Q: Reference: ***Review of Newfoundland and Labrador Hydro Power Supply Adequacy and Reliability Prior to and Post Muskrat Falls Final Report,*** **Page ES-4.**

"Liberty recommends that, given the criticality of the Maritime Link to the reliability of the IIS, additional studies be completed not only with the Link in service, but also with it out of service"

Please provide details about the required studies including (i) a prioritized listing of studies, (ii) when these studies should be completed, and (iii) the possible implications of these studies to the Muskrat Falls, Labrador Island Link, and Maritime Link projects.

A. Studies with the Maritime Link out of service, as well as with the Maritime Link in service at credible power import and export settings, should be performed by Hydro as part of its Operational Studies, which would then feed into the Operational Procedures. This is because the system dynamics will be significantly different dependent on the power flows on the Maritime Link, and its ability to be curtailed. The LIL should also be represented, with appropriate settings, taking into account the loads in the IIS, varying between minimum and maximum loads.

Both load flow and dynamic power stability studies should be performed. The load flow studies are done to ensure that no equipment is overloaded, and that the voltages in the ac network can be controlled as required.

The dynamic stability studies are performed to ensure that the system as loaded and supported by synchronous condensers can ride through disturbances, such as ac system faults, monopolar faults, bipolar faults, etc, with the ac network recovering as required by the adopted planning standard.

The studies will identify the maximum import and export on the Maritime Link, for various operating modes of the LIL, various IIS loads and with different numbers of synchronous condensers in the IIS.

The studies will determine the maximum Maritime Link import/export limits for different configurations of LIL, IIS loads and different number of synchronous condensers.

The studies should prioritize operation modes that are known to be required, and other configurations should then be studied.

The studies must be performed before the LIL and Maritime Link enter service. Studies for other operating modes should be completed before such new modes are made available.

The results of the studies will determine for the different configurations and settings:

- the permissible import on the LIL
- the permissible import/export on the Maritime Link
- the need for additional synchronous condenser, if any
- the need for changes to the UFLS

The Muskrat Falls generation will be a potential limit on the import of power via the LIL, depending on the state of the dam and generator availability. On the other hand, the export of power on the Maritime Link may be an opportunity to enable the Muskrat Falls generation to provide additional output for export.