

1 Q. **Reference: Reliability and Resource Adequacy Study 2022 Update, Volume III, page 16.**

2 Provide the most recent update on the status of the commissioning of the LIL including:

3 a) A description of the cause of the November 24, 2022 LIL offline event, the actions taken to  
4 correct the software failure that led to the event and how this affects the commissioning  
5 schedule, and

6 b) The cause of the overheard line damage on the LIL in the Northern Peninsula discovered on  
7 December 2, 2022, its implications for other LIL line sections and the action Hydro is taking  
8 to investigate this incident and its implications for overall LIL reliability.

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11 A. a) GE Canada (“GE”) has completed a root-cause analysis and pinpointed the problem to a  
12 measurement/calculation issue when operating the Labrador-Island Link (“LIL”) above  
13 475 MW. An analysis of the event shows:

- 14 • Pole 2 fully compensated for the planned emergency stop of Pole 1;
- 15 • Pole 2 operated at 700 MW for approximately 44 seconds until a block occurred;  
16 and
- 17 • Pole 2 was blocked because of several commutation failures in rapid succession.

18 It has been determined there is a control system calculation issue related to the extinction  
19 angle. To correct the problem, a new software version is required. This new software  
20 version will need to go through regression testing and Factory Acceptance Testing. Once  
21 Factory Acceptance Testing is successfully completed and the software is released to the  
22 site, the LIL will undergo Dynamic Commissioning at available power levels; however,  
23 completion of another Trial Operations period is not commercially required. A series of tests  
24 to prove overload functionality will be performed including a repeat of the 700 MW  
25 overload test. In addition, there will be tests conducted to prove extinction angle  
26 measurements are accurate.

1 The regression testing and Factory Acceptance Testing have been completed on the new  
2 version of the software, with the control system calculation issue related to the extinction  
3 angle successfully corrected. The software release to site is delayed pending the completion  
4 of root cause analysis by GE for LIL trips that occurred on January 31, 2023 and February 2,  
5 2023. Once the root-cause analysis has been completed and any identified corrective  
6 actions implemented, the software will be released to site and Dynamic Commissioning will  
7 commence. The plan is to release the new version of the software and complete high-power  
8 testing in the first quarter of 2023. Newfoundland and Labrador Hydro (“Hydro”) will  
9 provide a further update on the schedule, which requires coordination with its peer utilities  
10 in Atlantic Canada at least ten days in advance, in the next LIL monthly update to the Board  
11 of Commissioners of Public Utilities.

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

14 **b)** Repairs to the damage discovered on December 2, 2022 have been completed; however,  
15 the root cause analysis is ongoing, as Hydro has experienced similar issues elsewhere on the  
16 line.

17 As reported in the “*Reliability and Resource Adequacy Study Review – Labrador-Island Link*  
18 *Monthly Update - December 2022*,”<sup>1</sup> similar to the December 2, 2022 issue, Hydro has since  
19 found two additional broken turnbuckles and unbroken conductors on the ground, one in  
20 southern Labrador on Pole 1 and another in the Long Range Mountains on the Island.  
21 Repairs have since been completed.<sup>2</sup>

22 As mentioned, a root-cause investigation into each of the noted issues is underway. The  
23 information from the root-cause investigations will be used to determine appropriate  
24 mitigation measures and/or corrective actions to be implemented. Following the completion  
25 of the root-cause investigations for each issue, Hydro will be in a better position to examine  
26 the likelihood of possible systemic LIL conditions or isolated incidents.

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<sup>1</sup> “*Reliability and Resource Adequacy Study Review – Labrador-Island Link Monthly Update - December 2022*,” Newfoundland and Labrador Hydro, January 12, 2023, p. 3.

<sup>2</sup> “*Reliability and Resource Adequacy Study Review – Labrador-Island Link Monthly Update - January 2023*,” Newfoundland and Labrador Hydro, February 2, 2023, p. 3.