

January 12, 2023

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

Attention: Cheryl Blundon
Director of Corporate Services & Board Secretary

Re: *Reliability and Resource Adequacy Study Review – Labrador-Island Link Monthly Update – December 2022*

On November 21, 2019, the Board of Commissioners of Public Utilities (“Board”) requested that Newfoundland and Labrador Hydro (“Hydro”) provide further information as a result of the findings in The Liberty Consulting Group’s (“Liberty”) Eighth Quarterly Monitoring Report on the Integration of Power Supply Facilities to the Island Interconnected System.¹ In its response, Hydro committed to providing Liberty and the Board with a monthly status update regarding the schedule for the Labrador-Island Link (“LIL”) software development and testing, updated information in response to the specific requests detailed in the Board’s November 21, 2019 correspondence, and other pertinent information with respect to the Muskrat Falls Project.² On January 19, 2021, the Board requested Hydro continue monthly reporting and outlined specific information, at a minimum, to be included.³ Enclosed please find the update as requested.

1.0 LABRADOR-ISLAND LINK

1.1 Commissioning Activities

1.1.1 Bipole Commissioning

As previously reported,⁵ GE Canada (“GE”) is currently working on a new version of software to correct the issue that caused the 700 MW overload test to fail. GE has not provided a detailed schedule for the software fix, including regression testing and Factory Acceptance Testing; however, GE has advised that it

¹ “Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System - Phase Two - The Liberty Consulting Group Eighth Quarterly Monitoring Report on the Integration of Power Supply Facilities to the Island Interconnected System - Further Information and Continued Quarterly Monitoring Reports in 2020,” Board of Commissioners of Public Utilities, November 21, 2019.

² “Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System - Phase Two - The Liberty Consulting Group Eighth Quarterly Monitoring Report on the Integration of Power Supply Facilities to the Island Interconnected System - Further Information - Hydro’s Comments,” Newfoundland and Labrador Hydro, November 29, 2019, p. 1.

³ “Newfoundland and Labrador Hydro - Reliability and Resource Adequacy Study Review - Information Required for Monthly Reports,” Board of Commissioners of Public Utilities, January 19, 2021.

⁴ Hydro’s report has been adjusted to reflect the Board’s request, with the exception of information related to the LIL monthly energy transfers and Maritime Link availability and 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 time frame that corresponds with the timing of this report.

⁵ “Reliability and Resource Adequacy Study Review – Labrador-Island Link Monthly Update – November 2022,” Newfoundland and Labrador Hydro, December 8, 2022, p. 2.

is working to release a new version of the software and complete high-power testing in the first quarter of 2023. Hydro is working with GE to plan for the completion of the high-power tests required for Final Commissioning.

In the interim, the Newfoundland and Labrador System Operator (“NLSO”) will continue to work with the non-regulated Engineering team in executing the operational plan for the LIL with the current software, based on the successful testing up to 475 MW that occurred in the fall of 2022. These tests enabled power transfer at those levels from Labrador to the Island and beyond since that time. The NLSO will determine the actual power transfer level daily, based on system conditions. Every effort will be made to utilize the LIL while ensuring reliable operation.

1.1.2 Soldiers Pond Synchronous Condensers

GE Power’s long-term solution to the bearing tilt issue is still pending; however, its ongoing analysis of Synchronous Condenser (“SC”) 1 has identified an operating solution to return the unit to service while GE Power continues to develop a long-term solution.

In preparation for SC1 online testing, SC2 and SC3 were required to be online. While bringing SC3 back online after planned maintenance, the unit experienced a failure of the high-pressure lift pump. The failed pump was removed and replaced with the spare pump; however, the unit remains offline to complete some outstanding punches. It is planned to be back online by the end of January 2023. Subsequently, while bringing SC1 online, the unit appeared to have experienced a similar failure of its high-pressure lift pump. SC1 remains offline while GE Power waits for the delivery of a new pump, which is estimated to arrive by the end of January 2023. GE Power’s schedule for SC1 Return to Service remains in February 2023. GE Power’s root cause analysis into the pump issues is currently ongoing. Both pump failures are covered by warranty. The LIL has been in service while these issues are being resolved.

With respect to the vibration protection setting issue for all three synchronous condensers, the NLSO is still assessing the documentation regarding the protection setting changes. Progress has been made; however, the NLSO has advised the documentation still requires additional technical review before lifting the LIL capacity restriction of 315 MW.

With respect to the unintentional coast down⁶ of SC2 reported in the November 2022 update,⁷ corrective actions have been implemented and the unit was returned to service in December 2022.

Monthly meetings between the CEOs of Hydro and GE Power are ongoing to ensure all outstanding issues are resolved to satisfaction.

1.2 Operations

The LIL has been operating at various times and power transfer levels while repairs are ongoing. In total, 117,742 MWh of power was delivered during the month of December 2022.

⁶ Decelerating to an eventual shut down.

⁷ “Reliability and Resource Adequacy Study Review – Labrador-Island Link Monthly Update – November 2022,” Newfoundland and Labrador Hydro, December 8, 2022, p. 2.

As previously reported,⁸ on December 2, 2022, overhead line damage was found on one pole of the LIL, located on the Northern Peninsula. The work to repair this damage is complete.

Through December 2022 and early January 2023, additional damage was discovered in several areas along the line, the majority of which has been repaired. Specifically, similar to the December 2, 2022 issue, Hydro found an additional broken turnbuckle and an unbroken conductor on the ground in southern Labrador on Pole 1. Repairs have since been completed. Additionally, Hydro located damage to the optical ground wire (“OPGW”) in the Labrador Straits and Birchy Narrows. In the Labrador Straits, the tower connected to the OPGW was bent; however, the wire itself remained connected. In Birchy Narrows, the tower was bent and resting on the cross arm, while in this location, the wire sustained some damaged fibres. These repairs have been completed.

A list containing the issues found since December 30, 2022 for which repairs are ongoing and the status of those repairs is provided in Table 1.

Table 1: Overhead Line Issues and Status of Repairs

Location	LIL Line Issue	Status
Long Range Mountains (Newfoundland)	Pole 1: Broken turnbuckle and a conductor was on the ground but not broken. Conductors were coated with ice in the area.	Repairs are ongoing. The estimated restoration date is January 14, 2023.
Central Labrador	The electrode line had fallen and broken. Conductors were coated with ice in the area.	Repairs are ongoing. The estimated restoration date is January 16, 2023.

Through the course of the repairs to the items noted in Table 1, Pole 1 has been out of service; however, power has been able to flow over Pole 2. To conduct repairs, Hydro has taken Pole 2 out of service as needed. When repairs are not ongoing, Pole 2 remains in service flowing power. From a reliability perspective, Hydro is not relying upon the LIL to service customers this winter; therefore, these issues have not affected Hydro’s ability to provide customers on the Island with reliable service this winter.

A root cause investigation into all of the issues noted is underway. The information from the root cause investigation will be used to determine appropriate mitigation measures and/or corrective actions to be implemented.

In addition to the outstanding items on overhead lines noted in Table 1, an issue occurred with the Forteau disconnect switch that could have prevented Pole 1 from going into operation once the overhead was repaired. This issue has been identified and repairs will be implemented this week.

1.3 Outages

There were no LIL-related customer outages to report for December 2022.

⁸ “Reliability and Resource Adequacy Study Review – Labrador-Island Link Monthly Update – November 2022,” Newfoundland and Labrador Hydro, December 8, 2022, p. 3.

2.0 MUSKRAT FALLS GENERATION

2.1 Operations

Muskrat Falls Unit 4 is currently offline for planned maintenance. Units 1, 2, and 3 are in operation.

3.0 LABRADOR-ISLAND LINK SCHEDULE

As noted previously, GE is working to resolve the software issue discovered during high-power testing on November 24, 2022. A detailed schedule from GE for the new version of the software is pending; however, GE has advised that it is working to release the new version of the software in the first quarter of 2023. Completion of outstanding high-power tests is required for Final Commissioning. A schedule forecast will be provided when available.

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

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO



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