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November 18, 2024

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

Attention: Jo-Anne Galarneau
Executive Director and Board Secretary

Re: Monthly Energy Supply Report for the Island Interconnected System for October 2024

Enclosed please find Newfoundland and Labrador Hydro's Monthly Energy Supply Report for the Island Interconnected System as directed by the Board of Commissioners of Public Utilities.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

Shirley A. Walsh
Senior Legal Counsel, Regulatory
SAW/rr

Encl.

ecc:

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Monthly Energy Supply Report for the Island Interconnected System for October 2024

November 18, 2024

A report to the Board of Commissioners of Public Utilities

newfoundland labrador hydro

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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 biweekly report containing, but not limited to, the following:

1) System Hydrology 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 derating.

In July 2016, the Board indicated that a monthly report would thereafter be sufficient. This report provides data for October 2024.

2.0 System Hydrology

Reservoir inflows in October 2024 were 23% below the month's historical average.[1] Table 1 summarizes the aggregate storage position of Hydro's reservoirs at the end of the reporting period.

Table 1: System Hydrology Storage Levels

Date	2024 (GWh)	2023 (GWh)	20-Year Average (GWh)	Minimum Storage Limit (GWh)	Maximum Operating Level (GWh)	Maximum Operating Level (%)
31-October-2024	1,491	2,113	1,858	1,262	2,452	61

The aggregate reservoir storage level on October 31, 2024 was 1,491 GWh, which is 39% below the seasonal maximum operating level and 18% above the minimum storage limit.[2] While Hydro's reservoirs did experience an increase in precipitation throughout the month of October 2024 compared with previous months, system inflows remained below average for this time of year. The only notable precipitation event that occurred in October 2024 was post-tropical storm Oscar, where more than

[1] Calculated in terms of energy (gigawatt hour ["GWh"]).

[2] Minimum storage limits are developed annually to provide guidance in the reliable operation of Hydro's major reservoirs—Victoria, Meelpaeg, Long Pond, Cat Arm, and Hinds Lake. The minimum storage limit is designed to indicate the minimum level of aggregate storage required such that if there was a repeat of Hydro's critical dry sequence, or other less severe sequence, Hydro's load can still be met through the use of the available hydraulic storage supplemented with maximized deliveries of power from the Muskrat Falls Hydroelectric Generating Facility over the Labrador-Island Link ("LIL"). Hydro's long-term critical dry sequence is defined as January 1959 to March 1962 (39 months). Other dry periods are also considered during this analysis to ensure that no other shorter-term historic dry sequence could result in insufficient storage.

75 mm of rain fell on the Bay d'Espoir Generation System ("Bay d'Espoir System") on October 25 and 26. However, inflows to the reservoirs of the Bay d'Espoir System were 21% below average in October 2024. Inflows to the Hinds Lake Reservoir were 7% below average. Inflows to the Cat Arm Reservoir were 39% below average. The 10 MW reduction in firm target generation from the Exploits system that occurred in September 2024 continued throughout the month of October 2024.

Table 2 summarizes the unit outages experienced during October 2024.

Table 2: **October 2024 Unit Outage Summary**

Unit Name	Date offline	Return to Service	Outage Reason	Notes
Cat Arm Unit 2	September 15	October 4	Planned outage	n/a
Bay d'Espoir Unit 1	October 6	October 13	Planned outage	n/a
Bay d'Espoir Unit 2	October 6	October 12	Planned outage	n/a
Upper Salmon Unit	October 6	October 26	Planned outage	n/a
Bay d'Espoir Unit 5	October 14	October 15	Forced outage	Unit was temporarily unavailable because the unit went past its 48 hour window without spinning
Granite Canal Unit	October 19	October 20	Forced outage	Unit tripped due to operation in rough zone
Cat Arm Unit 1	October 29	October 29	Planned outage	n/a
Bay d'Espoir Unit 5	October 30	October 30	Planned outage	n/a
Bay d'Espoir Unit 6	October 30	October 31	Planned outage	n/a

Figure 1 plots the 2023 and 2024 storage levels, minimum storage limits, maximum operating level storage, and 20-year average aggregate storage for comparison. In addition to the 2023–2024 limits, Hydro has established the minimum storage limits to April 30, 2025. The 2024–2025 limits were developed considering maximized delivery of power from the Muskrat Falls Hydroelectric Generating Facility, supplemented by available Recapture Energy from the Churchill Falls Generating Station over the LIL, utilizing the transmission limits associated with the >58.0 Hz under-frequency load shedding scheme.[3]

[3] The 2024–2025 analysis assumed that only two units at the Holyrood Thermal Generating Station ("Holyrood TGS") would be online and operating at minimum load during the winter 2024–2025 period. Hydro plans to have all three units at the Holyrood TGS available at full capability, if needed. The minimum storage methodology was updated to ensure Hydro's reservoirs could continue to provide reliable service to customers at the lowest possible cost, in an environmentally responsible manner. In this context, Hydro expects Island reservoirs to be supported with MF energy instead of thermal energy from the Holyrood TGS.

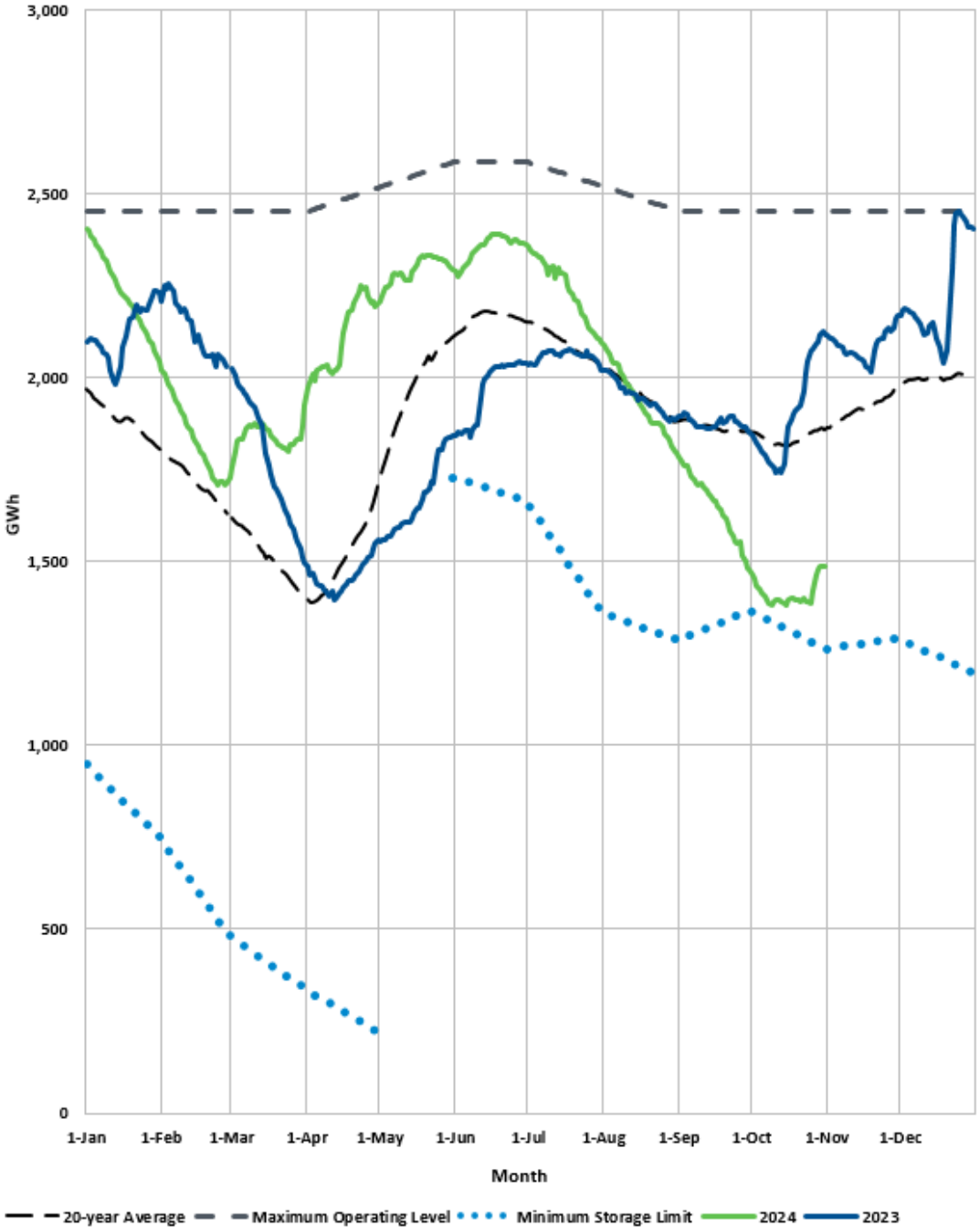

Figure 1: Total System Energy Storage[4]

[4] Data points in Figure 1 represent storage at the beginning of each day. Table 1 reports the end-of-day storage values, which results in a small difference between the storage data presented in Table 1 and Figure 1.

2.1 Ponding

In Order No. P.U. 49(2018), the Board approved Hydro's application for approval of a Pilot Agreement for the Optimization of Hydraulic Resources ("Pilot Agreement").[5] The intent of the Pilot Agreement is to optimize Hydro's hydraulic resources through the strategic use of its storage capabilities, taking advantage of the variability of energy pricing in external markets over time.

Appendix A provides information regarding imported and exported energy transactions under the Pilot Agreement during the month. No ponding exports or imports over the Maritime Link occurred during October 2024.

2.2 Spill Activity

Appendix A provides information regarding spill-avoidance export transactions undertaken.[6] There were no releases of water required at any locations on the Island Interconnected System in October 2024. A summary of the year-to-date ("YTD") total volumes spilled or bypassed in both MCM[7] and GWh can be found in Table 3.

Table 3: Spill Activity

	Granite Canal Bypass		Upper Salmon Bypass		Burnt Dam Spillway	
	MCM	**GWh**	**MCM**	**GWh**	**MCM**	**GWh**
31-October-2024	-	-	-	-	-	-
YTD Total	**5.9**	**0.6**	**3.9**	**0.5**	**21.0**	**13.8**

3.0 Production and Purchases

Appendix B provides a breakdown of power purchases, including the import and export activity over the LIL and Maritime Link and production by plant during October 2024. There was no energy repaid from CBPP to Energy Marketing under the Temporary Energy Exchange Agreement in October 2024. A total of 2.4 GWh at Bottom Brook (2.5 GWh including losses)[8] was supplied to Nova Scotia over the Maritime

[5] The Third Amended and Restated Pilot Agreement for the Optimization of Hydraulic Resources was approved as per Board Order No. P.U. 35(2022), and was extended as per Board Order No. P.U. 30(2023).
[6] Pursuant to the Pilot Agreement, exporting when system load is low allows for increased generation from Island hydraulic facilities and the utilization of water (energy) that would have otherwise been spilled, while not increasing the risk of spill elsewhere in the system.
[7] Million cubic metres ("MCM").
[8] Under the Interconnection Operators Agreement between Hydro and Nova Scotia Power.

Link during October 2024. On September 26, 2024, Hydro engaged Energy Marketing to import via the Maritime Link to support Island reservoir storage levels while the LIL was on a bipole outage. The imports ceased on October 2, 2024 when the LIL returned to service and deliveries over the LIL to the Island were maximized to the extent system conditions would allow. Due to limited transmission path availability from New England to Newfoundland, hourly imports were limited resulting in a total of 0.5 GWh being delivered.

4.0 Thermal Production

Unit 2 was online at the Holyrood TGS on October 11, 2024 for system requirements and remained online for the rest of the month. Unit 3 at the Holyrood TGS was online for all of October for system requirements. Total energy production from the Holyrood TGS was 95.8 GWh during the month. Due to the decline in system energy in storage as reported in Figure 1, Holyrood TGS was operated off of minimum from October 12, 2024 to October 23, 2024 to ensure the total system energy did not decline below the minimum storage limits. Standby generation was not used to support reservoir storage. The operating hours for the Holyrood TGS, Holyrood Combustion Turbine ("CT"), and the Hardwoods and Stephenville Gas Turbines ("GT") are summarized in Table 4. Hardwoods GT was online for testing purposes.

Table 4: Holyrood TGS and Combustion Turbines Operating Hours

	Operating Hours	Synch Condense Hours	Available Hours
Holyrood TGS			
Unit 1	0	0	0
Unit 2	487.7	0	487.7
Unit 3	744	0	744
Combustion Turbines			
Hardwoods GT	1.3	584	585.3
Stephenville GT	0	744	744
Holyrood CT	0	0	744

5.0 Unit Deratings

Holyrood TGS Unit 1 was taken offline for a planned annual outage on April 12, 2024. It remained on planned outage until the planned return to service date of October 19, 2024. For the remainder of October, the unit was on a forced extension of the planned outage, as work to restore the last stage

blades and complete other found work including damage found to the rotor journals continued. The anticipated return to service for Unit 1 is now mid-January, 2025.

Holyrood TGS Unit 2 was on a planned annual outage beginning August 4, 2024. On October 11, 2024, the unit was returned to service with a scheduled derating to 140 MW, pending completion of on-line safety valve testing. The testing was completed on November 1, 2024, and the unit was subsequently available for full load.

Holyrood TGS Unit 3 remained online and available for the month of October. The on-line safety valve testing was completed on October 4, 2024.

The Holyrood CT and Stephenville GT were available for the full month of October 2024.

The Hardwoods GT was available for the entire month of October 2024, with the exception of a planned outage that began on October 23, 2024 to complete preventative and corrective maintenance activities. The unit remained offline on its planned outage for the remainder of the month.

Appendix A

Ponding and Spill Transactions

Table A-1: Ponding Transactions

Date	Ponding Imports (MWh)	Ponding Exports (MWh)	Ponding Imports Purchased by Hydro (MWh)	Transfer of Pond Balance to Spill Avoidance (MWh)	Energy Losses to Export (MWh)	Cumulative Ponded Energy (MWh)
Opening Balance						**(4,774)**
Total[1]		-	-	-	-	

[1] Total transactions for October 2024.

Table A-2: Avoided Spill Energy

Date	Avoided Spill Exports (MWh)	Energy Losses to Export (MWh)	Transfer of Pond Balance to Spill Avoidance (MWh)	YTD Avoided Spill Energy (MWh)
Opening Balance	**-**	**-**	-	**170**
Total[2]	**-**	**-**	**-**	**170**

[2] Total transactions for October 2024.

Appendix B

Production and Purchases

Table B-1: Generation and Purchases (GWh)[1]

	October 2024	YTD Oct 2024
Hydro Generation (Hydro)		
Bay d'Espoir		
Unit 1	30.8	320.3
Unit 2	24.6	331.0
Unit 3	24.0	297.3
Unit 4	4.7	154.5
Unit 5	10.4	188.5
Unit 6	5.6	153.2
Unit 7	32.6	609.3
Subtotal Bay d'Espoir	132.7	2,054.1
Upper Salmon	16.8	419.4
Granite Canal	21.2	194.3
Hinds Lake	16.3	312.0
Cat Arm		
Unit 1	27.9	331.7
Unit 2	26.4	338.7
Subtotal Cat Arm	54.3	670.4
Paradise River	2.4	23.1
Star Lake	6.4	113.2
Rattle Brook	0.9	10.3
Nalcor Exploits	35.1	477.0
Mini Hydro	0.0	0.0
Total Hydro Generation (Hydro)	**286.1**	**4,273.7**
Thermal Generation (Hydro)		
Holyrood TGS		
Unit 1	0.0	180.1
Unit 2	37.6	54.6
Unit 3	58.3	266.4
Subtotal Holyrood TGS Units	95.8	501.1
Holyrood Gas Turbine and Diesels	0.0	9.5
Hardwoods Gas Turbine	0.0	0.9
Stephenville Gas Turbine	0.0	0.2
Other Thermal	0.0	0.1
Total Thermal Generation (Hydro)	**95.8**	**511.8**
Purchases		
Requested Newfoundland Power and CBPP	0.0	0.0
Capacity Assistance	0.0	0.5
Power Purchase Agreement	6.1	86.1
Secondary	0.0	3.4
Co-Generation	0.0	22.1
Subtotal CBPP	6.1	112.0
Wind Purchases	14.9	141.4
Maritime Link Imports[2]	1.2	2.2
New World Dairy	0.0	0.1
Labrador Island Link Delivery to IIS[3,4]	103.2	522.7
Total Purchases	**125.4**	**778.5**
Total[5]	**507.3**	**5,564.0**

[1] Gross generation.

[2] Includes energy flows as a result of purchases and inadvertent energy.

[3] LIL deliveries to the Island Interconnected System are calculated by total LIL imports of 202.9 GWh less Maritime Link Exports of 99.7 GWh.

[4] Net energy delivered to the Island Interconnected System is less than the total energy delivery to Hydro under the Muskrat Falls Power Purchase Agreement because of transmission losses on the LIL.

[5] Actuals reflect rounded values to the nearest tenth of a GWh. Differences between total versus addition of individual components due to rounding.