Q. **Volume 1 (1st Revision), Chapter 3: Operations**

Please provide a copy of Hydro's Capacity Assistance Report 2016-2017 which was filed with the Board on April 17, 2017. (Volume I (1st Revision), Chapter 3: Operations, Page 3.26, Footnote 54)

A. Please refer to Hydro's response to NP-NLH-052, Attachment 1 for Hydro's *Capacity Assistance Report Winter 2016 - 2017*, as submitted to the Board of Commissioners of Public Utilities on April 17, 2017.

newfoundland labrador hydro
a nalcor energy company

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April 17, 2017

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 of Corporate Services & Board Secretary

Dear Ms. Blundon:

Re: Newfoundland and Labrador Hydro – Capacity Assistance Report

Please find enclosed the original and nine (9) copies of Newfoundland and Labrador Hydro's Capacity Assistance Report – Winter 2016-2017 outling the dates, times, duration and system conditions, including generation available and calculation of system reserve, under which capacity assistance was requested, the capacity assistance requested and provided, and the capacity and variable payments made.

Please contact the undersigned should you have any questions.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO

Tracey L. Pennell
Senior Counsel, Regulatory

TLP/bs

cc: Gerard Hayes – Newfoundland Power
Paul Coxworthy – Stewart McKelvey Stirling Scales
Sheryl Nisenbaum – Praxair Canada Inc.
ecc: Larry Bartlett – Teck Resources Limited
Dennis Browne, Q.C. – Consumer Advocate
Thomas J. O'Reilly, Q.C. – Cox & Palmer

Capacity Assistance Report

Winter 2016-2017

April 17, 2017

A Report to the Board of Commissioners of Public Utilities

newfoundland labrador hydro
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Table of Contents

Appendices

List of Tables

1.0 Introduction

Newfoundland and Labrador Hydro (Hydro) presently has five capacity assistance agreements[1] in place with its industrial customers: two with Corner Brook Pulp and Paper Limited (CBPP), two with Vale Newfoundland and Labrador Limited (Vale), and one with Praxair Canada Inc. (Praxair). A summary of the key terms and conditions of Hydro's capacity assistance agreements is attached in Appendix A.

In Order No. P.U. 49(2014), the Board of Commissioners of Public Utilities (the Board) approved a capacity assistance agreement with CBPP, the CBPP Capacity Assistance Agreement, that provides up to 60 MW of capacity assistance, upon Hydro's request, during winter peak demand periods by both reducing CBPP's firm demand supplied by Hydro (9 MW), and by providing 51 MW of capacity to the Island Interconnected System (IIS) from CBPP's hydraulic generating facilities. The second agreement with CBPP, the CBPP Supplemental Capacity Assistance Agreement, enables Hydro to request up to an additional 30 MW of capacity assistance.

Hydro has two capacity assistance agreements with Vale. The first agreement, the Vale Capacity Assistance Agreement, is for the supply of up to 15.8 MW of capacity assistance from Vale's standby diesel generating facilities, subject to an annual test. The amount of capacity assistance that was available for winter 2016-2017, confirmed during annual testing, was 7.6 MW. Order No. P.U. 3(2017), issued in January 2017, approved Hydro's second capacity assistance agreement with Vale, the Vale Curtailment Agreement, which provides 6 MW of load curtailment by Vale.

[1] Capacity assistance can be provided in two ways. The first is by a customer providing additional generation capacity to Hydro. This is the case in both Corner Brook Pulp and Paper Capacity Agreement, with the exception of the first 9 MW, and the Vale Capacity Assistance Agreement. The second way a customer can provide capacity assistance is by curtailing its load and reducing the overall system demand. This is the case for the first 9 MW of the Corner Brook Pulp and Paper Capacity Assistance Agreement, the Praxair Load Curtailment Agreement, and the Vale Load Curtailment Agreement.

In Order No. P.U. 55(2016), the Board approved a capacity assistance agreement with Praxair, the Praxair Curtailment Agreement, which provides up to 5 MW of load curtailment by Praxair during winter peak demand periods.

All of Hydro's existing capacity assistance agreements expire at the end of March 2018. As part of its focus on customer reliability, Hydro continues to evaluate whether these agreements should be continued through interconnection.

In the Board orders approving the capacity assistance agreements, the Board directed Hydro to file with the Board, no later than April 15 of the year following each winter period December 1-March 31, a report setting out the dates, times, duration, and system conditions, including generation available and calculation of system reserve, under which capacity assistance was requested, the capacity assistance requested and provided, and the capacity and variable payments made.

In accordance with Board direction, this report summarizes the details and costs associated with Hydro's use of the capacity assistance agreements for the winter period December 1, 2016 to March 31, 2017.

2.0 Capacity Assistance Operating Experience - Summary

During winter of 2016-2017, Hydro made 18 requests for capacity assistance. A summary of the requests is provided in Table 1. Hydro did not call upon CBPP's Supplemental Capacity Assistance Agreement in winter 2016-2017 as the additional support was not required during the winter period. Hydro also did not utilize the Vale Load Curtailment Agreement as the customer's demand was already reduced through load reduction at its processing facility (not initiated by Hydro) and therefore additional load curtailment was not required from the Vale Curtailment Agreement. On two occasions, Praxair was unable to provide capacity assistance when requested by Hydro.

Table 1: Summary of Capacity Assistance Requests

Agreement	Number of Requests for Assistance	Total Number of Hours of Assistance Provided	Total Capacity Assistance Provided (equivalent kWh)
CBPP Capacity Assistance	4	18 hours	840,000 kWh
CBPP Supplemental	0	0 hours	0 kWh
Vale Capacity Assistance	10	68.5 hours	403,677 kWh
Vale Load Curtailment	0	0 hours	0 kWh
Praxair Load Curtailment	4	6 hours	28,725 kWh
2016-2017 Total	**18**	**92.5 hours**	**1,272,402 kWh**

3.0 Capacity Assistance Requests Winter 2016-2017

The following summaries provide an overview of the system conditions and capacity assistance provided during the capacity assistance request events. Additional details, including start and end times, are attached in Appendices B, C, and D. For details on system conditions, including actual peak demand values, see Appendix E for the daily supply and demand reports applicable to each day, as submitted to the Board.

<u>February 6, 2017 – CBPP, Vale, and Praxair</u>

On February 6, 2017, The Holyrood Gas Turbine (GT) became unavailable due to water ingress in the fuel forwarding building during that day's inclement weather. The Hardwoods GT End B was unavailable since February 5 due to an oil leak. Hardwoods GT End A was also unavailable due to a suspected weld failure. Avalon generating capacity was also reduced by the derations of Holyrood Units 1 and 2 due to air supply issues. The Stephenville GT was derated due to limitations posed by the capacity of the leased engine. As the total system generating capacity on the island was reduced by 225.5 MW, with a 213.5 MW reduction in generating capacity on the Avalon, Hydro issued a Power Watch to Avalon customers as per the Advance Notification Protocol.[2]

[2] Appendix F provides Hydro's Advance Notification Protocol.

To sustain the evening peak, Hydro requested the following capacity assistance to support Avalon and Island reserves:

- Vale Capacity Assistance – Vale provided 7.6 MW through its diesel generation from 1505 to 1830 hours;
- CBPP Capacity Assistance – CBPP provided 40 MW from 1640 to 1940 hours; and
- Praxair Curtailment – Praxair provided 5.0 MW of curtailment from 1640 to 1928 hours.

The Holyrood GT was returned to service that evening at 1725 hours.

<u>February 7, 2017 – Vale</u>

On February 7, 2017, the Hardwoods GT remained unavailable and Holyrood Units 1 and 2 remained derated. With a net Avalon generating capacity reduction of 90 MW, and to support the morning and evening peaks during a day with cold temperatures and high load, Hydro requested the following capacity assistance to support Avalon reserves:

- Vale Capacity Assistance – Vale provided 7.6 MW through its diesel generation from 0707 to 0827 hours and 1550 to 2150 hours.

<u>February 8, 2017 – CBPP, Vale</u>

The weather and system conditions continued from the previous days, and with the Province experiencing extremely cold temperatures, the Island Interconnected System hit a record Island peak of 1,714 MW and an Avalon record peak of 930 MW. The Hardwoods GT remained unavailable, and both the Stephenville GT and Units 1 and 2 at Holyrood remained derated. As generating capacity of the island was reduced by 102 MW, with 90 MW reduced generating capacity on the Avalon, Hydro issued a Power Watch alert for Avalon customers.

Hydro requested the following capacity assistance to support Avalon and Island reserves:

- CBPP Capacity Assistance - CBPP provided 60 MW from 0705 to 1305 hours; and
- Vale Capacity Assistance - Vale provided 7.6 MW through its diesel generation from 0506 to 1118 hours.

February 13, 2017 – Vale, Praxair

Hydro experienced an under frequency load shedding event on February 13, 2017, when the Holyrood GT tripped offline due to the activation of the protection and controls system when a fault occurred in the fire suppression system. The Hardwoods GT remained unavailable, and Holyrood Units 1 and 2 remained derated, for a net Avalon reduction in generating capacity of 213.5 MW. Hydro entered into a Power Watch for Avalon customers and requested the following capacity assistance to support Avalon reserves:

- Vale Capacity Assistance - Vale provided 7.6 MW through its diesel generation from 0925 to 1236 hours and 1530 to 2152 hours; and
- Praxair Curtailment - Hydro requested Praxair provide 5.0 MW of curtailment at 1600 hours; however, Praxair was not able to provide capacity assistance for this request.

February 14, 2017 – Vale, Praxair

On February 14, 2017, the Avalon experienced a blizzard. System conditions continued from February 13 and the Holyrood GT remained offline until later in the afternoon. The Hardwoods GT remained offline and Units 1 and 2 at Holyrood remained derated, for a net reduction in Avalon generating capability of 213.5 MW. Hydro issued a Power Watch for Avalon customers for the evening peak and requested the following capacity assistance to support Avalon reserves:

- Vale Capacity Assistance - Vale provided 7.6 MW through its diesel generation from 1131 to 1920 hours; and
- Praxair Curtailment - Hydro requested Praxair provide 5.0 MW of curtailment at 1200 hours; however, Praxair was not able provide capacity assistance for this request.

March 11-12, 2017 – Vale, CBPP, Praxair

On Saturday, March 11, 2017, the Island portion of the Province experienced a significant windstorm that resulted in outages to Hydro and Newfoundland Power customers on the Burin

and Avalon peninsulas. Due to significant issues on the transmission and distribution systems, Hydro experienced load loss and resulting generation issues. On March 12 Hydro issued a Power Watch alert, which developed into a Power Warning, to Avalon customers and requested the following capacity assistance to support Island and Avalon reserves over the two days:

- Vale Capacity Assistance - Vale provided 7.6 MW through its diesel generation from 1703 hours on March 11 to 2217 hours on March 12;
- Praxair Curtailment - Praxair provided 5.0 MW of curtailment from 1730 to 2030 hours on March 11; and
- CBPP Capacity Assistance - CBPP provided 40 MW from 0945 to 1545 hours and from 1930 to 2230 hours on March 12.

March 27, 2017 - Vale

On March 27, 2017, Hydro forecasted high customer demand during the morning peak due to cold temperatures and issued a Power Watch for customers on the Avalon Peninsula. In addition, all three units at Holyrood were derated due to air supply issues, resulting in a net reduction in generating capacity on the Avalon of 92 MW. Hydro requested the following capacity assistance to support Avalon reserves:

- Vale Capacity Assistance - Vale provided 7.6 MW through its diesel generation from 0644 to 0904 hours.

4.0 Capacity Assistance Costs

The overall cost of capacity assistance for the 2016-17 winter season is provided in Table 2. Additional details on the contract conditions, including rate structures, are included in Appendix A.

Table 2: Summary of Capacity Assistance Costs

Agreement	Fixed Charge	Variable Charge	Total
CBPP Capacity Assistance	$ 1,680,000	$ 168,000	$ 1,848,000
CBPP Supplemental	$ -	$ -	$ -
Vale Capacity Assistance	$ 212,800	$ 136,064	$ 348,864
Vale Load Curtailment[3]	$ 126,000	$ -	$ 126,000
Praxair Load Curtailment [4]	$ 113,750	$ 5,745	$ 119,495
2016-2017 Total			**$ 2,442,359**

5.0 Conclusion

In winter 2016-2017, Hydro made 18 capacity assistance requests which helped to maintain reserves on both the Island Interconnected and Avalon Peninsula systems and, in the case of significant system events, helped to lessen the impact to customers. These agreements continue to deliver benefit to customers by providing Hydro with operational flexibility during times of higher demand and/or unforeseen system events. All of Hydro's existing capacity assistance agreements expire at the end of March 2018. As part of its focus on customer reliability, Hydro continues to evaluate whether these agreements should be continued through interconnection.

[3] Vale's load interruption agreement was in place from January to March 2017.
[4] On February 13 and 14, 2017, Praxair was unable to provide capacity assistance. As per contract conditions their fixed monthly payment for February 2017 was adjusted by 75%, see Appendix A.

Appendix A

Summary of Capacity Assistance Agreements

Summary of Capacity Assistance Agreements

Provider	Contracted Capacity	Rate Structure	Conditions
CBPP Capacity Assistance	Up to 60 MW in 20 MW increments i.e. 20 MW, 40 MW or 60 MW	Fixed $7/kW per month for each of the four winter months December through March for a total of $1.68M Variable $0.20 per kW per hour	• Notification Period - 20 minutes • Interruption Period - 3 hours (minimum) to 6 hours (maximum) • Maximum number of curtailments - 2 per day, 20 per winter • Total Assistance Period - 100 hours per winter • Penalties - Three strike clause[i] • Expiry - March 31, 2018 • Test - No Test[ii], for Winter 2016-2017; 60 MW planned as available
CBPP Supplemental	Maximum of 30 MW Remaining of CBPP capacity except essential services at Mill.	Fixed No fixed payment Variable Up to 10 MW = 0.55/per kW per hour Greater than 10 MW = $0.65/ per kW per hour	• This agreement is supplemental to the first contract for up to 60 MW • Notification Period - 15 minutes • Other conditions as per initial 60 MW contract • Penalties - none • Expiry - March 31, 2018 • Test - No Test, for Winter 2016-2017; 22 MW (net) planned as available[iii]
Vale Capacity Assistance	Up to 15.8 MW	Fixed $7/kW per month for each of the four winter months December through March for a total maximum of $442k Variable Cost of fuel	• Notification Period - 20 minutes • Interruption Period - 3 hours (minimum) to 6 hours (maximum) • Maximum number of curtailments - 2 per day, 20 per winter • Total Assistance Period - 100 hours per winter • Penalties – Downward adjustment based on average capacity[iv] • Expiry - March 31, 2018 • Test - Tested annually, for Winter 2016-2017; 7.6 MW confirmed
Vale Load Curtailment	6 MW	Fixed $7/kW per month for each of the three winter months January through March for the 2016-17 winter (total of $126,000) and four months of December Variable $0.20 per kW per hour for the maximum assistance provided.	• Notification Period - 60 minutes • Interruption Period - 3 hours (minimum) to 6 hours (maximum) • Maximum number of curtailments - 2 per 24 hour period, 10 per winter • Total Assistance Period - 50 hours per • Penalties – Modified three strikes Clause 4 • Expiry – March 31, 2018 • Test – Tested annually, for Winter 2016-2017, 6MW confirmed
Praxair Load Curtailment	5 MW	Fixed $7/kW per month for each of the four winter months December through March for a total of $140k Variable $0.20 per kW per hour for the maximum assistance provided	• Notification Period - 20 minutes • Interruption Period - 3 hours (minimum) to 6 hours (maximum) • Maximum number of curtailments - 2 per day, 10 per winter • Total Assistance Period - 50 hours per winter • Penalties - Modified Three Strike Clause[iv] • Expiry - March 31, 2018 • More than 1 request in a 24 hour period has additional condition[v] • Test - Tested annually, for Winter 2016-2017; 5 MW confirmed

[i] If the customer fails to provide the requested capacity assistance, the fixed fee is reduced by 50% in the first instance. For the second failure to provide capacity assistance, the fixed fee is reduced by a further 25%. If the customer fails to provide capacity assistance three times during the winter, 100% of the fee is forfeited.

[ii] While there is no test as a part of the capacity assistance agreements, CBPP are required to conduct a generation test annually as part of the generation credit provisions in CBPP's piloted service agreement (per Board Order No.'s P.U. 17(2009), P.U. 15(2011) and P.U. 4(2012)).

[iii] The agreement was amended to provide economic incentive to Vale after multiple failures to provide the full amount of capacity assistance to Hydro early in winter 2015-2016. The amended agreement compensates Vale for making capacity available upon Hydro's request but if the full amount of capacity is not delivered upon any request by Hydro, the agreement provides for a downward adjustment to those payments by basing the capacity payment upon the average amount of capacity delivered in the winter season.

[iv] The agreement was amended to provide economic incentive to Vale after multiple failures to provide the full amount of capacity assistance to Hydro early in winter 2015-2016. The amended agreement compensates Vale for making capacity available upon Hydro's request but if the full amount of capacity is not delivered upon any request by Hydro, the agreement provides for a downward adjustment to those payments by basing the capacity payment upon the average amount of capacity delivered in the winter season. The three strike clause is modified for the first year of the contracts with Praxair and Vale (Load Curtailment) as they are continuing to ramp up operations and, as per their Power Service Agreements, have a monthly Power on Order as opposed to an annual Power on Order. The contracts are designed such that the winter of 2016-2017 has a modified penalty clause that applies and accrues penalties on a monthly basis whereas the winter of 2017-2018 reverts to penalties in the same manner as the CBPP agreement.

[v] In the case of Praxair, their operations require Hydro to give extra consideration to a second Load Curtailment Request in a 24 hour period:

- Notification of the second Load Curtailment Request must be provided to Praxair no less than 60 minutes prior to scheduled end of the first Load Curtailment Period.
- A request to cease second Load Curtailment Period shall be made with not less than 15 minutes notice prior to the scheduled end of the first Load Curtailment Period.

Whenever there are two Load Curtailment Periods in a twenty-four (24) hour period, Praxair's operations require a 24 hour rest during which no Load Curtailment Request can be made.

Appendix B
Capacity Assistance Requests: Corner Brook Pulp and Paper Capacity Assistance Agreement

Capacity Assistance Requests: Corner Brook Pulp and Paper Capacity Assistance Agreement

Date	Start Time	End Time	Duration (hh:mm)	System Generation Available (MW)	System Available Reserve (MW)	System Spinning Reserve (MW)	Maximum Capacity Assistance Requested (MW)	Maximum Capacity Assistance Provided (MW)
February 6, 2017	16:40	19:40	3:00	1790	265	125	40.0	40.0
February 8, 2017	7:05	13:05	6:00	1915	290	195	60.0	60.0
March 12, 2017	9:45	15:45	6:00	1695	265	145	40.0	40.0
March 12, 2017	19:30	22:30	3:00	1845	260	150	40.0	40.0

Appendix C

Capacity Assistance Requests: Vale Capacity Assistance Agreement

Capacity Assistance Requests: Vale Capacity Assistance Agreement

Date	Start Time	End Time	Duration (hh:mm)	System Generation Available (MW)	System Available Reserve (MW)	System Spinning Reserve (MW)	Maximum Capacity Assistance Requested (MW)	Maximum Capacity Assistance Provided (MW)
February 6, 2017	15:05	18:30	3:25	1810	335	200	7.6	7.6
February 7, 2017	7:07	8:27	1:20	1930	330	235	7.6	7.6
February 7, 2017	15:50	21:50	6:00	1950	360	240	7.6	7.6
February 8, 2017	5:06	11:18	6:12	1915	485	135	7.6	7.6
February 8, 2017	16:00	18:39	2:39	1940	325	220	7.6	7.6
February 13, 2017	9:25	12:36	3:11	1950	410	125	7.6	7.6
February 13, 2017	15:30	21:52	6:22	1805	315	170	7.6	7.6
February 14, 2017	11:31	19:20	7:49	1785	265	185	7.6	7.6
March 11, 2017	17:03	23:59	6:56	1445	400	240	7.6	7.6
March 12, 2017	0:00	22:17	22:17	1700	435	310	7.6	7.6
March 27, 2017	6:44	9:04	2:20	1950	380	240	7.6	7.6

Appendix D

Capacity Assistance Requests: Praxair Curtailable Agreement

Capacity Assistance Requests: Praxair Curtailable Agreement

Date	Start Time	End Time	Duration (hh:mm)	System Generation Available (MW)	System Available Reserve (MW)	System Spinning Reserve (MW)	Maximum Capacity Assistance Requested (MW)	Maximum Capacity Assistance Provided (MW)
February 6, 2017	16:40	19:28	3:00	1790	265	125	5.0	5.0
February 13, 2017[1]	16:00	16:00	0:00	1810	315	205	5.0	0.0
February 14, 2017[2]	12:00	12:00	0:00	1790	270	180	5.0	0.0
March 12, 2017	17:30	20:30	3:00	1845	375	355	5.0	5.0

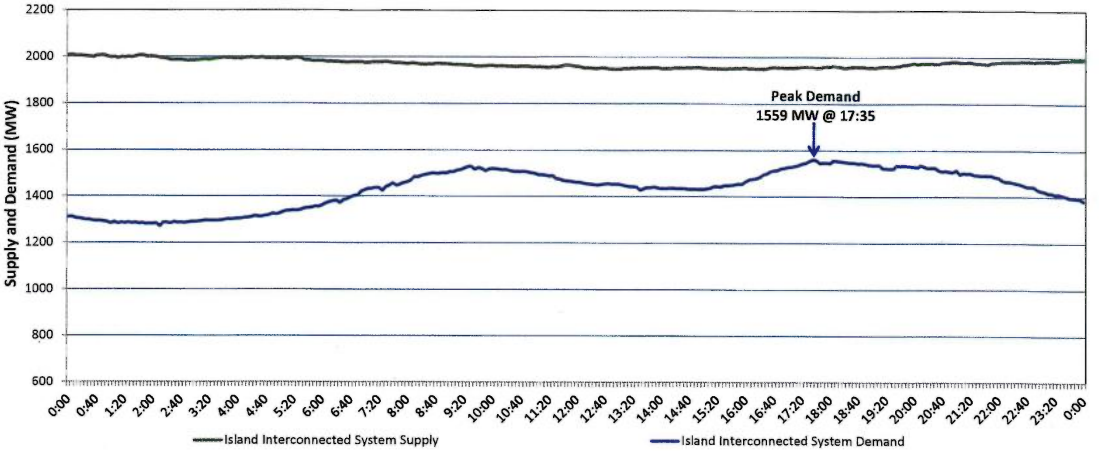
[1] Praxair was unable to provide Capacity Assistance (Load Curtailment)
[2] *Ibid.*

Appendix E

Daily Supply and Demand Reports

Newfoundland Labrador Hydro (NLH)
Supply and Demand Status Report Filed Monday, February 06, 2017

Section 1
Island Interconnected System Supply and Demand
Actual 24 Hour System Performance For Saturday, February 04, 2017



Supply Notes For February 04, 2017 [1,2]

A As of 1556 hours, January 20, 2017, Holyrood Unit 2 available at 150 MW (170 MW).
B As of 2107 hours, January 27, 2017, Holyrood Unit 1 available at 160 MW (170 MW).
C As of 1238 hours, February 03, 2017, Stephenville Gas Turbine available at 38 MW (50 MW).

Section 2
Island Interconnected Supply and Demand

Sun, Feb 05, 2017	Island System Outlook[3]		Seven-Day Forecast	Temperature (°C)		Island System Daily Peak Demand (MW)	
				Morning	Evening	Forecast	Adjusted[7]
Available Island System Supply:[5]	**1,990**	**MW**	Sunday, February 05, 2017	-14	-10	**1,660**	**1,550**
NLH Generation:[4]	1,650	MW	Monday, February 06, 2017	-4	-3	1,560	1,451
NLH Power Purchases:[6]	135	MW	Tuesday, February 07, 2017	-10	-13	1,710	1,599
Other Island Generation:	205	MW	Wednesday, February 08, 2017	-14	-4	1,640	1,530
Current St. John's Temperature:	-14	°C	Thursday, February 09, 2017	6	-3	1,460	1,352
Current St. John's Windchill:	-27	°C	Friday, February 10, 2017	-6	-7	1,535	1,426
7-Day Island Peak Demand Forecast:	**1,710**	MW	Saturday, February 11, 2017	-9	-5	1,495	1,387

Supply Notes For February 05, 2017 [3]

Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
2. Due to the Island Interconnected System being isolated from the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
3. As of 0800 Hours.
4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
5. Gross output from all Island sources (including Note 4).
6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Vale capacity assistance (when applicable), and Wind Generation.
7. Adjusted for CBP&P, Praxair and Vale interruptible load as well as the impact of voltage reduction, when applicable.

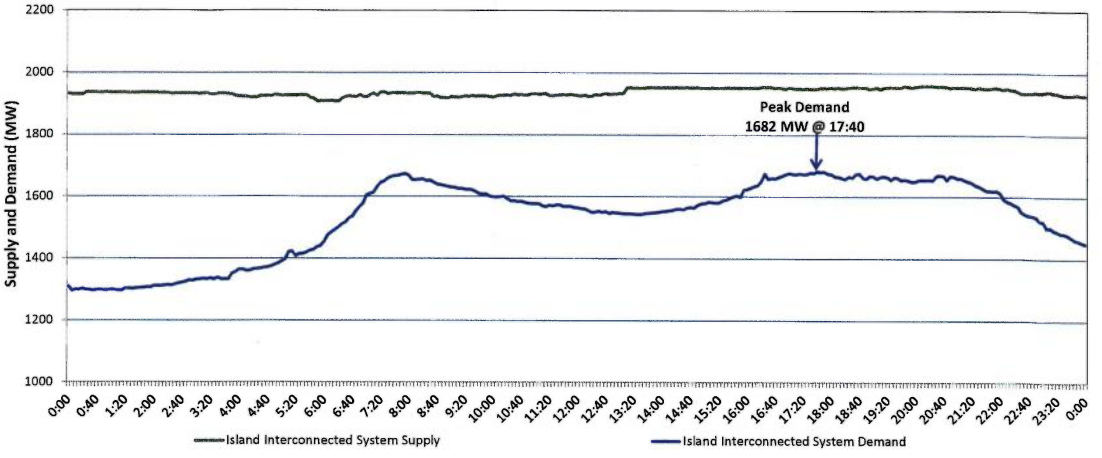
Section 3
Island Peak Demand Information
Previous Day Actual Peak and Current Day Forecast Peak

Sat, Feb 04, 2017	Actual Island Peak Demand[8]	17:35	1,559 MW
Sun, Feb 05, 2017	Forecast Island Peak Demand		1,660 MW

Notes: 8. Island Demand is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Newfoundland Labrador Hydro (NLH)
Supply and Demand Status Report Filed Wednesday, February 08, 2017

Section 1
Island Interconnected System Supply and Demand
Actual 24 Hour System Performance For Tuesday, February 07, 2017



Supply Notes For February 07, 2017 [1,2]

A As of 1556 hours, January 20, 2017, Holyrood Unit 2 available at 150 MW (170 MW).
B As of 1238 hours, February 03, 2017, Stephenville Gas Turbine available at 38 MW (50 MW).
C As of 1425 hours, February 06, 2017, Hardwoods Gas Turbine unavailable (50 MW).
D As of 2006 hours, February 06, 2017, Holyrood Unit 1 available at 150 MW (170 MW).

Section 2
Island Interconnected Supply and Demand

Wed, Feb 08, 2017	Island System Outlook[3]		Seven-Day Forecast	Temperature (°C)		Island System Daily Peak Demand (MW)	
				Morning	Evening	Forecast	Adjusted[7]
Available Island System Supply:[5]	**1,895**	**MW**	Wednesday, February 08, 2017	-13	-1	**1,725**	**1,614**
NLH Generation:[4]	1,590	MW	Thursday, February 09, 2017	3	-2	1,515	1,406
NLH Power Purchases:[6]	110	MW	Friday, February 10, 2017	7	-3	1,430	1,322
Other Island Generation:	195	MW	Saturday, February 11, 2017	-7	-9	1,575	1,466
Current St. John's Temperature:	-15	°C	Sunday, February 12, 2017	-10	-6	1,475	1,367
Current St. John's Windchill:	-21	°C	Monday, February 13, 2017	-5	-3	1,520	1,411
7-Day Island Peak Demand Forecast:	**1,725**	MW	Tuesday, February 14, 2017	-4	-4	1,515	1,406

Supply Notes For February 08, 2017 [3]

Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
2. Due to the Island Interconnected System being isolated from the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
3. As of 0800 Hours.
4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
5. Gross output from all Island sources (including Note 4).
6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Vale capacity assistance (when applicable), and Wind Generation.
7. Adjusted for CBP&P, Praxair and Vale interruptible load as well as the impact of voltage reduction, when applicable.

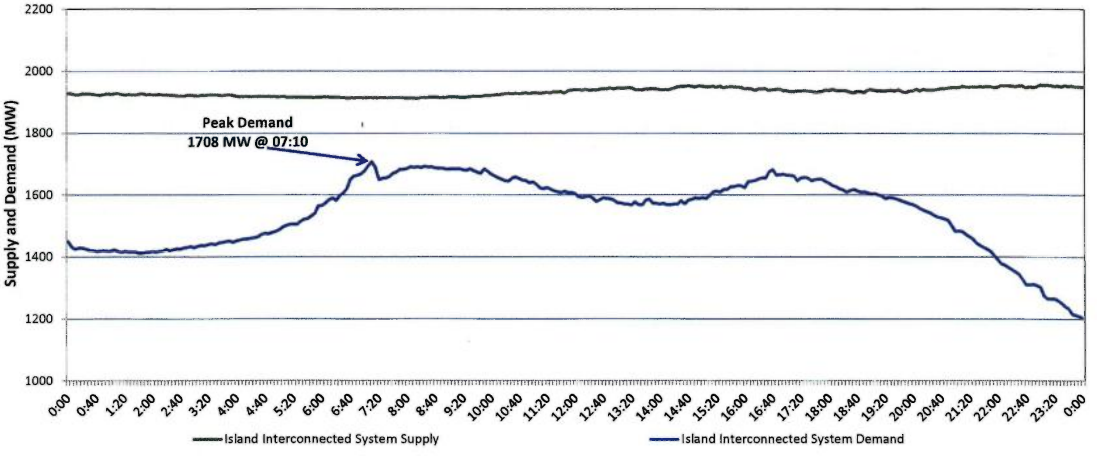
Section 3
Island Peak Demand Information
Previous Day Actual Peak and Current Day Forecast Peak

Tue, Feb 07, 2017	Actual Island Peak Demand[8]	17:40	1,682 MW
Wed, Feb 08, 2017	Forecast Island Peak Demand		1,725 MW

Notes: 8. Island Demand is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Newfoundland Labrador Hydro (NLH)
Supply and Demand Status Report Filed Thursday, February 09, 2017

Section 1
Island Interconnected System Supply and Demand
Actual 24 Hour System Performance For Wednesday, February 08, 2017



Supply Notes For February 08, 2017 [1,2]

A As of 1556 hours, January 20, 2017, Holyrood Unit 2 available at 150 MW (170 MW).
B As of 1238 hours, February 03, 2017, Stephenville Gas Turbine available at 38 MW (50 MW).
C As of 1425 hours, February 06, 2017, Hardwoods Gas Turbine unavailable (50 MW).
D As of 2006 hours, February 06, 2017, Holyrood Unit 1 available at 150 MW (170 MW).

Section 2
Island Interconnected Supply and Demand

Thu, Feb 09, 2017	Island System Outlook[3]		Seven-Day Forecast	Temperature (°C) Morning	Evening	Island System Daily Peak Demand (MW) Forecast	Adjusted[7]
Available Island System Supply:[5]	**1,910**	**MW**	Thursday, February 09, 2017	2	-5	**1,530**	**1,421**
NLH Generation:[4]	1,590	MW	Friday, February 10, 2017	5	-3	1,465	1,357
NLH Power Purchases:[6]	120	MW	Saturday, February 11, 2017	-8	-10	1,570	1,461
Other Island Generation:	200	MW	Sunday, February 12, 2017	-11	-10	1,505	1,396
Current St. John's Temperature:	2	°C	Monday, February 13, 2017	-10	-5	1,585	1,475
Current St. John's Windchill:	N/A	°C	Tuesday, February 14, 2017	-4	-1	1,485	1,377
7-Day Island Peak Demand Forecast:	**1,585**	MW	Wednesday, February 15, 2017	0	1	1,345	1,238

Supply Notes For February 09, 2017 [3]

Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
2. Due to the Island Interconnected System being isolated from the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
3. As of 0800 Hours.
4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
5. Gross output from all Island sources (including Note 4).
6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Vale capacity assistance (when applicable), and Wind Generation.
7. Adjusted for CBP&P, Praxair and Vale interruptible load as well as the impact of voltage reduction, when applicable.

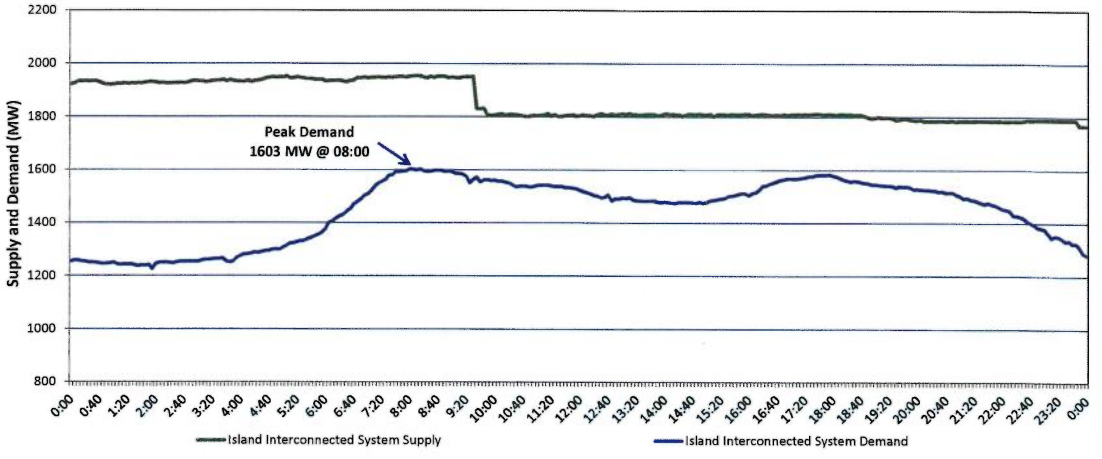
Section 3
Island Peak Demand Information
Previous Day Actual Peak and Current Day Forecast Peak

Wed, Feb 08, 2017	Actual Island Peak Demand[8]	07:10	1,708 MW
Thu, Feb 09, 2017	Forecast Island Peak Demand		1,530 MW

Notes: 8. Island Demand is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Newfoundland Labrador Hydro (NLH)
Supply and Demand Status Report Filed Tuesday, February 14, 2017

Section 1
Island Interconnected System Supply and Demand
Actual 24 Hour System Performance For Monday, February 13, 2017



Supply Notes For February 13, 2017 [1,2]

A	As of 1556 hours, January 20, 2017, Holyrood Unit 2 available at 150 MW (170 MW).
B	As of 1425 hours, February 06, 2017, Hardwoods Gas Turbine unavailable (50 MW).
C	As of 2006 hours, February 06, 2017, Holyrood Unit 1 available at 150 MW (170 MW).
D	As of 1513 hours, February 09, 2017, Stephenville Gas Turbine available at 38 MW (50 MW).
E	At 0921 hours, February 13, 2017, Holyrood Combustion Turbine unavailable (123.5 MW).

Section 2
Island Interconnected Supply and Demand

Tue, Feb 14, 2017	Island System Outlook[3]		Seven-Day Forecast	Temperature (°C) Morning	Temperature (°C) Evening	Island System Daily Peak Demand (MW) Forecast	Island System Daily Peak Demand (MW) Adjusted[7]
Available Island System Supply:[5]	**1,760**	**MW**	Tuesday, February 14, 2017	-2	0	**1,520**	**1,411**
NLH Generation:[4]	1,465	MW	Wednesday, February 15, 2017	0	-1	1,475	1,367
NLH Power Purchases:[6]	110	MW	Thursday, February 16, 2017	-2	-1	1,445	1,337
Other Island Generation:	185	MW	Friday, February 17, 2017	0	-2	1,340	1,233
Current St. John's Temperature:	-3	°C	Saturday, February 18, 2017	-1	-3	1,405	1,298
Current St. John's Windchill:	-13	°C	Sunday, February 19, 2017	-4	-3	1,375	1,268
7-Day Island Peak Demand Forecast:	**1,520**	MW	Monday, February 20, 2017	-3	-4	1,450	1,342

Supply Notes For February 14, 2017 [3]

Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
2. Due to the Island Interconnected System being isolated from the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
3. As of 0800 Hours.
4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
5. Gross output from all Island sources (including Note 4).
6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Vale capacity assistance (when applicable), and Wind Generation.
7. Adjusted for CBP&P, Praxair and Vale interruptible load as well as the impact of voltage reduction, when applicable.

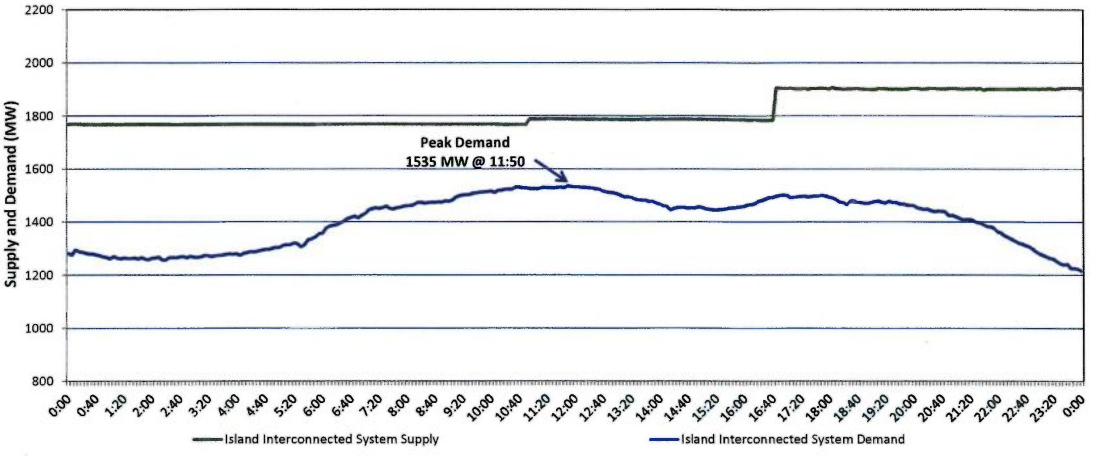
Section 3
Island Peak Demand Information
Previous Day Actual Peak and Current Day Forecast Peak

Mon, Feb 13, 2017	Actual Island Peak Demand[8]	08:00	1,603 MW
Tue, Feb 14, 2017	Forecast Island Peak Demand		1,520 MW

Notes: 8. Island Demand is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Newfoundland Labrador Hydro (NLH)
Supply and Demand Status Report Filed Wednesday, February 15, 2017

Section 1
Island Interconnected System Supply and Demand
Actual 24 Hour System Performance For Tuesday, February 14, 2017



Supply Notes For February 14, 2017 [1,2]

A	As of 1556 hours, January 20, 2017, Holyrood Unit 2 available at 150 MW (170 MW).
B	As of 1425 hours, February 06, 2017, Hardwoods Gas Turbine unavailable (50 MW).
C	As of 2006 hours, February 06, 2017, Holyrood Unit 1 available at 150 MW (170 MW).
D	As of 1513 hours, February 09, 2017, Stephenville Gas Turbine available at 38 MW (50 MW).
E	At 1645 hours, February 14, 2017, Holyrood Combustion Turbine available (123.5 MW).

Section 2
Island Interconnected Supply and Demand

Wed, Feb 15, 2017	Island System Outlook[3]		Seven-Day Forecast	Temperature (°C) Morning	Temperature (°C) Evening	Island System Daily Peak Demand (MW) Forecast	Island System Daily Peak Demand (MW) Adjusted[7]
Available Island System Supply:[5]	**1,895**	**MW**	Wednesday, February 15, 2017	0	0	**1,445**	**1,337**
NLH Generation:[4]	1,590	MW	Thursday, February 16, 2017	-3	0	1,420	1,312
NLH Power Purchases:[6]	125	MW	Friday, February 17, 2017	0	-2	1,410	1,303
Other Island Generation:	180	MW	Saturday, February 18, 2017	-2	-4	1,440	1,332
Current St. John's Temperature:	-1	°C	Sunday, February 19, 2017	-3	-3	1,340	1,233
Current St. John's Windchill:	-9	°C	Monday, February 20, 2017	-5	-3	1,450	1,342
7-Day Island Peak Demand Forecast:	**1,475**	MW	Tuesday, February 21, 2017	-4	-6	1,475	1,367

Supply Notes For February 15, 2017 [3]

Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
2. Due to the Island Interconnected System being isolated from the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
3. As of 0800 Hours.
4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
5. Gross output from all Island sources (including Note 4).
6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Vale capacity assistance (when applicable), and Wind Generation.
7. Adjusted for CBP&P, Praxair and Vale interruptible load as well as the impact of voltage reduction, when applicable.

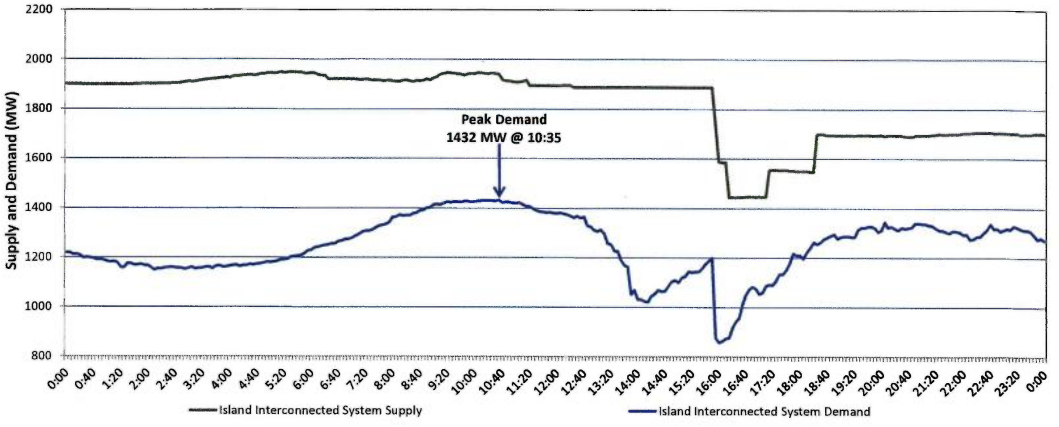
Section 3
Island Peak Demand Information
Previous Day Actual Peak and Current Day Forecast Peak

Tue, Feb 14, 2017	Actual Island Peak Demand[8]	11:50	1,535 MW
Wed, Feb 15, 2017	Forecast Island Peak Demand		1,445 MW

Notes: 8. Island Demand is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Newfoundland Labrador Hydro (NLH)
Supply and Demand Status Report Filed Tuesday, March 14, 2017

Section 1
Island Interconnected System Supply and Demand
Actual 24 Hour System Performance For Saturday, March 11, 2017



Supply Notes For March 11, 2017 [1,2]

A	As of 0700 hours, March 06, 2017, Holyrood Unit 2 available at 140 MW (170 MW).
B	As of 1700 hours, March 07, 2017, Stephenville Gas Turbine available at 38 MW (50 MW).
C	At 1222 hours, March 11, 2017, Paradise River Unit unavailable (8 MW).
D	At 1554 hours, March 11, 2017, Hardwoods Gas Turbine unavailable 25 MW (50 MW).
E	At 1554 hours, March 11, 2017, Holyrood Combustion Turbine unavailable (123.5 MW).
F	At 1557 hours, March 11, 2017, Holyrood Unit 3 unavailable (150 MW).
G	At 1613 hours, March 11, 2017, Holyrood Unit 1 unavailable 140 MW (170 MW).
H	At 1711 hours, March 11, 2017, Holyrood Combustion Turbine available at 105 MW (123.5 MW).
I	At 1820 hours, March 11, 2017, Holyrood Unit 3 available (150 MW).

Section 2
Island Interconnected Supply and Demand

Sun, Mar 12, 2017 Island System Outlook[3]		
Available Island System Supply:[5]	**1,715**	**MW**
NLH Generation:[4]	1,405	MW
NLH Power Purchases:[6]	100	MW
Other Island Generation:	210	MW
Current St. John's Temperature:	-9	°C
Current St. John's Windchill:	-19	°C
7-Day Island Peak Demand Forecast:	**1,600**	MW

Supply Notes For March 12, 2017 [3]

Seven-Day Forecast	Temperature (°C) Morning	Temperature (°C) Evening	Island System Daily Peak Demand (MW) Forecast	Island System Daily Peak Demand (MW) Adjusted[7]
Sunday, March 12, 2017	-8	-8	**1,600**	**1,490**
Monday, March 13, 2017	-3	-3	1,485	1,377
Tuesday, March 14, 2017	-6	-3	1,420	1,312
Wednesday, March 15, 2017	-1	5	1,405	1,298
Thursday, March 16, 2017	1	-3	1,395	1,288
Friday, March 17, 2017	-5	-3	1,425	1,317
Saturday, March 18, 2017	-2	-2	1,225	1,120

Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
2. Due to the Island Interconnected System being isolated from the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
3. As of 0800 Hours.
4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
5. Gross output from all Island sources (including Note 4).
6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Vale capacity assistance (when applicable), and Wind Generation.
7. Adjusted for CBP&P, Praxair and Vale interruptible load as well as the impact of voltage reduction, when applicable.

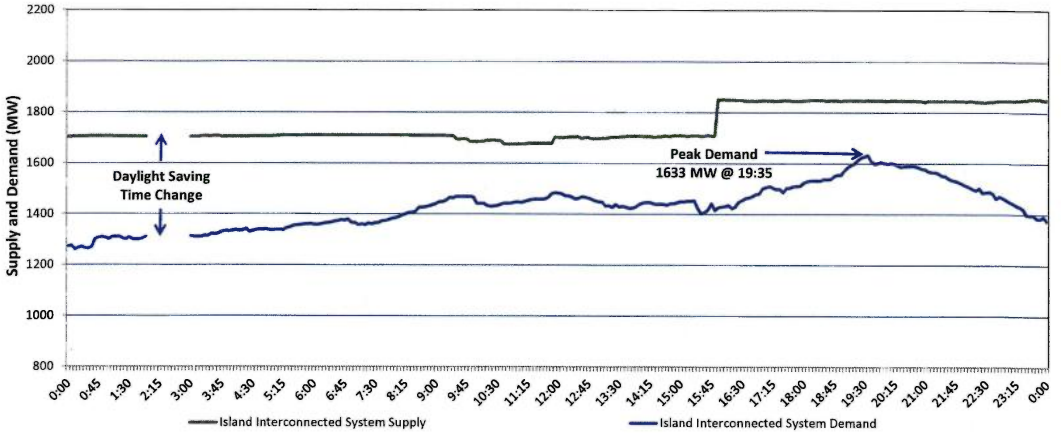
Section 3
Island Peak Demand Information
Previous Day Actual Peak and Current Day Forecast Peak

Sat, Mar 11, 2017	Actual Island Peak Demand[8]	10:35	1,432 MW
Sun, Mar 12, 2017	Forecast Island Peak Demand		1,600 MW

Notes: 8. Island Demand is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Newfoundland Labrador Hydro (NLH)
Supply and Demand Status Report Filed Tuesday, March 14, 2017

Section 1
Island Interconnected System Supply and Demand
Actual 24 Hour System Performance For Sunday, March 12, 2017



Supply Notes For March 12, 2017 [1,2]

A	As of 0700 hours, March 06, 2017, Holyrood Unit 2 available at 140 MW (170 MW).
B	As of 1222 hours, March 11, 2017, Paradise River Unit unavailable (8 MW).
C	At 0928 hours, March 12, 2017, Stephenville Gas Turbine available at 25 MW (50 MW).
D	At 0950 hours, March 12, 2017, Holyrood Diesels unavailable (10 MW).
E	At 1036 hours, March 12, 2017, Holyrood Unit 3 available at 135 MW (150 MW).
F	At 1155 hours, March 12, 2017, Hardwoods Gas Turbine available 25 MW (50 MW).
G	At 1547 hours, March 12, 2017, Holyrood Unit 1 available 140 MW (170 MW).
H	At 2300 hours, March 12, 2017, Holyrood CombustionTurbine available at full capacity (123.5 MW).

Section 2
Island Interconnected Supply and Demand

Mon, Mar 13, 2017 Island System Outlook[3]		
Available Island System Supply:[5]	**1,850**	**MW**
NLH Generation:[4]	1,550	MW
NLH Power Purchases:[6]	100	MW
Other Island Generation:	200	MW
Current St. John's Temperature:	-5	°C
Current St. John's Windchill:	-12	°C
7-Day Island Peak Demand Forecast:	**1,520**	MW

Supply Notes For March 13, 2017 [3]

Seven-Day Forecast	Temperature (°C) Morning	Temperature (°C) Evening	Island System Daily Peak Demand (MW) Forecast	Island System Daily Peak Demand (MW) Adjusted[7]
Monday, March 13, 2017	-5	-3	**1,520**	**1,411**
Tuesday, March 14, 2017	-4	-4	1,435	1,327
Wednesday, March 15, 2017	-2	6	1,425	1,317
Thursday, March 16, 2017	6	0	1,320	1,214
Friday, March 17, 2017	-3	-3	1,360	1,253
Saturday, March 18, 2017	-6	-4	1,365	1,258
Sunday, March 19, 2017	-1	-2	1,265	1,159

Notes:
1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
2. Due to the Island Interconnected System being isolated from the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
3. As of 0800 Hours.
4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
5. Gross output from all Island sources (including Note 4).
6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Vale capacity assistance (when applicable), and Wind Generation.
7. Adjusted for CBP&P, Praxair and Vale interruptible load as well as the impact of voltage reduction, when applicable.

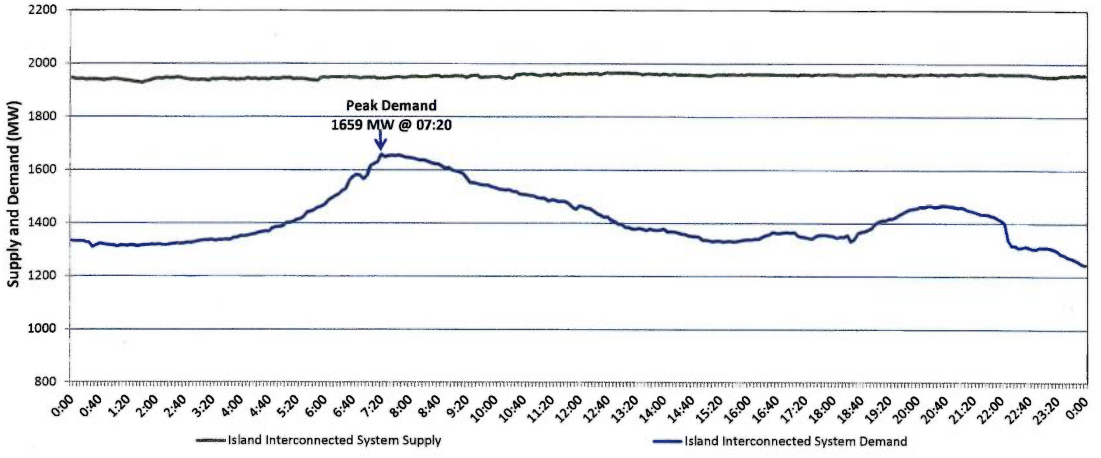
Section 3
Island Peak Demand Information
Previous Day Actual Peak and Current Day Forecast Peak

Sun, Mar 12, 2017	Actual Island Peak Demand[8]	19:35	1,633 MW
Mon, Mar 13, 2017	Forecast Island Peak Demand		1,520 MW

Notes: 8. Island Demand is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Newfoundland Labrador Hydro (NLH)
Supply and Demand Status Report Filed Tuesday, March 28, 2017

Section 1
Island Interconnected System Supply and Demand
Actual 24 Hour System Performance For Monday, March 27, 2017



Supply Notes For March 27, 2017 [1,2]

A	As of 1600 hours, March 21, 2017, Holyrood Unit 1 available at 134 MW (170 MW).
B	As of 1600 hours, March 21, 2017, Holyrood Unit 2 available at 134 MW (170 MW).
C	As of 1910 hours, March 22, 2017, Holyrood Unit 3 available at 130 MW (150 MW).
D	As of 1458 hours, March 23, 2017, Stephenville Gas Turbine available at 25 MW (50 MW).
E	At 1028 hours, March 27, 2017, Paradise River Unit available (8 MW).

Section 2
Island Interconnected Supply and Demand

Tue, Mar 28, 2017	Island System Outlook[3]		Seven-Day Forecast	Temperature (°C) Morning	Evening	Island System Daily Peak Demand (MW) Forecast	Adjusted[7]
Available Island System Supply:[5]	**1,950**	**MW**	Tuesday, March 28, 2017	-6	-3	**1,560**	**1,451**
NLH Generation:[4]	1,575	MW	Wednesday, March 29, 2017	-3	-1	1,430	1,322
NLH Power Purchases:[6]	165	MW	Thursday, March 30, 2017	-1	-1	1,320	1,214
Other Island Generation:	210	MW	Friday, March 31, 2017	2	-1	1,335	1,228
Current St. John's Temperature:	-6	°C	Saturday, April 01, 2017	0	-1	1,290	1,279
Current St. John's Windchill:	-16	°C	Sunday, April 02, 2017	-2	-2	1,210	1,199
7-Day Island Peak Demand Forecast:	**1,560**	MW	Monday, April 03, 2017	-2	-1	1,395	1,384

Supply Notes For March 28, 2017 [3]

Notes:

1. Generation outages for running and corrective maintenance are included. These are not unusual for power system operations. They generally do not impact customer supply. The power system operators schedule outages to system equipment whenever possible to coincide with periods when customer demands are low and sufficient supply reserves are available. However, from time to time equipment outages are necessary and reserves may be impacted.
2. Due to the Island Interconnected System being isolated from the larger North American grid, when there is a sudden loss of large generating units some customer's load must be interrupted for short periods to bring generation output equal to customer demand. This automatic action of power system protection, referred to as under frequency load shedding, is necessary to ensure the integrity and reliability of system equipment. Under frequency events typically occur 5 to 8 times per year on the Island Interconnected System and the resultant customer load interruptions are generally less than 30 minutes.
3. As of 0800 Hours.
4. Gross output including station service at Holyrood (24.5 MW) and improved NLH hydraulic output due to water levels (35 MW).
5. Gross output from all Island sources (including Note 4).
6. NLH Power Purchases include: CBPP Co-Gen, Nalcor Exploits, Rattle Brook, Star Lake, Vale capacity assistance (when applicable), and Wind Generation.
7. Adjusted for CBP&P, Praxair and Vale interruptible load as well as the impact of voltage reduction, when applicable.

Section 3
Island Peak Demand Information
Previous Day Actual Peak and Current Day Forecast Peak

Mon, Mar 27, 2017	Actual Island Peak Demand[8]	07:20	1,659 MW
Tue, Mar 28, 2017	Forecast Island Peak Demand		1,560 MW

Notes: 8. Island Demand is supplied by NLH generation and purchases, plus generation owned and operated by Newfoundland Power and Corner Brook Pulp & Paper (Deer Lake Power, DLP).

Appendix F

Advance Notification Protocol

NEWFOUNDLAND POWER A FORTIS COMPANY

Island Interconnected System Forecast Supply Shortfall[1]
Customer and Stakeholder Advance Notification Protocol

newfoundland labrador hydro a nalcor energy company

Alert Levels	Generation Reserves[2]	Stakeholder Notifications	NLH Actions	NP Actions	Customer Notifications
Normal Conditions (T-001[3] Level 0)	7-Day Generation Reserve Forecast indicates available reserves greater than the largest generating unit plus minimum spinning reserves	Daily Supply and Demand Status Report and 7-Day Forecast for the *Island Interconnected System* sent to Public Utilities Board (PUB) and Newfoundland Power.	Normal Operations	Normal Operations	None
Stage 1 ***Power Advisory (T-001 Level 1)***	7-Day Generation Reserve Forecast indicates available reserves less than the largest generating unit plus minimum spinning reserves	***Stage 1 - Power Advisory Notifications:*** Hydro System Operations notifies Newfoundland Power System Operations.	Follow System Operating Instruction T-001 as required to maintain minimum spinning reserves	Support Hydro with implementing T-001 measures	None
Stage 2 ***Power Watch (T-001 Level 2)***	24-Hour Generation Reserve Forecast indicates available reserves less than the largest generating unit	***Stage 2 - Power Watch Notifications*** : Hydro System Operations notifies Newfoundland Power, Hydro Regulatory Affairs notifies PUB and Hydro Communications notifies Newfoundland Power Communications and FES.	Follow System Operating Instruction T-001	Support Hydro with implementing T-001 measures	NP gives advance notification to its curtailable customers Utilities may issue [4]press release, update website, engage social media (or other communications tools) stating: ***"Power Watch in Effect - Conservation Request Likely"*** - Specify when conservation may be required. - Indicate what is the most effective ways for customers to conserve.
Stage 3 ***Power Warning (T-001 Level 3)***	Current Day Generation Reserve Margin less than half the largest generating unit	***Stage 3- Power Warning Notifications:*** Hydro System Operations notifies Newfoundland Power, Hydro Regulatory Affairs notifies PUB and Hydro Communications notifies Newfoundland Power Communications andFES.	Follow System Operating Instruction T-001	Support Hydro with implementing T-001 measures	Utilities will issue press release, update website, engage social media (or other communications tools) stating: ***"Power Warning in Effect - Customers Requested to Conserve Electricity; Rotating Outages Likely"*** - Request NP curtailable customers to curtail. - Specify when conservation is required. - Indicate the most effective ways for customers to conserve.
Stage 4 ***Power Emergency (T-001 Level 4)***	[5]Generation Shortfall Imminent - No reserves margin	***Stage 4- Power Emergency Notifications:*** Hydro System Operations notifies Newfoundland Power, Hydro Regulatory Affairs notifies PUB and Hydro Communications notifies Newfoundland Power Communications and FES.	Follow System Operating Instruction T-001	Support Hydro with implementing T-001 measures and implement Newfoundland Power SRP-001[6] for Rotating Power Outages	Customers to be notified immediately if a generation shortfall is anticipated. Utilities will issue press release, update website, engage social media (or other communications tools) stating: ***"Power Emergency in Effect - Conserve Electricity-Rotating Power Outages in Effect"*** - Inform customers of the actual impact (MW) conservation efforts are having on the electricity system. - Indicate what are the most effective ways for customers to conserve.

[1] Island Interconnected Supply Shortfall refers to ***all*** Firm Generating Capacity on the Island Electricity System.
[2] Operating Reserves = ((Island Interconnected System Available Generation / Island Interconnected System Forecast Peak) - 1) x 100%
[3] NLH System Operating Instructions for Generation Reserves
[4] Where desirable, utilities may undertake joint communications; however, each utility will communicate with its respective customers and key stakeholders directly according to its established protocols.
[5] In the event of an immediate loss of supply (unanticipated and unable to be forecast) this protocol will eliminate Stages 1-3 and begin with Stage 4: this applies to both a generation and transmission issue. Exception may be an underfrequency load trip that would result in a prompt power restoration.
[6] NP System Restoration Plan for Rotating Power Outages

Avalon Peninsula System Forecast Supply Shortfall[1]
Customer and Stakeholder Advance Notification Protocol

Alert Levels	Avalon Reserves	Inter-Utility Notifications	NLH Actions (Stakeholders)	NP Actions	Customer Notifications
Normal	7-Day Avalon Reserve Forecast indicates available reserves greater than 35MW under the single worst contingency.[2]	Daily Supply and Demand Status Report and 7-Day Forecast for the Avalon Peninsula provided to internal stakeholders.	Normal Operations	Normal Operations	None
Stage 1 Power Advisory	7-Day Avalon reserve is forecast to be less than the impact of the largest contingency plus 35 MW.	Stage 1 – Hydro System Operations notifies Newfoundland Power System Operations.	Follow Operating Instruction (T096) as required to maintain available Avalon reserves.	Support Hydro with implementing any requested measures to increase/maintain available Avalon reserves.	None
Stage 2 Power Watch	24-Hour Avalon reserve is forecast to be less than the impact of the largest contingency.	Stage 2 – Hydro System Operations notifies Newfoundland Power System Operations Hydro Communications notifies Newfoundland Power Communications	Follow Operating Instruction (T096) Hydro Comms to follow *Stakeholder Communication Process for Major System Events*[3]	Support Hydro with implementing any requested measures to increase/maintain available Avalon reserves.	NP gives advance notification to its curtailable customers to be prepared for possible load curtailment request.[4] Communicate according to *Joint Storm/Outage Communication Plan* Utilities may issue[5] a press release, update website, engage social media (or other communications tools) stating: **Power Watch in Effect – Be Prepared to Conserve if Asked** (Specify when conservation may be required, indicate what is the most effective ways to conserve)
Stage 3 Power Warning	Current Day reserve is forecast to be less than the impact of half the largest contingency.	Stage 3 – Hydro System Operations notifies Newfoundland Power System Operations Hydro Communications notifies Newfoundland Power Communications	Follow Operating Instruction (T096) Hydro Comms to follow *Stakeholder Communication Process for Major System Events*	Support Hydro with implementing any requested measures to increase/maintain available Avalon reserves.	Communicate according to *Joint Storm/Outage Communication Plan* Utilities **will** issue press release, update website, engage social media (or other communications tools) stating: **Power Warning in Effect – Customers Requested to Conserve Electricity; Be Prepared for Possible Rotating Outages** (Specify when conservation may be required, indicate what is the most effective ways to conserve)
Stage 4 Power Emergency	Avalon reserve is zero or in deficit.	Stage 4 – Hydro System Operations notified Newfoundland Power System Operations Hydro Communications notifies Newfoundland Power Communications	Follow Operating Instruction (T096) Hydro Comms to follow *Stakeholder Communication Process for Major System Events*	Support Hydro with implementing any requested measures to increase Avalon reserves and implement Newfoundland Power SRP-001 for Rotating Power Outages on the Avalon.[6]	Communicate according to *Joint Storm/Outage Communication Plan* Utilities **will** issue press release, update website, engage social media (or other communications tools) stating: **Power Emergency in Effect – Conserve Electricity – Rotating Power Outages in Effect** (Specify when conservation may be required, indicate what is the most effective ways to conserve)

[1] Refers to all Transmission and Generation capacity on the Avalon Peninsula.

[2] Single worst contingency – loss of major Transmission Line (i.e. TL202 or TL206) or loss of the largest generating unit (i.e. Holyrood Unit).

[3] Outlines stakeholder communication process for major system events, identifying stakeholders such as GNL, PUB, Executive, and key customers.

[4] The request for NP's curtailable customers to engage in load curtailment would be made by Hydro at least 2 hours in advance of whenever Avalon reserves are expected to drop below 35 MW, or, immediately following a trip of a transmission line or generation unit that places the Avalon in a Stage 4 Power Emergency.

[5] Where desirable, utilities may undertake joint communications; however, each utility will communicate with its respective customers and key stakeholders directly according to its established protocols. At various times of the year (i.e. Summer, high maintenance period) an advisory may be preferable over an alert, as conservation may not be required. Also, in the event of an immediate loss of supply (unanticipated and unable to forecast) this protocol will eliminate Stages 1-3 and begin with Stage 4: this applies to both a generation and transmission issue. Exception may be an under frequency load trip that would result in a prompt power restoration.

[6] NP System Restoration Plan for Rotating Power Outages.

ELECTRICITY SYSTEM NOTIFICATIONS

POWER WATCH

- **No immediate** action required.
- Electricity system being **watched closely.**
- **Be prepared** to conserve electricity if asked.

POWER WARNING

- **Conserve electricity.**
- This is a **warning** that current day electricity supply is getting close to maximum demand.
- **Be prepared** for possible rotating power outages.

POWER EMERGENCY

- **Rotating power outages** in effect.
- **Conserve electricity.**
- **Safety** should remain your highest priority when utilizing alternate sources of power, heat or light in your homes.

Visit newfoundlandpower.com/SaveEnergy
or NLHydro.com for tips on how to conserve.

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