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

Please see Footnote 12 of the April 30, 2020 EFLA report, noting that "tension towers were designed for extreme unbalanced ice with full load on one side and no conductor on the other side, for one conductor at a time." Please provide the data and analysis supporting this statement, and describe and explain why or why not tension towers are designed to remain intact when subjected to impact forces from sudden breaks of one conductor with full ice load.

A. Unbalanced ice load cases have been used within the design of Labrador-Island Link ("LIL") in an effort to capture all possible load combinations. With respect to EFLA Consulting Engineer's review of the original design, please refer to Newfoundland and Labrador Hydro's response to PUB-NLH-080.

Tension towers are designed to remain intact when subject to conductor breaks. This was checked both with the extreme unbalanced ice load case described above and with broken wire load cases with dynamic impact factors to account for the impact forces ranging from 1.5 to 2.

Tension towers are typically designed to remain intact when subject to impact forces from conductor break to limit cascading failure of tangent towers and reduce the potential for significant damage to extend through the line. Within the utility industry, they are typically referred to as anti-cascade towers and are installed at regular intervals to limit this exposure. Anti-cascade towers have been installed on the LIL at approximately every 21 structures thereby limiting risk and improving not only reliability but also the ability to restore power faster in the event of a significant failure.