newfoundland labrador hydro
a nalcor energy company

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March 11, 2019

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: **Monthly Energy Supply Report for the Island Interconnected System for February 2019**

Enclosed please find one original and eight copies of Newfoundland and Labrador Hydro's Monthly Energy Supply Report for the Island Interconnected System 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
SAW/sk

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

February 2019

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A Report to the Board of Commissioners of Public Utilities

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1.0 Introduction

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

1. A system hydrology report as contained in Hydro's Quarterly report;
2. Thermal plant production 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 thereafter be sufficient. This report covers data for February 2019.

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	2019 (GWh)	2018 (GWh)	20 Year Average (GWh)	2019 Minimum Storage Target (GWh)	Maximum Operating Level (GWh)	Percent of Maximum Operating Level
28 Feb 2019	1,089	1,259	1,640	456	2,452	44%

Reservoir inflows in February 2019 were approximately 34% of average. To date, 2019 inflows have been 95% of average.[1]

The first snow survey of 2019 was completed in mid-February. The snow water equivalent depth for the system as a whole at that time was approximately 80% of average for this time

[1] Reservoir inflows in February 2019, and consequently year-to-date inflows, are artificially low due to Hydro's opening of a gate at the North Salmon Spillway to bypass water around the Upper Salmon Hydraulic Generation Plant. This resulted in a drawdown of the water level at the location of the water level gauge.

of year. On an equivalent energy basis it was 85% of average. Based on the available snowpack data, the snowpack is approximately 684.2 mm of snow water equivalent at Bay d'Espoir and approximately 167.7 mm at Hinds Lake. Snowpack data was not collected at Cat Arm due to poor weather conditions experienced in the region during the survey time frame.

The rate of decline of the reservoir level at Long Pond increased during February 2019 and approached minimum level due to unseasonably cold temperatures that resulted in historically high loads on the system and sustained high energy consumption. On February 23, 2019, Hydro decided to bypass water around Upper Salmon through the North Salmon Spillway to increase inflows into Long Pond, ensuring the continued ability to generate at maximum output at the Bay d'Espoir Hydroelectric Generating Facility.

The aggregate reservoir storage level on February 28, 2019 was 1,089 GWh, 56% below the seasonal Maximum Operating Level and 139% above the minimum storage level. This storage level compares with the 20-year average storage level for the end of February 2019 of 1,640 GWh. At the end of February 2018, the aggregate storage level was 1,259 GWh.

Figure 1 plots the 2018 and 2019 storage levels, maximum operating level storage and the 20-year average aggregate storage for comparison.

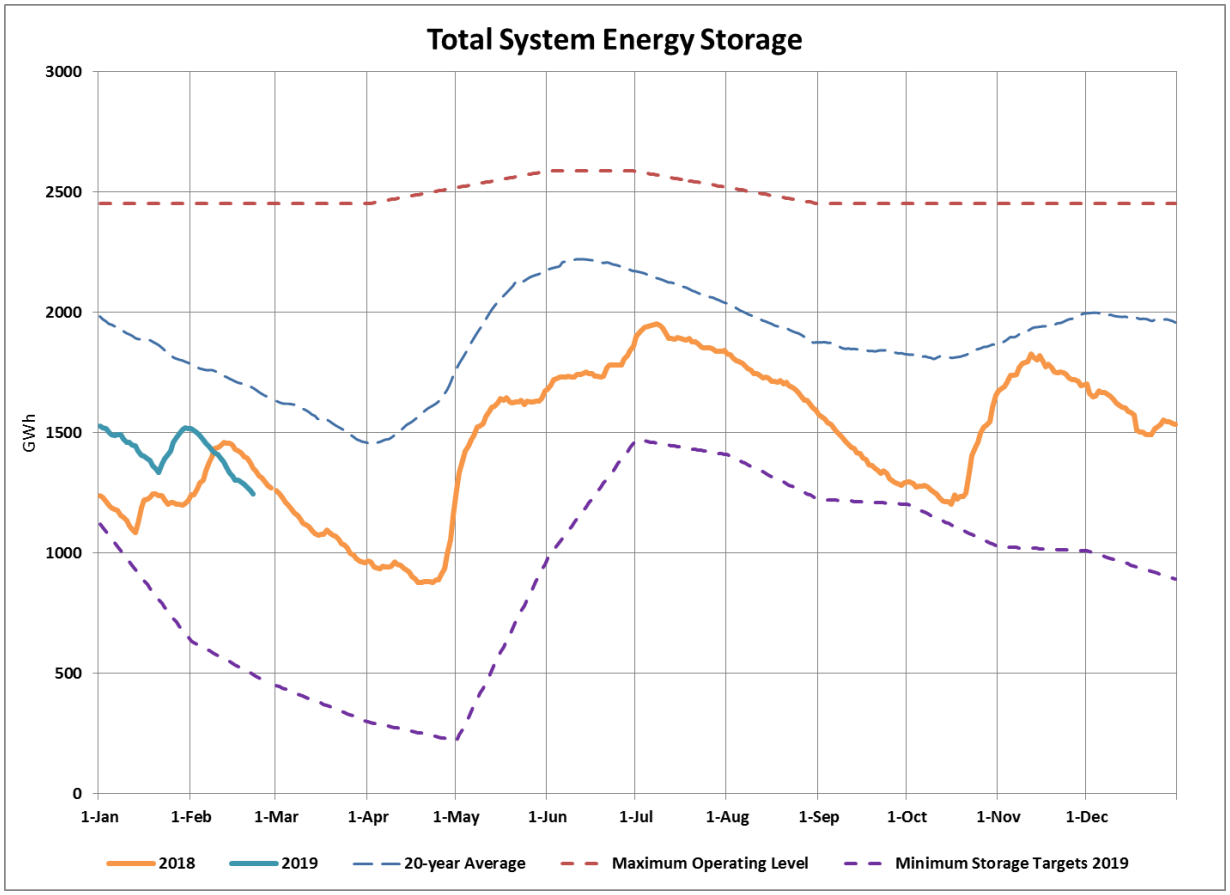

Figure 1: Total System Energy Storage for February 28, 2019[2]

3.0 Production by Plant

Production during February 2019 by plant and unit, both hydraulic and thermal, is provided in Table 2. Quantities imported are also provided in Table 2.

[2] Data is as of February 22, 2019 as the bypass of Upper Salmon into Long Pond began on February 23, 2019. The storage data from February 23, 2019 onward is inaccurate as a result of the draw down at the water level gauge due to a gate open at the North Salmon Spillway and is therefore not included.

Table 2: Generation Production from February 1 to February 28, 2019[3]

		Generation, GWh	Year to Date, GWh
Newfoundland and Labrador Hydro - Hydro Generation			
Bay d'Espoir Plant	*Unit 1*	*39.6*	80.9
	Unit 2	*39.5*	81.6
	Unit 3	*38.1*	68.7
	Unit 4	*27.0*	45.7
	Unit 5	*29.1*	50.1
	Unit 6	*30.6*	51.2
	Unit 7	*87.6*	*172.6*
	Bay d'Espoir Plant Total	*291.6*	*550.7*
Upper Salmon Plant		45.5	95.9
Granite Canal Plant		20.1	43.6
Hinds Lake Plant		38.0	63.8
Cat Arm Plant	*Unit 1*	*42.0*	87.3
	Unit 2	*43.4*	*89.8*
	Cat Arm Plant Total	*85.3*	*177.0*
Paradise River		2.0	5.1
Star Lake Plant		11.5	24.3
Rattle Brook Plant		0.2	1.2
Nalcor Exploits Plants		48.7	101.8
Mini Hydro		0.2	0.6
	Total Hydro Generation	**543.2**	**1064.0**
Newfoundland and Labrador Hydro - Thermal Generation			
Holyrood[4]	*Unit 1*	*70.7*	139.6
	Unit 2	*74.5*	149.5
	Unit 3	*70.6*	*141.2*
	Holyrood Units Total	*215.9*	*430.3*
Holyrood Gas Turbine and Diesels		3.7	4.1
Hardwoods Gas Turbine		0.1	0.1
Stephenville Gas Turbine		0.2	0.2
Other Thermal		0.0	0.0
	Total Thermal Generation	**219.9**	**434.8**
Purchases			
Requested Newfoundland Power and Vale		0.1	0.1
Corner Brook Pulp and Paper Secondary		2.0	3.4
Corner Brook Pulp and Paper Cogen		5.3	12.2
Wind Purchases		18.8	35.5
Maritime Link Imports[5]		26.3	31.7
New World Dairy		0.2	0.5
Labrador-Island Link Imports[6]		23.6	90.6
	Total Purchases	**76.4**	**174.0**
	Total[7]	**839.5**	**1672.8**

[3] Gross generation.
[4] Holyrood Thermal Generating Station ("Holyrood").
[5] Includes energy flows as a result of purchases and inadvertent energy.
[6] Includes purchases as result of testing activity.
[7] Actuals reflect rounded values to the nearest tenth of a GWh. Differences between total vs. addition of individual components due to rounding.

4.0 Thermal Production and Imports

Units 1, 2, and 3 at Holyrood were required to generate during February 2019 to meet Hydro's customer and system reliability requirements. System energy in storage remained above the minimum storage target throughout February 2019; however, reservoir storage at Long Pond, the head pond for the Bay d'Espoir Hydroelectric Generating Facility, continued to decline. As a result, on February 18, 2019 Holyrood minimum production per unit was increased to 125 MW. The required thermal generation was supplemented by deliveries over the Labrador-Island Link and purchases over the Maritime Link, when available and economic. This production target remained in place for the remainder of the month.

In February 2019, Holyrood Unit 1 was operated for 652.8 hours, Holyrood Unit 2 was operated for 672.0 hours, and Holyrood Unit 3 was operated for 669.3 hours. Total Holyrood generation was 215.9 GWh.

Standby units were operated for a total of 111.0 hours during the month. Total standby generation was 4.1 GWh. No standby generation was used for water management.

Imports on the Maritime Link were used in February 2019 to offset thermal generation and slow the decline of storage at Long Pond reservoir. Total imported energy was 26.3 GWh.

A total of 23.6 GWh was delivered to the system via the Labrador-Island Link in February 2019 as a result of testing activity.

5.0 Unit Deratings

Holyrood Unit 1 was returned to service on February 1, 2019 after completion of a maintenance outage to replace a fuel pump and fuel mass flow meter. A load test, conducted on February 5, 2019, confirmed that full capability had been restored.

Holyrood Unit 2 was capable of operating at full capability of 170 MW during the month of February 2019.

Holyrood Unit 3 was capable of operating at full capability of 150 MW for the month of February 2019. From February 10 to 15, 2019 the unit was derated to 140 MW as a result of a mechanical issue with one of the burner guns. The gun was repaired on February 15, 2019 and full load capability was restored.

The Stephenville Gas Turbine remains available at full capacity (50 MW).

The Hardwoods Gas Turbine is currently derated to 25 MW following a unit trip on February 21, 2019 while placing End B in service. The trip occurred as a result of high exciter vibration, which occurs only when End B is being placed online. The original equipment manufacturer, Brush, has been engaged to source generator exciter bearing components to allow detailed inspection and replacement if required. A return to service date for End B cannot be determined until replacement components can be sourced.