

1 Q. Please perform a reliability analysis for the situation where, once the Muskrat Falls  
2 to Happy Valley Interconnection is approved and constructed, the load on the  
3 Labrador East system exceeds its design capacity.

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6 A. Section 5.2 of the Report (2018 Capital Budget Application, Volume 2, Tab 13,  
7 Appendix A) states that once the new Muskrat Falls to Happy Valley  
8 Interconnection is in-service, the overall firm transfer limit of the proposed system  
9 is 129 MW for the single contingency loss of a 138/25 kV transformer at the Happy  
10 Valley Terminal Station. The limit is 77 MW for loss of the first 6 km of 138 kV  
11 transmission line at Muskrat Falls by reconnecting L1301 to the system, with the  
12 subsequent voltage constraint. Section 9.2 of the Report states that the  
13 unavailability of the proposed project is 0.0046 or 0.46%.

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15 Without knowing the load to be supplied beyond the capacity of the proposed  
16 alternative, the next incremental addition to the system is the construction of a  
17 second 138 kV transmission line (36 km) between Muskrat Falls and Happy Valley  
18 and a second 138/25 kV station. Section 5.5 of the Report states that the overall  
19 firm transfer limit of this system configuration is approximately 150 MW for the loss  
20 of a 315/138 kV transformer at Muskrat Falls with the 25 MW gas turbine in-service  
21 at Happy Valley. Section 9.5 of the Report states that the unavailability of this  
22 configuration is 0.000121 or 0.0121%.