

1 **Q. Reference: “2020 Capital Budget Application,” Newfoundland Power, July 5, 2019,**  
 2 **Report 2.1 “2020 Substation Refurbishment and Modernization,” sec. 3.1, at p. 4,**  
 3 **fn. 3; sec. 3.2, at p. 7, fn. 7; and sec. 3.3, at p. 11, fn. 16.**

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 5 **The Company’s strategy for switches is to operate and maintain switches whenever**  
 6 **opportunities and substation work permit, and to replace switches when they are**  
 7 **more than 30 years old. Over the life of the switches there is mechanical wear and**  
 8 **tear experienced by items such as hinge bushings, Teflon bushing liners and springs**  
 9 **used to assist movement. The result is typically misalignment of switch blades and**  
 10 **contact surfaces.**

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 12 **Has Newfoundland Power carried out an analysis to compare life cycle cost of**  
 13 **replacing switches at 30 years versus maintaining beyond 30 years? If so, please**  
 14 **provide analysis details. If not, why not?**

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 16 **A.** Newfoundland Power has not carried out an analysis comparing the life cycle cost of  
 17 replacing switches at 30 years versus maintaining them beyond 30 years. The Company  
 18 does, however, complete both replacements *and* corrective maintenance for switches  
 19 beyond 30 years in age.

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 21 There are a large number of switches in Newfoundland Power’s system that are beyond  
 22 30 years in age.<sup>1</sup> When a substation is undergoing refurbishment and modernization,  
 23 switches that are more than 30 years old are replaced.<sup>2</sup> Outside of the *Substation*  
 24 *Refurbishment and Modernization* capital project, Newfoundland Power’s practice is to  
 25 undertake corrective maintenance on switches that fail in service.<sup>3</sup> If the switch cannot  
 26 be repaired on site, a replacement switch is installed.

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 28 Removing switches with over 30 years in service, refurbishing them and returning them  
 29 to service would present a number of challenges. This includes the availability of new  
 30 components to include in the refurbishment and access to the necessary expertise,  
 31 internally or externally, to complete the refurbishment. Newfoundland Power is not  
 32 presently equipped to repair switches internally.

33  
 34 Maintenance and replacement of switches form part of Newfoundland Power’s overall  
 35 asset management program, which was reviewed by The Liberty Consulting Group in  
 36 2014.<sup>4</sup>

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<sup>1</sup> For example, as shown in the response to Request for Information NLH-NP-012, the switches planned for replacement as part of the *2020 Substation Refurbishment and Modernization* project range in age from 30 to 45 years old.

<sup>2</sup> Repairing or replacing failed switches in energized substations can be time consuming and costly. In some circumstances, lengthy customer outages may be required. Replacing aged switches in a planned fashion during *Substation Refurbishment and Modernization* projects is less costly than repairing them in service.

<sup>3</sup> Due to the age of these older switches, the Company frequently has to resort to salvaging parts from switches removed from service to facilitate repairs.

<sup>4</sup> For more information on The Liberty Consulting Group’s findings regarding Newfoundland Power, see the response to Request for Information PUB-NP-001.