

1 Q. **Newfoundland and Labrador Hydro - EFLA Consulting Engineers Report - Structural Capacity**  
2 **Assessment of the Labrador Island Transmission Link, April 30, 2020 (“EFLA” Report)**

3 With regard to Hydro’s ongoing LIL reliability studies (referred to at the June 4 technical  
4 conference) and to be filed with the Board by November 15, 2020, please confirm that Hydro is  
5 performing another assessment considering glaze ice data that is based on local climatological  
6 data; i.e., different from the glaze ice data underlying the results presented in the April 30, 2020  
7 EFLA report, and provide a description of the efforts, data sources, and use that such an  
8 assessment will employ. If not so confirmed please explain why not.

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11 A. To facilitate the study currently being executed by Haldar & Associates Inc., Newfoundland and  
12 Labrador Hydro (“Hydro”) is completing an icing study in cooperation with EFLA Consulting  
13 Engineers (“EFLA”) for the purpose of validating glaze ice loading criteria used in critical sections  
14 of the Labrador-Island Link (“LIL”). This assessment will use past environmental data to model  
15 and predict climatological loading. The model will be used to calculate freezing rain at specific  
16 locations where there is adequate historical data for comparison and model validation. Once the  
17 model is validated, it can be used to predict the return periods of climatic events. As the return  
18 period of a climatic event is the average occurrence of a climatic event over time, the more data  
19 available for analysis, the greater the probability of predicting extreme events.

20 In the late 1990s, Hydro completed an upgrade of transmission lines on the Avalon Peninsula  
21 (“Avalon Upgrade”) following frequent and multiple failures of transmission lines located on the  
22 Avalon due to climatic events. Environmental data leading back to the 1960s was utilized to  
23 analyze and determine an acceptable level of reliability based on calculated return periods (50-  
24 year) using the 30 plus years of data. Around the same time, CSA 60826 was developed to  
25 address some of the regional increases in extreme climatic events that were being experienced.  
26 The work completed for the Avalon Upgrade by Hydro with respect to climatological loading was  
27 utilized by the CSA working group to guide the new edition of the code for this region. Since that  
28 time, there is now an additional 20 plus years of data available, with no failures reported. For  
29 the purpose of the LIL study, Hydro is re-analyzing the entire data set to determine a more

1 realistic value for the associated return periods. It should be noted that since the development  
2 of CSA 60826, there has been no change to climatological ice loading maps for the province of  
3 Newfoundland and Labrador despite a reduction in failures.

4 The new analysis will enable assessment of whether the climatological ice loads used in the  
5 design of the LIL are realistic based on historical local data and if the loading provided by the  
6 CSA standard provides a reasonable basis for comparison, as some of the information may be  
7 dated. Further, it is possible that a value which was considered consistent with a 50-year return  
8 at the time of development of the CSA 60826 standard 30 years ago may not necessarily reflect  
9 a 50-year return period once the additional years of data are fully considered.

10 The findings from this assessment will be utilized in the reliability study currently underway by  
11 Haldar & Associates Inc. and will be provided as a part of the report to be filed in November  
12 2020. The work is currently tracking on schedule for completion as specified.