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

With respect to the April 30, 2020 EFLA report's page 28 discussion of assuming all icing to be radial, please:

a. Provide the basis for making this assumption.

b. Describe circumstances that have material potential for producing non-radial accumulation.

c. Explain whether non-radial accumulation has the potential for magnifying the impact of the accumulation.

A. a. It is assumed that the question refers to cylindrical icing along the conductor rather than irregular icing shape. This assumption is aligned with the CSA standard, which only refers to cylindrical icing consistent with other line design standards.

b-c. The analysis of whether non-radial accumulation has the potential for magnifying the impact of the accumulation of was outside the scope of EFLA's Report. The intent of this study was to assess the capacity of the Labrador-Island Link ("LIL") based on parameters outlined in the CSA Standard, in which all icing is referred to an equivalent cylindrical shape. Icing models (ISO 12494) use cylindrical accumulation to model icing. Line design with the use of non-radial accumulation is not common practice within the utility industry. While ice will form on the conductor in a variety of shapes and uniformity along the span on any transmission line, uniform radial ice thickness is consistently used to describe ice load on a line and is used in design to define the max ice load to in terms equivalent thickness that can be used for calculation.[1]

[1] From section 6.32. of CSA 60826; Ice load is a random variable that is usually expressed either as a weight per unit length of conductor, g (N/m), or as a uniform radial thickness t (mm) around conductors and ground wires. In real conditions, ice accretion is random in both shape and density and depends on the type of accretion as indicated in Table A.10 in A.5.4. However, for ease of calculations, these are converted to an equivalent radial ice thickness (t).