Q. (Reference Application Schedule B, page 3 of 98) It is stated "*This project is justified on the obligation to provide reliable service to customers at least cost and cannot be deferred*". Please provide evidence showing that NP will be unable to provide reliable service at least cost if it were to delay "*replacing and refurbishing deteriorated or substandard components at Horse Chops, Rattling Brook and Rose Blanche hydro plants*". Specifically, provide the expected impact on reliability if the work on Horse Chops, Rattling Brook and Rose Blanche were delayed by one or two years and show the impact on cost.

A. **General**

Newfoundland Power's hydro plants provide inexpensive energy to the benefit of customers.[1] They also provide a modest but meaningful contribution to capacity support on the Island Interconnected System.[2] The continued operation of these facilities reduces the need for additional, more expensive generation to supply customers and is consistent with the Company's obligation to provide reliable service to customers at least cost.[3]

In order for Newfoundland Power's hydro plants to remain in service and continue to provide customers with low cost energy, the Company must ensure the facilities can operate in a safe, reliable and environmentally compliant manner.[4] The alternative to maintaining the Company's generation facilities would be to retire them.

2021 Facility Rehabilitation Projects

Newfoundland Power's *2021 Facility Rehabilitation* project includes expenditures related to the Horse Chops, Rattling Brook, and Rose Blanche hydro plants.

The proposed expenditure for the Horse Chops hydro plant is to replace the bypass pipe system, which is directly connected to the plant penstock. Temporary repairs were carried out in 2019. Failure of the bypass pipe could lead to major plant flooding, which could take the plant out of service for an extended period.[5]

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1 Based on Newfoundland and Labrador Hydro's 2020 marginal cost update, the energy-related value of the production from the Company's hydro facilities is estimated at $18.4 million annually, while the capacity-related value is estimated at $18.3 million annually. This totals $36.7 million annually. See the *2021 Capital Budget Application, Volume 1, Schedule B*, page 3. This compares to the cost of production of approximately $20.3 million annually. See response to Request for Information CA-NP-019.

2 Newfoundland Power's hydro plants have a combined maximum rated demand capacity of 97.5 MW. The combined maximum rated demand capacity of the Horse Chops, Rattling Brook, and Rose Blanche hydro plants is 28.9 MW.

3 Section 3(b)(iii) of the *Electrical Power Control Act, 1994 ("EPCA")* requires that power be delivered to customers at the lowest possible cost consistent with reliable service.

4 Section 37(1) of the *Public Utilities Act* states: "*A public utility shall provide service and facilities which are reasonably safe and adequate and just and reasonable."*

5 See *2021 Capital Budget Application, Volume 2, 1.1 – 2021 Facility Rehabilitation, Section 2.1 – Horse Chops Bypass Piping Replacement ($150,000).* See also, the response to Request for Information CA-NP-101.

The proposed expenditures for the Rattling Brook hydro plant are related to its 93-metre-high surge tank and the replacement of the garage facility. The surge tank enables the safe release of water pressure in the Rattling Brook penstock when one or both generators trip offline.[6] An inspection of the surge tank was completed by Tacten International Inc. in 2019.[7] The inspection found significant wear on the column cross braces that support the surge tank. This is a significant structural issue.[8] The inspection also determined that the fall protection system on the surge tank access ladder was damaged beyond repair.[9] The replacement of the Rattling Brook garage facility is necessary to accommodate Rattling Brook Substation expansion and to support continued operation of the hydro plant.[10]

Expenditures proposed for the Rose Blanche hydro plant are related to the safe operation of its 1,257-metre long penstock. The proposed safety improvements are required to provide safe access for maintenance personnel and to meet *Occupational Health and Safety Regulations*.[11]

Deferring the 2021 Facility Rehabilitation Projects

The low cost energy provided by the Horse Chops, Rattling Brook, and Rose Blanche hydro plants makes a meaningful contribution to Newfoundland Power's ability to provide reliable service to customers at least cost. Inspections, operating experience and engineering studies related to these hydro plants have identified work that is necessary for their continued safe, reliable, and environmentally compliant operation. This work is identified in the *2021 Facility Rehabilitation* project.[12]

Deferral of the proposed *2021 Facility Rehabilitation* work associated with the Horse Chops, Rattling Brook, and Rose Blanche hydro plants would be detrimental to their continued operation and inconsistent with the *EPCA* and the *Public Utilities Act*. If this work is deferred, Newfoundland Power would be obligated to consider whether the hydro plants can remain in service. Removing these plants from service would disadvantage

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6 See *2021 Capital Budget Application, Volume 2, 1.1 – 2021 Facility Rehabilitation, Section 2.2 – Rattling Brook Surge Tank Rehabilitation ($300,000).*

7 A copy of the Tacten International Inc. inspection report is provided in the *2021 Capital Budget Application, Volume 2, 1.1 – 2021 Facility Rehabilitation, Appendix A – Tacten International Inc. – Rattling Brook Surge Tower*.

8 The braces are used to stabilize the long, slender columns holding the surge tank. Without them, the columns may become unstable and result in failure under high wind conditions. A collapse of the surge tank could endanger lives and take the Company's largest hydro plant out of service for an extended period of time.

9 See the response to Request for Information CA-NP-102 for additional details relating to the need to complete work relating to the Rattling Brook fall arrest system and surge tank bracing.

10 See *2021 Capital Budget Application, Volume 2, 1.1 – 2021 Facility Rehabilitation, Section 2.3 – Rattling Brook Garage Replacement ($225,000).*

11 See the response to Request for Information CA-NP-102.

12 See Table 1 of the response to Request for Information CA-NP-020 for a simple payback calculation relating to the proposed Facility Rehabilitation work associated with the Horse Chops, Rattling Brook, and Rose Blanche hydro plants.

customers due to the elimination of low cost energy as well as reduced capacity on the Island Interconnected System.