

1 **Q. Reference: “2020 Capital Budget Application,” Newfoundland Power, July 5, 2019,**
 2 **Report 2.1 “2020 Substation Refurbishment and Modernization,” sec. 2, at p. 2.**

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 4 **For 2020, Substation Refurbishment and Modernization Projects include planned**
 5 **refurbishment and modernization of 3 substations. This substation work is**
 6 **estimated to cost a total of \$10,856,000, comprising approximately 96% of the total**
 7 **2020 project cost. The remaining project cost includes \$180,000 associated with**
 8 **Substation Monitoring Upgrades to upgrade substation communication systems.**

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 10 **Please provide a list of the planned equipment replacement, including age and**
 11 **condition, for the Marystown, Bonavista, and Grand Bay Substations.**

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 13 **A. Table 1 provides a list of planned equipment replacements, including age and condition,**
 14 **for Bonavista Substation.**

Table 1
Bonavista Substation
2020 Planned Equipment Replacements

Equipment	Age (Years)	Condition
Transformer Foundation	29	No spill containment
138 kV Air Break/High-Speed Ground Switch	9	Air break seized
12.5 kV Bypass Switches	36-43	Deteriorated
12.5 kV Side Break Switches	36-43	Deteriorated
12.5 kV Hook-stick Operated Switches	36-43	Deteriorated
BVA-CT/PT Combo	5	Bypassed (failed during 2018 storm)
Protective Relays	5	Non-standard ¹
48 VDC Battery Bank (4 x 12 VDC)	8	End of Life

¹ The existing BVA-T1 protective relay was installed in 2014 due to a failure of the previous device. The existing relay is installed in an outdoor control cabinet and does not have standardized functionality of transformer protective relays currently used by the Company. Following completion of the 2020 planned equipment replacements, the existing relay will be repurposed as a spare to respond to future equipment failures.

- 1 Table 2 provides a list of planned equipment replacements, including age and condition,
2 for Grand Bay Substation.

Table 2
Grand Bay Substation
2020 Planned Equipment Replacements

Equipment	Age (Years)	Condition
Transformer Foundation	36	No spill containment
Power Transformer ²	53	Deteriorated (failed tap changer)
12.5 kV Bypass Switches	30	Deteriorated
12.5 kV Side Break Switches	30	Deteriorated
12.5 kV Hook-stick Operated Switches	30	Deteriorated
66 kV Bypass Switches	36	Deteriorated
66 kV Side Break Switches	36	Deteriorated
Protective Relays	36	Obsolete

- 3 Table 2 provides a list of planned equipment replacements, including age and condition,
4 for Marystown Substation.

Table 3
Marystown Substation
2020 Planned Equipment Replacements

Equipment	Age (Years)	Condition
Transformer Foundation	44	No spill containment
66 kV Air Break Switches	44	Deteriorated
66 kV High-Speed Ground Switch	40	Deteriorated
12.5 kV Bypass Switches	38-45	Deteriorated
12.5 kV Side Break Switches	38-45	Deteriorated
12.5 kV Hook-stick Operated Switches	38-45	Deteriorated
Protective Relays	40	Obsolete

² GBS-T1 was originally installed in Newfoundland Power's Deer Lake Substation before being transferred to Grand Bay Substation in 1992.