

1 Q. **Reference: Failure Investigation Report – L3501/2 Tower and Conductor Damage, Icing Event**
2 **January 2021 in Labrador (January 2021 Icing Event Report), page 39.**

3 Weather stations are said to be located a significant distance from the transmission line with
4 large differences in exposure and elevation and at page 14 it is noted that while there are
5 existing transmission lines in central Labrador they are not in parallel corridors. Explain whether
6 the weather information and limited operating experience available for the locations where the
7 damage occurred was sufficient to properly inform the appropriate design for the transmission
8 line in this section of central Labrador and what action Hydro is taking to obtain more detailed
9 information on the weather exposures of the line in this area.

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12 A. At the time of design, the best available information and engineering judgement was used to
13 select the design loads for the transmission line in central Labrador. This information included
14 freezing rain models which were based on data from existing weather stations and historical
15 storm information, existing transmission lines experience throughout Labrador, and the CSA
16 60822 ice thickness mapping. With the understanding that the available information was limited
17 in comparison to other regions of the Labrador-Island Link (“LIL”), the ice load was increased
18 significantly and was considered conservative from a design perspective.

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- Design ice maximum thickness = 50 mm.
 - 20 • Modeling from existing stations (Kathy Jones, CRREL) = 11 mm.
 - 21 • Existing TL = Ranging from 12.7 mm to 25 mm in various location throughout Labrador.
 - 22 • CSA 50 years load at line location = 37 mm.

23 To obtain more detailed information on the weather loads for this section of the LIL, Weather
24 Research and Forecasting modeling was completed in 2021. This modelling uses input from
25 existing weather station and terrain information to determine site specific weather information.
26 The weather model is then used to predict the ice accretion along the length of the LIL.

1 Along with the above modelling, icing information from this 2021 event was recorded and
2 installation of weather monitoring test spans are planned along the line in Labrador. This would
3 provide information on the weather experience at the line location, as well as the ice load due
4 to ice accretion on the test span.