

1 Q. Reference: *Probabilistic Based Transmission Reliability Summary Report*, Appendix
2 A, Page 34 of 56.

3 *“Considering the voltage levels for LIL and ML the average outage rates and*
4 *durations for LIL and ML overhead lines are as follows...”*

5 Please explain how transmission line voltage is correlated to reliability rates and
6 whether or not it is appropriate for Teshmont to assume outage rates for the design
7 of the LIL and ML based on voltage.

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10 A. Like with HVdc transmission lines, the failures rate, repair times, and unavailability
11 of ac transmission lines are dependent on multiple factors. In particular, these
12 include utility practices relating to design standards and operational considerations
13 including maintenance, spare materials, and crew location and availability.

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15 As noted in Table 12 of the Teshmont report, an increase in the voltage class of the
16 line is characterized by a reduction in the rate of failure. This is a direct result of the
17 application of design standards and maintenance practices to ensure that critical
18 lines are appropriately designed to withstand environmental conditions.

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20 Repair times are a function of the utility’s operational approach with respect to a
21 transmission line of a particular voltage class and criticality.

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23 For the purposes of this investigation the Labrador Island Link was assessed in light
24 of CEA data for transmission lines in the 200-299 kVrms (283 to 423 kVpeak) range
25 and the Maritime Link was assessed in light of CEA data for transmission lines in the
26 110-149 kVrms (156 to 211 kVpeak) range. These assessments were performed with
27 the objective of validating reliability parameters provided by Nalcor for the

- 1 purposes of a comparative reliability study. The development of true reliability
- 2 projections for the Labrador Island Link and the Maritime Link would require a
- 3 detailed review of the design and operational considerations discussed above.