

November 24, 2017

The Board of Commissioners of Public Utilities
Prince Charles Building
120 Torbay Road, PO Box 21040
St. John's, NL A1A 5B2

Attention: Ms. Cheryl Blundon
Director of Corporate Services and Board Secretary

Dear Ms. Blundon:

Re: The Board's Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System – Winter Readiness Planning 2017-2018 – Follow Up

Further to the Board's letter dated November 10, 2017, Hydro is enclosing the requested update, under the sections noted within that correspondence.

Grand Falls Unit 4

As noted in the October 30, 2017 update for the Winter Readiness report, the condition of Grand Falls Unit 4 necessitated a stator rewind of the unit given the risk to in-service failure and the subsequent additional damage that would be caused by such a failure. Contractual delays around the presence of asbestos dust pushed the execution out past the Winter Readiness date of December 1, 2017. However, the rewind must be completed given the risk in running the unit in its present condition. Execution of this work continues, and is on schedule for completion by February 28, 2018. All other exploits units are available.

Holyrood Diesel Generation

The six 2 MW Holyrood diesels generators are physically capable of generation, and fully available to black start the Holyrood Plant. Hydro continues to explore all avenues to expedite the extension of the exhaust stack project for energy and demand generation that is required to meet environmental regulations. A meeting with officials from the Department of Municipal Affairs and Environment is scheduled for November 28, 2017 to discuss the stack installation project options and the possible operation of the diesels for energy or planned spinning reserve prior to completion of the project. While Hydro is working with government on solutions to continue energy or spinning reserve generation in compliance with the regulations, Hydro will not regularly schedule the diesels for energy or spinning reserve. In the event of a power outage situation where customers would benefit from operation of the diesels before Hydro has obtained a variance or has installed the stacks, Hydro would operate the diesel generators to add to system capacity. A further update will be provided in the Winter Readiness Planning report due December 8, 2017 with respect to the outcome of the meeting with Municipal Affairs and Environment, and the plans for the coming winter with respect to exhaust stack installation.

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Holyrood Rated Output

Rated generation output for Units 1 and 2 in 2017 was limited by fouling of the economizer section of the units and air loss in the air heater system. The design of the economizer on both Units 1 and 2 utilizes finned tubes with very tight spacing, staggered diagonally in multiple rows, which makes cleaning difficult. Dry-ice blasting was utilized in the economizer sections of Units 1 and 2, removing some 18 tons of dry ash. Capital works in 2017 were also completed to reduce air leakage in the air heater sections. Hydro worked with service contractors to develop and utilize a new economizer cleaning tool, which was used on Unit 2 during the planned fall outage, further removing additional ash build-up. There has not been a suitable duration outage window available to perform additional cleaning on the Unit 1 economizer with the new tool.

On November 14, 2017, Hydro operated Unit 2 up to 160 MW and did not go further due to a concern with a safety valve leaking a small amount of steam during planned testing. Therefore, Unit 2, while kept on line for system needs, was derated to 150 MW to prevent the leaking steam from cutting into the safety valve and doing further damage. This continued while a suitable outage window was being scheduled where the valve could be addressed. Unit 2 is currently off line to repair the safety valve and is expected to be back on line by Saturday, November 25, 2017. Once on-line, a full load test will be carried out on Unit 2 as soon as system conditions permit; however, it is anticipated that full rated capacity will be available for this unit.

As noted in the Board's November 10, 2017 letter, Unit 1 required replacement of a Forced Draft Fan motor. This replacement was due to a high winding temperature, and the work has subsequently been completed and the unit was put back on-line. Another issue occurred in late September and early October, 2017, with a forced draft fan that had tripped Unit 1 off-line on two occasions. With the unit off-line, trouble shooting was not able to identify this intermittent issue. In order to further investigate the issue, the unit was run at a low load, below under frequency load shedding limitations to reduce the risk of customer interruptions, to allow for on-line trouble shooting. The issue was discovered to be a broken wire on an emergency stop circuit for the Forced Draft Fan, which had led to intermittent faulting and unit trips. This wire was replaced and the issue resolved on October 7, 2017. When running at these low loads, however, air heater fouling occurs faster than during regular operation. As such, the unit is currently limited to 145 MW, suspected due to accelerated air heater fouling from low loading. Due to system conditions and other activities, an outage window will be scheduled over the next 2 weeks to complete the wash and confirm all opportunities for additional capacity have been addressed, particularly any relevant items learned from the ongoing Unit 2 outage. Hydro notes that outages for air heater washes are normal expected maintenance in a winter period. A full load test will follow as soon as system conditions permit to evaluate the rated capacity of the unit and the effect of the capital modifications and the cleaning of the air heater and economizer areas in 2017.

Unit 3 is of a different design than Unit 1 and Unit 2, and is available at 150 MW.

Gas Turbines

Winter readiness activities for both Hardwoods and Stephenville gas turbines were rescheduled into November to accommodate more pressing system needs. These activities are essentially complete now with final checks currently underway. Hardwoods Gas Turbine remains available at its 50 MW capacity. Stephenville is available at 25 MW and will return to 38 MW with the completion of an exhaust stack repair on end A, currently scheduled for the week of November 27, 2017. Hydro's 25 MW engine, which will replace the 19 MW loaner engine that is installed at Stephenville, is currently being shipped from Alba Power in Scotland back to Newfoundland, and is scheduled to arrive Sunday, December 4, 2017.

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This engine will be installed as soon as conditions permit after its arrival and will restore Stephenville to 50 MW. Hydro is maintaining the four in-service engines and two spare engines in its fleet through this winter in order to provide for the ability to swap an engine in place of one that may require extended maintenance.

Bay d’Espoir Penstock 1

Investigation into the cause of the failure in the penstock is on-going. It has been identified that intermittent cracking has occurred in some welds that were replaced in 2016. Hydro engaged the consultants and contractors to return the penstock to service as quickly as possible, and work is currently being performed around the clock. Work is on-going to weld the cracks, and additional work is ongoing to further reinforce these areas. The penstock is planned to be returned to service by December 8, 2017, and the reinforced sections are expected to ensure that failures of this kind will not be a concern through the winter generating season while the investigation continues. As can be appreciated, this is a complex issue that has meant that experts in penstocks and geotechnical structures have been brought in to identify the cause of the cracking and this investigative work will continue throughout the winter.

TL 267

As noted in the bi-weekly update for TL 267 construction issued today, 97% of the stringing activities have been completed, and terminal station extensions are prepared and ready for energization. The forecasted in-service date of December 8, 2017 is still anticipated to be met, and this line will increase reliability and capacity in the transmission corridor between Bay d’Espoir and the Avalon Peninsula.

Hydro trusts that this information provides the clarity sought by the Board in its letter dated November 10, 2017 and notes that a further update to this information will be included in the December 8, 2017 Winter Readiness Report Update.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO



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Legal Counsel and Assistant Corporate Secretary
ML/skc

cc: Gerard Hayes – Newfoundland Power
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