

1 **Q. (Reference Application Schedule B, Hydro Facility Rehabilitation page 3 of 99) It is**
 2 **stated “This project is justified on the obligation to provide reliable service to customers**
 3 **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 *Hydro Facility Rehabilitation* project is
 14 consistent with this objective.

15
 16 Newfoundland Power owns and operates 23 small hydro plants throughout its service
 17 territory. These plants have provided low-cost electricity to the Company’s
 18 customers for over 100 years.

19
 20 The *Hydro Facility Rehabilitation* project is necessary for the replacement and
 21 refurbishment of plant components. The criteria for replacement or refurbishment is
 22 generally based on component failures that have been identified through routine
 23 inspections, operating experience or engineering studies. It also includes replacement
 24 of obsolete protection and control equipment.

25
 26 For 2022, the *Hydro Facility Rehabilitation* project includes:
 27

- 28 (i) Replacing the head gate at Morris Plant, which has failed and is currently
 29 being held open with secure straps;³
 30 (ii) Replacing the surge tank cladding at Petty Harbour Plant, which has failed
 31 and is currently being held in place with nylon strapping;⁴
 32 (iii) Refurbishing the Petty Harbour Plant Unit 2 turbine, which has deteriorated;⁵
 33 (iv) Addressing in-service failures at hydro plants on an emergency basis
 34 throughout the year;⁶ and
 35 (v) Replacing obsolete protection and control equipment at the Lookout Brook
 36 Plant and Sandy Brook Plant.⁷

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

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

3 Replacing the head gate also requires replacing the intake gatehouse. See the *2022 Capital Budget Application, Report I.1. 2022 Facility Rehabilitation*, page 1 *et seq.*

4 *Ibid.*, page 4 *et seq.*

5 *Ibid.*, page 7 *et seq.*

6 *Ibid.*, page 10 *et seq.*

7 *Ibid.*, page 9 *et seq.*

1 The 2022 *Hydro Facility Rehabilitation* is consistent with maintaining current levels
 2 of service reliability for customers at the lowest possible cost, as further described in
 3 part b).
 4

- 5 b) Delaying the 2022 *Hydro Facility Rehabilitation* project by 2 years would impede
 6 Newfoundland Power’s ability to repair or replace hydro plant components that fail
 7 in-service or are at imminent risk of failure. The primary consequence of component
 8 failures at hydro plants is increased plant downtime, which would increase costs to
 9 customers and reduce service reliability.⁸

10
 11 Newfoundland Power’s 23 hydro plants generate a combined normal annual
 12 production of approximately 435 GWh. This reduces the amount of energy required
 13 from Newfoundland and Labrador Hydro (“Hydro”) to serve Newfoundland Power’s
 14 customers. Based on Hydro’s 2020 marginal cost update, the value of Newfoundland
 15 Power’s energy production to its customers is estimated at approximately
 16 \$18.6 million annually.⁹ In-service failures or conditions at Newfoundland Power’s
 17 hydro plants that require a hydro plant to be removed from service will reduce
 18 Newfoundland Power’s hydro production and increase costs to customers.¹⁰
 19

20 In addition to contributing to low-cost energy production, Newfoundland Power’s
 21 hydro plants also provide localized reliability benefits. This includes supplying
 22 customers during maintenance work and unplanned transmission line outages.
 23

24 For example, Newfoundland Power operates its Rose Blanche Plant for
 25 approximately 1 week each summer to allow Hydro to conduct maintenance on its
 26 radial transmission lines that serve the Port aux Basques area. The Rose Blanche
 27 Plant is also used to restore service to customers in the area when unplanned outages
 28 occur on these transmission lines. For example, a trip on transmission line TL214 on
 29 December 19, 2020 resulted in an outage to approximately 5,300 customers.
 30 Operation of the Rose Blanche Plant in response to this outage avoided approximately
 31 122,000 customer outage minutes.
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33 Delaying the 2022 *Hydro Facility Rehabilitation* project would therefore be
 34 inconsistent with maintaining reliable service for customers at the lowest possible
 35 cost.

⁸ For information on Newfoundland Power’s approach to quantifying risks and benefits, see response to Request for Information CA-NP-014.

⁹ This estimate is calculated to reflect post Muskrat Falls marginal costs using the 2022 marginal cost values for energy. See the 2022 *Capital Budget Application, Report 1.1 2022 Facility Rehabilitation*, page 1.

¹⁰ For example, the Petty Harbour hydro plant has a normal annual production of 16.3 GWh. If the Petty Harbour hydro plant were removed from service the increased cost to customers would be approximately \$0.7 million annually. The energy related value of production is estimated using 4.3 ¢/kWh. This is the estimated energy-related value of production from the Company’s hydro facilities divided by normal annual hydroelectric production. (4.3 ¢/kWh = \$18,573,000 / 434.8 GWh). See the 2022 *Capital Budget Application, Report 1.1 Facility Rehabilitation*, footnote 2.