Q. Further to the response to PUB-NLH-217, page 8-9 which states that standby generation would be available in 10 to 20 minutes, information filed by Hydro in response to GT-NP-NLH-007 in the Application for Approval of a Capital Project to Supply and Install 100 MW of Combustion Turbine Generation states that the start time for the new 100 MW gas turbine at Holyrood is 40 minutes to full load. What impact does this have on the reliability associated with the Labrador Island Link?

A. The start-up time for the new combustion turbine will have minimal impact on the reliability associated with the Labrador-Island Link. As stated in Hydro's response to GT-NP-NLH-007[1] in the Board proceeding *Supply & Install of 100MW Combustion Turbine Generator*, the 40 minutes to full load start-up time reflects a normal "from cold" start. PUB-NLH-278 Attachment 1 also indicates that procedures will be developed to minimize the unit start up time. During periods of heightened alert due to weather conditions or reduced operating reserves, the unit will be placed in a state of readiness to further reduce the time required to supply customers. It is during these times of heightened alert that a failure of the Labrador-Island Link would have the greatest reliability impact and the timely availability of the combustion turbine is most important.

[1] Attached as PUB-NLH-278 Attachment 1.

GT-NP-NLH-007
100 MW Combustion Turbine Generation - Holyrood

Q. In the event of a sudden and unexpected loss of generation or transmission assets on the Island Interconnected System, how long does Hydro expect it would take to start the 100 MW combustion turbine and supply 100 MW of load?

A. The new 120 MW combustion turbine is being designed and constructed to complement existing generating capacity to provide reliable service to customers. It will be placed in dispatch order with other available generating capacity including existing gas turbines to meet service reliability requirements and minimize operating costs. Procedures will be developed, implemented, tested and drilled with staff to provide the minimum start-up and loading time under different operating scenarios.

During periods of heightened alert during severe weather conditions or reduced operating reserves, the unit will be placed in a state of readiness including, as the situation dictates, being placed on-line to be ready to quickly increase output as required to supply customers.

Under the stated scenario of the question, where a heightened level of readiness is not in place, the start-up and loading time for the unit has been estimated for the following scenarios:

<u>Scenario 1 - Emergency Service Duty</u>: Start-up power is provided from the Island Grid.

Estimated time: 40 minutes

It is estimated it will take 20 minutes to bring the main generator unit to its minimum load. It will then take an additional 20 minutes to load the unit to 100 MW.

Scenario 2 – Blackstart Service: Start-up power is provided from the unit's blackstart facilities.

Estimated time: 55 minutes

The plant is equipped with a diesel generating unit and a small combustion turbine to provide blackstart capability for the main generator. It is estimated it will take 15 minutes to bring the main generating unit to the "Ready to Start" status using this equipment. It will take an additional 20 minutes to bring the main generator up to speed and support the blackstarting load requirement of the Holyrood Thermal Generating Station load. It will take an additional 20 minutes to bring the unit to a 100 MW output level. The actual rate of picking up customer load under a blackstart scenario will be established through procedures developed between Hydro's Energy Control Centre and Newfoundland Power's control centre.