Q. On page 51 of the Upgrade Transmission Line Corridor Report it is noted that the load on TL206 must be limited to 50MW when TL202 is out for maintenance in order to maintain stability. Does this now occur with current system conditions pre Labrador Island Link?

A. The analysis completed within the Report concludes that there are power system stability issues on the Island Interconnected System with only two 230 kV transmission lines between Bay d'Espoir and Sunnyside Terminal Stations (TL202 and TL206) following the addition of the Labrador – Island HVdc Link (LIL). The analysis concludes that in order to ensure power system stability post LIL, a new 230 kV transmission line must be constructed between Bay d'Espoir and Western Avalon Terminal Stations. Section 6.3.3 (pages 51 to 52) of the Report discusses transmission line maintenance benefits obtained with the addition of the proposed 230 kV line in the Bay d'Espoir to Western Avalon corridor post LIL completion. The analysis demonstrates that with TL202 out of service for maintenance, the loading on TL206 must not exceed 50 MW to ensure stability is maintained in the event of the loss of the remaining line when only two lines are present in the corridor. The addition of the Bay d'Espoir to Western Avalon transmission line ensures that two 230 kV transmission lines are in service during the maintenance of TL202 or TL206. Analysis indicates that for maintenance of TL202, the load limit on TL206 and the new Bay d'Espoir to Western Avalon line (TL267) combined equals 350 MW. Consequently there is a significant improvement in the maintenance window for line maintenance in the Bay d'Espoir to Western Avalon corridor assuming the addition of the proposed line.

For the existing system, maintenance of TL202 and TL206 is problematic as load continues to increase on the eastern portion of the system. Islanding of the Avalon Peninsula is a possibility during TL202/TL206 maintenance today given that there are only two 230 kV lines in the corridor. Islanding of the Avalon Peninsula may result in load loss and/or instability. In order to reduce the risk of outage to the Avalon Peninsula, TL202 and TL206 maintenance is limited to the spring, fall and winter seasons to avoid the risk of a TL206/TL202 outage due to lightning, freezing rain or severe winter storms. Further, line maintenance outages are scheduled on a daily basis to minimize the risk of line outage due to inclement weather. During the TL202/TL206 maintenance window there will be units on line at Holyrood Thermal Generating Station (HTGS) to support Avalon Peninsula load for loss of a second transmission line (TL206) during line (TL202) maintenance. In summary, a similar concern does exist on the current system and the ability to maintain TL202 and TL206 will continue to become more difficult as load on the Avalon Peninsula continues to increase. The addition of the Bay d'Espoir to Western Avalon transmission line to the existing transmission system would provide benefit for maintenance of 230 kV transmission lines in the Bay d'Espoir to Western Avalon corridor today similar to those highlighted in the Report for the post LIL scenario.