newfoundland labrador hydro

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September 17, 2021

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 August 2021

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

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Senior Legal Counsel, Regulatory
SAW/kd

Encl.

ecc: **Board of Commissioners of Public Utilities**
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Monthly Energy Supply Report for the Island Interconnected System for August 2021

September 17, 2021

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A report to the Board of Commissioners of Public Utilities

Contents

1.0 Introduction 1
2.0 System Hydrology 1
3.0 Production and Purchases 4
4.0 Thermal Production and Imports 4
5.0 Unit Deratings 4

List of Appendices

Appendix A: Production and Purchases

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, 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 derating.

In July 2016, the Board indicated that a monthly report would thereafter be sufficient. This report provides data for August 2021.

2.0 System Hydrology

Reservoir inflows in August 2021 were approximately 21% of the month's historical average. Inflows in 2021 decreased to 82% of the year-to-date historical average.

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	2021 (GWh)	2020 (GWh)	20-Year Average (GWh)	Minimum Storage Limit (GWh)	Maximum Operating Level (GWh)	Percentage of Maximum Operating Level (%)
31-Aug-2021	1,482	1,770	1,833	727	2,452	60

The aggregate reservoir storage level on August 31, 2021 was 1,482 GWh, which is 40% below the seasonal maximum operating level and 104% above the minimum storage limit.[1] The current storage

[1] 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, maximum generation at Holyrood Thermal Generating Station, and non-firm imports. Hydro's long-term critical dry sequence is defined as January 1959 to March 1962 (39 months). Other dry periods are also examined during the derivation to ensure that no other shorter term historic dry sequence could result in insufficient storage.

level is shown in Figure 1 in relation to the 20-year average storage level for the end of August of 1,833 GWh. At the end of August 2020, the aggregate storage level was 1,770 GWh.

The Upper Salmon Plant was scheduled to return to service from its annual planned maintenance on August 20, 2021. However, during inspections the rotor rim guidance blocks exhibited defects resulting in integrity concerns. Investigation into this matter remains ongoing and the return to service date has not yet been established. As a result, it was determined that bypass of the Upper Salmon Plant is required to support storage in the Long Pond Reservoir. On August 27, 2021 bypass of the Upper Salmon plant commenced and is expected to continue until the Upper Salmon Plant returns to service. Planned bypass volumes are such that they offset generation at the Bay d'Espoir Hydroelectric Generating Station, with adjustments to bypass flow to maintain Long Pond Reservoir storage in response to inflows and deliveries to the Island system via the Labrador-Island Link.

Figure 1 plots the 2020 and 2021 storage levels, minimum storage limits, maximum operating level storage, and the 20-year average aggregate storage for comparison.

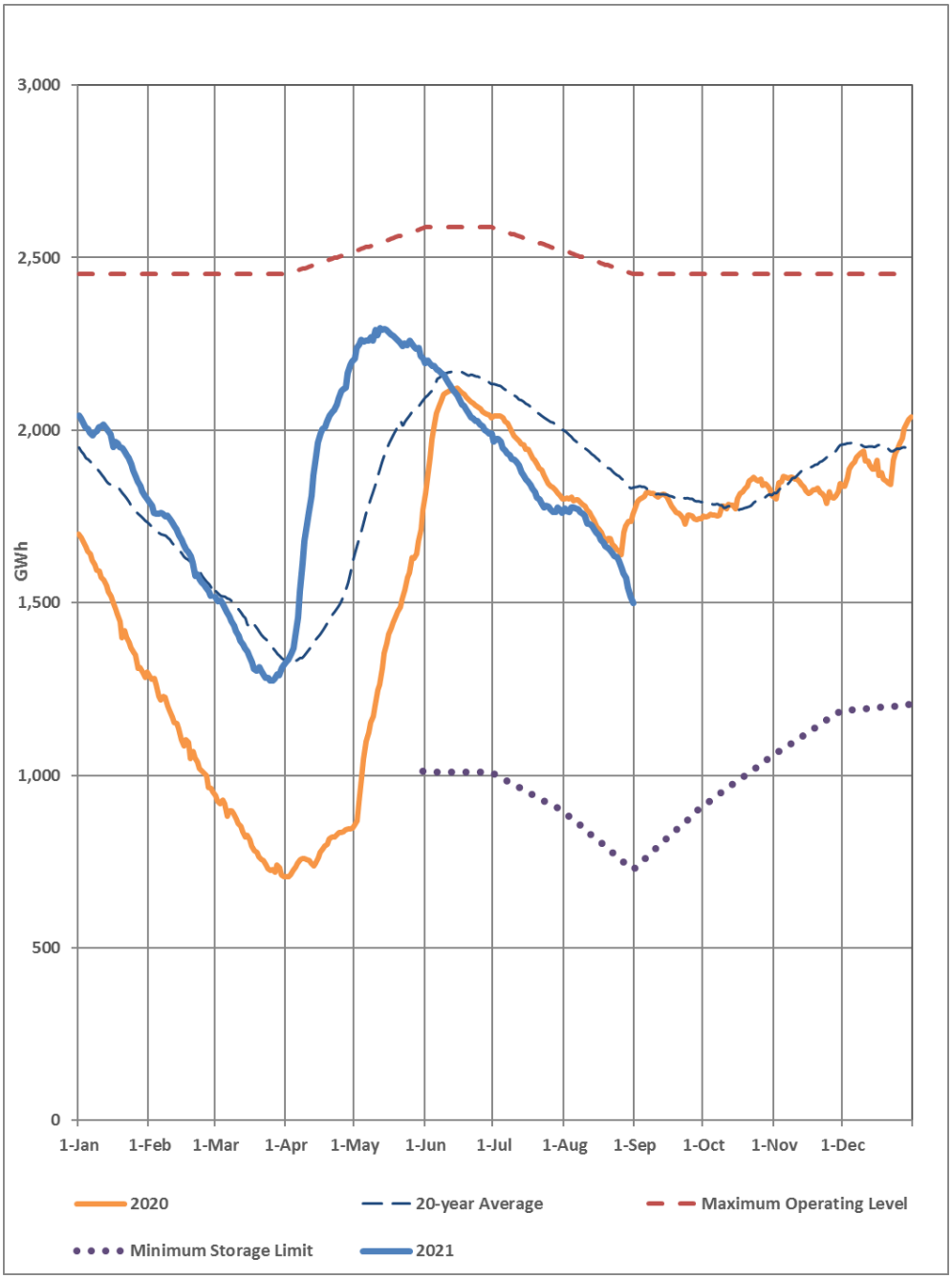

Figure 1: Total System Energy Storage

3.0 Production and Purchases

Appendix A provides a breakdown of power purchases, including imports, and production by plant during August 2021.

4.0 Thermal Production and Imports

Holyrood Thermal Generating Station ("Holyrood TGS") Unit 3 was operated in synchronous condenser mode for 405.8 hours in August 2021 for system requirements. Holyrood TGS Unit 1 and Unit 2 were not operated during August 2021. As such, there was no energy production from Holyrood TGS during the month of August 2021.

Standby units were operated during the month for system operating limit requirements and for testing purposes. Standby units were operated for a total of 79.3 hours during the month. Total standby production during the month was 1.8 GWh. Standby generation was not required to support reservoir storage.

Testing activities continued on the Labrador-Island Link in August 2021, resulting in the delivery of 30.4 GWh of energy at Soldiers Pond. On August 13, 2021, approximately 0.1 GWh[2] was generated to supply Emergency Energy to Nova Scotia Power, pursuant to the Interconnection Operators Agreement[3] between Hydro and Nova Scotia Power.[4] Delivery of the Nova Scotia Block commenced in August, with the first physical delivery taking place on August 17, 2021.[5,6] In addition, exports of 0.3 GWh occurred over the Maritime Link due to ponding activities. The ponded balance at month end was -5.4 GWh. Total exports over the Maritime Link for the month of August 2021 were 8.0 GWh.[7]

5.0 Unit Deratings

Holyrood TGS Unit 1 remained on annual maintenance outage for the entire month of August 2021.

[2] Total energy supplied amounted to 87 MWh.
[3] Article 5, Schedules A3 and C9.
[4] A copy of the agreement was provided in "The Board's Investigation and Hearing into Supply Issues and Power Outages on the Island Interconnected System – Availability of Requested Information from Hydro, July 5, 2017 Update," Appendix C.
[5] Pursuant to the Energy and Capacity Agreement between between Nalcor Energy and Emera Inc.
[6] Physical delivery of the Nova Scotia Block will only occur when the Labrador-Island Link is online and able to transfer power.
[7] Total exports include the provision of emergency and inadvertent energy to Nova Scotia Power Inc., provision of the Nova Scotia Block, and export activity conducted by Nalcor Energy Marketing including the export of spilled energy on Hydro's behalf.

Holyrood TGS Unit 2 remained on cold standby prior to beginning its annual maintenance outage on August 14, 2021, as it was not required to support system requirements.

Holyrood TGS Unit 3 remained on annual maintenance outage until August 10, 2021 when the unit was placed on-line in synchronous condensing mode. The unit ran as a synchronous condenser until August 27, 2021. From August 27, 2021 to September 2, 2021 the unit was on a maintenance outage to convert from synchronous condenser mode to generation mode.

The Hardwoods Gas Turbine was available at full capacity for the entire month of August 2021[8] with the exception of a planned unit outage from August 3, 2021 to August 4, 2021 to facilitate work in the Hardwoods Terminal Station.

The Stephenville Gas Turbine was available at full capacity for the entire month of August 2021.[9]

The Holyrood Gas Turbine was available at full capacity for the entire month of August 2021.[10]

[8] Due to limitations inherent in the design of combustion turbines, the output of combustion turbines may be reduced in the event that ambient temperatures exceed the threshold required for full rated output. This threshold is dependent on the design of each turbine.
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Appendix A

Production and Purchases

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Table A-1: Generation and Purchases[1]

	August 1–31, 2021 (GWh)	YTD[2] August 31, 2021 (GWh)
Hydro Generation (Hydro)		
Bay d'Espoir Plant		
Unit 1	44.9	287.1
Unit 2	25.7	277.5
Unit 3	32.4	241.1
Unit 4	17.3	111.6
Unit 5	0.0	132.4
Unit 6	0.0	113.2
Unit 7	66.3	588.4
Subtotal Bay d'Espoir Plant	186.7	1,751.4
Upper Salmon Plant	0.8	343.8
Granite Canal Plant	15.1	146.8
Hinds Lake Plant	27.0	234.8
Cat Arm Plant		
Unit 1	30.4	265.5
Unit 2	32.5	272.7
Subtotal Cat Arm Plant	62.8	538.2
Paradise River	0.8	12.3
Star Lake Plant	7.8	93.0
Rattle Brook Plant	0.5	7.9
Nalcor Exploits Plants	43.1	397.1
Mini Hydro	0.0	0.0
Total Hydro Generation (Hydro)	**344.6**	**3,525.4**
Thermal Generation (Hydro)		
Holyrood TGS		
Unit 1	0.0	206.6
Unit 2	0.0	242.2
Unit 3	0.0	112.6
Subtotal Holyrood TGS Units	0.0	561.4
Holyrood Gas Turbine and Diesels	1.3	8.5
Hardwoods Gas Turbine	0.4	1.4
Stephenville Gas Turbine	0.1	0.4
Other Thermal	0.0	0.1
Total Thermal Generation (Hydro)	**1.8**	**571.8**
Purchases		
Requested Newfoundland Power and Vale	0.0	0.0
CBPP[3]		
Capacity Assistance	0.0	0.0
Firm Energy Power Purchase Agreement	0.0	0.0
Secondary	1.3	14.8
Co-Generation	3.3	34.2
Subtotal CBPP	4.5	48.9
Wind Purchases	11.2	126.0
Maritime Link Imports[4]	0.2	1.3
New World Dairy	0.3	2.3
Labrador-Island Link Imports[5]	30.4	324.0
Total Purchases	**46.7**	**502.4**
Total[6]	**393.0**	**4,599.6**

[1] Gross generation.
[2] Year-to-date ("YTD").
[3] Corner Brook Pulp and Paper Limited ("CBPP").
[4] Includes energy flows as a result of purchases and inadvertent energy.
[5] Includes purchases as result of testing activity as well as deliveries that are then exported over the Maritime Link.
[6] Actuals reflect rounded values to the nearest tenth of a GWh. Differences between total vs. addition of individual components due to rounding.