WHENEVER. WHEREVER.
We'll be there.

NEWFOUNDLAND POWER
A FORTIS COMPANY

HAND DELIVERED

March 30, 2017

Board of Commissioners
of Public Utilities
P.O. Box 21040
120 Torbay Road
St. John's, NL A1A 5B2

Attention: G. Cheryl Blundon
Director of Corporate Services
and Board Secretary

Ladies and Gentlemen:

Re: The Board's Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System – Directions Further to the Board's Phase One Report

Please find enclosed Newfoundland Power's report on improving the transparency of the designation of critical customers.

If you have any questions, please feel free to contact the undersigned.

Yours very truly,

Gerard M. Hayes
Senior Counsel

Enclosures

c. Tracey Pennell
Newfoundland and Labrador Hydro

Paul Coxworthy
Stewart McKelvey Stirling Scales

Larry Bartlett
Teck Resources Ltd.

Dennis Browne, QC
Browne Fitzgerald Morgan & Avis

Roberta Frampton Benefiel
Grand Riverkeeper Labrador, Inc.

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Critical Customers Report

March 2017

NEWFOUNDLAND POWER
A FORTIS COMPANY

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1.0 BACKGROUND

The electrical system events of January 2-8, 2014 resulted in substantial numbers of Newfoundland Power customers being without service for extended periods of time. Such major electrical system events can threaten the health and safety of Newfoundland Power's customers. During such periods of system distress, the Company attempts to minimize outages to customers providing services that are essential to maintaining the health, safety and welfare of the communities the Company serves ("critical customers"), where possible.[1]

On September 29, 2016, the Board of Commissioners of Public Utilities (the "Board") issued its Phase One report on the *Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System* ("Phase One Report"). In its Phase One Report, the Board stated:

> "In relation to the designation of critical customers, the Board is satisfied that the current approach of identifying critical customers on the basis of health, safety and welfare is reasonable. Given the dynamic and uncertain circumstances during a system event, it may not be practical to broaden the basis upon which critical customers are identified."[2]

However, the Board acknowledged concerns expressed by parties regarding transparency in the designation of critical customers, and indicated that Newfoundland Power and Newfoundland and Labrador Hydro would be directed to file reports on improving the transparency of the designation of critical customers. This report outlines efforts being taken by Newfoundland Power to improve information available about the Company's approach to designating and managing critical customers.

2.0 CRITICAL CUSTOMERS

Newfoundland Power serves approximately 265,000 customers. The Company's primary criteria for designating customers as critical focuses on roles that are essential to the health, safety and welfare of the communities the Company serves. These roles are vital in times of system distress and are identified in consultation with health care authorities, Fire and Emergency Services and

[1] While not considered a critical customer, where possible, consideration is also given to special care customers, such as schools, businesses with sensitive products, and those with medical equipment used at home.

[2] See the Board's *Phase One Report, September 29, 2016*, page 49, lines 1-4.

other government officials. Critical customers typically include hospitals, long-term care facilities, fire and police stations, and critical municipal infrastructure, such as warming centers and water-pumping stations.

Newfoundland Power aims to maintain power to critical customers during controlled power outages, specifically (i) rotating power outages, and (ii) under-frequency load shedding events. These controlled outages are sometimes required to prevent the uncontrolled collapse of the electrical system during periods of system distress.

Rotating Power Outages

Rotating power outages may be required during periods of sustained, insufficient electricity generation to prevent system collapse. Rotating power outages involve the systematic disconnection and reconnection of distribution feeders to manage the amount of electricity used by customers.[3] Newfoundland Power, in consultation with health care authorities, Fire and Emergency Services and other government officials, determines which distribution feeders will be included in rotating outages, both in advance of an electrical system event and as it unfolds.[4]

The number of feeders available for rotating power outages affects the frequency and impact of those outages on customers. For example, when rotating power outages are spread among a large number of feeders, customers will experience rotating power outages less frequently. It is therefore important that the Company maintain a large pool of feeders that are available for rotating power outages. To maximize the size of the available pool, the Company excludes only those feeders that provide electricity to critical customers.[5]

[3] A distribution feeder is an electrical circuit which originates in a substation, and along its route connects customer premises to the electrical system. Distribution feeders vary in length, voltage and number of customers served. Some distribution feeders are only a few hundred meters in length, while others are over 100 kilometers in length. Some feeders serve only a handful of customers, while others serve thousands. Newfoundland Power has 306 distribution feeders in its service territory.

[4] The decision to include a particular feeder in rotating outages takes into account whether the feeder has remote control capability, whether the feeder supplies critical customers, and peak load.

[5] The determination of which distribution feeders may be excluded from rotating power outages is a dynamic process. It changes in real-time as system operating conditions change and as a result of consultation with customers and other stakeholders. For example, as warming centers and fuel supply depots were established during the January 2014 system events, the feeders serving these locations were added to the list of critical customers and were then excluded from rotating power outages. See the response to Request for Information PUB-NP-022, *Supply Issues and Power Outages on the Island Interconnected System*, page 4, lines 1-16.

Under-frequency Load Shedding

Power outages may occur whenever a large source of generation on the Island Interconnected System trips and the frequency of the electrical system drops suddenly. A sudden drop in system frequency can cause the electrical system to become unbalanced and may cause damage to electrical equipment. To account for such events, the Company's electrical system is programmed to automatically shed customer load in order to prevent system collapse. This is referred to as "under-frequency load shedding." Under such circumstances, customer load is typically restored within minutes.

Feeders providing electricity to critical customers are excluded from under-frequency load shedding events.

3.0 IMPROVING CUSTOMER UNDERSTANDING

Newfoundland Power has recently taken steps to increase customer understanding of critical customers and how customers designated as critical are managed during periods of system distress. Information on the designation and management of critical customers is being made available via two customer communication tools: the Company's website and the *Power Connection* newsletter. This information will also be shared with customers via the Company's social media channels.

3.1 Newfoundland Power's Website

Newfoundland Power's website includes a section on outages. Under the section *How We Restore Power*, the website informs customers of the Company's restoration priorities during major outages and outlines the order in which power is usually restored. The first priority for restoration is customers that provide health care and safety services. Next are major power lines and substations that serve large numbers of customers, followed by repairs that will restore large groups of customers, and finally, those that restore service to individual customers.

Newfoundland Power has added a *Critical Customers* section to its website that focuses on the first group in the priority sequence for power restoration: critical customers. Additional content has also been added to the *Unplanned Outages* section of the website that provides information

on unplanned outages caused by a loss of generation. It includes an explanation of why critical customers are typically excluded from rotating power outages and under-frequency load shedding events during periods of system distress.

The purpose of the new information is to improve customer understanding of which customers are considered critical, how the Company manages power outages to these customers during periods of system distress, and why some customers may not be included in power outages associated with these electrical system events.

Customer Service Representatives at Newfoundland Power's Customer Contact Centre are aware of this new website content, which ensures information relating to the designation and management of critical customers is available to those who call or email the Company.

Attachment A is a copy of the website content that provides information on Newfoundland Power's designation and management of critical customers.

3.2 *Power Connection* Newsletter

The *Power Connection* newsletter is included with customers' bills for the purpose of communicating important information to customers. For example, the February 2017 edition of *Power Connection* advised customers requiring electricity for medical purposes, such as oxygen or dialysis, to register with the Company's special care customer list.

Newfoundland Power will include information relating to the designation of critical customers and the Company's approach to managing these customers during periods of system distress in a *Power Connection* newsletter prior to the 2017-2018 winter season. The newsletter will include information similar to that provided on the Company's website and will help ensure this information is available to customers who are not inclined to visit the website.

Attachment B is an example of the content that will be provided in the *Power Connection* newsletter.

4.0 CONCLUSION

Newfoundland Power's approach to designating and managing critical customers places special emphasis on customers providing services that are necessary to maintain health, safety and welfare throughout the Company's service territory. Newfoundland Power believes this approach continues to be appropriate.

The electrical system events of January 2-8, 2014 demonstrated that more can be done to improve customer understanding of critical customers. Using various communication tools, Newfoundland Power has taken steps to ensure information is available on how the Company designates and manages critical customers during periods of system distress.

Newfoundland Power believes that the customer communication initiatives identified in this report will improve customer understanding of the Company's approach to designating and managing critical customers.

Newfoundland Power Website Content

Outages
Report a Power Outage
How We Restore Power
Planned Outages
Unplanned Outages
Lightning Safety and Preparedness
How to Prepare
Report a Street Light Out
Service Territory
Outage Alerts
Critical Customers

CRITICAL CUSTOMERS

Critical customers are those who provide services that are essential to the health, safety and welfare of the communities we serve. This includes hospitals, fire and police stations, acute care facilities, long-term care facilities, community warming centres, fuel storage, water treatment/pumping stations and other critical municipal infrastructure. These roles are particularly important during major electrical power outages due to storms or other events. Through discussions with health care authorities, fire and police services and government officials, Newfoundland Power determines which customers are critical.

Wherever possible, we work to prevent outages to critical customers. Sometimes, unexpected outages to these customers is unavoidable. However, we are able to minimize outages to these customers by:

- Giving top priority to critical customers when unplanned outages occur due to storms or other events.
- Avoiding critical customers during rotating power outages caused by lack of power supply.
- Not including critical customers in under frequency loading shedding events, which can be necessary to restore balance to the electricity system when a large source of electricity is suddenly lost on the system.

Outages

- Report a Power Outage
- How We Restore Power
- Planned Outages
- Unplanned Outages
- Lightning Safety and Preparedness
- How to Prepare
- Report a Street Light Out
- Service Territory
- Outage Alerts
- Critical Customers

UNPLANNED OUTAGES

Unplanned power outages are caused by things such as high winds, snow and ice storms, salt spray, lightning, and other severe weather conditions. Outages can also be caused by equipment problems, vehicle accidents, fallen trees, and even animals contacting power lines.

If a power outage affects only one part of your home, it is probably due to a problem in your electricity panel, such as a tripped circuit breaker or a blown fuse. If resetting the circuit breaker or replacing the fuse does not restore power, you may require an electrician to investigate.

At certain times throughout the year, customers may be at risk to outages caused by either a generation shortage or an unexpected generation interruption. Such occurrences may lead to rotating power outages or underfrequency load shedding

Rotating Power Outages

To maintain service to customers, the amount of electrical supply available on the electrical system must be greater than the amount of being used by our customers. When there is not enough electricity, we must reduce the amount being used by our customers or risk the entire electricial system failing. In these rare circumstances, Newfoundland Power must conduct rotating power outages to its customer.

To minimize the impact on customers, Newfoundland Power attempts to limit rotating power outages to 1 hour or less. Critical customers, who provide services that are essential to the health, safety and welfare of the communities we serve, are avoided in rotating power outages.

Under-Frequency Load Shedding

When a large source of electricity is suddenly lost on the system, the frequency of the electrical system drops. To ensure the entire electrical system does not fail, our system is programmed to quickly disconnect small groups of customers to restore the balance of supply and demand. This is called under-frequency load shedding. Power is usually restored to customers within an hour when this occurs.

Newfoundland Power's system is designed to ensure these types of outages are spread among our customers so that the same customers are not impacted each time. Critical customers, who provide services that are essential to the health, safety and welfare of the communities we serve, are typically not included in under-frequency load shedding.

Power Connection **Newsletter**

powerconnection

A newsletter for customers of Newfoundland Power • MONTH YEAR

WINTER'S HERE! BE AWARE. BE SAFE.

It's important to talk to your children about the dangers of playing on or near snow banks that may be close to overhead power lines or substations.

When using your snowmobile or ATV, always wear a helmet and be especially cautious of utility poles and guy wires, which may not be as noticeable during winter conditions.

Water reservoirs around hydroelectric generating plants are not safe for recreational activities due to fluctuations in water levels. Avoid these reservoirs, and respect posted danger signs and fenced areas.

SAFE STEPS TO YOUR METER

Gilda Lodge is a Meter Reader. She walks more steps in a month than most of us will walk in a year. Her steps become much harder and more dangerous in winter conditions. Hidden hazards like ice and snow covered items can pose safety risks as well as challenges with accessing your meter.

You can help Gilda, and all our Meter Readers, stay safe by sanding or salting your walkway on your scheduled reading day. Keeping the path to your meter shovelled and clear of obstructions, such as snow, ice and pets, will ensure Gilda has a safe work environment. It also helps prevent us having to estimate your meter reading.

Power Restoration for Critical Customers

Customers who are essential to the health, safety and welfare of the communities we serve are considered critical and are considered carefully during major system outages. In consultation with health care authorities, fire and police services and government, we determine the facilities deemed to be critical.

Newfoundland Power aims to prevent outages to these customers whenever possible. One of the ways we do this is by excluding them from controlled load shedding and during rotating outages where possible.

Find out more at www.newfoundlandpower.com/outages