Q. Reference: *Probabilistic Based Transmission Reliability Summary Report*, Appendix A, Page 28 of 56.

"Based on the Nalcor study the following are the expected failure rates and repair times for the HVDC overhead lines.

- *Average failure rate per pole (based on 1100km length): 2.101/year*
- *Average repair time: 1.78 hours*
- *Average common mode failure rate: 0.02/year/100km*
- *Average common mode repair time: 24 hours"*

Please provide the Labrador Island Link failure rates per pole, and common mode failure rates, due purely to severe weather events. Please present the response in 'failures/year'.

A. The per pole failures rates due to transmission line events are based on CIGRE statistics. These statistics do not include details relating to the specific cause of failure. Therefore, there is no basis for an estimation of failures rates due to severe weather events for the numbers presented above.

The common mode failure rate of 0.02 per year per 100 km is an estimated value provided by SNC Lavalin where it was anticipated that common mode failures within the industry average data would occur one order of magnitude less than a single pole failure. Industry wide bipole failure rates would depend on the design characteristics of the systems, and, if weather related, the severity of the weather experienced. The Labrador Island Link is designed such that the overhead transmission line common mode failures should only occur as a result of a structural failure of a transmission tower and as a result should be based on the reliability

return periods. It is therefore anticipated that common mode failures for weather would occur at a rate of 0.002/year for sections of the Labrador Island Link on the Avalon Peninsula[1] and 0.00667/year for the other sections[2].

[1] Based on a meteorological return period of 1:500 years as provided in NP-NLH-004
[2] Based on a meteorological return period of 1:150 years as provided in NP-NLH-004