Q. Please explain in detail the extent that the Island Interconnected System depends on the support of Maritime Link (when in service) to avoid system collapse or load shedding in the event of faults or trips of the Labrador Island Link, major transmission lines, and trips of large generators.

A. The Island Interconnected System modifications for the interconnection of the new HVdc links are being designed to enhance the reliability to customers and to ensure that the additions of the Labrador-Island Link (LIL) and Maritime Link (ML) will not have a negative impact on the performance of the power system for faults, trips of the LIL, bulk transmission lines and large generators. To date, power system studies with the ML in service have identified a requirement to either run back or curtail (interrupt) the power flow on the ML for a number of contingencies to meet transmission reliability requirements and to avoid system collapse or load shedding on the Island Interconnected System. These contingencies include:

- Temporary and permanent pole faults on the LIL;
  - Curtail the ML.
- Temporary and permanent bipole faults on the LIL;
  - Curtail the ML.
- Outage to 230 kV transmission lines west of Bay d'Espoir; and
  - Run back of the ML to the 300 MW range to avoid steady state overload of 230 kV transmission lines depending upon ambient temperature.
- Three phase faults on 230 kV transmission lines west of Bay d'Espoir.
  - The Bottom Brook converter has been specified with a 125 MVAR per pole rating.

- For 230 kV multi-phase faults west of Bay d'Espoir the ML export to Nova Scotia must be run back to 250 MW.

To avoid under frequency load shedding on the Island for loss of large on-Island generation, reserve capacity will be scheduled on the LIL and a frequency controller will be used to automatically dispatch this reserve to replace the generation loss on the Island. During periods when the reserve on the LIL is reduced, generation reserves on the Island combined with run back of the ML export to Nova Scotia, can be used to avoid under frequency load shedding.