

October 5, 2023

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 & Board Secretary

Re: *Reliability and Resource Adequacy Study Review – Labrador-Island Link Update for the Quarter Ended September 30, 2023.*

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 Hydro committed to providing Liberty and the Board with a monthly status update reflecting specific requests by the Board and other pertinent information with respect to the Muskrat Falls Project.^{2,3,4} On July 25, 2023, the Board directed Hydro to reduce the frequency of reporting to quarterly from monthly.⁵ Enclosed please find the update as requested.

1.0 LABRADOR-ISLAND LINK

1.1 Commissioning Activities

1.1.1 Bipole Commissioning

As previously reported, the Labrador-Island Link (“LIL”) was officially commissioned on April 14, 2023, in accordance with the project financing and revenue agreements.

Since commissioning, the LIL has performed as expected and the current version of software is adequate to ensure reliable operations through the upcoming winter season. Hydro will continue to address

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 Ibid., 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 requests, with the exception of information related to the 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.

⁵ “Newfoundland and Labrador Hydro - Reliability and Resource Adequacy Study Review –Frequency of Reporting by Newfoundland and Labrador Hydro and The Liberty Consulting Group,” Board of Commissioners of Public Utilities, July 25, 2023.

remaining punchlist items submitted with the commissioning certificate, including delivery of a final version of LIL software and execution of a 900 MW pole overload test.

The purpose of the final software version is to resolve the outstanding punchlist items and other items that were deferred to the final release. Due to supply limitations associated with generators that are currently scheduled to be out of service this fall, particularly Holyrood Thermal Generating Station (“Holyrood TGS”) Unit 2,⁶ and the extended outage that would be required for the installation and testing of the new software version, Hydro has decided to delay the installation of the new software version until the spring of 2024. This decision is made with the knowledge that Hydro has operational protocols in place since software commissioning to ensure reliable operation of the current software version of the LIL.

Hydro continues to plan for the execution of the 900 MW pole overload test. Given the supply considerations discussed above, Hydro will not be scheduling the test during the late fall/early winter of 2023-2024. Rather, Hydro will plan for the test once sufficient backup generation is available and the following conditions are met:

- 1) Satisfactory system conditions, including those in Newfoundland and Labrador and neighboring jurisdictions, are present.
- 2) Successful coordination with all relevant system operators is attained.
- 3) Identification of risks and implementation of all necessary risk mitigation actions are in place.

It is noted that Hydro has performed supply adequacy analysis to confirm that the LIL’s current operational capacity of 700 MW is sufficient to meet forecasted load expectations and that there is no appreciable reliability benefit of a capacity increase to 900 MW for the coming winter.

1.1.2 Soldiers Pond Synchronous Condensers

Since the July 6, 2023 LIL update,⁷ the synchronous condensers have been in operation at all times other than for scheduled maintenance and completion of punchlist work, with the following exceptions:

- On August 30, 2023, Synchronous Condenser 2 (“SC2”) tripped. Indications are that the cause of the trip related to efforts to find a dc ground fault. There was no impact to customers as a result of this trip. The unit returned to service on the same day. An investigation into the event is ongoing.
- On September 29, 2023, SC2 tripped. An investigation into the event is ongoing. There was no impact to customers as a result of this trip. Hydro is working with original equipment manufacturer to identify additional testing or checks required before returning the unit to service.

⁶ As reported in Hydro’s response to CA-NLH-057 of the 2024 Capital Budget Application proceeding, Hydro has encountered cracking on the low pressure blades on Unit 2 turbine at the Holyrood TGS that will render the unit unavailable into the first quarter of 2024.

<<http://pub.nl.ca/applications/NLH2024Capital/responses/CA-NLH-057.PDF>>.

⁷ “Reliability and Resource Adequacy Study Review – Labrador-Island Link Monthly Update – June 2023,” Newfoundland and Labrador Hydro, July 6, 2023.

- On September 29, 2023, Synchronous Condenser 1 tripped and it was safely returned to service later the same day. There was no impact to customers as a result of this trip. An investigation into the event is ongoing and, based on preliminary investigation findings, the trip is unrelated to the issue that caused SC2 to trip on the same day.

Hydro will continue to address the remaining items that were noted in punchlist reports submitted with the commissioning certificate and outstanding warranty claims. 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 power transfer levels since the last report on July 6, 2023 and in total, 556.83 GWh were delivered over the LIL from July 1 to September 30, 2023. Hydro continues to ensure the availability of generation at the Holyrood TGS for operation during colder months to ensure reliable supply of power for customers. Energy and capacity delivered over the LIL are used to minimize thermal generation whenever possible.

During the current quarter⁸, LIL was available at all times other than for scheduled maintenance outages, with the exception of the system events described below. As the LIL is in its early operation, Hydro expects that there will be a higher frequency of issues that need to be addressed. Several events, including pole trips and instances of loss of communication occurred within the current quarter, which were resolved quickly. The following is an update on the LIL performance in the current quarter:

- There were three instances of loss of communication between Muskrat Falls and Soldiers Pond, which had no impacts to customers, during the current quarter. On July 9, 2023, a communication loss occurred as a result of the inadvertent bending of optical ground wire fibres during repair by a third-party contractor, communication was restored on the same day. On July 21 and August 26, 2023, there were communication losses related to a failed start of the diesel generator at the Three Rocks Repeater site, communication was restored within 24 hours for both events. Improvements to the diesel generator monitoring system are being implemented and the investigation is ongoing to identify the root cause and remedial actions.
- There were four instances of pole trips on the LIL during the current quarter. Customer impact occurred in one of the four instances, which is detailed in Section 1.3. Each trip was investigated to determine the cause and necessary repairs were completed to return the pole to service as noted below:
 - On July 14, 2023, Pole 1 tripped at Soldiers Pond when it was placed in service. Pole 1 was returned to service on July 15, 2023. The trip was the result of a faulty ground switch which has been repaired and returned to service.
 - On August 21, 2023, Pole 2 tripped in monopole mode. The trip was due to high inrush current when energizing the Pole 1 converter transformer. Control settings have been adjusted and additional testing to validate resolution of this issue is pending LIL outage scheduling.

⁸ Period beginning July 1, 2023, and ending September 30, 2023.

- On August 24, 2023, Pole 2 tripped in bipole mode. The trip was caused by the shorting of contacts due to water ingress on a junction box, which was remediated. Pole 2 was returned to service on August 26, 2023.
- On August 24, 2023, Pole 1 tripped in monopole mode due to a lightning strike on the Labrador electrode line. Pole 1 returned to service shortly after the trip. No issues were found with the electrode line following inspection and it was made available for service.

1.3 Outages

As noted in Section 1.2, there was an outage to Island customers as a result of the Pole 2 trip on August 21, 2023. The trip resulted in a runback on the Maritime Link and approximately 35 MW of under-frequency load shedding on the Island. All customers were returned to service within a few minutes of the trip. Hydro has revised operational protocols in response to this event to eliminate risk of any future customer impact.

2.0 MUSKRAT FALLS GENERATION

2.1 Operations

Since the filing of the July 6, 2023 LIL monthly update, the units at the Muskrat Falls Hydroelectric Generating Facility were available for service at all times other than for scheduled maintenance outages, with the exception of the following system events:

- On August 1, 2023, Unit 2 was in the process of performing a function test after completing scheduled maintenance when it tripped due to excitation system and Unit 2 correctly tripped. Replacement parts were installed and the unit was returned to service on August 3, 2023. An investigation into this event is ongoing.

3.0 LABRADOR-ISLAND LINK SCHEDULE

As noted in Section 1.1.1, LIL commissioning has been achieved in accordance with both the project finance agreement and revenue agreements.

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

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO



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