2017

OEB FILING 2.1.4.2.10
MAJOR EVENT RESPONSE REPORT FOR:
THUNDER BAY HYDRO

***Major Event Day*: December 5th, 2017 - Code 6 - Adverse Weather**

2.1.4.2.8 Major Event Response Reporting

When a distributor determines an outage was caused by a Major Event, it shall file a report with the OEB that outlines the distributor's response to the Major Event, including answers to all of the questions set out below.

The distributor shall file this report with the OEB within 60 days of the end of the Major Event unless there are exceptional circumstances, in which case the report can be filed within 90 days of the end of the Major Event. The distributor shall also post this report on its website at the same time it is filed with the OEB.

Prior to the Major Event

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

   Thunder Bay Hydro received short term notice of adverse weather expected in the area by Environment Canada; however the outages in consideration were actually caused by the galloping of conductors, and this was not possible to forecast.

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.*

   Thunder Bay Hydro regularly schedules staff to be available on standby regardless of the possibility of a Major Event Day (MED) occurring. This staffing schedule includes one line supervisor, two field staff (on call) and a system control operator on duty. When the first outages began on the day of the event (December 5th 2017 at approx. 4:30am) the on call staff were called in to assist. By 8am the full complement of staff available to Thunder Bay Hydro was deployed to assist with outages.

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?*

Thunder Bay Hydro provides standard information about planning for outages to its customers; however Thunder Bay Hydro did not issue specific warnings about December 5th, 2017. The specific warning was not issued because the adverse winter weather that was forecasted by Environment Canada was considered fairly standard for that time of year.

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, Thunder Bay Hydro last reviewed its Emergency Preparedness Plan in detail on November 13, 2017.

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)?*

Thunder Bay Hydro did not use third parties within a mutual assistance agreement, but did use a local private contractor to assist with the Major Event on December 5th 2017.

During the Major Event

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

   On December 5th, 2017, Thunder Bay and its surrounding areas experienced a period of moderately severe winter weather which was predicted with some advance warning given typical weather trends for the area at that time of year.

   What was not foreseeable, predictable, preventable or avoidable, was the resonant condition of harmonic motion at the specific wind speed and direction (West at 50-70km/h), which caused extreme galloping of Thunder Bay Hydro's conductors. This extreme galloping was at a level reported by the experienced field staff, not witnessed in more than 30 years of service.

   The galloping of conductors caused phases to make contact with each other, and breakers to open (more than 120 breaker operations in a single day). This frenzy of breaker activity and dangerous field condition handicapped Thunder Bay Hydro's ability to make progress restoring customers until late in the afternoon when wind conditions had changed.

   https://www.youtube.com/watch?v=9PvgWIhenZo

   The number of customer minutes of outage experienced in this one day, nearly doubled Thunder Bay Hydro's SAIDI compared to the remainder of the year (from 1.86 to 3.44)

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

   Yes.

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

   The primary contributing cause code of this Major Event was Adverse Weather cause

code 6.

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?*

   Yes. Thunder Bay Hydro declared a Level 2 emergency as defined by its Emergency Preparedness Plan. Thunder Bay Hydro is not aware of any local emergency declarations during the time period of this Major Event.

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

   Date: December 5th, 2017
   Time: 04:25 am

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, all (100%) of the on-call staff were utilized.
   - During the Major Event, all (100%) of the available staff were 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, Thunder Bay Hydro did issue estimated times of restoration through its internet Outage Map (https://www.tbhydro.on.ca/support/power-outage/outage-map/), IVR, and Social Media Accounts (Twitter & Facebook). Local Media inquiries were responded to promptly to ensure news reports were accurate.

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 Thunder Bay Hydro issued on December 5th, 2017 at 05:59am via our Internet Outage Map.

9. *Did the distributor issue any updated ETRs to the public? If so, how many and at what dates and times were they issued?*

Thunder Bay Hydro does not track the issuance of ETR's explicitly, but does have a history of every update event that was provided on the Internet Outage Map. Thunder Bay Hydro has documented seventy-eight updates on December 5th, 2017, averaging an update approximately every 15 minutes.

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.*

Thunder Bay Hydro customers were directed to the Internet Outage Map, if the customers did not have access via a smart phone, these customers were informed over the phone by CSRs. Thunder Bay Hydro also provided messaging for outage areas delivered through Social Media Accounts (Twitter & Facebook).

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?*

Thunder Bay and surrounding area broadcast media was proactively contacted by telephone in the early morning and kept apprised of the situation throughout the day. Thunder Bay Hydro also issued regular updates via Twitter, approximately sixty-nine 'tweets' throughout the day, providing information to the customers about the causes for the outages, where the outages are, and the expected time of restoration.

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

Thunder Bay Hydro does not currently have statistics regarding the IVR line as it is hosted outside of our call system to prevent phone line flooding. Thunder Bay Hydro is investigating with the provider on what actions are required to be able to

track call statistics on the IVR line.

Thunder Bay Hydro's live representatives answered 1,931 of the 1,958 incoming calls to the outage call center during the major outage event.

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?*

The Internet Outage Map is located on Thunder Bay Hydro's website, and was updated seventy-eight times throughout the day.

https://www.tbhydro.on.ca/support/power-outage/outage-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?*

50,180 customer interruptions were recorded on December 5th, 2017, although it can be noted that many of these interruptions were affecting the same customers for multiple interruptions.

At the peak of the event, approximately 11,000 (~22%) of Thunder Bay Hydro customers were without power at one time.

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

It took approximately 9.5 Hours to restore 90% of Thunder Bay Hydro customers (based on the duration of the level 2 emergency).

17. *Was any distributed generation used to supply load during the Major Event?*

Yes.

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?*

No.

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)?*

Thunder Bay Hydro is reviewing its communication methods, crew deployment strategies, and key switch locations as a result of this adverse weather 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?*

Thunder Bay Hydro is implementing the above changes which are expected to improve response time and efficiency of its operations in all major outage situations.

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 result*

No. Not after this particular Major Event Day.