

OEB Filing 2.1.4.2.10
Major Event Response
Report for Waterloo North Hydro Inc.



Prepared By: Waterloo North Hydro

May 4, 2018

Prior to the Event

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

- The Weather Network, Environment Canada and similar authorities had issued special weather statements and wind warnings in advance of the major event.

2. If the distributor did have prior warning, did the distributor arrange to have extra employees on duty or standby prior to the Major Event beginning? If so, please give a brief description of the arrangements.

Waterloo North Hydro (WNH) normal after hours on call staff were readily available. This is comprised of:

- One (1) Line Supervisor
- Two (2) Power Line Maintainers (PLM's)
- One (1) Protection and Control Technician

On Friday May 4, 2018, before the wind storm began, WNH invoked emergency preparedness discussions. Arrangements were made to have these resources available:

- Two (2) Corporate Communications Representatives
- Power Line Maintainers to be available per Call Out List
- One (1) extra System Operator for Day and Night shift for entire week end
- One (1) Engineering Supervisor in case Damage Assessment was required
- Six (6) Customer Service Representatives to handle phone calls
- Two (2) Customer Service Managers rotating through Friday night and Saturday
- One (1) Stores Representative including the availability of emergency storm inventory

Note. All PLM's are on a call out list. Additional PLM staff and Line Supervisors were called out and utilized on May 4, May 5 and May 6, 2018, working up to 16 hour days.

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?

WNH default website banners include rotating banners and direct customers to updates and information should outages occur i.e. social media and our outage management website (wnhydro.com/outages).

4. Did the distributor train its staff on the response plans for Major Events? If so, please give a brief description of the training process.

WNH Operations employees are on call or on standby as part of their employment. Expectations to respond and work long days if required are known.

Training was provided for Call Handling and Outage Case management through the implementation and ongoing development of WNH Outage Management System.

Training was also provided to staff for providing updates on our website and social media (Twitter and Facebook) as well as fielding customer inquiries on social media (Twitter and Facebook)

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. WNH has a third party Mutual Aid Agreement in place (including at least 18 local distributors).
- Yes. WNH has Mutual Switching Agreement with Hydro One to allow either party to switch distribution system devices at tie points for the purpose of emergency restoration or isolation.
- Additionally, WNH has an ongoing relationship with a private contractor who does capital construction work for WNH. WNH utilized the services of a private contractor who provided a seven man crew of Power Line Maintainers and a Line Supervisor. This crew replaced several broken poles in multiple locations on Saturday, May 5, 2018.

During the Event

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

This event has exceeded the IEEE 1366-2012 2.5B threshold for Major Event Days (TMED).
WNH 2018 TMED = 0.0695 SAIDI/day.
This MED = 1.0213 SAIDI/day

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 2.1.4.2.5.

- While several outages were logged as 6 - Adverse Weather – Wind, the primary contributing cause code of this Major Event was 3 – Tree Contact.
- The 24 hour period of this MED includes cause codes 0, 1, 2, 3, 5, 6 and 9.

4. Were there any declarations by government authorities, regulators or the grid operator of an emergency in relation to the Major Event?

- WNH is not aware of any local emergency declarations during the time period of this Major Event.

5. When did the Major Event begin?

- Date: May 4, 2018
- Time: 00:00 AM to 24:00 PM

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

- WNH utilized 100% of its on-call distributor staff
- Additionally WNH called out and utilized all Power Line Maintainers, Line Supervisors and additional Control Room staff. This MED took WNH out of normal business operations and required safety rest time to reset our Power Line Maintainers and Line Supervisors.

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

No, not at outset. WNH customer outage map displayed number of customers out of power, the geographical area of the outage, the cause, and the customers remaining out of power.

The outage involved several supply feeders. The small pockets that remained out of power after the 12 hours had ETR's issued when known.

Updates on the outage were communicated to customers as known and at the minimum hourly. In addition information on how to report power issues, trees on lines, and safety messages were continually communicated via social media.

8. If the distributor did issue ETR's, at what time did the distributor issue the first ETR to the public?

See #7 above

9. Did the distributor issue any updated ETRs to the public? If so, how many and at what points in time were they issued?

See #7 above

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, WNH did inform customers of options for contacting WNH to receive more information. This information is readily available on our public facing web based outage management website (wnhydro.com/outages).

11. Did the distributor issue press releases, hold press conferences or send information to customers through social media notification? If so, how many times and what was the general content?

WNH communicated via an in camera television news segment with CTV news (following the wind storm).

WNH customers and media representative are encouraged to use WNH public outage map and social media for updates.

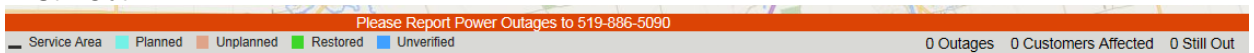
12. What percentage of customer calls were dealt with by the distributors IVR system (if available) versus a live representative?

- Not applicable.

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?

- Outage areas are shown on a map and updated live with unique shading for 'active outage' area or 'restored area'. Website is changed during Major Events to route to the Outage Map page and Power Outage Tips page during Major Events.

- WNH outage map displays:
 - # Outages
 - # Customers Affected
 - # Still Out



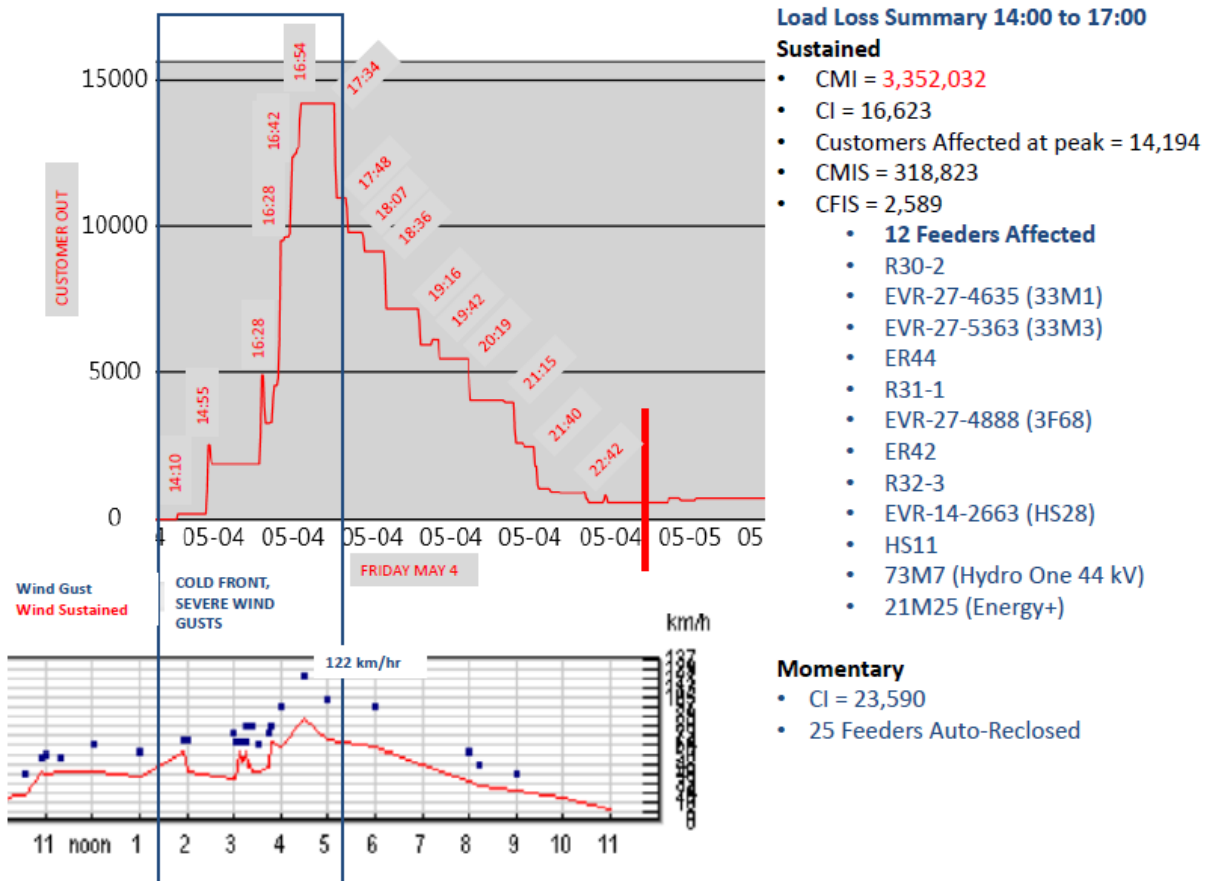
- WNH also provided updates via social media during the event (Twitter and Facebook)

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 distributors total customer base did the interrupted customers represent?

WNH logged 16,623 customer interruptions (sustained interruptions). This represents 16,623/57,059 or 29% of WNH customers.



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

It took 7.5 hours to restore 90% of the affected customers.

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 the duration and frequency of the Loss of Supply outages.

- Yes. The Loss of Supply interruptions contributed 426,196 Customer Minutes of Interruption and 674 Customer Interruptions. Customers were restored over multiple steps.
- Some customers were restored in 170 minutes. The longest duration for a Loss of Supply outage was 1,028 minutes. There was severe tree damage in this area.

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 or mitigate such Major Events in the future (ie. Staff training, process improvements, system upgrades)?

- WNH realizes that severe weather is not avoidable.
- WNH continues to invest in capital rebuild and distribution automation.
- WNH owned infrastructure held up well in this severe weather event.
- WNH investment in distribution automation has offered a 9% savings in SAIDI during this MED.
- WNH continues to practice its preparedness and restoration tactics.

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

WNH has learned to:

- prepare in advance by discussing the likelihood of a major event and the plan to respond with a defensible strategy
- communicate on regular two hour intervals during a major event to internal and external stake holders
- dedicate staff to specific tasks such as ETR population and outage case management
- dedicate call handlers and scribes for managing large volumes of customer damage locations (requiring ESA inspection prior to WNH reconnection)

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

- No. Not after this particular Major Event Day.