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August 19, 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 July 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:

Board of Commissioners of Public Utilities
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Monthly Energy Supply Report for the Island Interconnected System for July 2024

August 19, 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 July 2024.

2.0 System Hydrology

Reservoir inflows in July 2024 were 76% 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-July-2024	2,088	2,023	2,035	1,362	2,521	83

The aggregate reservoir storage level on July 31, 2024 was 2,088 GWh, which is 17% below the seasonal maximum operating level and 53% above the minimum storage limit.[2] Hydro's reservoirs experienced dry weather throughout the month of July 2024, with little rain received across all Island reservoirs. Inflows to the reservoirs of the Bay d'Espoir Generation System ("Bay d'Espoir System") were 12% of

[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.

average during July 2024. Inflows to the Hinds Lake Reservoir were 70% of average, and inflows to the Cat Arm Reservoir were 42% of average.

Bay d'Espoir Unit 5 was taken offline on a brief planned outage on July 4, 2024 and returned to service the same day. Bay d'Espoir Unit 6 was taken offline on a planned outage on July 4, 2024 and was offline for the remainder of July. Bay d'Espoir Unit 5 was taken offline on a brief planned outage on July 8, 2024 and returned to service the same day. Bay d'Espoir Unit 7 was taken offline on a planned outage on July 9, 2024 and was offline for the remainder of July. The Upper Salmon Hydroelectric Generating Station was taken offline on a brief forced outage on July 10, 2024 due to a trip caused by lightning; the unit returned to service the same day. The Granite Canal Hydroelectric Generating Station returned to service on July 12, 2024 from the planned outage that began on June 16, 2024. Bay d'Espoir Unit 2 was taken offline on a brief planned outage on July 15, 2024 and returned to service the same day. Bay d'Espoir Unit 1 returned to service on July 15, 2024, following a planned outage that began on May 20, 2024. The Paradise River Hydroelectric Generating Station was taken offline on a brief forced outage on July 16, 2024 due to a lightning in the area; the unit returned to service the same day. Cat Arm Unit 1 was derated to 60 MW on May 27, 2024 due to a spherical valve pit water level alarm. The unit was returned to full capacity on July 18, 2024. The Granite Canal Hydroelectric Generating Station was taken offline on a brief forced outage on July 28, 2024 due to a unit trip, and was returned to service later the same day.

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.

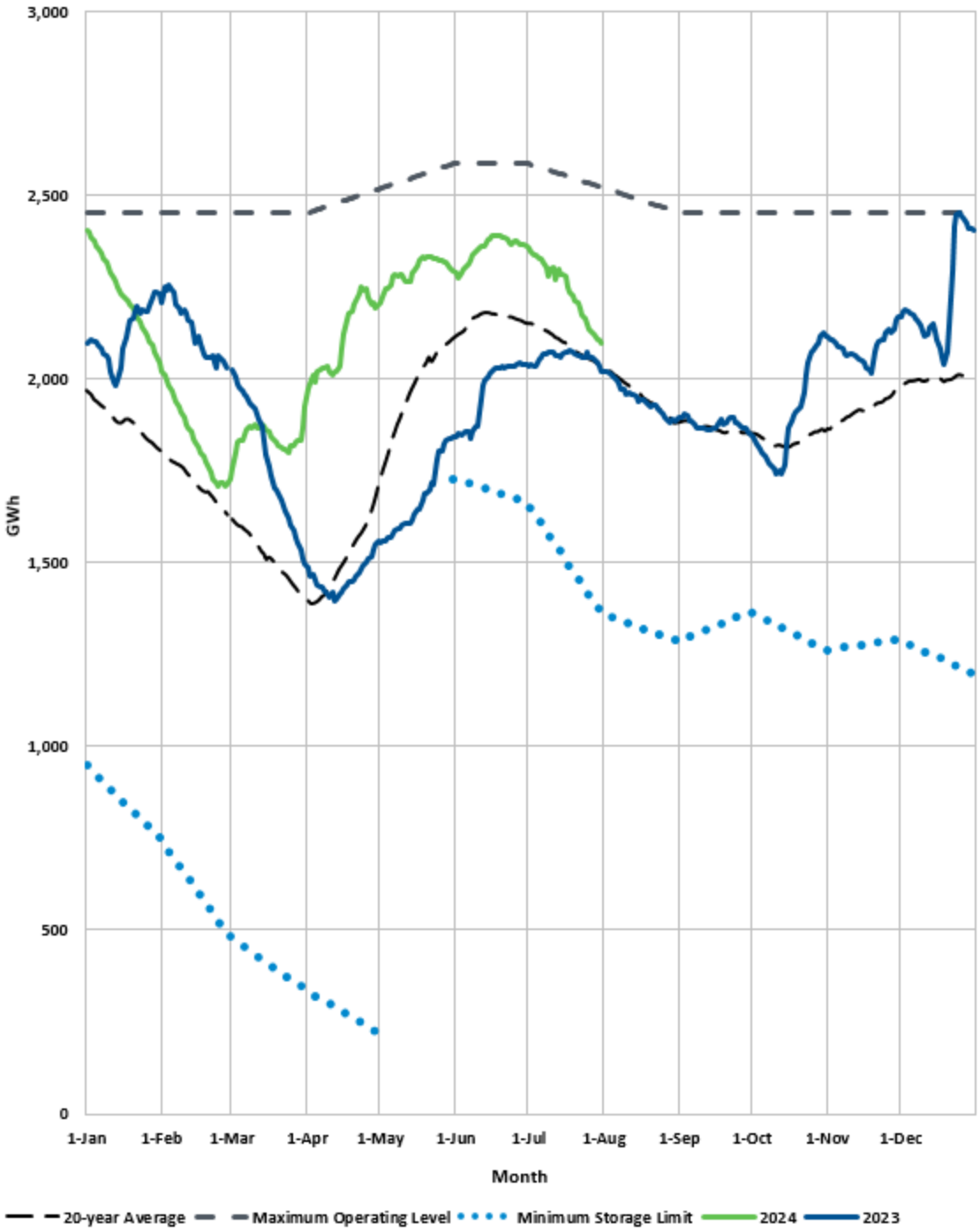

Figure 1: Total System Energy Storage[4]

[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 July 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 July 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 2.

Table 2: Spill Activity[8]

	Granite Canal Bypass		Upper Salmon Bypass		Burnt Dam Spillway	
	MCM	**GWh**	**MCM**	**GWh**	**MCM**	**GWh**
31-July-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 July 2024. A total of 1.0 GWh of energy was repaid from Corner Brook Pulp and Paper Limited ("CBPP") to Energy Marketing under the Temporary Energy

[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] Numbers may not add due to rounding.

Exchange Agreement in July 2024. There was no emergency energy[9] supplied to Nova Scotia over the Maritime Link during July 2024.

4.0 Thermal Production

There were no units online at the Holyrood TGS during July 2024. Total energy production from Gas Turbines was 0.9 GWh during the month. The operating hours for the Holyrood TGS and the Hardwoods, Stephenville, and Holyrood Combustion Turbines are summarized in Table 3. Standby generation was not required to support reservoir storage.

Table 3: Holyrood TGS and Combustion Turbines Operating Hours

	Operating Hours	Synch Condense Hours	Available Hours
Holyrood TGS			
Unit 1	0	0	0
Unit 2	0	0	744.0
Unit 3	0	0	0
Combustion Turbines			
Hardwoods Gas Turbine	5.2	686.3	691.5
Stephenville Gas Turbine	0	0	0
Holyrood Combustion Turbine	26.3	0	744.0

5.0 Unit Deratings

Holyrood TGS Units 1 and 3 were taken offline for the planned annual outage on April 12, 2024 and May 26, 2024, respectively. The units remained on a planned outage for the entire month of July 2024.Holyrood TGS Unit 2 remained available, but on standby for the entire month of July 2024 as it was not required to support system generation requirements.

The Hardwoods Gas Turbine was available for the entire month of July 2024 with the exception of a planned outage to Bus 7 at the Hardwoods Terminals Station on July 23, 2024 to July 25, 2024, which also made the unit unavailable.

The Holyrood Combustion Turbine was available for the full month of July 2024.

[9] Under the Interconnection Operators Agreement between Hydro and Nova Scotia Power.

The Stephenville Gas Turbine remained unavailable during July 2024 due to damage to the generator resulting from the failure of a generator cooling fan. After inspection and testing at the original equipment manufacturer ("OEM") facility in the United States in December 2023, the rotor was returned to the site in February 2024 and reinstalled in the unit on March 5, 2024. The exciter was received back from OEM's facility on May 10, 2024. The contractor mobilized to the site on May 6, 2024, and began reassembly activities. Assembly of the unit continues with final assembly of the unit and auxiliaries planned for July and early August 2024. It is expected that the unit will return to service in August 2024.

Appendix A

Ponding and Spill Transactions

Table A-1: Ponding Transactions[1]

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[2]		-	-	-	-	

[1] Numbers may not add due to rounding.
[2] Total transactions for July 2024.

Table A-2: Avoided Spill Energy[3]

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[4]	**-**	**-**	**-**	**170**

[3] Numbers may not add due to rounding.
[4] Total transactions for July, 2024.

Appendix B

Production and Purchases

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

	July 2024	YTD July 2024
Hydro Generation (Hydro)		
Bay d'Espoir		
Unit 1	20.1	208.6
Unit 2	20.1	224.8
Unit 3	35.9	223.8
Unit 4	24.2	143.1
Unit 5	32.5	140.2
Unit 6	3.3	128.1
Unit 7	21.6	470.5
Subtotal Bay d'Espoir	157.8	1,539.0
Upper Salmon	26.0	316.9
Granite Canal	11.2	138.3
Hinds Lake	33.6	246.0
Cat Arm		
Unit 1	25.3	269.5
Unit 2	24.9	272.5
Subtotal Cat Arm	50.2	542.0
Paradise River	1.7	19.0
Star Lake	12.5	82.3
Rattle Brook	0.1	8.5
Nalcor Exploits	48.8	365.8
Mini Hydro	0.0	0.0
Total Hydro Generation (Hydro)	**341.9**	**3,257.8**
Thermal Generation (Hydro)		
Holyrood TGS		
Unit 1	0.0	180.1
Unit 2	0.0	17.0
Unit 3	0.0	204.7
Subtotal Holyrood TGS Units	0.0	401.8
Holyrood Gas Turbine and Diesels	0.9	6.0
Hardwoods Gas Turbine	0.0	0.4
Stephenville Gas Turbine	0.0	0.0
Other Thermal	0.0	0.1
Total Thermal Generation (Hydro)	**0.9**	**408.2**
Purchases		
Requested Newfoundland Power and Vale	0.0	0.0
CBPP		
Capacity Assistance	0.0	0.5
Power Purchase Agreement[2]	0.0	80.0
Secondary	1.1	3.4
Co-Generation	4.3	16.6
Subtotal CBPP	5.4	100.5
Wind Purchases	8.5	104.5
Maritime Link Imports[3]	0.0	0.0
New World Dairy	0.0	0.1
Labrador Island Link Delivery to IIS[4,5]	35.7	393.4
Total Purchases	**49.7**	**598.5**
Total[6]	**392.5**	**4,264.5**

[1] Gross generation.

[2] In the June 2024 Energy Supply Report, an additional 0.5 GWh was attributed to the CBPP PPA in error. The 0.5 GWh is now reflected in the Secondary YTD total.

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

[4] LIL deliveries to the Island Interconnected System are calculated by total LIL imports of 144.0 GWh less Maritime Link Exports of 136.9 GWh.

[5] 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.

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