London Hydro

Major Event Report

March 8, 2017

Prior to the Major Event

1. Did the distributor have any prior warning that the Major Event would occur?
Yes, London hydro was aware of the weather forecast. In addition, Environment Canada issued a high wind warning 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.
The Major Event started during normal working hours. London Hydro had all employees available to assist during the event and put contractors on alert.

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, London Hydro did not issue any media announcements as we were monitoring closely 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. The last training session was held on December 13, 2016. This session included training on the roles and responsibilities of each member of the team along with the execution of a mock tabletop exercise (i.e. 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 has third party mutual assistance agreements with other distributors and agreements with private contractors.

During the Major Event

1. Please explain why this event was considered by the distributor to be a Major Event.
This event was related to extreme winds. Based on the definition of a Major Event in the *"Electricity Distribution System Reliability: Major Events, Reporting on Major Events and Customer Specific Measures"* report issued by the OEB, this event was beyond the control of London Hydro. As well, based on the IEEE Standard 1366 (2.5 Beta method) this event was considered to be a Major Event since the daily SAIDI and SAIFI values recorded exceeded the MED threshold values.

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.
6- Adverse Weather (Extreme Wind)

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, however Environment Canada issued extreme wind warnings for Southwestern Ontario.

5. When did the Major Event begin (date and time)?
The Major Event Day began on March 8, 2017 at 10:38am

6. What percentage of on-call distributor staff was available at the start of the Major Event and utilized during the Major Event?
All staff (100%) were available (regular and on-call) at the start and during 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, London Hydro issued ETR messages through Twitter, IVR, Email, and Text. London Hydro also issued ETR through the Outage Map on our website, which is updated every 5 minute with the most recent information.

8. If the distributor did issue ETRs, at what date and time did the distributor issue its first ETR to the public?
London Hydro's Outage Map on the internet was communicating outages as soon as the storm started. In addition, the first email and text notifications went out at 11:33am on March 8, 2017.

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 5 minute with the most up-to-date- information including revised ETRs and new outages in the city. London Hydro also conducted live media interviews every hour.

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 event with estimated restoration times. Customers were encouraged to access the Outage Map on the website and/or register for outage notifications through our website to 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. These interviews were conducted to update the public about the outages, restoration time and the severity of the storm. In addition, to inform the public to monitor the Outage website for updated restoration time.

12. What percentage of customer calls were dealt with by the distributor's IVR system (if available) versus a live representative?
There were 3,124 calls on March 8, 2017. The IVR system dealt with 49% while live representative dealt with 51%.

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 throughout the event, which was updated every 5 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?
No, 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?
18,895 customers were interrupted during the Major Event. This represents 12% 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 11 hours to restore more than 90% of the customers who were interrupted.

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, there were no outages associated with Loss of Supply during the Major Event Day.

19. In responding to the Major Event, did the distributor utilize assistance through a third party mutual assistance agreement?
London Hydro did not invoke the third party mutual assistance agreement; however, London Hydro used third party contractors through private agreements.

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 material shortages were encountered by London Hydro during the Major Event.

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 which is complemented by the execution of a mock tabletop exercise 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. In addition, London Hydro performs post event analysis following each Major Event in order to identify points of strength and areas where improvement is needed. Considering the root cause of the outages in this Major Event was trees falling on the distribution lines, London Hydro has meetings planned with the City's Forestry Department to educate them on the risks posed by trees and to aid in better planning and planting by the City.

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 agreements with private contractors to assist in restoring power to our customers. London Hydro also saw the huge benefit of the Outage Management System (OMS) when identifying outages and restoring power to our customers. London Hydro was also active in terms of communicating with our customers through different channels (Twitter, Email, Text, Outage Map website, Live Interviews). Finally, London Hydro, recently, initiated a review of its current Vegetation Management Plan in order to improve the efficiency of tree trimming and reduce outages related to trees.

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.

Customers were not surveyed specifically for this Major Event; however, London Hydro was conducting our Annual Customer Satisfaction Survey at the time of the event. The survey includes general questions regarding outages and reliability.