

July 24, 2020

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

Attention: Ms. Cheryl Blundon
Director of Corporate Services & Board Secretary

Dear Ms. Blundon,

Re: The Liberty Consulting Group Eighth Quarterly Monitoring Report on the Integration of Power Supply Facilities to the Island Interconnected System – Monthly Update

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 (“Project”). Nalcor Energy (“Nalcor”) has provided Hydro with the following information on various aspects of the Muskrat Falls Project.

COVID-19 Pandemic Effects on Muskrat Falls Project Execution

All Project sites are continuing to work under procedures and work methods in alignment with Project COVID-19 hazard management guidelines. Nalcor continues to assess the impact of the COVID-19 pandemic (“Pandemic”) on the Project and is evaluating its consequences on Project schedule and cost. Given the duration of the COVID-19 work suspension, it is known there will be both Project schedule and cost impacts; Project completion is delayed at least four months, with the potential that final completion could be delayed an additional two to six months.¹ The Integrated Project Schedule will be updated when greater certainty on the path forward is available.

Labrador-Island Link Software Development and Testing Schedule (Board Request #2)

The Board requested the schedule for LIL software development and testing and for Hydro to advise the Board on any future changes to this schedule, the reason for the change, and the implications of any delay for delivery of power and energy to the Island Interconnected System over the LIL.

¹ “The Liberty Consulting Group Eighth Quarterly Monitoring Report on the Integration of Power Supply Facilities to the Island Interconnected System – Monthly Update,” Newfoundland and Labrador Hydro,, May 26, 2020.

GE Grid commenced a second round of Factory Acceptance Testing (“FAT”) for the Interim Bipole Software on July 13, 2020. FAT is expected to take 12 days. GE Grid will provide an updated schedule for Dynamic Commissioning and Trial Operations based on the outcome of the FAT. As the schedule reflected in Hydro’s prior monthly reports requires updating based on the above noted information, it is not included in this report. Hydro will reflect updated schedule information in a future update once it is available.

Synchronous Condenser Binding/Vibration (Board Request #4)

The Board referenced Liberty’s discussion of binding/vibration issues with the Soldiers Pond Synchronous Condensers (“SC”). The Board required Hydro to report on these two issues, including details of the problems and the investigation into their root causes, as well as a plan and schedule to address them.

GE Renewable Energy (“GE Power”) is continuing to commission SC Unit 2. SC Unit 2 was successfully balanced and commissioning of the hydrogen cooling system started in late June 2020. During hydrogen filling of SC Unit 2, a sensor identified an issue and hydrogen flow was stopped. The emergency alarm and stop system worked as designed; the cause of the alarm is under investigation. To avoid unnecessary delay, commissioning of SC Unit 2 continued without hydrogen. On-Grid Load testing for SC Unit 2 was successful up to 45 MVAR. Vibration data has been collected and is being analyzed to determine if the unit can be successfully operated for extended periods.

With respect to the lateral vibration remediation work, GE Power has proposed an elliptical design modification to the bearing face that has the potential to resolve the lateral vibration issue without requiring foundation remediation. The elliptical design modification to the SC Unit 3 bearings is ongoing and the bearings and housing are scheduled to be at the Soldiers Pond Site for installation starting in mid-August 2020. Commissioning of SC Unit 3 is scheduled to start in early October 2020. If the redesigned elliptical bearings resolves the lateral vibration then the SC Unit 1 bearings will undergo the same redesign.

To mitigate any potential impact to the schedule, the foundation design work will continue while the bearing redesign work is being undertaken such that if the bearing modification proves unsuccessful, the foundation modification will proceed as scheduled. GE Power’s foundation design-build contractor has started work on the design phase. A design review is planned for early August 2020 after which it is anticipated that a preliminary schedule will be provided. Nalcor will be in further contact with Liberty early next week on their outstanding foundation remediation work impact question.

Muskrat Falls Unit 1 Update

Limited construction activity resumed at Muskrat Falls in Labrador in late May 2020. Contractor mobilization has slowly ramped up their work force since restart with approximately 280 workers on site as of mid-July. Senior personnel for Andritz Hydro, the turbine and generator contractor, completed self-isolation in mid-June and resumed work in early July 2020.

The primary focus is completing all of the activities required to commission and run Unit 1. Unit 1 is presently going through mechanical commissioning tests and wet testing restarted in July 2020.

On July 8, 2020, during the Unit 1 test run, movement was noted between the radial arms of the lower bracket and the lower bracket sole plates. Commissioning was halted and a root cause analysis indicated that the radial keys did not fit snugly allowing movement which caused cracking in the weld between

the keys. Redesign of the key arrangement has been completed to ensure a proper fit, as well, the weld detail between the keys has been improved. Rework has commenced and is estimated to take approximately 14 days. Due to this rework, the forecast for completion of Unit 1 commissioning and Ready for Operation² has moved from August 2020 into September 2020. Hydro is assessing whether this delay will impact the Muskrat Falls-Happy Valley interconnection in 2020 and expects to make a determination on this matter before the end of the third quarter 2020.

An inspection of the upstream water passage for Unit 1³ was undertaken during the pause in wet testing, and some concrete debris was observed in the water passage. Based on its shape, it appears to be secondary concrete from the intake sill (lower sealing surface) and lintel (upper sealing surface). A remotely operated vehicle inspection was undertaken to survey the extent and location of the issue. The results of the survey have been assessed and this issue will not delay Unit 1 commissioning.

Further inspection will be undertaken during the next planned dewatering of the unit in August 2020.

If you have any questions, please contact the undersigned.

NEWFOUNDLAND AND LABRADOR HYDRO



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² Released for service.

³ Each of the four turbine and generating units has an intake area where the water flows through as it enters the powerhouse before reaching the turbine. Various gates are in place to provide a barrier between the river and the turbine and the gate are inserted into a gate guide so it can move up and down to let water into the intake area or to block water from entering the intake area.

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