

1 Q. **Reference: Life Extension Application, Schedule 1, page 25, lines 18-20.**

2 “Certain portions of the commissioning work, post remediation, for Bay d’Espoir Unit 7 requires
3 interaction with the electrical grid. The project schedule has this work occurring prior to the
4 winter period.”

5 a) Detail the portions of the commissioning work that would have interactions with the
6 electrical grid.

7 b) Explain the impact this work could have on the Island Interconnected System during the
8 commissioning period.

9 c) If project completion is delayed, are there concerns about the timing of commissioning
10 work and impact on the Island Interconnection System?
11
12

13 A. a) Commissioning of Bay d’Espoir Unit 7, post-remediation, will require interaction with the
14 electrical grid. Following the completion of pre-commissioning checks and offline,
15 unsynchronized commissioning tests, the unit is required to be synchronized to the
16 electrical grid to complete the remaining commissioning activities. These activities include,
17 but are not limited to, heat runs, turbine output testing, unit performance verification and
18 load rejection tests—all of which are completed at various unit loadings and are required to
19 confirm the design, performance and response of the unit prior to allowing it to be released
20 for normal operation. Similar commissioning activities have been previously completed by
21 Newfoundland and Labrador Hydro (“Hydro”) throughout the course of completing other
22 turbine-generator refurbishment or replacement work.

23 b) At any point during the online synchronized testing, the unit is at risk of an inadvertent trip
24 due to unknowns which can occur during the commissioning process. This risk is mitigated
25 using a staged or stepped approach during commissioning. Offline testing precedes online
26 testing, and the online testing is stepped from no-load to full load in increments to minimize
27 the potential impacts. The required commissioning tests are industry standard, and all

1 commissioning activities are to be completed under the complete control of a
2 Commissioning Lead and will include ongoing communication with the Newfoundland and
3 Labrador System Operator and any affected stakeholder in attempts to ensure the electrical
4 grid is prepared to minimize any potential impacts that may result during commissioning.

5 Furthermore, the Labrador-Island Link and Maritime Link are high-voltage direct current
6 systems, both equipped with a frequency controller that can significantly help regulate the
7 Island system frequency following a unit trip. These frequency controllers are independently
8 capable of avoiding any under-frequency load shedding following the loss of Bay d’Espoir
9 Unit 7 at full capacity, including during unit commissioning.

- 10 **c)** Should project completion be delayed, commissioning activities will have to proceed as
11 planned. To ensure the electrical grid is prepared to minimize potential impacts, Hydro may
12 need to avail of the Holyrood Thermal Generating Station and existing standby generation
13 to support system conditions, as required, to ensure that commissioning activities can
14 proceed. If conditions are unfavorable, adjustments may be required to complete final
15 commissioning checks during non-peak periods as an additional mitigation.