

1 Q. Regarding reserve margins:

2 a) What capacity reserve margin does Hydro need to meet its LOLH reliability criterion
3 through 2035?

4 b) What capacity reserve margin does Hydro need to meet its LIL shortfall event criterion
5 through 2035?

6 c) What was Hydro's capacity reserve margin used for planning purposes before the
7 commercial in-service date of the Muskrat Falls project?

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10 A. a) Planning Reserve Margin requirements in terms of megawatt and the percent of peak in the
11 representative year (2032)¹ for various combinations of Labrador-Island Link ("LIL")
12 Equivalent Forced Outage Rate ("EqFOR") and planning criteria were provided in the 2024
13 Resource Adequacy Plan.² For the Minimum Investment Required Expansion Plan, a 17.1%
14 reserve margin is required, which equates to 360 MW in 2032. For the Reference Case
15 Expansion Plan, a 25.8% reserve margin is required, equating to 500 MW in 2032.

16 b) To date, Newfoundland and Labrador Hydro ("Hydro") has not combined the LIL shortfall
17 criteria in the capacity reserve margin calculation. The LIL shortfall criteria was first
18 introduced into the Reliability and Resource Adequacy filings in 2018, and while valuable
19 operational experience has been gained on the LIL since commissioning, the LIL shortfall
20 criteria has not formally been approved by the Board of Commissioners of Public Utilities.
21 Therefore, Hydro felt that it was important to delineate the impact of the LIL EqFOR

¹ The Reliability Model focuses on a single representative year, with the resulting Planning Reserve Margins applied to the entire study period. To ensure that incremental investment is made prudently, it is important to select a representative year that most closely represents anticipated long-term system conditions. In the 2024 Resource Adequacy Plan, the year 2032 was selected as the representative year since, at that time, all currently proposed capacity resource additions and planned retirements are expected to have occurred. The selection of the representative year is for the purpose of establishing the reliability criteria only. For more information, please refer to the "2024 Resource Adequacy Plan – An Update to the Reliability and Resource Adequacy Study," Newfoundland and Labrador Hydro, rev. August 26, 2024 (originally filed July 9, 2024), app. B, sec. 5.1.

² "2024 Resource Adequacy Plan – An Update to the Reliability and Resource Adequacy Study," Newfoundland and Labrador Hydro, rev. August 26, 2024 (originally filed July 9, 2024), app. B, sec. 5.1.7.

1 compared to the potential for the prolonged loss of the LIL bipole, and the impacts of each
2 on the long-term expansion planning requirements.

3 c) Hydro began establishing a planning reserve margin for the first time in the 2018 Reliability
4 and Resource Adequacy Study to plan for the migration from the isolated system to an
5 interconnected system. To do so, Hydro had to change software programs from the
6 Strategist modeling tool to the Plexos software in order to enable accurate modeling of the
7 interconnected system, as Strategist was unable to calculate a planning reserve margin.³
8 Prior to the 2018 Reliability and Resource Adequacy Study, only LOLH was calculated due to
9 the capabilities of the Strategist software.⁴ Therefore, there was no established planning
10 reserve margin that was developed prior to the migration from the isolated system to the
11 interconnected system.

³ Previous generation expansion modelling was supported by the Strategist modelling tool. In preparation for modelling the interconnected system, it became evident that the optimization methodology of the Strategist software was not capable of incorporating the complex modelling of the interconnected system. As such, Hydro migrated to the Plexos software. For further details on the software migration, please refer to the "Reliability and Resource Adequacy Study," Newfoundland and Labrador Hydro, rev. September 6, 2019 (originally filed November 16, 2018), vol. I, att. 4.

⁴ *Supra*, f.n. 3.