

1 Q. **Reference: 2025 Build Application, Schedule 5: Avalon Combustion Turbine Project Evidence,**
2 **page 5, lines 22-23.**

3 a) How many spare GSU transformers (13.8 kV to 230 kV) does Hydro have in inventory,
4 including any approved for purchase?

5 b) Will any GSU transformers (13.8 kV to 230 kV) be removed from service as a result of
6 impending retirements of thermal assets? If yes, provide details including suitability for
7 acting as a spare units and number of years in service.

8 c) Does Hydro require that spare GSU transformers be site specific, or does it require a
9 minimum number of spare GSU transformers of similar specifications on a system wide
10 basis?

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13 A. a) Newfoundland and Labrador Hydro ("Hydro") has two spare Generator Step-Up ("GSU")
14 transformers (13.8 kV to 230 kV) and one spare GSU transformer 13.8/16 kV to 230 kV on
15 order and expected to be delivered in July of 2028, namely Bay d'Espoir ("BDE") T6S, Cat
16 Arm T1S and an additional spare GSU. BDE T6S is a refurbished used unit that is a spare for
17 GSU transformers at BDE, Granite Canal and Upper Salmon. Cat Arm T1S is a used unit that
18 is spare only for GSU transformers at Cat Arm, due to its adaption to Cat Arm gas-insulated
19 switchgear. The spare GSU is a new unit, presently on order and expected in July 2028,¹ that
20 will be a spare for GSU transformers at BDE, Granite Canal, Holyrood Thermal Generating
21 Station ("Holyrood TGS") and Upper Salmon.

22 b) Three GSU transformers, T1, T2, and T3, will be removed from service if the Holyrood TGS is
23 retired, but none of them are suitable as a spare unit elsewhere (due to their 16 kV low-
24 voltage rating instead of 13.8 kV). These three GSU's have been in service for 48, 23, and 47

¹ As approved in Board Order No. P.U. 28(2023).

1 years for T1, T2, and T3, respectively (with T2 having been in service for a total of 23 years
2 and having been a used spare for 32 years).

3 c) Hydro does not require that all spare GSU transformers be site specific; however, Hydro
4 balances the competing priorities of cost, reliability and technical challenges by currently
5 having two used spare GSU transformers 13.8 kV to 230 kV and another new spare GSU,
6 13.8/16 kV to 230 kV, currently being procured. One of the used spares, Cat Arm T1S, is
7 specific to Cat Arm Generating Station. The second used spare, BDE T6S, is suitable for three
8 hydroelectric generating stations. The new dual low voltage unit (13.8 kV and 16 kV) GSU,
9 presently being procured, is suitable for Holyrood and three hydroelectric generating
10 stations, BDE, Granite Canal, and Upper Salmon. The new GSU, a 172 MVA rated unit at 13.8
11 kV and 194 MVA rated at 16 kV, that is being procured is planned to be placed in Holyrood
12 TGS and be the first-choice spare for a failure of Holyrood T1, T2, T3, or T4 and BDE T7. The
13 intention at this time is to relocate this newly purchased GSU to BDE when Holyrood is
14 retired, or remain with one-unit synchronous condenser mode, and use it as a first-choice
15 spare for BDE T7 and Holyrood T4 due to its rating of 172 MVA, and a second-choice spare
16 for other GSUs at BDE, Granite Canal, and Upper Salmon. If Holyrood Unit 3 remains as a
17 synchronous condenser, the remaining T1 and T2 transformers will be dedicated spares for
18 T3. The spare required for the 2025 Build Application will be a spare located at Holyrood, as
19 a first-choice spare for the new Avalon Combustion Turbine and a second-choice spare for
20 Holyrood T4 due to its rating of 83.3 MVA. Hydro also plans to look further at the option of
21 using the new 13.8/16 kV GSU procured and planned to be relocated to BDE as a second-
22 choice spare for the Avalon Combustion Turbine.