newfoundland labrador hydro
a nalcor energy company

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December 10, 2018

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

Attention: Ms. Cheryl Blundon
Director Corporate Services & Board Secretary

Dear Ms. Blundon:

Re: Energy Supply Report – Monthly Report – November 2018

Enclosed please find one original and eight copies of Newfoundland and Labrador Hydro's Monthly Energy Supply Report as directed by the Board in correspondence dated February 6, 2016 and with schedule modifications on July 26, 2016 and July 29, 2016.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

Shirley A. Walsh
Senior Legal Counsel – Regulatory
SW/kd

Encl.

cc: Gerard Hayes – Newfoundland Power
Paul Coxworthy – Stewart McKelvey
ecc: Sheryl Nisenbaum – Praxair Canada Inc.
Dean Porter – Poole Althouse
Dennis Browne, Q.C. – Browne Fitzgerald Morgan & Avis
Denis Fleming – Cox & Palmer
Larry Bartlett – Teck Resources Limited

Monthly Energy Supply Report for the Island Interconnected System

November 2018

December 10, 2018

A Report to the Board of Commissioners of Public Utilities

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1.0 Introduction

On February 8, 2016, the Board of Commissioners of Public Utilities ("Board") requested Newfoundland and Labrador Hydro ("Hydro") file a bi-weekly report containing, but not limited to, the following:

1. System Hydrology Report as contained in Hydro's Quarterly report;
2. the thermal plant operated in support of hydrology;
3. production by plant/unit; and
4. details of any current or anticipated long-term de-rating.

In July 2016, the Board indicated that a monthly report would henceforth be sufficient. This report covers data for November 2018.

2.0 System Hydrology

Table 1 summarizes the aggregate storage position of Hydro's reservoirs at the end of the reporting period.

Table 1: System Hydrology Storage Levels

Storage Level	2018 (GWh)	2017 (GWh)	21 Year Average (GWh)	2018 Minimum Storage Target (GWh)	Maximum Operating Level (GWh)	Percent of Maximum Operating Level
30 Nov 2018	1,702	1,405	2,006	1,352	2,452	69%

Reservoir inflows in November were approximately 118% above average. To date, 2018 inflows have been 24% above average.

The aggregate reservoir storage level on November 30, 2018 was 1,702 GWh, 31% below the seasonal Maximum Operating Level and 26% above the minimum storage level. This storage level compares with the 21-year average storage level at the end of November of 2,006 GWh. At the end of November 2017, the aggregate storage level was 1,405 GWh.

Figure 1 plots the 2017 and 2018 storage levels with the minimum storage target, maximum operating level and the 21-year average aggregate storage for comparison.

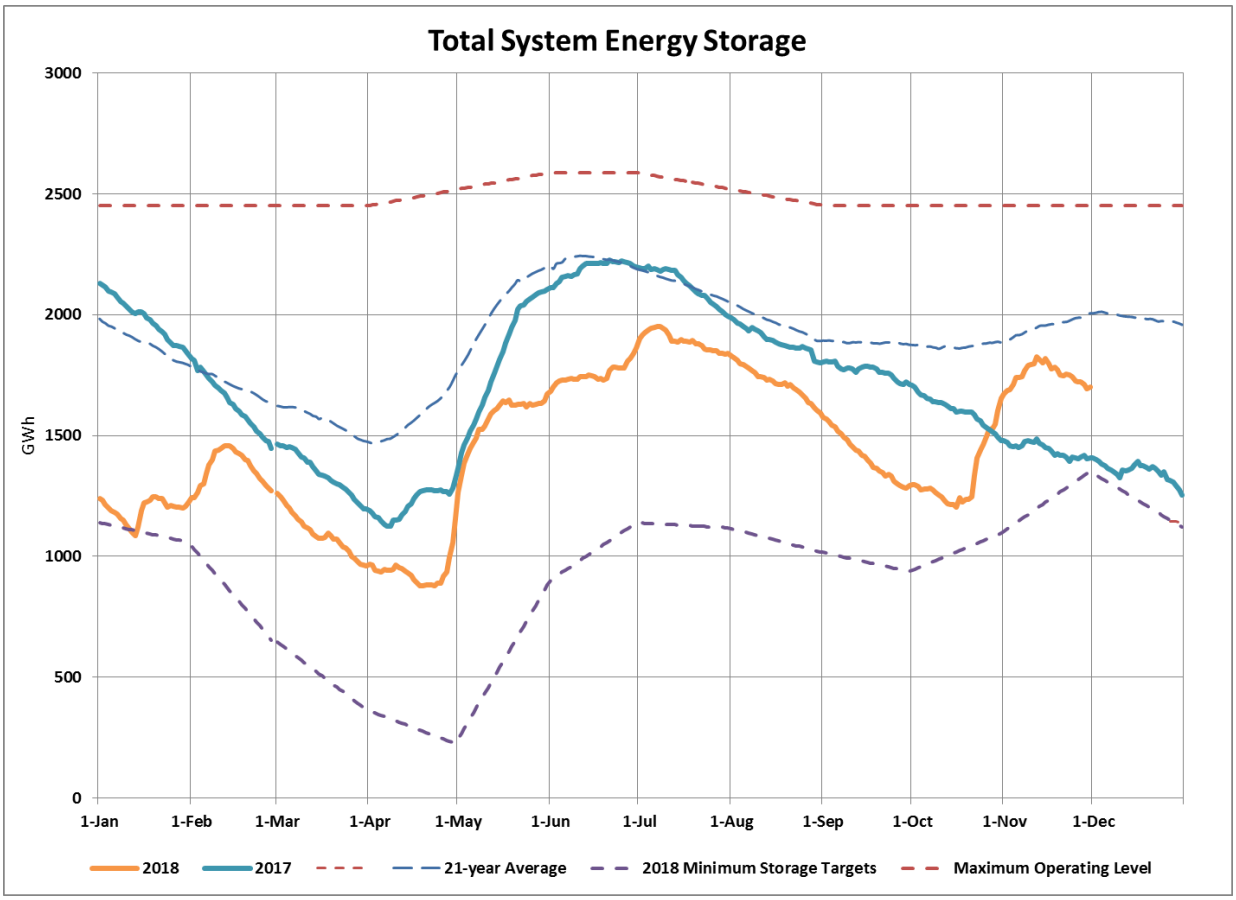

Figure 1: Total System Energy Storage – November 30, 2018

3.0 Production by Plant

Production during November 2018 by plant and unit, both hydraulic and thermal, is provided in Table 2. Quantities imported are also provided.

Table 2: Generation Production – November 1 to November 30, 2018[1]

		Generation, GWh	Year to Date, GWh
Newfoundland and Labrador Hydro - Hydro Generation			
Bay d'Espoir Plant	Unit 1	40.6	422.6
	Unit 2	40.8	350.9
	Unit 3	34.3	335.6
	Unit 4	22.7	209.3
	Unit 5	28.1	193.3
	Unit 6	25.9	219.5
	Unit 7	89.3	875.8
	Total Bay d'Espoir Plant	*281.7*	*2606.8*
Upper Salmon Plant		38.9	511.1
Granite Canal Plant		23.5	224.7
Hinds Lake Plant		24.7	294.6
Cat Arm Plant	Unit 1	43.7	395.0
	Unit 2	45.0	409.0
	Total Cat Arm Plant	*88.7*	*804.0*
Paradise River		4.9	35.5
Star Lake Plant		12.2	127.6
Rattle Brook Plant		1.7	13.6
Nalcor Exploits Plants		45.7	518.8
Mini Hydro		0.4	2.8
Total Hydro Generation		**522.3**	**5139.5**
Newfoundland and Labrador Hydro - Thermal Generation			
Holyrood	Unit 1	16.0	311.7
	Unit 2	59.4	407.4
	Unit 3	39.2	215.7
	Total	*114.7*	*934.8*
Holyrood GT and Diesels		4.5	51.3
Hardwoods GT		0.3	4.2
Stephenville GT		0.4	1.6
Other Thermal		0.2	1.3
Total Thermal Generation		**120.0**	**993.2**
Purchases			
Requested NP and Vale		0.1	0.7
CBPP Secondary		3.1	14.1
CBPP Cogen		3.3	61.0
Wind Purchases		18.3	186.2
Maritime Link Imports[2]		1.2	59.5
New World Dairy		0.2	2.5
Labrador Island Link Imports[2]		2.0	10.2
Total Purchases		**28.2**	**334.3**
Total[3]		**670.5**	**6466.9**

[1] Gross generation.
[2] Includes purchases as a result of testing activity.
[3] Actuals reflect rounded values to the nearest tenth of a GWh. Differences between total and addition of individual components due to rounding.

4.0 Thermal Production and Imports

Units 1, 2 and 3 at the Holyrood Thermal Generating Station ("Holyrood") were required to generate during November 2018 to meet Hydro's customer and system reliability requirements. Unit 1 was operated for 206.5 hours. Unit 2 was operated for 716 hours. Unit 3 was operated for 512.1 hours. Total Holyrood generation was 114.7 GWh.

Stand-by units were operated for a total of 163.8 hours during the month. Total standby generation was 5.4 GWh. No stand-by generation was used for water management.

Imports on the Maritime Link were used in the early part of November to offset use of thermal units and increase energy in storage. Total imported energy was 1.2 GWh. A total of 2.0 GWh was delivered to the system via the Labrador Island Link in November as a result of testing activity.

5.0 Unit Deratings

At the beginning of November 2018, Holyrood Unit 1 was derated to 140 MW pending online safety valve testing. On November 3, 2018 the unit tripped and was put back online, limited to 40 MW, while the failure was investigated. It was determined that the trip was due to hydraulic system contamination. The unit was taken offline later that day to commence a maintenance outage to refurbish the turbine hydraulic system. This work was completed and the unit returned to service on November 24, 2018. On November 27, 2018 the safety valve testing was completed and on November 28, 2018, the unit was load tested to 165 MW. The load was not limited by airflow issues, which proved that the work done during the maintenance season had successfully mitigated this issue. However, exhaust opacity (i.e., dark smoke) from the stack was high at loads above 160 MW, which indicated a potential boiler tuning issue. The unit will be limited to 160 MW until this is addressed. This work is planned to be completed by the end of December 2018.

Holyrood Unit 2 was capable of operating at full capacity during the month of November 2018. On November 30, 2018, the unit was taken offline for a planned maintenance outage to complete a stack inspection and to refurbish the turbine hydraulic system.

Holyrood Unit 3 was returned to generation service on November 4, 2018 with a derating to 140 MW pending completion of online safety valve testing. Safety valve testing was completed on November 6, 2018 and full load capability was proven in a load test conducted on November 8, 2018. On November 15, 2018 the unit was taken offline to repair a boiler tube leak that had developed. The unit was returned to service on November 20, 2018 with full load capability.

The Stephenville gas turbine was returned to full capacity of 50 MW on November 28, 2018 following repairs to the vibration monitoring system and successful testing of End A. The unit remains available at full capacity.

Hardwoods gas turbine End B (engine s/n 202204) was found to be damaged and in need of off-site repair during a planned borescope inspection on November 21, 2018. The engine was removed and replaced with a spare engine to restore the Hardwoods gas turbine to its full capacity of 50 MW. On November 26, 2018 the plant was removed from service to complete exhaust stack repairs on both units. The exhaust stack repairs are expected to be completed on December 9, 2018 and the Hardwoods gas turbine is expected to return to service at full capacity on December 10, 2018. The damaged engine has been shipped to the repair facility and will be available at the end of January 2019 as a spare.