

December 8, 2022

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 – November 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. 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. On January 19, 2021, the Board requested Hydro continue monthly reporting and outlined specific information, at a minimum, to be included.¹ Enclosed please find the update as requested.

1.0 LABRADOR-ISLAND LINK

1.1 Commissioning Activities

1.1.1 Bipole Commissioning

Trial Operations commenced on October 11, 2022 and was successfully completed on November 10, 2022; during that time there were no trips on the LIL attributed to the HVdc system. Subsequent to the conclusion of Trial Operations and in preparation for higher power tests, GE successfully performed a 450 MW heat run on each pole for 12 hours. The completion of the heat run indicated the correct functioning of the control system features and equipment capabilities to enable testing and operation at higher power levels.

The LIL was taken offline from November 18 to 20, 2022 to allow GE to conduct equipment inspections prior to higher power testing. On November 24, 2022, GE attempted the 700 MW overload test. During the overload test, Pole 2 successfully compensated for the loss of Pole 1 (i.e., the control system correctly triggered short-term overload and automatic cable switching was successful). Pole 2 continued

¹ 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.

to operate at 700 MW for 44 seconds until it tripped, resulting in an under frequency load shedding event and loss of customers.

GE have completed a root cause analysis and have pinpointed the problem to a measurement/calculation issue when operating the LIL above 475 MW. To correct the problem, a new software version is required. This new software version will need to go through regression testing and Factory Acceptance Testing (“FAT”). Hydro is currently reviewing the root cause analysis. A schedule from GE for the software fix, followed by regression and FAT, is pending; however, Hydro anticipates that it will be in a position to undertake high-power online testing again in early 2023.

Once FAT is successfully completed and the software is released to site, the LIL will undergo dynamic commissioning at available power levels; however, completion of another Trial Operations period is not commercially required. Final commissioning will be delayed until the remaining high-power tests can be successfully performed. Confirmation of acceptance of final commissioning requirements are being worked with financing partners, including Government of Canada.

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. 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 ongoing analysis of Synchronous Condenser (“SC”) 1 has identified an operating solution to return the unit to service by February 2023. GE Power’s long-term solution to the bearing tilt issue is pending. Monthly meetings between the CEOs of Hydro and GE Power are ongoing to ensure this issue is resolved to satisfaction.

In consultation with GE Power, the vibration protection settings for all three synchronous condensers have been modified to allow the units to provide the intended support for the system during system events while still maintaining appropriate protection for these machines. During two recent system disturbances both SC2 and SC3 remained online. The NLSO is currently reviewing the investigation documentation to determine next steps and further information required for lifting the LIL capacity restriction of 315 MW.

SC2 recently underwent an unintentional coast down.² The investigation into this coast down is ongoing and the control system designers are involved to determine the cause and necessary corrective actions. GE Power have reviewed vibration and temperature data during the coast down and have confirmed that the unit can be safely returned to service. It is anticipated that the necessary corrective actions will be implemented and the unit returned to service this week.

² Decelerating to an eventual shut down.

1.2 Operations

In addition to the issue discovered during high-power testing noted previously, on December 2, 2022, overhead line damage was found on one pole of the LIL on the Northern Peninsula, 72 kilometres from main highway access. No tower damage has been reported at this time to the affected tower or adjacent towers. One conductor is on the ground with damage at the point of connection, where the conductor would normally be attached to the tower. Crews are clearing snow from the access road and arranging for the repair. A root cause investigation is also underway. Pole 1 was briefly taken out of service to enable the placement of a ground on Pole 2, making the area safe for the public.

1.3 Outages

As noted previously, there was one trip of the LIL on November 24, 2022 during high-power testing, which resulted in customer outages.

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 are 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 software is pending. Completion of outstanding high-power tests are 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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