

1 **Reference: Schedule B Projects and Programs over \$750,000**

2

3 **Q. Page 61, Gambo Substation Refurbishment and Modernization Substations.**

4 **Substations are inspected eight times a year under the Substation**

5 **Refurbishment and Modernization Plan. When did inspections find the**

6 **deteriorated and obsolete equipment at Gambo Substation and how did**

7 **Newfoundland Power determine the appropriate time to undertake the**

8 **refurbishment and modernization of this substation?**

9

10 A. Newfoundland Power's substation inspections identify preventative and corrective

11 maintenance necessary to ensure the reliable operation of critical substation assets.

12 Inspection results are incorporated into the Company's annual update of its *Substation*

13 *Refurbishment and Modernization Plan*.

14

15 In 2022, an inspection and an engineering assessment on the Gambo ("GAM")

16 Substation wood pole structures were completed. The inspection determined that the

17 wood poles are deteriorated to the point where replacement is required. Multiple

18 concrete foundations were also found to be deteriorated and in need of refurbishment or

19 replacement.<sup>1</sup>

20

21 The 121L transmission line circuit breaker, GAM-121L-B, is a 138 kV SF6 breaker that

22 was installed in 2023 following the failure of the previously existing oil filled General

23 Electric KSO breaker that was 45 years old at time of failure. The GAM-146L-B circuit

24 breaker is the same model and vintage as the failed GAM-121L-B breaker. The

25 GAM-146L-B circuit breaker was determined to be at the end of its useful service life.<sup>2</sup>

26

27 The GAM Substation control building roof leaked in 2022 which caused water damage to

28 the building interior. The roof was repaired to temporarily stop the leak, however, the

29 roof requires replacement.<sup>3</sup>

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31 In 2020, Newfoundland Power completed an engineering assessment of its substation

32 ground grids.<sup>4</sup> The assessment identified that the ground grid at GAM Substation has

33 deficiencies that need to be addressed.<sup>5</sup>

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<sup>1</sup> See Newfoundland Power's *2024 Capital Budget Application*, report 2.1 *2022 Substation Refurbishment and Modernization*, Appendix A, Section 2.1 *138kV Infrastructure*, Section 2.2 *66kV Infrastructure*, and Section 2.3 *25kV Infrastructure*.

<sup>2</sup> See Newfoundland Power's *2024 Capital Budget Application*, report 2.1 *2022 Substation Refurbishment and Modernization*, Appendix A, Section 2.1 *138kV Infrastructure*.

<sup>3</sup> See Newfoundland Power's *2024 Capital Budget Application*, report 2.1 *2022 Substation Refurbishment and Modernization*, Appendix A, Section 2.6 *Control Building*.

<sup>4</sup> See Newfoundland Power's *2022 Capital Budget Application*, response to Request for Information PUB-NP-015.

<sup>5</sup> See Newfoundland Power's *2024 Capital Budget Application*, report 2.1 *2024 Substation Refurbishment and Modernization*, Appendix A, Section 2.7 *Site Condition*.

1 The GAM Substation bus and transformer protection relays are vintage  
2 electromechanical type relays. These electromechanical relays are no longer industry  
3 standard, are obsolete and require replacement.<sup>6</sup>  
4  
5 GAM Substation contains equipment that is deteriorated, obsolete, and at end of life  
6 which increases the probability of outages to customers. Refurbishment and  
7 modernization projects are proposed when an individual substation contains a material  
8 amount of aged, deteriorated and obsolete equipment. Projects are prioritized based on  
9 the condition of individual substations where a large volume of work is required. In the  
10 case of GAM Substation, the number of components requiring preventative and  
11 corrective maintenance at this time justifies the refurbishment and modernization of the  
12 substation in 2024.

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<sup>6</sup> See Newfoundland Power's *2024 Capital Budget Application*, report 2.1 *2022 Substation Refurbishment and Modernization*, Appendix A, Section 2.5 *Protection and Control*.