

- 1 **Q. (Reference Application, Schedule B, page 35) Should not the number of**
2 **transformer replacements be decreasing after such a high replacement rate in**
3 **recent years?**
4
- 5 A. Newfoundland Power does not expect to see a decrease in distribution transformer
6 replacements due to replacement rates in recent years.
7
- 8 Distribution transformers are inspected in accordance with Newfoundland Power's
9 *Distribution Inspection and Maintenance Practices*. Transformers are inspected for rust
10 and oil leaks. Transformers that are leaking or are rusted to the point that a leak
11 appears imminent must be replaced. Inspections also check for other deficiencies,
12 including broken bushings and damaged hardware. Inspections ensure deteriorated
13 transformers and transformers at risk of failure are identified before they fail.¹
14
- 15 However, major events, such as snow or ice storms and lightning strikes can cause
16 distribution transformers to fail. In these cases, distribution transformer failure cannot
17 be predicted.
18
- 19 Table 1 provides the annual number and five-year averages of transformer replacements
20 due to deterioration or failure in service since 2004. This data illustrates that the
21 quantities of replacements have levelized over the last 15 years, where the average has
22 been 627 units replaced annually over that period.

¹ See Newfoundland Power's *2025 Capital Budget Application, Schedule B*, page 35.

Table 1: Distribution Transformer Replacements		
Year	Quantity Replaced	Five-Year Average
2004	2,347	
2005	1,496	
2006	1,194	1,503
2007	1,445	
2008	1,031	
2009	563	
2010	466	
2011	434	521
2012	604	
2013	537	
2014	798	
2015	861	
2016	742	722
2017	585	
2018	623	
2019	705	
2020	608	
2021	660	638
2022	461	
2023	754	

1 There are approximately 66,000 distribution transformers in operation throughout
2 Newfoundland Power's service territory, the majority of which have been in service
3 for less than 20 years, with approximately 7% in service for 40 years or more. Given
4 the average service life of a distribution transformer is approximately 42 years,² the
5 Company observes that the replacement numbers have been relatively low over the
6 last 15 years at an annual rate of approximately 1% of the total transformers in
7 service.³ The low number of replacements aligns with the high percentage of units
8 with an age less than half of the expected service life.

² See Newfoundland Power's *2022/2023 General Rate Application, Volume 3: Expert Evidence, Depreciation Study: Mr. John Wiedmayer, Gannett Fleming Valuation and Rate Consultants LLC*, page VI-7, line 364.1.

³ The average of distribution transformer replacements over the last 15 years = 627. Approximate number of distribution transformers in service = 66,000. $627/66,000=0.0095$ or approximately 1%.