <p>Crews are responding to outages affecting over 31,000 customers across the province. They are working to make repairs and restore power as quickly and safely as possible. To report an outage, call us at 1-800-434-1235 and visit our map for local updates: ow.ly/B6GI30juPf7</p>  <p>6:07 PM - 2 Jul 2018</p>

July 3



Thunderstorms and high winds are heading east resulting in fallen trees, broken poles and downed lines. We are mobilizing crews to the hardest hit areas in eastern Ontario to continue with restoration efforts. Customers in these areas may be without power overnight. #ONstorm



Facebook

June 30



Severe thunderstorms and high winds swept through northern Ontario on Friday night causing significant damage such as downed trees, lines and broken poles. Crews are assessing damage and working through the extreme heat to restore power to over 22,000 customers as quickly and safely as possible. All available crews have been mobilized to the hardest hit areas, and customers in these areas may be without power overnight. We are ready to respond as the severe weather continues over the next few days. To report outages or hazards, call us at 1-800-434-1235. Visit our map for local updates: <http://ow.ly/QvZK30kKfBO>



July 2



After battling the extreme heat and humidity to make repairs following Friday night's storm, crews have restored power to over 100,000 customers. They're making significant progress with relief efforts, but the high temperatures have caused additional outages. We have all available resources including lines, forestry, damage assessors and support staff working to get the lights back on for the remaining customers. Thank you for your continued patience and support.



Instagram

July 2



 hydrooneofficial

hydrooneofficial After battling the extreme heat and humidity to make repairs following this weekend's #ONstorm, crews have restored power to over 100,000 customers. They continue to make progress fixing the damage that they're facing, but the high temperatures are causing additional outages. We have all available resources out in full force as we work to get the lights back on for the remaining customers.