Q. Re: **Upgrade Transmission Line Corridor** *Bay d'Espoir to Western Avalon*, Pages 27-28 and 52-53.
If generators were installed to provide synchronous condenser capabilities as opposed to simple synchronous condensers, would the proposed 230 kV transmission line still be required to ensure system stability? In the response, please indicate the technical and/or cost considerations justifying the conclusion.

A. As noted in Hydro's response to NP-NLH-007, the 175 MVAR synchronous condensers cannot be considered simple synchronous condensers given the high inertia constant and the cost impact of providing the same level of inertia with typical simple cycle combustion turbines with synchronous condenser capability.

The analysis provided in this Application demonstrates that the addition of multiple high inertia synchronous condensers without the new Bay d'Espoir to Western Avalon 230 kV transmission line, in and of itself, does not provide a technically viable solution to maintain Island Interconnected System stability. Given that the response to NP-NLH-007 demonstrates a need for eighteen simple cycle combustion turbines with synchronous condenser capability for every two 175 MVAR high inertia synchronous condensers at a estimated cost of $2.7B, then increasing the number of synchronous condensers beyond the existing level to avoid the construction of the proposed new 230 kV transmission line is, by comparison, cost prohibitive.

Operation of generators instead of synchronous condensers on the Avalon Peninsula to maintain system stability would mean burning fuel and effectively reducing hydroelectric imports from Labrador. The shutdown of existing on-island

thermal resources for generation of power and energy has been determined to be the least cost option for long-term supply of the Island Interconnected System.