

1 **Q. (Reference Application Schedule B, Replace/Upgrade Communications Equipment,**
 2 **page 74 of 99) It is stated “This project is justified on the obligation to provide reliable**
 3 **service to customers at least cost and cannot be deferred.”**
 4

5 **a) Please provide evidence based on reliability criteria that Newfoundland Power**
 6 **will be unable to provide reliable service at least cost if it were to delay this project.**

7 **b) Please quantify the impact on the following if the project were delayed by two**
 8 **years: 1) reliability, 2) cost, and 3) the risk and consequences of failure.**
 9

10 A. a) Newfoundland Power manages its capital expenditures in a manner that balances both
 11 the cost and reliability of the service provided to its customers.¹ The Company is
 12 focused on maintaining current levels of overall service reliability for its customers at
 13 the lowest possible cost.² The 2022 *Replace/Upgrade Communications Equipment*
 14 project is consistent with this objective.
 15

16 Communications equipment is critical to the safety of Newfoundland Power
 17 employees working in the field. Communications equipment includes operational
 18 voice systems such as mobile radio, portable radio, base station radio and radio
 19 console equipment. This radio equipment is used for communications between: (i)
 20 field staff working in multiple crews; (ii) field staff and operations centres; and (iii)
 21 field staff and the System Control Centre.³
 22

23 Communications equipment also includes the equipment that is used to link the
 24 monitoring and control technologies on distribution lines, in substations and hydro
 25 plants to the SCADA system at the System Control Centre. This communications
 26 equipment provides the SCADA system and Outage Management System with
 27 information on the location of customer outages to assist in dispatching crews to
 28 restore service to customers.⁴
 29

30 Overall, communications equipment contributes to safe and efficient operations in
 31 maintaining the electrical system and responding to customer outages and other
 32 customer requests.
 33

34 The criteria for replacing or upgrading communications equipment is based on: (i) in-
 35 service equipment failures as equipment deteriorates over time; (ii) obsolescence as
 36 technology evolves and is no longer supported; and (iii) manufactures’
 37 recommendations for firmware upgrades or cybersecurity upgrades.⁵
 38

39 The 2022 *Replace/Upgrade Communications Equipment* project is consistent with
 40 maintaining reliable service for customers at the lowest possible cost.

¹ See response to Request for Information NLH-NP-042.

² See response to Request for Information CA-NP-014.

³ See the 2022 *Capital Budget Application, Schedule B*, pages 74-75.

⁴ Ibid.

⁵ Ibid.

1 b) Delaying the 2022 *Replace/Upgrade Communications Equipment* project by 2 years
2 would increase the risk of equipment failure. The primary consequences of
3 communications equipment failure would be increased risks to employee safety,
4 reduced service reliability for customers and increased costs.⁶
5

6 For example, a radio system is used by field crews when completing switching
7 orders.⁷ Should the radio system fail, field crews would lose communication with the
8 System Control Centre. This would create hazardous conditions for employees
9 working in the field.

10 Additionally, should monitoring and control technologies fail, Newfoundland Power
11 would be required to dispatch employees to physically monitor and operate field
12 devices. Since communications equipment allows these functions to be completed
13 remotely in real time, dispatching employees to undertake the same function would
14 increase costs to customers and increase the time required to respond to customer
15 outages.
16

17 For example, in May 2018, a distribution feeder from Frenchman's Cove Substation
18 experienced an outage affecting over 800 customers. Due to battery failure,
19 communications with the feeder was lost and there was a delay in restoring service to
20 customers.⁸ Newfoundland Power has since implemented battery monitoring
21 equipment to provide an alarm when batteries start to degrade.
22

23 Delaying an upgrade to communication equipment may also result in: (i) the complete
24 replacement of a piece of equipment if the replacement part is no longer available;
25 and (ii) increased exposure to cybersecurity risks, as patches recommended by
26 manufacturers to address potential vulnerabilities would not be implemented. This
27 would increase costs to customers and place customer and Company information at
28 risk.
29

30 Delaying the 2022 *Replace/Upgrade Communications Equipment* project would
31 therefore be inconsistent with maintaining reliable service for customers at the lowest
32 possible cost.
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⁶ For information on Newfoundland Power's approach to quantifying risks and benefits, see response to Request for Information CA-NP-014.

⁷ Switching orders are procedures followed by field crews to safely energize, de-energize or isolate sections of the electrical system. Switching orders typically involve multiple field crews and Power System Operators at the System Control Centre. Use of a radio system ensures coordination throughout the process.

⁸ Newfoundland Power provides communication to some remote substations, including Frenchman's Cove Substation, by way of a pole-mounted cabinet that provides telecommunications service from the local wireless communications provider. Equipment in the cabinet is normally powered by the feeder or substation station service. In the event of a power outage, backup power for the communications equipment is provided by batteries. The investigation into the outage at Frenchman's Cove Substation found that the batteries in the pole-mounted cabinet were no longer holding their charge, resulting in a loss of communication between the feeder and the System Control Centre when the outage occurred.