

December 6, 2023

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

Attention: Jo-Anne Galarneau
Executive Director and Board Secretary

Dear Ms. Galarneau:

Re: Newfoundland and Labrador Hydro – 2023-2024 Winter Readiness Planning Report dated November 10, 2023 and Near-Term Reliability Report dated November 15, 2023 – Newfoundland Power's Comments

A. Introductory

Newfoundland and Labrador Hydro's ("Hydro") *2023-2024 Winter Readiness Planning Report* ("Winter Readiness Report") and *2023 Near-Term Reliability Report – November Report* ("Near-Term Reliability Report") were filed with the Newfoundland and Labrador Board of Commissioners of Public Utilities (the "Board") on November 10 and November 15, 2023, respectively. By letter dated November 28, 2023 the Board invited parties to file comments with respect to the reliability and resources adequacy for the 2023-2024 winter. These are Newfoundland Power's comments.

B. Supply Adequacy

In its Winter Readiness Report, Hydro provides a summary of its annual work plan which integrates all planned activities for the year that are critical to the safe and reliable production and transmission of electricity to customers on the Island Interconnected System. In its Near-Term Reliability Report, Hydro provides the results of its near-term resource adequacy and reliability model for the 2024-2028 period. The results show violations of Hydro's planning criteria in five out of six scenarios for the 2023-2024 winter season.¹

Hydro is forecasting a peak demand on the Island Interconnected System of 1,802 MW for the 2023-2024 winter season.² Hydro's base-case reliability model assumes the Labrador-Island Link ("LIL") is available at 700 MW for the 2023-2024 winter season. Hydro's reliability model also assumes the 490 MW Holyrood Thermal Generating Station ("Holyrood TGS") is de-rated to 350 MW due to Unit 2 being out of service for the majority of the winter season.³ Hydro's 50 MW Stephenville Gas Turbine is also out of service and not expected to be available until

¹ See Near-Term Reliability Report, page 40, Table 6: Annual LOLH, EUE, and NEUE Results.

² See Near-Term Reliability Report, page 33, Table 3: Island Interconnected System ("IIS") Peak Demand Forecast (MW).

³ See Near-Term Reliability Report, pages 40-41.

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mid-to late-January.⁴ Together, these assets comprise a significant portion of the available capacity on the Island Interconnected System to meet forecast load for the 2023-2024 winter season.

The Winter Readiness Report and the Near-Term Reliability Report raise concerns regarding supply reliability, particularly for the 2023-2024 winter season. Most notable are the risks associated with the LIL and Holyrood TGS, which remains in service as a source of backup for the LIL. Hydro states that the LIL is essential to system reliability and that the reliability of backup sources of supply remain essential to system reliability until new generation sources can be constructed.⁵

The LIL is subject to harsh environmental conditions that occur throughout the 1,100 km transmission line corridor between Muskrat Falls and Soldiers Pond. In each of the two previous winter seasons, the LIL experienced damage. In January 2021, a freezing rain event caused damage to three sections of the LIL in Labrador which caused it to be out of service.⁶ Between December 2022 and January 2023, the LIL experienced failures resulting from four types of localized issues, each observed on a different section of the LIL. Hydro states that the issues associated with the LIL did not affect Hydro's ability to provide customers on the Island with reliable service during the 2022-2023 winter operating season and that all critical repairs resulting from the winter failures have been completed.⁷

The LIL was commissioned on April 14, 2023 and is now relied upon as a firm source of capacity for the Island Interconnected System. Weather conditions and loads in the eight months since commissioning are not comparable to those that can be experienced during the winter months. Equipment failures that have occurred on the LIL in the past two winter seasons are concerning to Newfoundland Power and highlight uncertainty regarding the LIL's ability to provide reliable service to customers for the upcoming winter.

Hydro's Winter Readiness Report states that Holyrood TGS Unit 2 will be out of service until mid-March 2024.⁸ This reduces Hydro's available capacity on the Island Interconnected System by 170 MW for the majority of the 2023-2024 winter season. In addition, the reliability of remaining capacity at the Holyrood TGS is not without risk for the upcoming 2023-2024 winter season.

The majority of the Holyrood TGS assets are 40 to 50 years old and require Hydro to manage a higher risk of in-service failures.⁹ Recent age-related failures have been experienced on the boilers, turbines, and electrical equipment at the Holyrood TGS.¹⁰ Hydro is also currently

⁴ See Near-Term Reliability Report, page 16.

⁵ See Near-Term Reliability Report, page 46.

⁶ See Hydro's May 31, 2021 Correspondence Re: Reliability and Resource Adequacy Study Review – Labrador-Island Link Failure Investigation Reports.

⁷ See Near-Term Reliability Report, page 19.

⁸ See Winter Readiness Planning Report, page 5.

⁹ See Winter Readiness Planning Report, page 30.

¹⁰ See Near-Term Reliability Report, page 15.

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dealing with fuel contamination issues which occurred when Hydro took delivery of fuel in September.¹¹ Finally, the reliability of Holyrood is at increased risk until 2026 due to a lack of a spare generator step-up (“GSU”) transformer.¹² While these issues have not resulted in any interruptions to service to date, they demonstrate the risk associated with the operation of the Holyrood TGS during the 2023-2024 winter season and beyond.

For the 2023-2024 winter season, Newfoundland Power observes that supply risk to customers on the Island Interconnected System is elevated. The LIL is early in its operation and has experienced damage in the past two winter seasons, the Holyrood TGS is without Unit 2 for the majority of the winter season, and the Stephenville Gas Turbine is out of service until mid to late January. The supply risk is demonstrated in the results of Hydro’s reliability model, which shows planning violations in five of six scenarios for the 2023-2024 winter season. Hydro has identified one potential source of additional supply: capacity from the Maritime Link. However, firm capacity from the Maritime Link cannot be assured and there are Island transmission constraints in delivering imported energy through the Maritime Link to the Avalon Peninsula.¹³

Near-term supply challenges for customers on the Island Interconnected System are expected to persist into future winter seasons. This highlights the importance of the work required by Hydro as part of its ongoing Reliability and Resource Adequacy Study. The evaluation of alternative sources of supply and an earlier replacement of Holyrood TGS capacity could improve reliability for customers as well as reduce future supply costs. Completion of the necessary work identified as part of Hydro’s next Reliability and Resource Adequacy Study and subsequent applications to the Board for additional sources of supply are critical to reducing supply risk to customers in future winter seasons.

C. Customer Communications

Following #DarkNL in 2014, Hydro and Newfoundland Power established an advance notification protocol to guide the utilities’ communications to customers in the event of anticipated or experienced supply constraints during the winter season. The advance notification protocol defined increasing levels of alert including *Power Watch*, *Power Warning*, and *Power Emergency* corresponding to diminishing levels of supply reserves.

The recent introduction of the LIL has changed supply dynamics on the Island Interconnected System. For instance, the LIL is available for the 2023-2024 winter season at 700 MW in bipole mode and 675 MW in monopole mode.¹⁴ This means that, if the LIL were to lose operation of one pole, it can still operate at a high capacity. However, during such circumstances the Island Interconnected System is at greater risk of underfrequency load shedding. If the LIL experiences a failure of both poles (a bipole failure), a loss of supply up to 700 MW would occur. The amount of energy delivered from the LIL also depends on the availability of the

¹¹ See Winter Readiness Planning Report, page 35.

¹² See Near-Term Reliability Report, page 29.

¹³ See Near-Term Reliability Report, pages 36-37.

¹⁴ See Near-Term Reliability Report, page 21, footnote 42.

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Maritime Link. If the Maritime Link were not available, this would reduce the amount of LIL energy that can be brought to the Island Interconnected System.¹⁵

Newfoundland Power received Hydro's most recent Operating Reserves procedure on December 5, 2023 and is assessing how it differs from Hydro's procedure prior to the commissioning of the LIL. Newfoundland Power has also been in contact with Hydro regarding updates to the customer advance notification protocol that take into account the commissioning and increased reliance on the LIL. The updated procedure and advance notification protocol are important to ensure customers are provided with accurate and timely information in advance of, or during, supply constraints.

D. Potential for Rotating Power Outages

As part of its Near-Term Reliability Report, Hydro responded to Newfoundland Power's request for further information regarding rotating customer outages in the event of a LIL outage during peak winter conditions with two, as opposed to three, Holyrood TGS units online. In its response, Hydro did not provide any details regarding to what extent rotating power outages would be required under the requested scenario. Rather, Hydro provided the results of its modelling, which assumed a 5% forced outage rate for the LIL.¹⁶

#DarkNL in 2014 demonstrated that the ability to rotate distribution feeders, while not standard practice, becomes a necessary emergency capability in times of supply shortfall. Rotating outages create considerable challenges to customers and Newfoundland Power's operation of the distribution system. The extent to which customer load is rotated and the duration of customer load rotations are dependent on a number of dynamic factors including availability of supply, customer load, and weather conditions. The operation of the distribution system during such periods is not routine or predictable.

Since 2014, Newfoundland Power's ability to efficiently operate the distribution system during emergency rotating power outages has improved. This is due to increased automation of the distribution system, integration of a new outage management system, tabletop exercises, and distribution feeder reviews which are completed prior to the winter season. In advance of the 2023-2024 winter season, Newfoundland Power has undertaken additional measures to prepare for the potential of rotating power outages. This includes development of internal dashboards to help operational staff manage rotating power outages as efficiently as possible, should they occur, to minimize the impact on customers.

¹⁵ See Near-Term Reliability Report, pages 21-22.

¹⁶ See Near-Term Reliability Report, pages 27-28.

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E. Concluding

Hydro's Winter Readiness Report and Near-Term Reliability Report outline elevated supply risks for all customers on the Island Interconnected System for the 2023-2024 winter season. This risk is expected to continue for customers throughout the medium term, largely due to uncertainty regarding LIL and Holyrood TGS reliability. The issues identified in the reports require that Hydro urgently complete the remaining work outlined in its Winter Readiness Report as well as the work outlined by the Board in relation to Hydro's next Reliability and Resource Adequacy Study update which is due in the spring of 2024.

We trust this is in order. If you have any questions regarding the enclosed, please contact the undersigned.

Yours truly,



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