Q. **Re: IC-NLH-030, p. 2 of 10**

Please explain why the Transmission and Transformation Loss Rates are:

- 3 to 4 times greater for Labrador West energy than for the Island Interconnected System, throughout the year
- 3 to 4 times greater for Labrador East energy than for the Island Interconnected System, except in the summer months
- 2.8 to 4 times greater for Labrador Interconnected System demand than for the Island Interconnected System, for all months.

A. The overall loss rates on the Labrador Interconnected System are higher than those on the Island Interconnected System, primarily due to system configuration. On the Island Interconnected System, there are many more transmission paths between the generation sources and load points than on the Labrador Interconnected System. On the Island, the bulk 230 kV transmission system consists of multiple paths between the largest hydro-electric source at Bay d'Espoir and the load centers in eastern and western Newfoundland. In addition, the 230 kV transmission line conductors are generally larger than those used in Labrador.

In Labrador, the generation source is located at Churchill Falls and there is a single, 269 km long, 138 kV transmission line to Happy Valley and two, 217 km long, 230 kV transmission lines to Labrador City-Wabush. These lines have relatively small conductors and experience high demand in the winter season due to heating loads. Consequently the overall demand losses are relatively high when compared to those on the Island. In addition, the losses in serving Hydro's customers in Labrador West are incremental to, or on top of, the fixed 5.3% loss rate applied to the TWINCo energy block and therefore are very high relative to the amount of load

Hydro transmits over the line. Since the TWINCo load is industrial in nature and consistent throughout the year, this contributes to higher year round losses when compared to the Island Interconnected System.