

1 **Q. Reference: Newfoundland Power's 2027 Capital Budget Application, 2027-**
2 **2031 Capital Plan**

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4 **Newfoundland Power is also forecasting to proactively replace an average of**
5 **three power transformers annually to address the Company's aging power**
6 **transformer fleet. Power transformer replacements are forecast to account**
7 **for an average of \$7.3 million annually from 2027 to 2031.**

- 8
9 a) **How does Newfoundland Power treat the remaining depreciable life**
10 **and any undepreciated value of the assets being removed from service,**
11 **including whether these remaining costs are reflected in the least-cost**
12 **assessment of replacement versus continued operation?**
13 b) **Explain how proactive early removal affects depreciation expense and**
14 **overall customer cost.**
15 c) **If all power transformers are retired based on their average**
16 **depreciable life, how would this affect the average age and asset**
17 **service life of the transformer fleet? Could this method reduce the**
18 **assumed asset life used to calculate depreciation expense?**

19
20 **A.** a) The *Substation Power Transformer Strategy* (the "Strategy") has been
21 implemented to manage safety and reliability risks associated with the age of
22 Newfoundland Power's transformer fleet. As provided by Gannett Fleming's power
23 transformer *Service Life Study* (the "Study") filed with the Strategy in the *2026*
24 *Capital Budget Application*, power transformers are typically expected to have
25 average service lives in the 45 to 55-year range.¹ Based on industry experience,
26 unit data and discussions with Newfoundland Power regarding the assets, the
27 Study recommended an average service life of 55 years for the Company's power
28 transformers.² The Study also suggested that Newfoundland Power should expect
29 to replace, on average, three transformers annually through 2052 based on the
30 age of its power transformer fleet.³ This analysis included forecasted power
31 transformer retirements of four in 2027 and 19 in total over the 2027 to 2031
32 timeframe.⁴

33
34 Of Newfoundland Power's 191 transformers currently in service, 111 are 50 years
35 of age or older. Further, as shown in part b) of the response to Request for
36 Information PUB-NP-008, approximately 65 power transformers are projected to
37 remain in service beyond the average depreciable life of 55 years by 2052, even
38 with an average of three power transformer replacements per year. The Strategy
39 provides for four power transformer replacements in 2027 and 15 in total over the
40 2027 to 2031 timeframe.⁵ It is also important to recognize that the Strategy is not

¹ See the *2026 Capital Budget Application*, report 2.2 *Substation Power Transformer Strategy*, Appendix C, page III-4.

² *Ibid.*

³ *Ibid.*, page IV-3.

⁴ *Ibid.*, page V-2.

⁵ See the *2027 Capital Budget Application*, report 2.2 *Substation Power Transformer Strategy*, Appendix E.

aimed at retiring power transformers based solely on age. The Strategy coordinates and considers condition-based replacements, spare transformer inventory, portable substation resources, and procurement lead times along with asset ages to manage the continued safe and reliable operation of the Company's power transformer fleet in a planned and reasonable manner.⁶

Table 1 provides details on the age of the four power transformers proposed to be replaced in the *2027 Capital Budget Application*.

Table 1 Transformer Age Details		
Power Transformer	Current Age	Age at Time of Retirement ⁷
LAU-T1	50	52
LBK-T1	64	67
HAR-T1	57	60
RRD-T3	51	54
Average	56	58

The average age of the four power transformers proposed to be replaced in the *2027 Capital Budget Application* at the time of retirement is approximately 58 years. In addition, each power transformer has undergone a detailed condition assessment and a risk assessment which supports their replacement at this time.

Overall, the average retirement age of the four power transformers proposed for replacement, at 58 years, is comparable to the 55-year average service life recommended by the Study. Further, the Study recognizes future power transformer replacements at a rate relatively consistent with the Strategy. Finally, the replacement of power transformers is based on several factors beyond age, including fulsome engineering assessments. For these reasons, the Strategy is not expected to have any material impact on depreciation cost differences associated with power transformer retirements and depreciation cost differences are not a direct input into the assessment of alternatives.⁸

⁶ *Ibid.*, page 1.

⁷ LAU-T1 is proposed to be retired in 2028 with the remaining three proposed to be retired in 2029.

⁸ While not a direct input, Newfoundland Power assesses the potential to repair a power transformer compared to replacement on a case-by-case basis, which indirectly considers potential depreciation cost differences. In general, the potential to repair a power transformer is higher for a younger-age unit, which may be experiencing a singular issue as opposed to deterioration across multiple critical systems. Overall, this approach considers the potential remaining service life of a unit and limits any cost differences that could arise from more material age differences.

1 With respect to the treatment of cost differences arising from actual service lives
2 differing from estimates reflected in current depreciation rates, they are
3 accounted for as part of depreciation studies which are completed on a five-year
4 cycle.⁹ The Company's depreciation study relies on group depreciation methods,
5 which group multiple similar assets together to determine depreciation rates by
6 group, rather than on an asset-by-asset basis. Similarly, any depreciation "true-
7 ups", determined as part of the methodology due to factors such as changing
8 service lives, are dealt with as a group (e.g., substation equipment as opposed to
9 individual power transformers) with any true-ups amortized over the average
10 remaining service life of the related group.¹⁰ The use of group depreciation
11 methods for utilities (as opposed to unit depreciation) is cost effective, consistent
12 with sound public utility practice and Board approvals.¹¹
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14 b) See parts a) and c) to this response.

15
16 c) In theory, if all power transformers were retired from service at a maximum of
17 55 years (equal to the current average service life estimate), it could reduce the
18 overall average service life of the fleet as power transformers can fail before
19 reaching 55 years of age. In this scenario, future depreciation expense could
20 increase to account for any reduction in average service life for the substation
21 equipment group as a whole.¹²
22

23 As provided in part a) to this response, the Strategy is not designed to retire
24 power transformers based solely on age.¹³ Further, the Study, along with
25 standard depreciation studies, also considers factors beyond asset age, such as
26 industry experience, to determine service life estimates for the purpose of
27 determining depreciation rates. Finally, the Study, which recommended an
28 average service life estimate of 55 years, projects annual power transformer
29 replacements that are relatively consistent with the Strategy.
30

31 Given the foregoing, Newfoundland Power does not foresee any direct material
32 impacts of the Strategy on future service life estimates, depreciation rates or
33 depreciation expense.

⁹ Newfoundland Power's current depreciation rates reflect the methodology and depreciation rates established through the *2019 Depreciation Study* completed by Gannett Fleming Valuation and Rate Consultants, LLC, based on plant in service as of December 31, 2019. The *2019 Depreciation Study* was approved by the Board in Order No. P.U. 3 (2022) and approved for continued use in Order No. P.U. 3 (2025).

¹⁰ The substation equipment group includes power transformers, circuit breakers, protective relays, reclosers, switches, lightning arrestors, underground power cables, ground grids, and foundations.

¹¹ See, for example, Order No. P.U. 13 (2013) where the Board approved Newfoundland Power's continued use of the equal life group depreciation procedure in the *2014 Depreciation Study* and Order No. P.U. 3 (2022), where the Board approved the use of the *2019 Depreciation Study* using the same methodology.

¹² An increase in depreciation expense would result in an increase in overall customer costs from the amount reflected in customer rates prior to the increase in depreciation expense.

¹³ For example, as noted in part a), approximately 65 power transformers are projected to remain in service beyond the average depreciable life of 55 years by 2052, based on an average of three power transformer replacements per year.