Major Event Report

Waterloo North Hydro Inc.

December 11, 2021

Adverse Weather – Extreme Winds

Filed: December 23, 2021

Contents

Major Event Description

Environment Canada issued wind warnings for essentially all of the province's southern regions, gusts between 90 and 120 kilometres per hour through the afternoon and evening, causing outages throughout our territory. There were 7,039 Customer Interruptions for 489,101 Customer Minutes of Interruption.

Prior to the Major Event

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

Yes or No?

Response: Yes

Additional Comments: The Weather Network, Environment Canada, and similar authorities issued special weather statements and wind warnings just hours before the Major Event.

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?**

Yes or No?

Response: Yes

Brief description of arrangements, or explain why extra employees were not arranged:

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

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?**

Yes or No?

Response: Yes

4. **Did the distributor train its staff on the response plans to prepare for this type of Major Event?**

Yes or No?

Response: Yes

During the Major Event

1. **Please identify the main contributing cause of the major event as per the table in Section 2.1.4.2.5 of the Electricity Reporting and Record Keeping Requirements.**

   Response: Adverse Weather-Wind

   Please provide a brief description of the event (i.e. what happened?). if selected, "other" please explain.

   Response: Environment Canada issued wind warnings for essentially all of the province's southern regions, gusts between 90 and 120 kilometres per hour through the afternoon and evening, causing outages throughout our territory. There were 7,039 Customer Interruptions for 489,101 Customer Minutes of Interruption.

2. **Was the IEEE Standard 1366 used to derive the threshold for the Major Event?**

   Response: Yes, used IEEE Standard 1366.

3. **When did the Major Event begin:**

   Date: December 11, 2021
   Time (For Example HH:MM AM): 16:00 EST

4. **Did the distributor issue any information about this major event, such as estimated times of restoration (ETR) to the public during the Major Event?**

   Yes or no?

   Response: Yes.

   If yes, please provide a brief description of the information. If no, please explain.

   Response: Yes, WNH's customer outage map displayed the number of customers initially out of power, the geographical area of the outage, cause, and the customers remaining out of power. Once available, WNH also included ETRs on the outage map.

   WNH provided updates on restoration efforts through its social media channels (Facebook and Twitter). ETRs were not yet known when WNH published its first outage messages at 3:29 p.m. on December 11. Further messages followed at 4:40 p.m.

alerting customers that ETRs were not yet known, but crews were working to restore power. A further update was provided at 6:09 p.m. and two additional updates followed before the end of the day on December 11.

The fact that crews were working to restore power was also shared with the public through an alert banner on the corporate website (www.wnhydro.com). The banner was updated twice on December 11 and later removed when only a small portion of customers remained without power.

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

   Response:

Cause Code	Customers Affected	Total Customers	Percentage	SAIFI
10 - Major Event	7,039	58,727	11.99%	0.1199

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

   Response: WNH restored 90% of interrupted customers within 2.25 hours.

7. **Were there any outages associated with loss of supply during the major event?**

   Yes or No?

   Response: Yes

   Additional Comments: Loss of Supply - Duration - 59.9 minutes and 215 customers interrupted

8. **In responding to the Major Event, did the distributor utilize assistance through a third party mutual assistance agreement with other utilities?**

   Yes or No?

   Response: No

9. **Did the distributor run out of any needed equipment or materials during the Major Event?**

   Yes or No?

   Response: 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)?**

   Response: No further action is required at this time.

   Additional Comments: WNH has implement a number of grid modernization technologies and will continue to do so to increase system reliability and operational efficiencies. An example is Survalent's Fault Location, Isolation, and Service Restoration (FLISR) software application which combines SCADA, OMS, and automated switching devices to re-route power in the event of a fault. This enables power to be efficiently restored to as many customers as possible via an automatic process. These technologies provide automatic self-healing on the portions of the system unaffected by the fault, ultimately improving restoration times.

   WNH's staff is trained to be on alert for emergencies and major events.