

October 3, 2024

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

Attention: Jo-Anne Galarneau
Executive Director and Board Secretary

Re: *Reliability and Resource Adequacy Study Review – Labrador-Island Link Update for the Quarter Ended September 30, 2024*

In 2019, Newfoundland and Labrador Hydro (“Hydro”) committed to providing the Board of Commissioners of Public Utilities (“Board”) and its consultant with a monthly status update reflecting specific requests by the Board and other pertinent information with respect to the Muskrat Falls Project.^{1,2,3} Hydro’s update is as follows.

Since commissioning in April 2023, the LIL has been in service and successfully providing power to the provincial grid. Since the last update, the LIL has been operating at various power transfer levels as required by the system. To facilitate the commissioning of the software and to complete previously scheduled maintenance activities, the LIL was on a planned outage for a portion of the period, as a result, approximately 337 GWh were delivered over the LIL from July 1, 2024 to September 30, 2024. Hydro continues to ensure the availability of generation at the Holyrood Thermal Generating Station; however, energy and capacity delivered over the LIL are used to minimize thermal generation whenever possible.

As reported in Hydro’s most recent Quarterly Report on Asset Performance in Support of Resource Adequacy (“Rolling 12”),⁴ despite expectations of unavailability being at the higher end of this range early in its commissioned operation, the equivalent forced outage rate (“EqFOR”) for the LIL from July 1, 2023 to June 30, 2024, was approximately 2.79%. This is well within the assumed long-term range of 1% to 10%. Hydro will provide an update on EqFOR for the twelve months ended September 30, 2024, in its next Rolling 12 report due to the Board on October 31, 2024.

1.0 Labrador-Island Link

1.1 900 MW Test and Software

All software functionality required for operation up to 900 MW was proven and accepted as satisfactory during pole overload tests in winter 2023 prior to April 2023 commissioning; however, as committed,

¹ “Newfoundland and Labrador Hydro – Reliability and Resource Adequacy Study Review – Information Required for Monthly Reports,” Board of Commissioners of Public Utilities, January 19, 2021.

² Hydro’s report has been adjusted to reflect the Board’s requests, with the exception of information related to the Labrador-Island Link (“LIL”) monthly energy transfers as well as Maritime Link availability, exports, and imports in the month. Both pieces of information are currently included in Hydro’s Monthly Energy Supply report and are not available in a timeframe that corresponds with the timing of this report.

³ On July 25, 2023, the Board directed Hydro to reduce the frequency of reporting to quarterly from monthly.

⁴ “Quarterly Report on Asset Performance in Support of Resource Adequacy for the Twelve Months Ended June 30, 2024,” Newfoundland and Labrador Hydro, July 31, 2024.

controlled testing at the highest power levels will be performed prior to operation in this range when system conditions permit. Hydro continues to plan for the execution of the 900 MW pole overload test in the fall of 2024. As previously reported, the following are prerequisite conditions for the test to occur:

- Satisfactory system conditions are present, including both those in Newfoundland and Labrador, where a high system load can be reasonably expected to occur and neighbouring jurisdictions;
- Successful coordination with all relevant neighbouring system operators is attained; and
- Identification of risks and implementation of all necessary risk mitigation actions are in place.

As discussed in the previous update, additional work to mitigate cable switching transients at the LIL Transition Compounds was required and Cable 3 remains out of service.⁵ A grounding study and ground grid modifications were completed to reduce the impacts of cable switching transients. The modifications mitigated safety concerns; however, the associated voltage transient is still higher than the ratings of some low-voltage equipment. This equipment is planned for replacement and testing by mid-October. These mitigations are a pre-requisite to execution of the 900 MW high-power test.

New LIL software was installed in August and is anticipated to be commissioned in mid-October. This software, as with the previous version, allows for full operation of the LIL up to 900 MW. Through dynamic commissioning, non-critical software-related items were identified. A future software will address these non-critical issues and improve operational functionality. It is anticipated to be installed in spring 2025.

1.2 Operations

During the third quarter of 2024, the LIL experienced five pole trip events. On July 28, 2024, two under frequency load shedding events occurred which resulted in customer outages to Labrador East and the Island, due to an event in the Muskrat Falls Terminal Station. The event occurred during maintenance activities where a ground fault in control circuitry resulted in an inadvertent circuit breaker operation during testing. This event resulted in the isolation of elements connected at the terminal station and an outage to the LIL and Muskrat Falls Generation.

The first under frequency protection trip due to the Muskrat Falls Terminal Station event impacted 5,500 Hydro Domestic customers in Labrador East. As successive system elements tripped, power flow over both LIL poles was interrupted and resulted in the under frequency load shedding of 126,269 Newfoundland Power Inc. customers, as well as one Industrial customer on the Island. The majority of customers were restored within 45 minutes.

Other LIL events did not result in any customer impact as the other pole was in service and pole compensation operated, as designed, in each case. Pole compensation ensures that power flow from the tripped pole immediately moves to the pole still in service. The average return-to-service time for all of the trips was less than one day.

Hydro will provide an overview of the LIL winter readiness within its winter readiness reporting, the first of which is to be submitted to the Board on October 10, 2024.

⁵ With cable switching disabled, pole overloads (individual pole operation above 450 MW) are limited to five minutes, as only one cable is in service per pole. To provide reliable service, Hydro has limited the LIL bipole capacity to 450 MW for normal operation; however, operation up to 700 MW is available should the system require operation at that level.

2.0 Soldiers Pond Synchronous Condensers

Since the last LIL update, the Soldiers Pond Synchronous Condensers have been in operation at all times, other than for scheduled maintenance and punch list items.

Hydro will include an update on the total number of hours of operation for the Soldiers Pond Synchronous Condensers for the twelve months ended September 30, 2024, in its next Rolling 12 report.

3.0 Muskrat Falls Generation

As reported in its most recent Rolling 12 report, the Muskrat Falls Hydroelectric Generating Station (“Muskrat Falls”) total plant DAFOR⁶ performance through the end of the second quarter of 2024 was 0.42%, which was significantly better than the Electricity Canada average of 5.70% for similar units across Canada.

Hydro will include an update on the performance of the Muskrat Falls generation for the twelve months ended September 30, 2024, in its next Rolling 12 report. Hydro will also provide an overview of Muskrat Falls’ winter readiness on October 10, 2024.

Hydro continues to submit its quarterly update while the Board considers Hydro’s previous proposal to discontinue the quarterly update, as Hydro has integrated reporting on the LIL and Muskrat Falls assets into its regular outage and operational reporting, including the Daily Supply and Demand, Winter Readiness, Rolling 12 and other reports to the Board.

If you have any questions or comments, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO



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ecc:

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⁶ Derated Adjusted Forced Outage Rate (“DAFOR”).