

1 Q. **Reference: 2018 Cost of Service Methodology Review Report, Appendix A, Cost of Service**  
2 **Methodology Review, Christensen Associates Energy Consulting (CAEC), Nov. 15, 2018,**  
3 **page 15 (71 pdf)**

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5 Citation:

6 However, Muskrat Falls is on the mainland, connected to the Island's customers via  
7 an HVdc line that may encounter transmission constraints.

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9 Please explain under what circumstances the HVdc line connecting Muskrat Falls to the  
10 Island's customers may encounter transmission constraints.

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13 A. The HVdc line in question is the Labrador Island Link ("LIL"). The line has a nominal rating of  
14 900 MW, and under normal operation is intended to transmit power from Labrador to the  
15 Island and to export destinations via the Maritime Link connecting the Island to Nova Scotia  
16 and the North American grid.

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18 At times of peak load conditions on the Island, the LIL could be fully loaded. Should  
19 additional generation be required to meet high demand on the Island, the LIL would not be  
20 able to assist in the supply of that demand because it would be at its rating. In this  
21 situation the LIL would be considered to be constrained.

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23 The LIL is designed for reduced voltage operation. The benefit of reduced voltage operation  
24 is that the LIL would be able to operate at a reduced capacity should there be flashovers of  
25 the insulators due to contamination such as salt or smoke (i.e. forest fire). By reducing the  
26 operating voltage of the LIL, the remaining insulating properties of the temporarily polluted  
27 insulators can be utilized to provide demand on the LIL. The drawback of the reduced  
28 voltage operation is reduced capacity of the LIL. With the LIL operating at 80% of rated  
29 voltage, the maximum power transfer at the Muskrat Falls converter is reduced to 720

1 MW. Therefore, in reduced voltage operating mode the LIL would be considered  
2 transmission constrained to the lower rating with respect to demand supply to the Island.

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4 Similarly, the LIL may be constrained during scheduled maintenance when, for example, an  
5 electrode line or pole equipment is taken out of service. Of course, scheduled maintenance  
6 is completed at times of lower demand such that the LIL constraint has minimal impact on  
7 supply to the Island (i.e. sufficient Island generation available to meet the demand  
8 forecast).