



Major Event Report

Date of Major Event: July 20, 2019

Prior to the Major Event

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

Yes, Environment Canada issued high wind and thunderstorm warnings for Southwestern 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.

London Hydro alerted the on call staff and contractor support.

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, we did not issue any media announcements as Environment Canada had issued a potential severe weather warning and we were monitoring the conditions in our area.

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.

London Hydro provides annual training to all supervisory staff that are involved in major event response on their roles and responsibilities. The last training session was held on November 29, 2018. This session included training on the roles and responsibilities of each member of the team along with the execution of a mock table top exercise (ie. an ice storm scenario was used in the training session).

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, London Hydro does have third party mutual assistance agreements with other distributors and private contractors. During this event, an overhead contractor crew was supporting the restoration activities.

During the Major Event

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

The weather events of July 20, 2019 were accordant with the definition of Major Event Day as per OEB's Electricity Reporting and Keeping Requirements, section 2.1.4.2.

Severe thunderstorms, accompanied by high winds and lightning passed London Hydro's distribution area since July 19, 2019 through July 20 and July 21, 2019.

Some of the Environment Canada alerts for July 20, 2019 include:

- 19:17h "A line of strong to severe thunderstorms has formed over Michigan and is forecast to move southeastward across Southwestern Ontario this evening. Very strong wind gusts to 100 km/h will be possible with this line of storms, as well locally heavy rainfall accumulations. Intense lightning is likely with any thunderstorm that develops."
- 23:40h "A line of strong to severe thunderstorms has moved into southwestern Ontario and is expected to race eastward this evening. Very strong wind gusts to 100 km/h will be possible with this line of storms, as well as locally heavy rainfall accumulations."

Based on the IEEE Standard 1366 (2.5 Beta method) this event was considered to be a Major Event Day where the daily SAIDI values exceeded the daily SAIDI threshold value. The current SAIDI threshold is 0.09 and this MED (July 20, 2019) had a SAIDI of 0.22. The SAIDI threshold value was set based on the daily SAIDI values for the past 5 years.

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

Yes IEEE Standard 1366 was used to identify the scope of the Major Event.

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

3- Tree Contacts, 4-Lightning

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 Major Event Day began on July 20, 2019 at 08:02 pm.

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

At the start of the event, 25% of the operations workforce was available to support restoration efforts. Additional staff was deployed on a rotational basis to continue restoration efforts.

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

Yes, London Hydro issued ETR through Twitter, IVR, Email, and Text. London Hydro also issued ETR through the outage map on our website, which gets updated every minute with the most updated information.

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

The first notification (email & text) went out at 9:25pm on July 20th, 2019 (Twitter 9:25pm). However, our outage map on our website was showing outages as soon as the storm started.

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, the outage map on our website is updated every minute with the most up-to-date- information included revised ETRs and new outages in the city. London Hydro also conducted live media interviews throughout the event.

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.

Through live media interviews London Hydro gave updates on the situation and estimated restoration times and encouraged customers to access our outage map on our website and/or register for outage notifications through our website where they could then receive emails, texts or phone call to advise them of an outage affecting their property.

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?

London Hydro conducted live media interviews to update the public hourly as well as sending texts, emails, phone calls, and tweeting.

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

51.28% of the customer calls were dealt with by the IVR system.

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?

London Hydro provided updates on the outage map through our outage management system which was refreshed every minute.

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?

The website was accessible throughout the event.

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

There were 13,919 customer interruptions during the Major Event Day and represents 8.7% of London Hydro's total customer base.

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

It took 5.6 hours to restore over 90% of the customers who were interrupted (13,096).

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.

No.

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

London Hydro used an overhead contractor crew during the restoration work.

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

No.

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)?

London Hydro has an Emergency Procedures Plan; training and mockup is performed annually. The purpose of the Emergency Procedures Plan is to define the roles and responsibilities of London Hydro personnel in the event of extensive damage to London Hydro's electrical distribution system. Also, London Hydro performs post event analysis following each Major Event in order to identify points of strength and areas where we need to improve.

Also, in 2017 London Hydro conducted a review of its tree trimming practices. Subsequently, this review resulted in additional tree trimming efforts and resources being deployed. The additional trimming during this time helped to decrease the number of limbs down on power lines during the storm.

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

During the Major Event, London Hydro saw the merits and benefits of its annual Emergency Procedures Plan and the contractual agreement with the private contractors. London Hydro also saw the huge benefit of the Outage Management System (OMS) when identifying outages and restoring customers. London Hydro was also active in terms of communicating with our customers through different channels (eg. twitter, email, text, outage map website, live interviews). London Hydro also implemented an effective damage assessment throughout the storm which led to an efficient use of available resources.

3. Did the distributor survey its customers after the Major Event to determine the customers' opinions of how effective the distributor was in responding to the Major Event? If so, please describe the results.

London Hydro conducts Annual Customer Satisfaction Surveys. These surveys include general questions regarding outages and reliability. We also monitor customer communications throughout and after the event - and received many emails and tweets from customers thanking our staff for their quick response to the outages.