

1 Q. In Board Order No. P.U. 5(2012), p. 14, in discussing future capital expenditures
2 relating to the Hydro Holyrood Thermal Generating Station, the Board agreed with
3 Newfoundland Power Inc. that:
4 *"...an overview may assist the evaluation of capital expenditure proposals in relation*
5 *to the Holyrood Thermal Generating Station, The Board accepts Newfoundland*
6 *Power's suggestions as to what should be included in this overview with the proviso*
7 *that the Industrial Customers and the Consumer Advocate are provided an*
8 *opportunity to comment as to the specific content of this overview."*

9 The suggestions made by Newfoundland Power Inc. state that an overview should
10 contain the following:

- 11 *"1. an updated outlook regarding anticipated changes in the role of Holyrood*
12 *on the system;*
13 *2. an updated schedule of anticipated changes in Holyrood operations that*
14 *may reasonably be expected to have an impact on capital expenditure*
15 *requirements;*
16 *3. a summary description of all proposed Holyrood capital projects, including*
17 *an explanation of how such projects relate to one another and whether such*
18 *projects may be impacted by decisions yet to be taken regarding Holyrood's.*
19 *role on the system;*
20 *4, a summary guide to all internal and external reports filed in support of the*
21 *capital expenditure proposals, summarizing alternatives considered and*
22 *recommendations made; and*
23 *5. an explanation of the necessity of all proposed capital expenditures in the*
24 *context of the anticipated changes in Holyrood operations."*
25 *(Newfoundland Power, Submission Phase IT, pg. 8)*

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27 For each of the Holyrood capital projects please explain whether the

1 equipment is required for synchronous condenser mode of operation and, if
2 not, why the expenditure is necessary now in the last few years of operation of
3 the plant in generation mode,
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5 A. Please refer to the table provided below:

<u>Project Description</u>	<u>Required for Synchronous Condenser Mode?</u>	<u>Current Justification</u>
Upgrade Vibration Monitoring Equipment Units 1,2,3	Yes	Upgrade will be performed on Generators only.
Install Variable Frequency Drives on Forced Draft Fans	No	The installation of VFDs on the forced draft fan motors at the Holyrood Thermal Plant will reduce energy costs and yield operational savings of \$4.7 million per year. The payback period for the \$3.4 million project budget is less than one year.
Install Fire Protection Upgrades	No	The project was originally recommended in 2008 by Hydro's insurer FM Global, and has been identified by Hydro as a prudent action to maintain safety and reliability.
Install Unit 3 Cold Reheat Condenser Drains & High Pressure Heater Trip Level Switches	No	This project is recommended by Hydro's insurer, FM Global, and has already been implemented on Units 1 and 2 in 2009 and 2010. Unit 3 installation has been budgeted for 2013. Hydro has identified this project as a prudent course of action to maintain safety and reliability.
Replace Condensate Polisher Annunciator Panels - Units 1 and 2	No	This project was recently identified through Hydro's heightened awareness of safety. While operational, the condensate polishers are locally controlled by a plant laboratory technician. Failure of an annunciator panel will prevent safe operation of the condensate polisher and render the system inoperable. If the system is bypassed completely, contaminated condensate will re-circulate throughout the system. All of the

<u>Project Description</u>	<u>Required for Synchronous Condenser Mode?</u>	<u>Current Justification</u>
		condensate should be treated to protect the boilers from corrosion, and prevent boiler tube failures. Spare parts for this system are not available.
Upgrade Governor Controls on Units 1 and 2	No	This turbine controller for Units 1 and 2 needs to be upgraded because the existing Mark V controller will enter Phase 5, Obsolescence of its Life Cycle Plan in 2014. Phase 5 means that "the product is no longer supported and is not recommended for continued use in a machinery protection application." Support and repairs services will be limited by availability.
Upgrade Fuel Oil Day Tank	No	Section 8 of the Storage and Handling of Gasoline and Associated Products Regulations (GAP) states that an owner or operator shall not directly or indirectly cause pollution of the soil or water by causing, suffering or permitting leakage or spillage of gasoline or associated product from a storage tank system. Standard API653 (American Petroleum Institute) recommends that tanks such as the Day Tank at Holyrood be externally inspected every five years and internally inspected every ten years. The fuel oil day tank at Holyrood has not been inspected in over 14 years. This tank must be inspected and refurbished if required to ensure that it remains in reliable operational condition and does not impact the environment. All work will be performed according to applicable API standards.
Install Backup System for Raw Water Supply & Clarifier	Yes	Raw water will still be required for fire protection and cooling water. Clarified water will be required for the Hydrogen Electrolyzer.
Complete Condition Assessment Phase 2 (Year 2)	Partial (Electrical Equipment & Civil Structures will be required	The life expectancy of a thermal generating station is 30 years. As of 2012, Holyrood is 42 years old, and after a plant has reached or exceeded its life expectancy life, extension work is required to continue safe and reliable

<u>Project Description</u>	<u>Required for Synchronous Condenser Mode?</u>	<u>Current Justification</u>
	- Boilers will not)	operation. Holyrood will be required to meet the growing power generation needs of the Island Interconnected System for, at least, the next five years until Muskrat Falls is established. To meet this requirement, it is necessary to continue with Phase 2 of the condition assessment and life extension program to obtain information required to determine prudent actions that should be taken to ensure that safe, reliable service can continue to be provided.
Overhaul unit 2 Extraction Pump South	No	A failure of an extraction pump can cause a unit shutdown and would likely result in a unit de-rating. These pumps are being overhauled on a frequency which has been recommended by the OEM and has met with reliable operation over the years.
Overhaul Unit 3 Boiler Feed Pump West	No	A failure of a boiler feed pump can cause a unit shutdown and would result in a unit de-rating. These pumps are being overhauled on a frequency which has been recommended by the OEM and has met with reliable operation over the years.
Overhaul Unit 3 Turbine Valves	No	The valves of a turbine control the steam flow and hence the load on the turbine. An improper functioning valve or valve failure can cause an over-speed of the turbine and result in damage to property and a risk to life. It is important for operation as well as safety to maintain the valves in proper condition. The turbine valves need to be overhauled every three years as supported by industry practice. The three year frequency was reviewed when the turbine overhaul schedule was moved from six years to nine years and was confirmed at three year intervals.