

February 25, 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: Reliability and Resource Adequacy Study – Update of Ongoing Work**

Newfoundland and Labrador Hydro (“Hydro”) recently met with staff of the Board of Commissioners of Public Utilities (“Board”) and its consultant, The Liberty Consulting Group regarding the review of Hydro’s Reliability and Resource Adequacy Study (“RRA Study”). The following provides an update of ongoing work related to the RRA Study as well as prior commitments made by Hydro in its October 31, 2019 and December 13, 2019 correspondence.

Hydro recognizes that to enable an informed review of the matter before the Board, certain key issues need to be addressed. Those include, among other things;

- an assessment of the reliability of the Labrador-Island Link (“LIL”) and an understanding of the potential for an extended Labrador-Island Link bipole outage;
- viability of the Holyrood Thermal Generation Station (“Holyrood TGS”) as a resource option; and
- an assessment of customer’s willingness to pay with respect to future reliability.

The information which follows provides a summary of next steps by Hydro.

**Assessment of Labrador-Island Link Reliability**

Hydro believes it is important to provide a full assessment of the reliability of the LIL and associated implications for system reliability. As such, Hydro is preparing supporting information, outlined within, to provide a comprehensive set of analysis and conclusions for the consideration of the Board and parties.

The findings of (i) Hydro’s Assessment of LIL Reliability in Consideration of Climatological Loads,<sup>1</sup> which will provide critical input factors including the likelihood of failure for climatological loading scenarios, and (ii) the Emergency Restoration Planning report, which will provide information on the associated expected outage duration of critical input factors, will be used to support modelling exercises required as part of the 2020 Update to the RRA Study. This will allow for a fulsome assessment of the likelihood

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<sup>1</sup> Data from this analysis is anticipated to be available in October 2020. This data is required to support Hydro’s modelling exercises.

and the range of consequences of an extended bi-pole outage under extreme weather circumstances and provide further insight into the associated implications for system reliability. All findings will be included in Hydro's RRA Study 2020 Update that is planned for filing with the Board on November 15, 2020.

### ***Supporting Information and Studies***

#### **Assessment of As-Designed Structural Capacity of the Labrador-Island Link**

In its October 31, 2019 correspondence, Hydro outlined an anticipated filing date of February 28, 2020 for the review of as-built structural capacity of the LIL being conducted by EFLA Consulting Engineers, identified in that correspondence as "Report 2." This report, now titled "Assessment of As-Designed Capacity of the LIL," is nearing completion and will be filed with the Board by March 31, 2020.

The report is focused on the structural capacity of the as-built design based on site-specific details and potential extreme weather conditions and provides a comparative benchmarking with the Canadian Standards Association ("CSA") C22.3 60826, which primarily focuses on glaze icing. The findings will provide an enhanced understanding of the strengths and vulnerabilities of the overhead transmission component of the LIL.

The report will also identify critically loaded areas within the system as a result of extreme climatological loads. The information will then be incorporated in the 2020 annual review of the Emergency Response Planning document to guide operational response protocols with respect to access planning and material staging to improve response times in the event of a failure.

#### **Assessment of Labrador-Island Link Reliability Considering Climatological Loads**

The work undertaken as part of the Assessment of As-Designed Capacity of the LIL has confirmed that, based on the design, particular sections of the line are governed by rime icing, rather than glaze icing. As CSA does not provide standards with respect to rime icing, there is no applicable comparator against which those sections can be benchmarked. Hydro is undertaking further assessment to provide assurance that all local conditions have been appropriately considered.

The assessment, focusing specifically on rime icing is underway and will include the consideration of additional climatological data that has been collected since completion of the original design. All data will then be used to complete an assessment of the as-built structural capacity of the LIL under rime icing.

The determination of the as-built capacity of the line with respect to all local conditions, including glaze icing as provided in the Assessment of As-Designed Capacity of the LIL and rime icing as outlined in the ongoing work described above, will enable Hydro to complete an assessment of the overall line reliability with respect to the likelihood (or probability) of failure based on a range of climatological loading scenarios. The report will include a qualitative benchmarking of the LIL with respect to utility-based operational statistics and a discussion on Hydro's operational experience with selected existing transmission lines.

The results of this work will be presented in the report titled "Assessment of LIL Reliability in Consideration of Climatological Loads," planned for filing with the Board as an attachment to the RRA Study 2020 Update.

### **Emergency Restoration Planning**

Given that the LIL is expected to be in service for the 2020-2021 winter operating season, Hydro will provide details on the specific Emergency Restoration Plan that will be in effect for that winter operating season. This plan will be included in Hydro's next assessment of near-term reliability, to be filed with the Board in May 2020. This will build on the "Summary of Emergency Restoration Planning"<sup>2</sup> report, which addressed the current estimation of recovery rates associated with varying forms of unavailability.

### **Extension of Holyrood as a Generating Facility**

With the recent announcement of the extension of the Holyrood TGS as a generating facility to March 31, 2022,<sup>3</sup> Hydro believes it is prudent to delay the undertaking of a full condition assessment<sup>4</sup> of the Holyrood TGS at this time pending the outcomes of Hydro's updated modelling of LIL reliability. In the interim, Hydro is assessing the potential to reduce unit recall times from standby or synchronous condenser mode and will identify the associated required modifications and costs, where possible. Findings from this exercise will provide preliminary insight as to whether it is technically and economically feasible to modify Holyrood to become a suitable backup facility and thus be considered as a resource option in Hydro's assessments.

As this assessment is expected to require unit testing,<sup>5</sup> the findings of the exercise will be available in the third quarter of 2020 and will be shared with the Board as part of Hydro's RRA Study 2020 Update.

### **Stakeholder Engagement on Value of Loss Load**

Building on its customer engagement work in the "Reliability and Resource Adequacy Study – November 2018," Hydro will continue to engage with its Electricity Feedback Panel throughout 2020 as Hydro plans for the future of the electricity system. Hydro has reviewed its plans to move forward with the portion of stakeholder engagement focused specifically on the Value of Loss Load ("VOLL"). It has been determined that the findings of Hydro's updated modelling of LIL reliability should inform the requirement for this type of study. Further, if such a study is warranted, the modelling results will help ensure development of appropriate questions with respect to customers' willingness to pay for increased system reliability. Should the findings of Hydro's Assessment of LIL Reliability confirm the requirement to engage with stakeholders specifically on VOLL, Hydro will commence this work based on preparatory work completed to date.

### **Conclusion**

While Hydro appreciates the need to provide information in a timely manner, it is also cognizant of the importance of providing comprehensive information to enable informed considerations and decision-making.

Should you have any questions, please contact the undersigned.

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<sup>2</sup> "Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System – Phase Two – The Liberty Group Eighth Quarterly Monitoring Report on the Integration of Power Supply Facilities to the Island Interconnected System – Further Information – Updated Version of the Overhead Transmission Lines Emergency Response Plan," Newfoundland and Labrador Hydro, December 12, 2019, att. 1.

<sup>3</sup> "Extension of Holyrood Thermal Generation Station as a Generating Facility," Newfoundland and Labrador Hydro, filed with the Board on February 14, 2020.

<sup>4</sup> Estimated cost of the assessment is approximately \$3 million, inclusive of internal labour, overheads and contingency.

<sup>5</sup> Anticipated to take place during the total plant outage in August 2020.

Yours truly,

**NEWFOUNDLAND AND LABRADOR HYDRO**



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