

1 **Reference: "2023 Capital Budget Application," Newfoundland Power Inc., June 29,**
 2 **2022, Schedule B, pp. 77–80 (Walbournes Substation Refurbishment**
 3 **and Modernization) and Schedule B, pp. 81–84 (Molloy's Lane**
 4 **Substation Refurbishment and Modernization).**
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- 6 **Q. a) Please provide the criteria used to rank and identify substations for**
 7 **refurbishment and modernization.**
 8
 9 **b) Please provide the details of condition assessment data inputs and the**
 10 **methodology used.**
 11
 12 **c) Please provide Newfoundland Power's methodology for ranking**
 13 **substation criticality.**
 14
 15 **d) Does Newfoundland Power have a criticality scoring for ranking the**
 16 **criticality for all of its substations?**
 17

18 A. a) As described in the *Substation Strategic Plan*, each substation is assessed based
 19 on a number of factors including physical condition, history of equipment
 20 maintenance and performance, equipment life expectancy, impact of failures on
 21 service to customers, and requirements for modernizing substation protection
 22 and control.¹
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24 Refurbishment and modernization projects are coordinated with the maintenance
 25 cycle for major substation equipment to provide reliability and productivity
 26 benefits for customers. This coordination is particularly important when
 27 completing the required work necessitates the installation of a portable
 28 substation or the offloading of a substation in order to avoid prolonged customer
 29 outages.
 30

31 The *2023 Substation Refurbishment and Modernization* report provides an
 32 update on the age and condition of major substation equipment and
 33 infrastructure, including the strategy for addressing these assets during
 34 refurbishment and modernization projects.²
 35

- 36 b) The condition assessments for the Walbournes and Molloy's Lane substations are
 37 outlined in the *2023 Substation Refurbishment and Modernization* report.³ These
 38 assessments consider the condition of substation infrastructure, power
 39 transformers, protection and control equipment, control buildings and the site on
 40 which the equipment is located. This approach is consistent with that outlined in
 41 Newfoundland Power's *Substation Strategic Plan*.

¹ See the *2007 Capital Budget Application*, report 2.1 *Substation Strategic Plan*.

² See the *2023 Capital Budget Application*, report 2.1 *2023 Substation Refurbishment and Modernization*, Appendix A and Appendix B.

³ See the *2023 Capital Budget Application*, report 2.1 *2023 Substation Refurbishment and Modernization*, Section 4.1 for Walbournes substation and Section 4.2 for Molloy's Lane substation.

- 1 c) The criteria used to determine the criticality of a substation depends on the role
2 of the substation within the electrical system and whether it has transmission,
3 distribution, and/or generation equipment.
4
- 5 The majority of Newfoundland Power’s substations contain distribution
6 equipment. Distribution substations are, by their nature, critical in providing
7 reliable service to customers as a single substation equipment failure can result
8 in outages to thousands of customers.
9
- 10 The relative criticality of one distribution substation versus another would
11 typically be judged based on the number of customers served and, by extension,
12 the number of customers that would be without service in the event of an
13 equipment failure. The substations proposed for refurbishment and
14 modernization in 2023 serve significant numbers of customers, with 6,900
15 customers served by Walbournes Substation and 8,900 customers served by
16 Molloy’s Lane Substation.⁴ Accordingly, both substations are considered critical
17 in providing reliable service to Newfoundland Power’s customers.
18
- 19 d) Newfoundland Power does not have a specific scoring methodology for ranking
20 the criticality for all of its substations. As explained in part c), the relative
21 criticality of one substation versus another is assessed based on engineering
22 judgment and depends on the substation’s role in the electrical system. As
23 explained in part a), the criteria used to determine which substations undergo
24 refurbishment and modernization is primarily condition based, with consideration
25 of a substation’s operating experience and customer impact in the event of a
26 failure.

⁴ Walbournes Substation also feeds Frenchman’s Cove Substation through radial Transmission Line 353L. There are an additional 1,400 customers supplied from Frenchman’s Cove Substation.