

Canadian Niagara Power Inc. (CNPI)

Major Event Day Report (April 4, 2018)

Introduction

On April 4, 2018, Canadian Niagara Power's service territory experienced an extreme wind event causing 26 separate wind related outages. As a result of responding to these wind-caused outages, CNPI's ability to respond to other outages was also impaired. System restoration was also delayed in some cases due to additional tree contact and damage to equipment occurring after the initial outages. CNPI recorded 8668 customer outages on April 4.

On this day, southern Ontario experienced high winds and localized rain. According to historical weather data, the Fort Erie and Port Colborne area experienced sustained heavy winds from approx. 3:54am EST until 11:54pm. From 8:00am until 4:30pm the winds gusted to over 80km/h reaching as high as 96km/h.

During these high wind gusts CNPI experienced wind related power outages over the Port Colborne service area in 26 separate events. Many of these events affected hundreds of customers, with restoration efforts complicated by broken poles and damaged equipment. The combined customer impact of all April 4 outages was 15,620 customer-hours.

Prior to the Major Event

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

On April 3, 2018, Environment Canada issued wind warnings for much of Southern Ontario, indicating that damaging winds were expected on April 4.

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 extreme winds were forecasted to begin in the early morning hours of April 4. CNPI had a normal complement on-call during the overnight hours from April 3-4, with the ability to call in additional crews if required. Additional crews were made available for outage response on April 4, with many crews working into the evening to complete restoration.

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?

Due to the widespread nature of the Environment Canada warnings on April 3, these warnings and the potential for power outages resulting from high winds were reported by a number of media outlets.

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.

CNPI has a Business Continuity and Disaster Recovery Plan that is periodically updated and reviewed at the management level. This plan is designed to assist in the response to natural disasters, accidents, major outages, environmental disasters, municipal emergencies, and cyber-attacks. This plan is available to all staff both via CNPI's corporate intranet, and hard copy. For major outages, this plan covers responsibilities and procedures for all outage restoration and communication efforts, and consolidates contact information for internal staff and key external agencies.

The scope of the outage described in this report did not invoke CNPI's Business Continuity and Disaster Recovery Plan.

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)?

CNPI has service agreements in place with its affiliates, Algoma Power and Cornwall Electric. These agreements would allow for mobilization of resources between LDC's when warranted by the impact of any particular event or series of events. The geographic diversity of the three LDC's mitigates the risk that any single weather event or natural disaster would simultaneously affect all three areas. CNPI has also worked in the past with neighboring utilities such as Niagara Peninsula Energy and Welland Hydro, as well as private utility-based contractors, to provide and receive support during unique events.

During the Major Event

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

CNPI considered this a Major Event due to the extreme and uncontrollable nature of the wind's intensity and the resulting substantial impact on CNPI's network and customer base. The gusting of the wind in this area exceeded the criteria specified in CNPI's distribution design standards and CNPI could not have reasonably designed its system to avoid all outages in this situation.

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

Yes – the IEEE Standard 1366 was applied to determine the scope and ensuing categorization of the incident as a Major Event.

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

Most interruptions associated with the event were coded as: Code 3 (Tree Contacts) and Code 6 (Weather).

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 declarations published.

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

April 4, 2018 – There was one wind related outage at approx. 6:00am EST and the balance of the outages were between 8:30am and 20:00.

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

100% of the On-Call staff were available at the start, and utilized during the Major Event.

Initially one crew was deployed and as the events evolved, additional crews were deployed to assist in the restoration effort. In addition, the Control room personnel and supervisory staff were required to manage the outages and crews restoration efforts. Our contracted Customer Services worked with the Outage Management System (OMS) and related software in dealing with high volume of customer contact.

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

CNPI issued several public media notices on Twitter and website relating to the outages and restoration of affected areas. The ETR was noted as “No ETR” as initially the estimate was not known and power was restored prior to further media updates.

If the distributor did issue ETRs, at what date and time did the distributor issue its first ETR to the public?

n/a

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

n/a

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.

No information regarding options for contacting the distributor to obtain further details about outage/restoration efforts was presented to CNPI customers during the Major Event.

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?

CNPI issued several public media notices on Twitter and website relating to the outages and restoration of affected areas.

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

CNPI does not employ an IVR system. All calls are handled by live representatives as they became available.

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?

CNPI publishes its Twitter feed on the company website. The Twitter messages were also presented on the website.

Was there any point in time when the website was inaccessible? If so, what percentage of the total outage time was the website inaccessible?

The website was accessible for the entire duration of the Major Event.

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

Throughout the duration of the Major Event, a maximum of approximately 8668 customers were affected which represents 30% of CNPI's 28,800 total customer base.

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

It took approximately 8 hours to restore 90% of the customers who were interrupted by this Major Event.

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

No distributed generation was employed during this Major Event.

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.

n/a

In responding to the Major Event, did the distributor utilize assistance through a third party mutual assistance agreement?

CNPI did not utilize assistance through a third party mutual assistance agreement, however we did utilize a private utility-based contractor.

Did the distributor run out of any needed equipment or materials during the Major Event? If so, please describe the shortages.

CNPI did not run out of any needed equipment or materials throughout the Major Event.

After the Major Event

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)?

CNPI conducted a round table discussion with contributors from the company operation departments, to review all facets of the Major Event, including the event itself, response and restoration efforts, resource allocation and technological assistance.

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

There were no specific lessons learned from the response to this Major Event, which would be applicable to a response to the next Major Event.

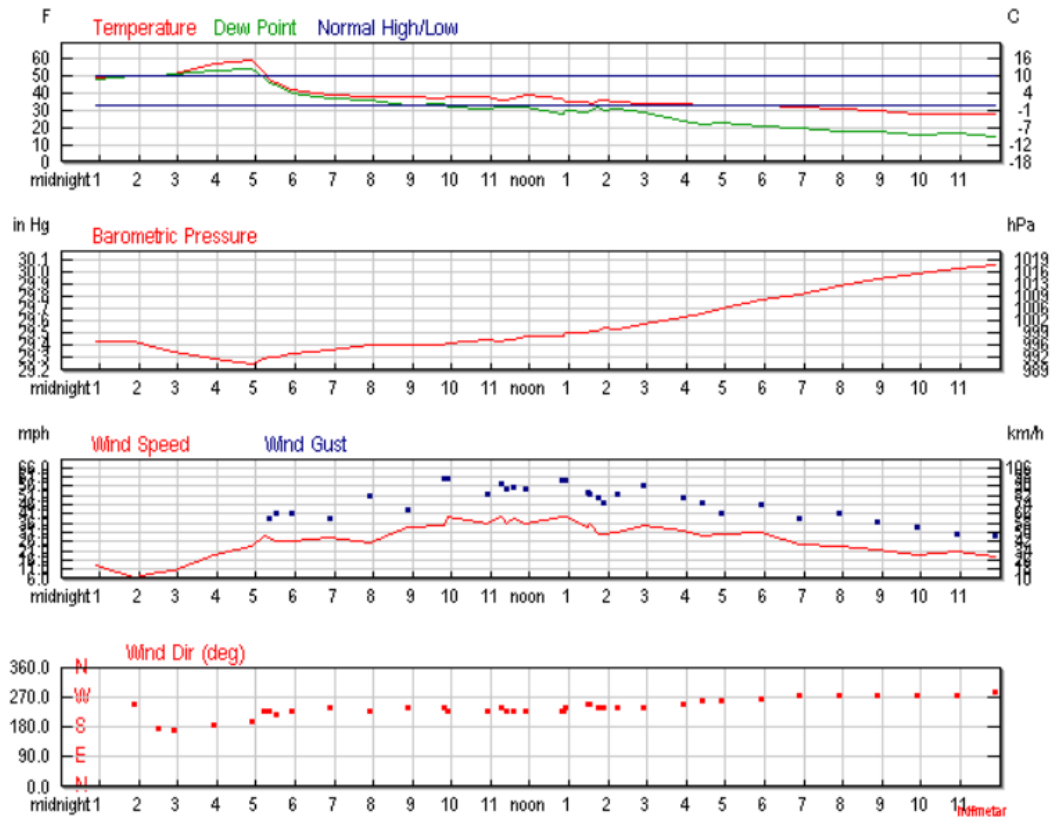
Did the distributor survey its customers after the Major Event to determine the customers' opinions of how effective the distributor was in responding to the Major Event? If so, please describe the results.

No survey was conducted by CNPI to gauge customer opinion regarding the response to this Major Event.

Appendix: Historical Weather Data

<https://www.wunderground.com/history/airport/KBUF/2018/4/4/DailyHistory.html>

Daily Weather History Graph



Certify This Report

3:54 AM	13.9 °C	-	11.7 °C	87%	991.6 hPa	16.1 km	South	29.6 km/h / 8.2 m/s	48.2 km/h / 13.4 m/s
4:54 AM	15.0 °C	-	12.2 °C	83%	990.5 hPa	16.1 km	SSW	37.0 km/h / 10.3 m/s	-
5:12 AM	11.1 °C	-	9.4 °C	89%	991.8 hPa	12.9 km	SW	46.3 km/h / 12.9 m/s	77.8 km/h / 21.6 m/s
5:21 AM	8.9 °C	-	7.8 °C	93%	992.4 hPa	16.1 km	SW	44.4 km/h / 12.3 m/s	61.1 km/h / 17.0 m/s
5:30 AM	7.8 °C	2.9 °C	7.2 °C	96%	992.1 hPa	14.5 km	SW	42.6 km/h / 11.8 m/s	66.7 km/h / 18.5 m/s
5:54 AM	5.6 °C	-0.1 °C	4.4 °C	92%	993.2 hPa	11.3 km	SW	42.6 km/h / 11.8 m/s	66.7 km/h / 18.5 m/s
6:54 AM	3.9 °C	-2.5 °C	2.8 °C	93%	994.1 hPa	14.5 km	WSW	44.4 km/h / 12.3 m/s	61.1 km/h / 17.0 m/s
7:54 AM	3.3 °C	-3.0 °C	2.2 °C	93%	995.4 hPa	16.1 km	SW	40.7 km/h / 11.3 m/s	81.5 km/h / 22.6 m/s
8:54 AM	3.3 °C	-3.8 °C	0.6 °C	83%	995.7 hPa	16.1 km	WSW	53.7 km/h / 14.9 m/s	68.5 km/h / 19.0 m/s
9:48 AM	3.0 °C	-4.3 °C	1.0 °C	87%	995.5 hPa	16.1 km	WSW	55.6 km/h / 15.4 m/s	96.3 km/h / 26.8 m/s
9:54 AM	3.3 °C	-4.3 °C	0.0 °C	79%	996.2 hPa	16.1 km	SW	63.0 km/h / 17.5 m/s	96.3 km/h / 26.8 m/s
10:54 AM	3.3 °C	-4.0 °C	-0.6 °C	76%	997.1 hPa	16.1 km	SW	57.4 km/h / 15.9 m/s	83.3 km/h / 23.1 m/s
11:16 AM	2.2 °C	-5.9 °C	0.0 °C	86%	996.8 hPa	3.2 km	WSW	63.0 km/h / 17.5 m/s	92.6 km/h / 25.7 m/s
11:25 AM	2.2 °C	-5.6 °C	0.0 °C	86%	997.2 hPa	3.2 km	SW	57.4 km/h / 15.9 m/s	87.0 km/h / 24.2 m/s
11:35 AM	2.8 °C	-4.9 °C	0.0 °C	82%	997.2 hPa	16.1 km	SW	61.1 km/h / 17.0 m/s	88.9 km/h / 24.7 m/s
11:54 AM	3.9 °C	-3.2 °C	0.0 °C	76%	997.8 hPa	16.1 km	SW	57.4 km/h / 15.9 m/s	87.0 km/h / 24.2 m/s
12:48 PM	3.0 °C	-4.7 °C	-2.0 °C	70%	998.2 hPa	12.9 km	SW	63.0 km/h / 17.5 m/s	94.5 km/h / 26.2 m/s
12:52 PM	2.0 °C	-6.1 °C	-2.0 °C	75%	998.2 hPa	4.0 km	SW	63.0 km/h / 17.5 m/s	94.5 km/h / 26.2 m/s
12:54 PM	1.7 °C	-6.5 °C	-1.1 °C	82%	998.8 hPa	11.3 km	WSW	63.0 km/h / 17.5 m/s	94.5 km/h / 26.2 m/s
1:28 PM	1.7 °C	-6.0 °C	-1.7 °C	78%	999.2 hPa	0.8 km	WSW	53.7 km/h / 14.9 m/s	85.2 km/h / 23.7 m/s
1:32 PM	0.6 °C	-7.8 °C	-1.1 °C	89%	999.5 hPa	0.8 km	WSW	57.4 km/h / 15.9 m/s	83.3 km/h / 23.1 m/s
1:46 PM	2.2 °C	-5.0 °C	0.0 °C	86%	999.5 hPa	11.3 km	WSW	48.2 km/h / 13.4 m/s	79.6 km/h / 22.1 m/s
1:54 PM	2.2 °C	-5.0 °C	-1.1 °C	79%	1000.1 hPa	11.3 km	WSW	48.2 km/h / 13.4 m/s	75.9 km/h / 21.1 m/s
2:13 PM	1.7 °C	-5.8 °C	-0.6 °C	85%	999.9 hPa	3.2 km	WSW	50.0 km/h / 13.9 m/s	83.3 km/h / 23.1 m/s
2:54 PM	1.1 °C	-7.0 °C	-1.7 °C	82%	1001.6 hPa	11.3 km	WSW	55.6 km/h / 15.4 m/s	90.7 km/h / 25.2 m/s
3:54 PM	1.1 °C	-6.7 °C	-4.4 °C	67%	1003.2 hPa	16.1 km	WSW	51.9 km/h / 14.4 m/s	79.6 km/h / 22.1 m/s
4:24 PM	0.6 °C	-7.0 °C	-5.6 °C	64%	1004.3 hPa	16.1 km	West	46.3 km/h / 12.9 m/s	75.9 km/h / 21.1 m/s
4:54 PM	0.6 °C	-7.2 °C	-5.0 °C	66%	1005.5 hPa	16.1 km	West	48.2 km/h / 13.4 m/s	66.7 km/h / 18.5 m/s
5:54 PM	0.6 °C	-7.3 °C	-6.1 °C	61%	1007.9 hPa	16.1 km	West	50.0 km/h / 13.9 m/s	74.1 km/h / 20.6 m/s
6:54 PM	0.0 °C	-7.3 °C	-6.7 °C	61%	1009.8 hPa	14.5 km	West	38.9 km/h / 10.8 m/s	61.1 km/h / 17.0 m/s
7:54 PM	-0.6 °C	-7.9 °C	-7.8 °C	59%	1011.8 hPa	16.1 km	West	37.0 km/h / 10.3 m/s	66.7 km/h / 18.5 m/s
8:54 PM	-1.1 °C	-8.4 °C	-7.8 °C	61%	1013.9 hPa	16.1 km	West	35.2 km/h / 9.8 m/s	59.3 km/h / 16.5 m/s
9:54 PM	-2.2 °C	-9.3 °C	-8.9 °C	61%	1015.6 hPa	16.1 km	West	29.6 km/h / 8.2 m/s	53.7 km/h / 14.9 m/s
10:54 PM	-2.2 °C	-9.7 °C	-8.3 °C	63%	1016.8 hPa	16.1 km	West	33.3 km/h / 9.3 m/s	48.2 km/h / 13.4 m/s
11:54 PM	-2.2 °C	-9.1 °C	-9.4 °C	58%	1017.7 hPa	16.1 km	WNW	27.8 km/h / 7.7 m/s	46.3 km/h / 12.9 m/s