

1 Q. **Reference: Schedule 6, Program 8 Upgrade Power Transformers (2024-2025), Page 1**

2 Please describe Hydro’s asset management strategy for terminal station power transformers,
3 including the total number of transformers, the numbers refurbished over the period 2014-
4 2023, the number remaining to be refurbished under the program and the frequency of
5 inspections for the power transformers.

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8 A. The details of Newfoundland and Labrador Hydro’s (“Hydro”) asset management strategy for
9 terminal station power transformers can be found within Version 7 of Hydro’s “Terminal Station
10 Asset Management Overview.”¹ This strategy applies to all of Hydro’s 118 terminal station
11 power transformers. There have been 105 terminal station power transformers refurbished
12 from 2014 to 2023 and another 68² are presently planned for refurbishment from 2023 to 2028.
13 As determined through the assessment process, approximately 16 terminal station power
14 transformers did not require refurbishment from 2014 to 2023 and are not anticipated to need
15 refurbishment from 2023 to 2028.

16 The frequency of inspection of power transformers varies based on maintenance activity. Table
17 1 outlines the maintenance activities completed on power transformers and the frequency of
18 each.

¹ “2024 Capital Budget Application,” Newfoundland and Labrador Hydro, rev. August 18, 2023 (originally filed July 12, 2023), sch. 1, app. F.

² The combined total of completed refurbishments and planned refurbishments is greater than the total number of terminal station power transformers. Due to the nature of targeted refurbishments, some transformers require multiple refurbishments throughout their service life (e.g., Rocky Harbour T1 had an oil refurbishment completed in 2017 and has bushing replacements planned for 2023).

Table 1: Power Transformer Maintenance Activity and Frequency

Frequency	Power Transformer Maintenance Activity
120 days	Cooling fan function testing, operational data collection, and visual inspection.
1 year	Complete dissolved gas analysis (“DGA”), oil quality, and particle count analysis for condition ranking of tap changers. ³
3 years	Sample all sealed transformers for DGA and oil quality.
6 years	Electrical testing, ⁴ protective device function testing, tap changer function testing, cooling fan function testing, and visual inspection.

³ All non-sealed transformers must be sampled annually or sooner for DGA and Oil Quality. Transformers with on-line DGA monitors do not require an annual DGA.

⁴ Includes Doble Testing, winding resistance, winding insulation resistance, protective device insulation resistance, and surge arrester grounding continuity.