

1 **Distribution**

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3 **Q. Reference: "2025 Capital Budget Application," Newfoundland Power Inc.,**
4 **June 28, 2024, sch. B, Distribution Feeder Automation, p. 12.**

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6 **Scenario 2 – Deployment of multiple downline reclosers on a feeder such that**
7 **approximately one third of the feeder load is upstream of the first downline**
8 **recloser, one third of the load is between the first and second downline**
9 **recloser, and the remaining one third of the load is downstream of the second**
10 **downline recloser. This is typically used for larger feeders with the highest**
11 **number of customers.**

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13 **a) Please describe the procedure used to measure the load distribution**
14 **across a feeder for Scenario 2.**

15 **b) For feeders PUL-02, PUL-03 and LOK-01, please provide the single line**
16 **drawings with the proposed recloser locations and upstream/downstream**
17 **load values.**

18 **c) When does Newfoundland Power anticipate that its Distribution Feeder**
19 **Automation project will conclude?**

20 **d) Please provide the System Average Interruption Duration Index ("SAIDI")**
21 **and System Average Interruption Frequency Index ("SAIFI") values for**
22 **each year from 2019 to 2023 for each of the proposed feeders, along with**
23 **the company average and the Electricity Canada Region 2 average.**

24 **e) What is the anticipated lead time for reclosers?**

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26 **A. a)** Newfoundland Power uses computer modeling software to simulate load flows
27 during various load conditions. In the case of distribution feeders, total feeder load is
28 allocated across the feeder to approximate load at each distribution transformer
29 downstream from the substation, based on their individual capacities. This permits
30 the Company to approximate the load on individual sections of line, which can be
31 verified by field measurements.

- 1 Figure 2 shows the locations of the newly proposed reclosers for PUL-03, as well as
- 2 the requested upstream and downstream loads. Total feeder load is approximately
- 3 6.6 MVA.

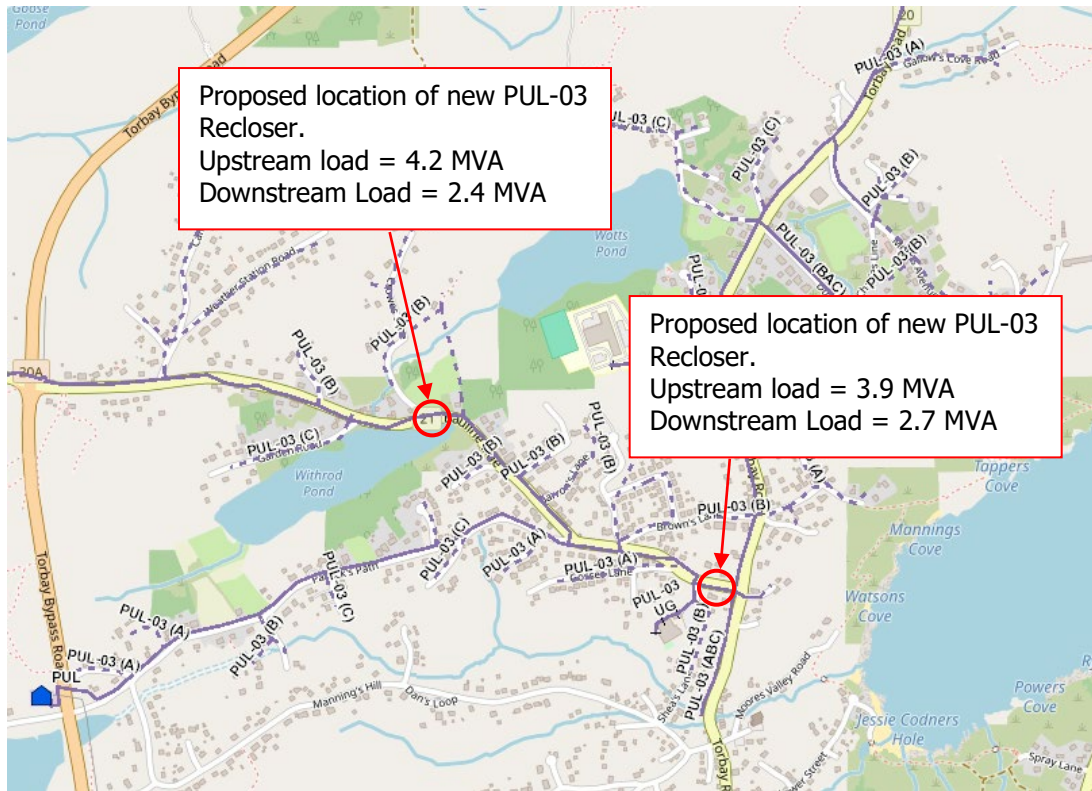


Figure 2 – Location of New Reclosers for PUL-03.

1 d) Data can be provided as requested; however, the comparison between feeder-level
 2 statistics, the Company's system-level corporate statistics, and Electricity Canada
 3 Region 2 statistics is not truly meaningful due to differences in how the data has
 4 been recorded. Feeder-level statistics have been compiled from Newfoundland
 5 Power's Worst Performing Feeders list and include only distribution-level unplanned
 6 outages. System-level Corporate and Electricity Canada statistics include
 7 transmission and substation outages along with planned outages.² Data collected
 8 from the new Outage Management System includes more granularity when
 9 compiling feeder-level statistics, but this data is only available to 2020.

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Table 1 provides five-year historical SAIDI data for the proposed feeders.

Table 1 Comparison of Historical SAIDI Data ³						
Feeder	2019	2020	2021	2022	2023	
APT-01 ⁴	N/A	N/A	N/A	N/A	0.01	
COB-01	0.14	3.15	0.14	0.32	1.08	
FRN-01	1.75	4.22	4.43	0.24	0.13	
HOL-03	1.84	6.11	7.00	9.24	4.47	
LOK-01	2.61	4.1	2.86	0.50	0.52	
PUL-01	0.13	0.30	0.05	0.47	1.44	
PUL-02	2.31	0.66	0.59	0.18	0.14	
PUL-03	1.45	0.26	1.72	0.71	1.49	
PUL-04	0.48	0.26	0.05	1.68	0.15	
PUL-05	0.47	1.56	0.27	0.02	0.11	
RRD-10	0.01	5.45	0.15	0.55	0.14	
SMV-01	1.19	3.36	0.65	13.43	7.94	
WAL-02	0.53	10.89	7.28	0.39	2.14	
WAL-04	0.19	10.25	0.92	0.2	0.17	
Corporate Average	2.34	2.97	2.48	3.03	2.62	
Electricity Canada Region 2	4.92	4.34	3.83	4.36	4.89	

² All data excludes major events and loss of supply outages.

³ Feeder-level data is based exclusively on unplanned distribution-level outages, and excludes outages at the transmission and substation levels, as well as loss of supply and major events. Corporate Average and Electricity Canada data includes substation and transmission level outages.

⁴ The Airport ("APT") Substation was constructed in 2022 as part of the *St. John's North - Portugal Cove Planning Study* included in the Company's *2021 Capital Budget Application*. Distribution feeder APT-01 was first energized in March 2023.

1 Table 2 provides the five-year historical SAIFI data for the proposed feeders.

Table 2 Comparison of Historical SAIFI Data ⁵						
Feeder	2019	2020	2021	2022	2023	
APT-01 ⁶	N/A	N/A	N/A	N/A	0.09	
COB-01	0.04	1.04	1.04	2.15	0.58	
FRN-01	1.07	2.28	1.04	0.23	1.05	
HOL-03	2.26	2.69	4.46	3.95	3.44	
LOK-01	3.55	2.47	3.29	1.51	0.55	
PUL-01	0.05	0.16	0.02	0.36	1.56	
PUL-02	2.51	0.15	0.35	0.08	0.1	
PUL-03	4.38	0.14	2.04	1.01	1.04	
PUL-04	0.32	0.1	0.02	1.17	0.1	
PUL-05	1.99	2.83	0.15	0.00	0.06	
RRD-10	0.01	3.55	1.04	0.16	0.07	
SMV-01	1.61	2.07	0.41	11.8	5.44	
WAL-02	1.25	8.25	4.62	2.21	3.04	
WAL-04	0.08	5.7	1.99	0.11	2.01	
Corporate Average	1.62	2.32	1.96	2.05	2.04	
Electricity Canada Region 2	1.99	1.89	1.81	1.96	2.13	

2 e) The anticipated lead time for a recloser is currently 52 weeks.

⁵ Feeder-level data is based exclusively on unplanned distribution-level outages, and excludes outages at the transmission and substation levels, as well as loss of supply and major events. Corporate Average and Electricity Canada data includes substation and transmission level outages.

⁶ The Airport ("APT") Substation was constructed in 2022 as part of the *St. John's North - Portugal Cove Planning Study* included in the Company's *2021 Capital Budget Application*. Distribution feeder APT-01 was first energized in March 2023.