

- 1 **Q. (Reference Application, 2025 – 2029 Capital Plan, page 6) It is stated “The**
 2 **effect of age on the condition of Newfoundland Power’s electrical system can**
 3 **be observed through its recent experience with equipment failures. An**
 4 **average of approximately 1,100 equipment failures per year were**
 5 **experienced on the distribution system from 2019 to 2023, which represents**
 6 **a 6% increase compared to the previous five-year period.”**
 7 **a) What was the average size of NP’s net plant and equipment over 2019 to**
 8 **2023 and how much has it increased compared to the previous five-year**
 9 **period?**
 10 **b) Please provide a table showing the number of equipment failures in each**
 11 **year since 1994.**
 12 **c) Do these failures require replacement or repair?**
 13 **d) In light of supply chain issues and inflation, have equipment repair**
 14 **alternatives become more economic relative to replacement alternatives?**
 15 **e) Please show how the increase in equipment failures has impacted NP’s**
 16 **SAIFI and SAIDI statistics.**
 17 **f) Does the fact that equipment failures are increasing suggest that NP’s**
 18 **capital programs are failing, or improperly prioritized?**
 19
 20 **A. a) Table 1 shows the average net investment for the five-year periods 2014-2018 and**
 21 **2019-2023.¹**

Table 1: Average Net Investment 2024 \$ (\$000's)	
Years	Average Net Investment
2014-2018	1,000,010
2019-2023	1,196,417

¹ See the response to Request for Information CA-NP-003.

- 1 b) Table 2 provides the requested data for the years 2001-2023.²

Table 2: Equipment Failures (Excluding Services) (2001 to 2023) ³	
Year	Quantity
2001	1,520
2002	1,691
2003	1,761
2004	1,927
2005	1,678
2006	1,769
2007	1,819
2008	1,896
2009	1,544
2010	973
2011	1,064
2012	958
2013	877
2014	863
2015	817
2016	975
2017	971
2018	1,423
2019	1,159
2020	1,004
2021	927
2022	1,187
2023	1,053

² For clarity, the 1,100 equipment failures referenced in the 2025-2029 Capital Plan, and the data provided in response to this request for information, refers to the number of customer outage events in which the cause was identified as equipment failure.

³ Data on equipment failures prior to 2001 is not available.

- 1 c) Distribution components are usually replaced upon failure. Repair is not an option for
- 2 many failed distribution devices such as insulators, lightning arrestors, hardware and
- 3 fittings. Some larger items, such as transformers, are refurbished where possible.
- 4 Conductors are generally repaired as well by sleeving or splicing. Poles are evaluated
- 5 as to the extent of damage incurred and may be returned to service if the condition
- 6 is judged to be adequate.
- 7
- 8 d) Yes, in some cases equipment, such as distribution transformers, repairs have
- 9 become more economic relative to replacement based on recent supply chain issues.
- 10 As such, Newfoundland Power has increased refurbishment of equipment, such as
- 11 distribution transformers, to alleviate these supply chain issues and high
- 12 replacement cost. However, the ability to refurbish transformers locally is limited.⁴
- 13
- 14 e) Table 3 shows the proportion of SAIDI and SAIFI attributed to equipment failure for
- 15 the years 2020-2023.⁵

Table 3: SAIDI and SAIFI Due to Equipment Failure (2020 to 2023)		
Year	SAIDI	SAIFI
2020	1.08	0.76
2021	1.02	0.70
2022	1.38	0.91
2023	1.08	0.76

- 16 f) No. Increased equipment failures are reflective of aging and deteriorating
- 17 infrastructure, as well as more frequent and severe weather events.

⁴ Newfoundland Power has engaged a local supplier to refurbish distribution transformers removed from service. For the period 2019-2023, Newfoundland Power has received 703 refurbished distribution transformers from this supplier, which represents 9.4% of distribution transformers used in this time period ($703/7,494 = 0.0938$). This has saved over \$1.6 million dollars in transformer costs over the same time period.

⁵ Data on reliability by equipment failure cause is unavailable for years prior to 2020.