

April 4, 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 March 31, 2024***

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. 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.<sup>1,2</sup> On July 25, 2023, the Board directed Hydro to reduce the frequency of reporting to quarterly from monthly.

Hydro has recently integrated reporting on the LIL and Muskrat Falls assets into its regular outage and operational reporting, including Daily Supply and Demand, Winter Readiness,<sup>3</sup> and other reports to the Board and going forward, will include information within its Quarterly Report on Performance of Generating Units (“Rolling 12”) beginning with the Rolling 12 report for the twelve months ended March 31, 2024, to be submitted to the Board on April 30, 2024.

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 LIL was officially commissioned on April 14, 2023, in accordance with the project financing and revenue agreements. Since commissioning, the LIL has been in service and successfully providing power to the provincial grid.

---

<sup>1</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>2</sup> 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.

<sup>3</sup> Hydro provided an update on the status of the DC (“Direct Current”) current transformer mitigation discussed in its last quarterly report within the March 2024 Winter Readiness Update.

Since the last update, the LIL has been operating at various power transfer levels as required by the system. In total, approximately 835 GWh were delivered over the LIL from January 1 to March 31, 2024, in excess of 150% of the deliveries for the same period in 2023. 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 part of the *Reliability and Resource Adequacy Study Review* proceeding, Hydro established the assumption that the equivalent forced outage rate (“EFOR”) for the LIL over the long term would be in the range of 1% to 10%. Hydro is pleased to report that, despite expectations of unavailability being at the higher end of this range early in its commissioned operation, the EFOR for the LIL from January 1 to December 31, 2023 was approximately 4%.<sup>4,5</sup> This is well within the assumed long-term range.

The final software version for the LIL successfully passed Factory Acceptance Testing in March 2024. All outstanding punchlist and deferred items have been resolved and the software is planned for site installation and commissioning in May 2024 following the conclusion of control system mitigations described below.

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, 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. 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.

Mitigations to prevent control system component sensitivity to cable switching transients at the LIL Transition Compound as discussed in Hydro’s March 2024 Winter Readiness Update are now planned for implementation in early May.<sup>6</sup> These mitigations are a pre-requisite to execution of the 900 MW high-power test to ensure reliable service while testing. There is insufficient predictable system load for high-power testing beyond early April, and these mitigations will not be in place until after the winter 2023–2024 testing window has closed. As such, Hydro is now planning to execute the 900 MW pole overload test late in the fall of 2024 when higher system load conditions will next be present.

### **1.1.2 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 completion of punchlist work, with the following exceptions:

- On January 16, 2024, Synchronous Condenser 1 tripped as a result of an error during testing of the differential protection 87LB/T1. There was no customer impact as a result of this trip. The

---

<sup>4</sup> EFOR is calculated on a base LIL capacity of 700 MW. On a base capacity of 900 MW, the EFOR is calculated to be approximately 6%. Following the completion of the 900 MW test, all calculations will be adjusted to reflect the change in assumptions.

<sup>5</sup> Hydro will provide an update on EFOR for the twelve months ending March 31, 2024 in its next Rolling 12 report.

<sup>6</sup> 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.

unit was returned to service on January 18, 2024. The root cause investigation into this trip is completed and corrective actions implemented.

- On March 1, 2024, Synchronous Condenser 2 tripped due to protection relay operation. There was no customer impact as a result of this trip. The unit returned to service on March 7, 2024. An investigation into the event is ongoing.

Hydro will include a fulsome update on the total number of hours of operation for the Soldiers Pond Synchronous Condensers for the twelve months ending March 31, 2024 in its next Rolling 12 report.

## 1.2 Operations

During the first quarter of 2024, the LIL experienced six pole trips; these trips did not result in any customer impact as the other pole was in service and the LIL functioned as designed and expected demonstrated with power flow from the tripped pole immediately moving to the pole still in service. Excluding the March 30, 2024 event, the average return-to-service time for the trips was less than six hours.

One trip was due to asymmetry protection with a return to service time of approximately one hour. Two pole trips were due to DC transmission line faults<sup>7</sup> with a return-to-service time of approximately eleven hours and another trip was due to protection loss of supply to the valve cooling plant with a return to service time of approximately one hour.

The remaining two pole trips occurred on March 30, 2024. Following an ice storm in southern Labrador that resulted in significant ice accumulating on a short section, approximately four kilometres long, of the LIL, the LIL sustained damage to the upper portion of towers.<sup>8</sup> The LIL is currently offline and an investigation is ongoing. Crews mobilized, located the issue and were on site within approximately seven hours of the initial trip event. Extensive icing was observed on the line, and crews are currently working to make the necessary repairs to allow the LIL to return to monopole operation.

Hydro currently anticipates a return to monopole service within one to two weeks and, in the interim, current generating reserves are healthy. Hydro is taking steps as a result of this damage to mitigate re-occurrence in the future and will include a fulsome update on the performance of the LIL for the twelve months ending March 31, 2024 in its next Rolling 12 report.<sup>9</sup>

## 1.3 Outages

As noted in Section 1.2, there were no customer outages to report in the current quarter.<sup>10</sup>

---

<sup>7</sup> These trips occurred within the same event.

<sup>8</sup> The electrode conductor system in Labrador is a redundant system that consists of two conductors supported on the 1,229 transmission line steel towers of the LIL. Eleven towers in total (0.09% of all structures) have been impacted by storm damage. Damaged components include optical ground wire ("OPGW") tower peaks and electrode wings. There is one area of pole conductor damage from contact with the electrode conductor.

<sup>9</sup> Hydro will provide an update on the root cause of ongoing investigations into LIL trips upon their conclusion in a future Rolling 12 report.

<sup>10</sup> As reported in Hydro's March 2024 Winter Readiness Update, during an icing event experienced in early February 2024, line patrols of affected areas of the LIL revealed damage to the peaks of eight towers and the OPGW. Damage did not affect LIL operations; the bipole outage required to restring the OPGW has been completed. There was no customer impact as a result.

## 2.0 Muskrat Falls Generation

### 2.1 Operations

The Muskrat Falls Hydroelectric Generating Facility total plant DAFOR<sup>11</sup> performance through the end of the first quarter of 2024 was 0.08%, which was significantly better than the Electricity Canada average of 5.70% for similar units across Canada.

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

- On March 17, 2024, Unit 3 tripped due to low water intake passage pressure. The unit was returned to service the same day, and an investigation is ongoing.

Hydro will include a fulsome update on the performance of the Muskrat Falls generation for the twelve months ending March 31, 2024 in its next Rolling 12 report.

## 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



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  
Board General

#### Consumer Advocate

Dennis M. Browne, KC, Browne Fitzgerald Morgan & Avis  
Stephen F. Fitzgerald, KC, Browne Fitzgerald Morgan & Avis  
Sarah G. Fitzgerald, Browne Fitzgerald Morgan & Avis  
Bernice Bailey, Browne Fitzgerald Morgan & Avis

#### 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

---

<sup>11</sup> Derated adjusted forced outage rate (“DAFOR”).