

1 Q. **Reference: *Structural Capacity Assessment of the Labrador Island Transmission Link (LITL)*,**  
2 ***EFLA, April 28, 2020, page 51.***

3 *“The “Strain Margin” type test [12] indicate that the optical fibres permanent attenuation in*  
4 *signal was below the limits specified in IEEE Std. 1138-2009 when tested up to the RTS.”*

5 Please provide a detailed technical explanation of how the OPGW optical fibres are able to  
6 withstand permanent elongation/attenuation and continue to function appropriately when  
7 subjected to ice loads in multiple spans at 109% RTS.

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10 A. During EFLA Consulting Engineers’ (“EFLA”) analysis, higher ice loads than that of the original  
11 design of the Labrador-Island Link (“LIL”) were placed on the line components to determine the  
12 structural capacity of the LIL. It was determined that when using EFLA’s chosen CSA 1:150 loads  
13 the optical ground wire (“OPGW”) is stressed to 109% of its Rated Tensile Strength. From  
14 reviewing the design documentation, EFLA has concluded that this loading will elongate the  
15 OPGW conductor but will not result in a break to the cable. From a communication perspective  
16 it is not known if the fibers within the OPGW will withstand such stresses; however, there are  
17 redundant communications systems in place which will help to ensure power delivery will  
18 remain unaffected. Please refer to Newfoundland and Labrador Hydro’s response to NP-NLH-  
19 027 for a description of OPGW fiber failures.