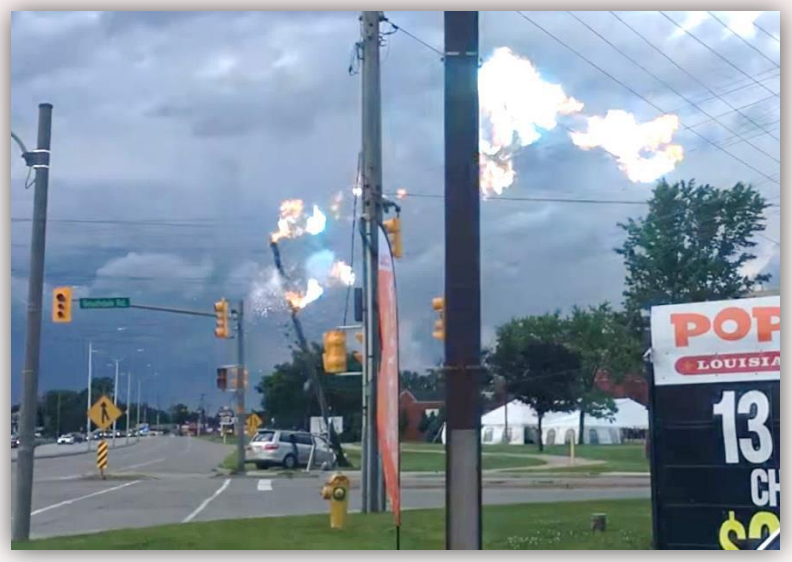
Major Event Report



6/24/2017

Prior to the Major Event

1. Did the distributor have any prior warning that the Major Event would occur?
No. This event was caused by a vehicle accident.

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.
Not applicable.

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?
Not applicable.

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 December 13th, 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.
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. The SAIDI and SAIFI threshold values were set based on the daily SAIDI and SAIFI 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.
9- Foreign Interference (Vehicle Accident)

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 Saturday, June 24, 2017 at 17:29.

6. What percentage of on-call distributor staff was available at the start of the Major Event and utilized during the Major Event?
London Hydro continuously staffs a system operations centre to control and monitor the distribution system. At the time of this event, 100% of on-call staff (a crew of 2 linemen and 1 supervisor) was available to respond. London Hydro also called in a second crew to restore power faster. In addition to internal staff, London Hydro leveraged third party private contractor agreements to acquire the services of three linemen.

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 Messages. London Hydro also issued ETR messages through an Outage Map on our website, which is updated every 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?
The first ETR was issued to the public at 18:03.

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, including revised ETRs and new outages in the city.

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. Updates were provided to all local media directing customers to the Outage Map on our website. Also, customers have previously been informed about several methods of contacting London Hydro and have the option to select their preferred method of contact from the Outage Management System - email, text message, or telephone. Links in text messages, emails and Twitter direct customers to the Outage Notification webpage, which offers customers current restoration times.

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?
Media release and press conferences were not issued as one on one interviews were conducted with local media. Social media notifications were sent through our outage notification system. In total, 15 tweets were sent.

12. What percentage of customer calls were dealt with by the distributor's IVR system (if available) versus a live representative?
The IVR system dealt with 93% while live representative dealt with 7%.

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, 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?
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?
16,595 customers were interrupted during the Major Event Day. This represents 10.6% 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 1 hour 52 minutes to restore 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 utilized the assistance of a third party private contractor through an existing agreement.

20. Did the distributor run out of any needed equipment or materials during the Major Event? If so, please describe the shortages.
No. All equipment and material required to restore power was available.

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 that 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 event was a traffic accident, a review of major intersection is being undertaken to determine if there are any mitigating measure that can efficiently be designed into the distribution system to mitigate the impact of similar events in the future.

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 observed the merits of its annual Emergency Procedures Plan and its agreements with third party private contractors. In addition, London Hydro observed the significant benefits of its Outage Management System (OMS) when identifying outages and restoring power to customers. This system enables London Hydro to communicate to customers through different channels (Twitter, Email, Text, Outage Map website, Local Media Interviews) in near real-time. Finally, London Hydro has identified additional opportunities to invest in remotely-controlled switches that will improve future restoration times.

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 does conduct an Annual Customer Satisfaction Survey that includes generic questions regarding outages and reliability.