Q. Please describe Hydro's models and modeling capability for the power system post Muskrat Falls. What is the source for the data used to model HVDC transmission in terms of capacity and reliability?

A. Hydro uses the Siemens – PTI software program PSS®E for its transmission system analyses including load flow, short circuit and power system stability. The PSS®E program is a well-recognized transmission planning tool and is used by the utility industry worldwide.

Hydro maintains a set of base case load flow models of both the Island and Labrador Interconnected Systems for the current year and the next four calendar years. Each year the models are updated to reflect system additions, modifications and changes in load forecast. The steady state load flow models form the starting point for all transmission planning analyses. The load flow, short circuit and stability models are used to identify system additions required to meet the transmission planning criteria.

Integration studies involving the HVdc transmission line between Muskrat Falls and Soldiers Pond utilized generic HVdc converter models available within the PSS®E program and calculated overhead transmission line data based upon the proposed conductors. Design studies of the HVdc system will be completed by the HVdc converter vendor to ensure proper tuning of the converter controls for the Labrador and Island Interconnected Systems. Once design and commissioning are complete, the vendor will provide Hydro with the compiled vendor written model of the Muskrat Falls and Soldiers Pond converters for long term use in PSS®E by Hydro for future transmission system analysis.

With respect to HVdc reliability data, Hydro relies on the available CIGRE statistics. Further detail on the HVdc reliability data is provided in Hydro's response to PUB-NLH-212 Attachment 2.