Q. On p. 13 of Exhibit 101, key finding 38 states: "*Relative to the Isolated Island alternative, the Interconnected Island alternative is also expected to provide similar levels of security and reliability, significantly reduced GHG emissions and significantly less risk and uncertainty.*" Please describe in detail how these "*similar levels of security and reliability*" were determined for both options. Was a quantitative assessment of each option completed for comparative purposes? If so, please provide a copy of the assessment.

A. The Technical Note: Labrador – Island HVdc Link and Island Interconnected System Reliability filed as Exhibit 106 provides the analysis of the levels of security and reliability for each option. Navigant was provided with a draft of the report for their review.

The Nalcor analysis to determine the level of exposure and unserved energy as a result of a transmission failure begins with the hourly load data for the year in question. A comparison is made between the hourly load in MW and the available generating capacity to meet the load during the hour. For hours in which the available generating capacity exceeds the load there is no exposure and no unserved energy. For any hour in which the load exceeds the available generating capacity there is an hour of exposure and the difference between the available capacity and the load is taken as the MWh of unserved energy for that hour. The calculation is performed for each hour of the year. Next, a 14 day or 336 hour sliding window is used to determine the two week window having the largest total hours of exposure and unserved energy. This two week window is deemed to be the “worst case” two week window by Nalcor as it captures the maximum unserved energy for the two week repair period. In other words, the “worst case” gives the

maximum unserved energy should the transmission line failure occur at the most inopportune time.

For the Isolated Island option the simultaneous loss of TL202 and TL206 connecting the Bay d'Espoir Generating Station and other hydroelectric resources to the Avalon Peninsula is viewed as the most significant transmission failure for the Isolated Island option. With both TL202 and TL206 in a common corridor and having the same design loading, failure of both lines can be expected for a storm resulting in loads that exceed the design load. Loss of both transmission lines, for all intents and purposes, isolates the Avalon Peninsula from the rest of the grid.

For the Interconnected Island option the failure of the overhead HVdc transmission line is viewed as the most significant transmission line failure as it removes a nominal 900 MW of capacity to the Island with limited on Island resources to supply the load with Holyrood thermal generation unavailable.

Table 5 of Exhibit 106 provides the results of the analysis. In summary it indicates that between 2017 and 2027 the Interconnected Island option has less unserved energy for the worst case two week outage window than the existing system today. In terms of level of exposure the availability values for the Isolated Island and Interconnected Island are very similar in the long term with both options providing energy availability values in excess of 99% and unsupplied energy values less than 1% of the annual energy forecast in any year.