

February 2, 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 – January 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.<sup>1</sup> 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.<sup>2</sup> On January 19, 2021, the Board requested Hydro continue monthly reporting and outlined specific information, at a minimum, to be included.<sup>3,4</sup> Enclosed please find the update as requested.

## **1.0 LABRADOR-ISLAND LINK**

### **1.1 Commissioning Activities**

#### **1.1.1 Bipole Commissioning**

As previously reported,<sup>5</sup> 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 provided a tentative schedule for the

---

<sup>1</sup> “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.

<sup>2</sup> “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.

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

<sup>4</sup> 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.

<sup>5</sup> “*Reliability and Resource Adequacy Study Review – Labrador-Island Link Monthly Update – December 2022*,” Newfoundland and Labrador Hydro, January 12, 2023, p. 1.

software fix which includes a plan to release a new version of the software and complete high-power testing in the first quarter of 2023. The tentative schedule is as follows:

- February 7–10, 2023 – Factory Acceptance Testing;
- February 15, 2023 – Software release to site and commencement of testing below 450 MW;
- February 15–22, 2023 – Dynamic Commissioning below 450 MW; and
- February 23–28, 2023 – Dynamic Commissioning above 450 MW.

Hydro will continue to work with GE and other stakeholders to plan for the completion of the high-power tests required to achieve Final Commissioning.

In the interim, the Newfoundland and Labrador System Operator (“NLSO”) continues to work with the responsible Engineering team in executing operational plans for the LIL with the current software, based on the successful testing up to 475 MW that occurred in the fall of 2022. The NLSO will continue to 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. An interim operating solution developed by GE Power was implemented, allowing for the return of Unit 1 to service as it relates to the bearing tilt issue, while GE Power continues to develop a long-term solution.

In the December 2022 update,<sup>6</sup> Hydro reported a failure of the high-pressure lift pump on Synchronous Condenser (“SC”) 1 and SC3. The pump on SC3 was replaced in December 2022 and the pump on SC1 was replaced in January 2023. Both pump failures are covered under warranty. GE Power is preparing a root cause analysis into the pump issues, which will be assessed prior to putting SC1 and SC3 back into service. The LIL remains in service while these issues are being resolved.

With respect to the vibration protection setting issue for all three SCs, the NLSO has completed an assessment of documentation regarding the protection setting changes. As a result of this assessment, the prior operating restriction on the LIL of 315 MW has been lifted recently and the current capacity restriction has been set to 450 MW.

SC2 has been in service throughout the month of January 2023.

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 to the overhead lines were ongoing during the month. In total, 134,640 MWh of power was delivered during the month of

---

<sup>6</sup> “*Reliability and Resource Adequacy Study Review – Labrador-Island Link Monthly Update – December 2022*,” Newfoundland and Labrador Hydro, January 12, 2023, p. 2.

January 2023. Hydro continues to operate generation at Holyrood to ensure supply adequacy and reliable operation for customers given the risk of unreliability with the LIL. Energy and capacity delivered over the LIL are used to minimize thermal generation whenever possible.

As previously reported,<sup>7</sup> there was an issue with the Forteau Disconnect switch that required repairs. An outage on Pole 1 is required to implement the repairs, which commenced on February 2, 2023 and repairs are currently scheduled to be completed on February 3, 2023.

All other outstanding issues identified in the previous update<sup>8</sup> have been repaired. Repairs to overhead line damage on the electrode line in Central Labrador and in the Long Range Mountains were completed on January 17 and 19, 2023, respectively.

During the overhead line repairs, Pole 2 of the LIL was operational, however Pole 1 was out of service. Upon completion of the repairs, Pole 1 became available allowing for bipole operation commencing January 19, 2023, subject to further planned outages required to service the line.

Since November of 2022, the LIL has experienced a total of three turnbuckle failures, two optical ground wire failures and one electrode line failure. Root cause investigations into these issues are underway. The information from the root cause investigations will be used to determine appropriate mitigation measures and/or corrective actions to be implemented.

On January 24, 2023, circuit breaker operation at Bottom Brook Terminal Station resulted in an outage in the Stephenville area and a trip of Pole 1 of the Maritime Link. With only one Maritime Link pole left in service, a further disturbance on the high-voltage direct current link would fully interrupt export capacity to Nova Scotia and potentially result in overfrequency on the Island system. To prevent overfrequency conditions, the LIL is equipped with runback functionality that would be triggered upon receipt of further trip signals from the Maritime Link.

An attempt was made to restore Pole 1 of the Maritime Link back online, but was unsuccessful. The LIL, being armed to run back power flow upon receipt of a trip signal, responded as if both Maritime Link poles were offline, as opposed to just the one, and ran back as designed. This sudden reduction in supply resulted in an under frequency load shedding (“UFLS”) event.

All customers affected by this event were restored within four minutes. A review of the LIL runback philosophy is ongoing to determine if logic or procedural modifications are required to prevent a future occurrence of this type or event. Hydro will report implications, if any, this may have on the LIL as further information becomes available.

On February 1, 2023, the LIL Pole 1 tripped and Pole 2 successfully compensated resulting in no reduction in power transmitted across the LIL. An additional trip occurred on Pole 2 on February 2, 2023, while the LIL was operating in monopole mode transmitting 375 MW; there was no interruption of power to customers due to the runback of the Maritime Link. A root cause investigation into these trips is

---

<sup>7</sup> “Reliability and Resource Adequacy Study Review – Labrador-Island Link Monthly Update – December 2022,” Newfoundland and Labrador Hydro, January 12, 2023.

<sup>8</sup> “Reliability and Resource Adequacy Study Review – Labrador-Island Link Monthly Update – December 2022,” Newfoundland and Labrador Hydro, January 12, 2023.

underway, and will be used to determine appropriate mitigation measures and/or corrective actions to be implemented.

### 1.3 Outages

There were a total of 20,307 customers impacted as a result of the January 24, 2023 UFLS event associated with the LIL runback event addressed in Section 1.2. As previously noted, power was restored within four minutes.

## 2.0 MUSKRAT FALLS GENERATION

### 2.1 Operations

There were no forced outages during the month of January 2023. Units 1, 2 and 4 were out of service at different times for scheduled maintenance and warranty work.

## 3.0 LABRADOR-ISLAND LINK SCHEDULE

As noted in Section 1.1.1, GE continues to work towards finalizing software to correct issues discovered during the high-power testing on November 24, 2022. Receipt of this software and completion of testing, including high-power tests, is required for Final Commissioning. Hydro continues to work with GE to achieve the dates indicated in the tentative schedule with the aim of achieving Final Commissioning in the first quarter of 2023.

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

Yours truly,

### NEWFOUNDLAND AND LABRADOR HYDRO



Michael S. Ladha, KC  
Vice President, Chief Legal Officer & Corporate Secretary  
MSL/kd

ecc:

**Board of Commissioners of Public Utilities**  
Jacqui H. Glynn  
Maureen Greene, KC  
PUB Official Email

**Consumer Advocate**  
Dennis M. Browne, KC, Browne Fitzgerald Morgan Avis & Wadden  
Stephen F. Fitzgerald, Browne Fitzgerald Morgan Avis & Wadden  
Sarah G. Fitzgerald, Browne Fitzgerald Morgan Avis & Wadden  
Bernice Bailey, Browne Fitzgerald Morgan Avis & Wadden  
Bernard M. Coffey, KC

**Labrador Interconnected Group**  
Senwung F. Luk, Olthuis Kleer Townshend LLP  
Nicholas E. Kennedy, Olthuis Kleer Townshend LLP

**Island Industrial Customer Group**  
Paul L. Coxworthy, Stewart McKelvey  
Denis J. Fleming, Cox & Palmer  
Dean A. Porter, Poole Althouse

**Newfoundland Power Inc.**  
Dominic J. Foley  
Lindsay S.A. Hollett  
Regulatory Email