

1 Q. **Reference: Volume I, Capital Projects Over \$500,000, Hydraulic Generation Refurbishment and**
2 **Modernization (2020-2021), page C-4**

3
4 Is there a standard or other industry guideline to substantiate the 6 year cycle for turbine and
5 generator overhauls? If yes, please provide a copy of the standard or guideline.

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7 A. The time interval between Major Unit Overhauls is approximately 6 years as referenced in
8 Appendix C of the Hydraulic Generation Asset Management Overview.¹ To determine the exact
9 time interval between overhauls for a generating unit the following information, as described in
10 Appendix C, is reviewed:

- 11 • Timing;
- 12 • Condition;
- 13 • Asset Criticality;
- 14 • Frequency of Operation;
- 15 • Safety;
- 16 • Reliability; and
- 17 • Geographic Location.

18 Newfoundland and Labrador Hydro (“Hydro”) is not aware of any industry standard or guideline
19 that outlines the specific frequency of unit overhauls. Original Equipment Manufacturers
20 (“OEM”) provide recommended maintenance and inspection intervals for daily, weekly,
21 monthly, and yearly maintenance; however, overhauls normally require more extensive
22 disassembly and larger work items to address internal deterioration that has taken place over a
23 longer period of time. The operating regimes of the assets influence the timing and extent of
24 that work.

¹ “2020 Capital Budget Application,” Newfoundland and Labrador Hydro, August 1, 2019, vol. I.

1 The following statement has been taken from the Operating and Maintenance Manual of one of
2 Hydro's major OEMs: "GE Hydro has no specific recommendations for replacement intervals of
3 turbine wearing parts since this varies greatly with severity of service and maintenance
4 practice."

5
6 In Hydro's operating environment, Hydro considers 6 years to be an appropriate time interval
7 between turbine generator overhauls to ensure reliability.