

1 Q. **Reference: Supply Cost Deferrals 2015, 2016 and 2017 Application Evidence,**
2 **Appendix B, Specific Examples of the Requirement for Standby Generation, page**
3 **14, lines 2-3.**

4

5 *“During this week, standby generation was required to support Island spinning*
6 *reserves and facilitate a planned outage to transmission line*
7 *TL 237 from September 26-29, 2016.”*

8

9 Please explain why, with transmission line TL237 out of service, Figure 17 indicates
10 that no standby units were required to be operated.

11

12

13 A. As indicated in the response to NP-NLH-030¹ of the October 2016 Application -
14 *Recovery of the 2015 and 2016 Balances*, Hydro developed a real-time Avalon
15 contingency reserve data point and corresponding graph for use by the ECC
16 operators when dispatching standby units. The assessment of Avalon contingency
17 reserves in this manner was based on a defined set of assumptions (i.e., all lines in
18 service, current Avalon generator availability and ambient temperature based on
19 the season) which would be considered a typical system configuration. Figure 17 of
20 Hydro’s current Application was also developed based on this defined set of
21 assumptions and would not have specifically considered TL237 out of service (refer
22 to Footnote 2 of NP-NLH-322, Attachment 1).

23

24 In advance of the TL237 outage however, Hydro performed additional analysis to
25 identify the system operating limits with this line out of service and the required

¹ Attached as NP-NLH-322, Attachment 1.

1 generation dispatch to position the Avalon system to withstand the next single
2 worst contingency. These operating limits were used by the ECC operators to
3 dispatch the Holyrood CT accordingly.

1 Q. Complete the following table with the hourly data for each of March 9, 2015; April
2 30, 2016; September 20, 2016; September 29, 2016; October 15, 2016; October 18,
3 2016; November 18, 2016; and November 26, 2016.

Time	HRD G1 (MW)	HRD G2 (MW)	HRD G3 (MW)	HRD GT (MW)	Island Reserve (MW)	Island Reserve (% of Peak)	Avalon Reserve (MW)	Avalon Reserve (% of Peak)
12:00 AM								
1:00 AM								
2:00 AM								
.								
.								
.								
11:00 PM								

4 A. Please refer to NP-NLH-030, Attachment 1 for the required data. Note that Hydro
5 has interpreted the “Reserve (% of Peak)” data request to mean the percentage of
6 the daily peak load (Island and Avalon). Hydro has also interpreted the “Reserve”
7 data request to mean the spinning or on-line reserves (in the case of the Island and
8 Avalon, respectively). The reserves indicated in the table include the contribution
9 from the Holyrood Gas Turbine (GT) when it is on-line.

10

11 The determination of on-line Avalon reserves in real time is not as readily
12 determined as Island spinning reserves, as it depends on a number of factors
13 including generator real and reactive power, the status of static and dynamic
14 reactive sources, the system configuration (e.g., transmission lines in and out of
15 service), and ambient temperatures, which impact transmission line ratings. As
16 indicated in Hydro’s response to NP-NLH-020, Hydro conducts daily reserve

1 assessments for the Avalon in which it utilizes a series of load flows with various
2 equipment in/out of service configurations to identify the levels of Avalon loading
3 or “thresholds” for which the system operators dispatch Avalon generation,
4 including standby sources, in order to withstand the next single worst contingency.
5 Transmission line thermal ratings as well as delivery point voltages are key
6 considerations when developing these thresholds. Generation is dispatched in
7 advance of the contingency in order to mitigate the potential of sustained
8 interruption to customers.

9

10 As a proxy, Hydro has developed a real-time Avalon contingency reserve data point
11 and corresponding graph for use by the Energy Control Center (ECC) operators
12 when dispatching standby units.¹ The calculation of Avalon contingency reserves in
13 this manner is based on a defined set of assumptions (i.e., all lines in service,
14 current Avalon generator availability and ambient temperature based on the
15 season). The Avalon reserves in NP-NLH-030 Attachment 1 are the pre-contingency
16 reserves determined using this pre-defined set of assumptions and would not be
17 reflective of transmission line outage configurations or varying temperatures.² The
18 daily assessments and standby generator dispatch guidelines issued to the ECC
19 operators do incorporate any changes in transmission system configuration and the
20 ambient temperature expectations.

¹ Commencing on January 8, 2016.

² For example, the Avalon reserves indicated on September 20 and 29, 2016 in the table would not have reflected the outage to transmission line TL237. The standby dispatch for those days were determined by load flow analysis and communicated to the ECC operators via a prescribed set of guidelines.

Table 1 - March 9, 2015

Time	Island					Avalon				
	HRD G1 (MW)	HRD G2 (MW)	HRD G3 (MW)	HRD GT (MW)	Reserve Spinning (MW)	Island Load (MW)	Island Reserve (% of Peak)	Reserve On-Line (MW)	Avalon Load (MW)	Avalon Reserve (% of Peak)
12:00 AM	69.9	70.4	89.2	0.0	427.0	1,173.9	29%	n/a	584.3	n/a
1:00 AM	69.4	70.9	89.2	0.0	386.0	1,137.7	26%	n/a	567.2	n/a
2:00 AM	69.9	70.9	89.2	0.0	382.3	1,125.7	26%	n/a	562.6	n/a
3:00 AM	69.9	70.9	89.2	0.0	374.9	1,132.5	25%	n/a	566.1	n/a
4:00 AM	69.9	70.9	89.2	39.9	543.3	1,093.6	36%	n/a	572.1	n/a
5:00 AM	69.9	70.4	89.7	39.9	470.7	1,161.7	32%	n/a	586.1	n/a
6:00 AM	69.4	70.9	89.2	39.9	464.7	1,241.0	31%	n/a	625.6	n/a
7:00 AM	96.1	98.9	97.7	39.9	435.6	1,389.5	29%	n/a	717.6	n/a
8:00 AM	128.3	129.3	129.7	39.9	336.6	1,492.6	23%	n/a	773.1	n/a
9:00 AM	129.3	130.7	130.7	0.0	279.7	1,437.6	19%	n/a	722.0	n/a
10:00 AM	112.0	112.4	109.4	0.0	326.9	1,396.5	22%	n/a	700.0	n/a
11:00 AM	99.4	100.8	97.2	0.0	369.3	1,352.3	25%	n/a	656.8	n/a
12:00 PM	89.5	90.9	88.2	0.0	394.6	1,333.0	26%	n/a	643.7	n/a
1:00 PM	69.9	72.1	87.9	0.0	438.9	1,297.2	29%	n/a	619.1	n/a
2:00 PM	69.9	71.3	87.6	0.0	465.3	1,268.5	31%	n/a	616.0	n/a
3:00 PM	69.9	71.3	87.6	0.0	488.2	1,241.2	33%	n/a	591.6	n/a
4:00 PM	69.4	71.3	87.6	0.0	485.8	1,244.7	33%	n/a	597.7	n/a
5:00 PM	69.9	70.9	87.1	0.0	449.0	1,278.4	30%	n/a	609.6	n/a
6:00 PM	70.4	71.3	87.6	0.0	456.2	1,293.2	31%	n/a	632.7	n/a
7:00 PM	99.8	100.3	100.4	0.0	379.5	1,352.8	25%	n/a	681.5	n/a
8:00 PM	119.5	120.4	121.2	0.0	296.1	1,426.4	20%	n/a	720.9	n/a
9:00 PM	119.5	120.4	121.2	0.0	263.1	1,431.5	18%	n/a	720.5	n/a
10:00 PM	119.5	120.4	121.7	0.0	278.5	1,406.2	19%	n/a	706.6	n/a
11:00 PM	109.2	111.0	108.4	0.0	346.8	1,332.8	23%	n/a	668.5	n/a

Comments:

The Holyrood GT was operated for Avalon reserve considerations. The original intent was to run the available end of Hardwoods which would sustain an Avalon load of up to 770 MW. Due to uncertainties in the load forecast the request was made to operate the HRD GT instead. The unit was started in advance of the peak and as the load barely materialized to the point where the HRD GT was required it was shut down immediately after the load peaked.

Table 2 - April 30, 2016

Time	Island					Avalon				
	HRD G1 (MW)	HRD G2 (MW)	HRD G3 (MW)	HRD GT (MW)	Island Reserve Spinning (MW)	Island Load (MW)	Island Reserve (% of Peak)	Avalon Reserve On-Line (MW)	Avalon Load (MW)	Avalon Reserve (% of Peak)
12:00 AM	38.8	70.2	(0.5)	0.0	303.1	993.4	28%	276.3	497.3	52%
1:00 AM	-	70.2	(0.5)	0.0	199.8	975.2	18%	169.9	489.0	32%
2:00 AM	-	70.6	(0.5)	0.0	208.0	969.5	19%	170.9	488.7	32%
3:00 AM	-	71.1	0.1	0.0	208.6	967.6	19%	168.9	490.6	32%
4:00 AM	-	70.6	(0.5)	0.0	203.6	972.3	19%	167.6	490.9	31%
5:00 AM	-	70.6	(0.5)	0.0	192.5	983.8	18%	158.6	500.6	30%
6:00 AM	-	90.7	(0.5)	0.0	184.4	994.4	17%	149.8	508.7	28%
7:00 AM	-	80.9	(0.5)	40.1	370.9	1,006.0	34%	274.2	506.5	51%
8:00 AM	-	80.4	(0.5)	40.4	264.0	1,039.4	24%	249.8	524.5	47%
9:00 AM	-	91.2	(0.5)	39.8	286.6	1,069.3	27%	236.5	533.2	44%
10:00 AM	-	90.7	(0.5)	40.1	265.7	1,080.0	25%	231.0	533.7	43%
11:00 AM	-	80.4	(0.5)	40.7	284.7	1,060.0	26%	239.1	522.6	45%
12:00 PM	-	80.4	(0.5)	40.2	299.5	1,041.4	28%	249.6	509.0	47%
1:00 PM	-	87.5	(0.5)	40.3	267.2	992.6	25%	269.9	484.7	51%
2:00 PM	-	100.5	(0.5)	0.0	178.4	947.6	17%	167.5	460.2	31%
3:00 PM	-	70.6	(0.5)	0.0	197.7	910.8	18%	193.0	437.0	36%
4:00 PM	-	70.6	(0.5)	0.0	210.7	900.6	20%	188.7	428.9	35%
5:00 PM	-	70.2	(0.5)	0.0	216.6	914.7	20%	181.0	440.1	34%
6:00 PM	-	69.7	(0.5)	0.0	222.7	905.9	21%	184.4	437.5	35%
7:00 PM	-	70.6	(0.5)	0.0	239.3	894.0	22%	193.0	432.4	36%
8:00 PM	-	70.2	(0.5)	0.0	210.8	911.4	20%	169.0	445.9	32%
9:00 PM	-	110.8	(0.5)	0.0	151.9	969.8	14%	127.2	477.9	24%
10:00 PM	-	109.0	(0.5)	0.0	218.4	968.0	20%	132.2	474.2	25%
11:00 PM	23.9	109.4	(0.5)	0.0	378.6	931.0	35%	266.9	459.8	50%

Comments:

The Holyrood GT was operated during the morning peak period for Island spinning and Avalon reserve considerations. Holyrood Unit 1 was taken out of service at 00:28 hours on April 30 for required maintenance and to repair an oil leak on the forced draft fan inboard bearing. Hydro's reserve assessments determined that the unit was not required for the evening peak period. The Holyrood thermal unit was restored later that evening at 22:09 hours.

Table 3 - September 20, 2016

Time	Island					Avalon				
	HRD G1 (MW)	HRD G2 (MW)	HRD G3 (MW)	HRD GT (MW)	Spinning (MW)	Island Load (MW)	Island Reserve (% of Peak)	Reserve On-Line (MW)	Avalon Load (MW)	Avalon Reserve (% of Peak)
12:00 AM	-	70.2	(0.5)	0.0	277.3	655.0	33%	349.9	289.5	85%
1:00 AM	-	70.6	(0.5)	0.0	216.4	600.8	26%	377.8	268.8	91%
2:00 AM	-	70.2	(0.5)	0.0	224.8	589.6	27%	376.6	263.6	91%
3:00 AM	-	70.6	(0.5)	0.0	234.3	577.0	28%	383.5	258.8	93%
4:00 AM	-	70.6	(0.5)	0.0	226.9	582.1	27%	378.2	260.4	92%
5:00 AM	-	70.2	(0.5)	0.0	198.9	608.6	24%	368.3	266.4	89%
6:00 AM	-	70.6	(0.5)	0.0	276.4	655.7	33%	337.5	295.8	82%
7:00 AM	-	70.2	(0.5)	0.0	172.0	771.5	20%	277.1	361.2	67%
8:00 AM	-	70.2	(0.5)	40.0	246.0	837.4	29%	369.6	392.5	89%
9:00 AM	-	70.6	(0.5)	39.9	236.8	841.5	28%	363.9	392.3	88%
10:00 AM	-	70.6	(0.5)	40.4	256.0	825.7	30%	364.9	393.8	88%
11:00 AM	-	70.6	(0.5)	39.4	246.9	828.5	29%	357.6	398.3	87%
12:00 PM	-	73.0	(0.5)	39.8	249.4	825.0	30%	358.8	395.5	87%
1:00 PM	-	73.4	(0.5)	41.2	281.1	800.5	33%	376.7	388.2	91%
2:00 PM	-	70.2	(0.5)	39.8	363.3	776.8	43%	365.3	379.1	88%
3:00 PM	-	70.2	(0.5)	39.9	380.3	767.8	45%	380.3	372.6	92%
4:00 PM	-	70.2	(0.5)	40.1	353.0	792.9	42%	357.1	384.6	86%
5:00 PM	-	70.2	(0.5)	40.4	314.6	831.8	37%	329.3	407.9	80%
6:00 PM	-	70.2	(0.5)	39.5	325.6	822.4	39%	338.4	413.0	82%
7:00 PM	-	70.6	(0.5)	39.0	320.2	817.9	38%	333.2	406.4	81%
8:00 PM	-	70.2	(0.5)	40.2	300.2	835.5	36%	324.1	411.4	78%
9:00 PM	-	70.6	(0.5)	40.3	322.9	815.2	38%	341.8	396.9	83%
10:00 PM	-	70.6	(0.5)	0.0	227.9	781.2	27%	250.1	365.5	61%
11:00 PM	-	70.2	(0.5)	0.0	303.8	698.3	36%	295.8	322.6	72%

Comments:

The Holyrood GT was operated to facilitate a planned outage to transmission line TL237. Hydro's reserve assessments determined that the unit was required in order to protect against the contingency of a loss of a Holyrood unit and to maintain the system within static and dynamic limits, post-contingency.

Table 4 - September 29, 2016

Time	Island					Avalon				
	HRD G1 (MW)	HRD G2 (MW)	HRD G3 (MW)	HRD GT (MW)	Reserve Spinning (MW)	Island Load (MW)	Island Reserve (% of Peak)	Reserve On-Line (MW)	Avalon Load (MW)	Avalon Reserve (% of Peak)
12:00 AM	-	73.0	(0.5)	0.0	307.8	681.6	32%	342.6	313.1	73%
1:00 AM	-	73.0	(0.5)	0.0	271.5	645.7	28%	364.7	292.9	78%
2:00 AM	-	73.0	(0.5)	0.0	273.6	640.4	28%	370.5	285.5	79%
3:00 AM	-	72.5	(0.5)	0.0	288.8	630.9	30%	373.2	284.9	80%
4:00 AM	-	73.0	(0.5)	0.0	272.3	646.8	28%	369.6	285.6	79%
5:00 AM	-	72.5	(0.5)	0.0	254.1	665.6	26%	361.5	292.5	77%
6:00 AM	-	73.0	0.1	0.0	205.1	715.9	21%	333.7	320.9	71%
7:00 AM	-	72.5	(0.5)	35.1	330.1	830.6	34%	382.2	389.0	82%
8:00 AM	-	73.0	(0.5)	41.0	261.3	909.6	27%	331.0	421.1	71%
9:00 AM	-	72.5	(0.5)	40.1	259.2	916.1	27%	328.7	423.9	70%
10:00 AM	-	73.0	(0.5)	40.1	261.9	915.4	27%	320.9	431.7	69%
11:00 AM	-	74.8	(0.5)	40.3	265.4	912.3	28%	312.4	441.1	67%
12:00 PM	-	76.2	(0.5)	39.9	247.6	928.2	26%	308.0	438.7	66%
1:00 PM	-	76.2	(0.5)	39.0	262.5	907.0	27%	307.8	436.0	66%
2:00 PM	-	76.2	(0.5)	40.0	261.2	905.6	27%	305.7	433.3	65%
3:00 PM	-	76.2	(0.5)	40.1	264.6	900.1	28%	302.7	434.2	65%
4:00 PM	-	79.0	(0.5)	39.2	246.6	922.9	26%	292.5	445.1	63%
5:00 PM	-	101.0	(0.5)	40.4	188.5	960.9	20%	271.0	467.3	58%
6:00 PM	-	110.4	(0.5)	40.0	207.5	941.8	22%	284.8	461.0	61%
7:00 PM	-	110.8	(0.5)	40.8	209.7	934.9	22%	285.0	454.9	61%
8:00 PM	-	110.4	(0.5)	39.6	212.6	933.1	22%	297.2	445.5	64%
9:00 PM	-	90.3	(0.5)	39.9	249.6	908.8	26%	331.1	430.1	71%
10:00 PM	-	71.1	(0.5)	40.9	311.9	853.6	32%	374.5	403.6	80%
11:00 PM	-	71.1	(0.5)	39.2	373.7	790.3	39%	420.5	369.7	90%

Comments:

The Holyrood GT was operated to facilitate a planned outage to transmission line TL237. Hydro's reserve assessments determined that the unit was required in order to protect against the contingency of a loss of a Holyrood unit and to maintain the system within static and dynamic limits, post-contingency.

Table 5 - October 15, 2016

Time	Island					Avalon				
	HRD G1 (MW)	HRD G2 (MW)	HRD G3 (MW)	HRD GT (MW)	Island Reserve Spinning (MW)	Island Load (MW)	Island Reserve (% of Peak)	Reserve On-Line (MW)	Avalon Load (MW)	Avalon Reserve (% of Peak)
12:00 AM	-	-	69.3	0.0	329.1	671.8	33%	311.2	294.5	62%
1:00 AM	-	-	69.8	0.0	373.4	632.9	38%	339.4	275.2	67%
2:00 AM	-	-	68.7	0.0	402.1	615.2	40%	362.1	260.9	72%
3:00 AM	-	-	69.8	0.0	405.6	610.5	41%	364.0	257.4	72%
4:00 AM	-	-	70.3	0.0	402.7	614.1	40%	363.1	258.5	72%
5:00 AM	-	-	69.3	0.0	387.6	628.8	39%	356.5	265.9	71%
6:00 AM	-	-	70.3	0.0	356.4	661.2	36%	345.5	283.3	68%
7:00 AM	-	-	70.3	0.0	309.9	708.6	31%	314.6	310.9	62%
8:00 AM	-	-	69.8	40.4	354.4	786.7	36%	388.4	354.3	77%
9:00 AM	-	-	69.8	40.3	274.4	865.5	28%	338.8	398.5	67%
10:00 AM	-	-	69.8	41.0	228.2	914.2	23%	319.8	428.0	63%
11:00 AM	-	-	69.8	39.5	219.8	930.7	22%	310.3	446.3	61%
12:00 PM	-	-	69.8	40.7	215.3	937.0	22%	302.2	454.1	60%
1:00 PM	-	-	69.3	38.8	229.2	919.3	23%	308.2	452.7	61%
2:00 PM	-	-	69.3	39.9	250.9	896.7	25%	312.6	447.9	62%
3:00 PM	-	31.8	69.8	39.7	428.8	881.0	43%	475.3	443.0	94%
4:00 PM	-	43.1	69.8	39.8	429.6	889.1	43%	466.7	450.8	92%
5:00 PM	-	70.6	69.8	0.0	332.3	927.5	33%	321.3	476.1	64%
6:00 PM	-	70.6	69.8	0.0	293.9	953.3	30%	299.6	491.6	59%
7:00 PM	-	71.1	70.9	0.0	242.1	994.5	24%	268.9	504.6	53%
8:00 PM	-	70.6	70.3	0.0	257.3	983.8	26%	282.0	493.4	56%
9:00 PM	-	70.6	70.3	0.0	277.1	967.5	28%	293.9	479.8	58%
10:00 PM	-	70.6	70.3	0.0	311.3	928.9	31%	319.9	454.9	63%
11:00 PM	-	70.6	69.8	0.0	354.7	877.9	36%	344.1	429.6	68%

Comments:

The Holyrood GT was operated for Island spinning reserve considerations during a planned outage to Holyrood Unit 2 for required maintenance. In addition, Bay d'Espoir Units 1 and 2 were out of service since September 14 due to issues with the common penstock. The HRD GT was operated through the morning peak hours on October 15 and shut during the afternoon when the Holyrood thermal unit was returned to service.

Table 6 - October 18, 2016

Time	Island					Avalon				
	HRD G1 (MW)	HRD G2 (MW)	HRD G3 (MW)	HRD GT (MW)	Island Reserve Spinning (MW)	Island Load (MW)	Island Reserve (% of Peak)	Reserve On-Line (MW)	Avalon Load (MW)	Avalon Reserve (% of Peak)
12:00 AM	-	70.2	70.3	0.0	295.5	729.8	28%	437.3	338.0	82%
1:00 AM	-	70.2	70.3	0.0	423.1	680.5	40%	457.1	314.3	86%
2:00 AM	-	69.2	69.3	0.0	363.6	668.5	34%	471.8	303.2	88%
3:00 AM	-	69.2	71.4	0.0	363.6	666.7	34%	476.6	305.3	89%
4:00 AM	-	69.7	69.8	0.0	362.3	669.5	34%	474.1	306.6	89%
5:00 AM	-	69.2	69.3	0.0	344.0	680.4	32%	458.2	313.1	86%
6:00 AM	-	69.7	69.8	0.0	369.3	738.4	35%	431.7	346.1	81%
7:00 AM	-	69.2	69.8	0.0	327.2	859.9	31%	357.2	417.8	67%
8:00 AM	-	69.2	70.3	0.0	234.8	952.2	22%	311.5	459.1	58%
9:00 AM	-	69.7	70.9	0.0	214.9	972.8	20%	308.2	464.4	58%
10:00 AM	-	69.7	70.9	0.0	209.2	976.3	20%	313.6	468.7	59%
11:00 AM	-	69.7	70.3	0.0	222.9	974.5	21%	313.9	465.7	59%
12:00 PM	-	152.0	70.3	0.0	204.2	973.6	19%	283.2	468.9	53%
1:00 PM	-	170.7	70.3	0.0	240.4	932.2	23%	292.0	462.8	55%
2:00 PM	-	146.4	70.3	0.0	274.5	919.5	26%	314.0	464.7	59%
3:00 PM	-	126.7	69.8	0.0	269.4	929.4	25%	301.3	471.4	56%
4:00 PM	-	81.8	69.3	0.0	220.3	976.1	21%	288.2	488.8	54%
5:00 PM	-	80.4	80.4	40.3	288.7	1,026.5	27%	367.9	521.8	69%
6:00 PM	-	80.4	81.0	39.8	277.2	1,035.9	26%	357.5	533.4	67%
7:00 PM	-	81.4	81.5	40.8	252.9	1,059.1	24%	360.2	534.1	67%
8:00 PM	-	81.4	81.0	39.9	257.7	1,033.9	24%	343.5	526.9	64%
9:00 PM	-	80.9	81.5	40.3	251.0	1,030.0	24%	350.5	514.7	66%
10:00 PM	-	81.4	81.5	39.6	302.3	979.6	29%	380.1	485.1	71%
11:00 PM	-	70.6	69.8	0.0	259.5	896.3	25%	314.4	434.2	59%

Comments:

The Holyrood GT was operated during the evening peak period for Island spinning reserve considerations. Bay d'Espoir Units 1 and 2 were out of service since September 14 due to issues with the common penstock and several other units were off for planned annual maintenance.

Table 7 - November 18, 2016

Time	Island				Avalon					
	HRD G1 (MW)	HRD G2 (MW)	HRD G3 (MW)	HRD GT (MW)	Reserve Spinning (MW)	Island Load (MW)	Island Reserve (% of Peak)	Reserve On-Line (MW)	Avalon Load (MW)	Avalon Reserve (% of Peak)
12:00 AM	69.7	-	72.5	0.0	316.4	669.3	34%	533.1	294.4	123%
1:00 AM	70.2	-	71.9	0.0	358.4	626.7	39%	556.5	269.8	128%
2:00 AM	70.2	-	74.1	0.0	307.3	608.6	33%	558.0	259.7	128%
3:00 AM	69.7	-	70.9	0.0	309.1	602.4	33%	557.2	255.2	128%
4:00 AM	70.2	-	73.0	0.0	307.0	604.8	33%	567.2	253.9	131%
5:00 AM	69.7	-	72.5	0.0	291.8	616.9	31%	552.5	263.6	127%
6:00 AM	69.7	-	71.9	0.0	251.7	657.5	27%	530.8	287.4	122%
7:00 AM	70.2	-	73.5	0.1	364.7	766.4	39%	459.3	350.6	106%
8:00 AM	70.2	-	72.5	0.1	275.1	840.2	30%	409.7	386.8	94%
9:00 AM	70.2	-	73.0	0.1	310.3	846.8	33%	401.2	386.5	92%
10:00 AM	69.7	-	73.0	0.2	300.4	858.8	32%	393.3	387.9	91%
11:00 AM	70.2	-	72.5	38.6	430.0	851.8	46%	505.6	392.3	116%
12:00 PM	70.2	-	73.0	40.8	406.1	877.4	44%	528.0	393.0	122%
1:00 PM	68.8	-	72.5	40.0	419.0	863.3	45%	535.0	387.0	123%
2:00 PM	68.8	-	73.0	40.2	438.8	847.7	47%	539.2	381.9	124%
3:00 PM	69.2	-	72.5	40.1	457.5	827.7	49%	539.2	382.3	124%
4:00 PM	68.8	-	73.0	41.2	416.9	872.3	45%	523.9	399.1	121%
5:00 PM	68.8	-	72.5	44.5	436.1	930.6	47%	466.2	434.4	107%
6:00 PM	68.8	-	69.3	0.0	320.0	930.3	34%	357.8	431.6	82%
7:00 PM	68.8	-	69.8	0.0	332.1	902.9	36%	366.9	413.6	84%
8:00 PM	68.8	-	69.3	0.0	357.3	878.3	38%	376.5	401.8	87%
9:00 PM	68.8	-	69.8	0.0	334.1	860.2	36%	388.9	390.1	90%
10:00 PM	68.8	-	69.8	0.0	379.7	817.8	41%	413.8	369.0	95%
11:00 PM	68.8	-	69.8	0.0	354.9	767.0	38%	445.6	342.7	103%

Comments:

The Holyrood GT was operated during the day to facilitate a planned outage to disconnect B3B4-1 at the Bay d'Espoir terminal station No. 1 for required maintenance. This required that BDE Units 5 and 6 be taken out of service and the 230 kV bus at BDE TS1 was split for the duration of the outage. With the bus split at BDE TS1 in this manner, another contingency requiring the operation of a bus breaker for isolation could result in a significant loss of BDE generation. To help position the system for this contingency (i.e. to increase spinning reserves using units other than those at Bay d'Espoir) Hydro operated the Holyrood GT. The HRD GT was shut when the 230 kV bus was restored to its normal configuration.

Table 8 - November 26, 2016

Time	Island										Avalon		
	HRD G1 (MW)	HRD G2 (MW)	HRD G3 (MW)	HRD GT (MW)	Reserve Spinning (MW)	Island Load (MW)	Island Reserve (% of Peak)	Reserve On-Line (MW)	Avalon Load (MW)	Avalon Reserve (% of Peak)			
12:00 AM	69.7	70.6	67.7	0.0	380.9	1,017.2	30%	430.2	512.7	65%			
1:00 AM	69.7	70.6	69.3	0.0	420.7	978.0	33%	458.4	488.9	69%			
2:00 AM	70.2	70.2	69.8	0.0	441.4	959.7	34%	469.6	479.2	71%			
3:00 AM	69.7	70.6	70.3	0.0	477.9	930.3	37%	475.3	475.5	72%			
4:00 AM	69.7	70.6	69.8	0.0	459.1	941.9	36%	468.9	481.4	71%			
5:00 AM	69.7	70.6	69.3	0.0	446.6	954.3	35%	460.8	487.9	70%			
6:00 AM	70.0	70.6	69.3	0.0	397.3	1,003.2	31%	440.7	503.9	67%			
7:00 AM	80.0	80.4	77.3	0.0	339.4	1,060.0	26%	401.5	538.0	61%			
8:00 AM	95.4	97.3	97.0	0.0	271.7	1,127.5	21%	354.2	573.4	53%			
9:00 AM	120.2	121.1	116.1	0.0	202.7	1,195.9	16%	304.6	609.7	46%			
10:00 AM	120.2	120.6	120.4	0.0	175.5	1,223.2	14%	289.6	624.4	44%			
11:00 AM	120.2	121.6	120.4	0.0	174.8	1,223.9	14%	288.4	625.1	44%			
12:00 PM	119.7	122.0	119.3	0.0	177.6	1,219.9	14%	290.4	621.6	44%			
1:00 PM	120.2	121.6	119.3	0.0	211.4	1,195.4	16%	311.0	613.0	47%			
2:00 PM	119.7	121.6	120.4	0.0	230.7	1,178.4	18%	319.4	609.6	48%			
3:00 PM	120.2	121.6	120.4	0.0	252.6	1,158.6	20%	325.4	605.4	49%			
4:00 PM	119.7	121.6	120.4	40.1	331.3	1,204.1	26%	427.6	618.2	65%			
5:00 PM	119.7	122.5	120.9	39.9	259.8	1,286.9	20%	386.1	662.2	58%			
6:00 PM	119.7	121.1	120.9	40.2	358.6	1,271.9	28%	394.1	657.9	60%			
7:00 PM	109.9	110.8	109.2	0.0	257.3	1,251.1	20%	297.0	639.6	45%			
8:00 PM	109.9	110.8	107.6	0.0	283.6	1,227.3	22%	314.0	627.1	47%			
9:00 PM	100.1	84.2	99.6	0.0	311.5	1,202.8	24%	338.4	613.2	51%			
10:00 PM	88.9	70.6	90.6	0.0	346.5	1,162.5	27%	364.7	589.6	55%			
11:00 PM	69.7	70.6	69.8	0.0	410.7	1,102.0	32%	411.7	552.1	62%			

Comments:

The Holyrood GT was operated during the evening peak period for Island spinning reserve considerations. Bay d'Espoir Units 1 and 2 were out of service since September 14 due to issues with the common penstock and several other units were off for planned annual maintenance. The Upper Salmon unit was taken out of service earlier in the week for an inspection and planned to be returned to service later in the evening. The HRD GT was shut following the return to service of the USL unit.