

1 **Q. Reference: Response to PUB-NP-008**

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3 **"...While the Study provided a high-level forecast of expected transformer**
4 **retirements based on age and service life, the Strategy expands upon this**
5 **analysis by incorporating transformer condition assessments, operational**
6 **requirements, spare transformer inventory, portable substation capability,**
7 **and evolving procurement lead times into long-term planning decisions..."**
8

9 **Explain:**

- 10 a) **The role that transformer condition assessments, operational**
11 **requirements, spare transformer inventory, portable substation**
12 **capability and evolving procurement lead times played in the**
13 **development of the Substation Power Transformer Strategy.**
14 b) **Whether the replacement pace of approximately three transformers**
15 **per year is intended as a planning guide or a fixed target.**
16 c) **If the replacement pace of approximately three transformers per year**
17 **is intended as a planning guide, explain how this will be adjusted as**
18 **future condition assessments, risk rankings or system requirements**
19 **change.**
20

- 21 **A.** a) The Gannett Fleming *Service Life Study* provided a fleet-level, age-based
22 forecast of expected transformer retirements. Newfoundland Power used this
23 forecast as one input in developing the Substation Power Transformer Strategy
24 (the "Strategy"). However, replacement decisions are *not* based on age alone.
25 The Strategy was developed by incorporating forecast retirement rates from the
26 Gannett Fleming *Service Life Study*, transformer condition assessments,
27 operational requirements, spare transformer inventory, portable substation
28 capability and procurement lead times into the long-term planning process.
29
30 Transformer condition assessments, including assessments of both internal and
31 external condition, are used to gather asset data for power transformers. This
32 data can be used to generate an overall view of the current condition of the
33 Company's power transformer fleet. The overall view will identify power
34 transformers that have a higher probability of failure within the planning
35 horizon.¹
36
37 Operational requirements were considered to ensure sufficient transformer
38 capacity and system reliability could be maintained throughout the duration of
39 the Strategy. Additionally, the deployment of the Company's internal resources
40 was considered to ensure it would be able to effectively execute both the
41 Strategy and other capital project and maintenance work.

¹ See the *2027 Capital Budget Application*, report 2.2 *Substation Power Transformer Strategy*, section 2.4 *Preventative Maintenance and Condition Assessment*. The condition assessments for each power transformer proposed for replacement beginning in 2027 can be found in appendices A through D of the same report.

1 Spare transformer inventory and portable substation capability were evaluated to
2 determine the Company's ability to respond to failures, support planned outages
3 and maintain customer service during transformer replacement projects.²
4

5 Procurement lead times were also considered given the increasing time required
6 to obtain replacement transformers, which can affect both replacement timing
7 and emergency response planning.³
8

9 Accordingly, the Substation Power Transformer Strategy represents an integrated
10 asset management plan that considers age, condition, risk, operational
11 requirements and emergency response capability rather than relying solely on
12 the age-based results of the *Service Life Study*.
13

- 14 b) The replacement pace of approximately three transformers per year is intended
15 as a long-term planning guide, not a fixed annual replacement target. The
16 Gannett Fleming *Service Life Study* concluded that Newfoundland Power should
17 expect to replace approximately three transformers annually, on average,
18 through 2052 based on the age profile of the fleet. The *Service Life Study* also
19 noted that the forecast was intended to provide a high-level outlook and was not
20 an exact prediction of future replacement requirements.⁴
21

- 22 c) Since the replacement pace is intended as a planning guide, Newfoundland
23 Power will continue to review and adjust future replacement requirements
24 through its annual capital planning process.⁵ Future replacement decisions will be
25 based on the most current transformer condition information, inspection and
26 testing results, operating experience, risk assessments, system requirements,
27 spare transformer availability, portable substation capability, and procurement
28 considerations.
29

30 As a result, the number of transformer replacements proposed in any particular
31 year may be higher or lower than the average pace identified in the *Service Life*
32 *Study*. Where condition and inspection information indicate that a transformer
33 requires earlier replacement, replacement timing may be accelerated.
34

35 Conversely, where inspection and condition information indicate that a
36 transformer can continue to provide reliable service, replacement timing may be
37 deferred. Similarly, changes in system requirements, construction sequencing,
38 spare transformer availability, portable substation requirements or procurement

² See the *2027 Capital Budget Application*, report 2.2 *Substation Power Transformer Strategy*, section 2.0 *Power Transformer Asset Management*.

³ See the *2027 Capital Budget Application*, report 2.3 *Portable Substation*, section 4.0 *Risk Assessment*.

⁴ See the *2026 Capital Budget Application*, report 2.2 *Substation Power Transformer Strategy*, Appendix C Gannett Fleming *Service Life Study*, page 6 of 45.

⁵ See the *2027 Capital Budget Application*, *2027 Capital Budget Overview*, section 2.2 *Capital Planning at Newfoundland Power*.

1 lead times may influence the timing and number of replacements proposed in
2 future years.

3
4 Therefore, while the *Service Life Study* establishes a reasonable long-term
5 replacement pace for planning purposes, Newfoundland Power expects the
6 Strategy and associated five-year replacement plans to evolve as transformer
7 condition, risk, and system requirements change over time.