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NEWFOUNDLAND POWER
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October 24, 2017

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

Attention: G. Cheryl Blundon
Director of Corporate Services
and Board Secretary

Ladies and Gentlemen:

Re: Newfoundland and Labrador Hydro – Application for Recovery of the 2015 and 2016 Balances in the Isolated Systems Supply Cost Variance Deferral Account, the Energy Supply Cost Variance Deferral Account and the Holyrood Conversion Rate Deferral Account

Please find enclosed the original and 9 copies of Newfoundland Power's Requests for Information NP-NLH-001 to NP-NLH-039 in relation to the above noted Application.

For convenience, the Requests for Information are provided on three-hole punched paper.

A copy of this letter, together with enclosures, has been forwarded directly to the parties listed below.

If you have any questions regarding the enclosed, please contact the undersigned at your convenience.

Yours very truly,

Gerard Hayes
Senior Counsel

Enclosures

c. Tracey Pennell
Newfoundland and Labrador Hydro

PaulCoxworthy
Stewart McKelvey

Larry Bartlett
Teck Resources Ltd.

Dennis Browne, QC
Browne Fitzgerald Morgan Avis

Sheryl Nisenbaum
Praxair Canada Inc.

Newfoundland Power Inc.
55 Kenmount Road • P.O. Box 8910 • St. John's, NL A1B 3P6
PHONE (709) 737-5609 • FAX (709) 737-2974 • **ghayes@newfoundlandpower.com**

N THE MATTER OF the Electrical Power Control Act 1994, RSNL 1994, Chapter E-5.1 (the EPCA) and the Public Utilities Act, RSNL 1990, Chapter P-47 (the Act), and regulations thereunder;

IN THE MATTER OF an Application by Newfoundland and Labrador Hydro for the recovery of the balances in: i) the Isolated Systems Supply Cost Variance Deferral Account; ii) the Energy Supply Cost Variance Deferral Account; and iii) the Holyrood Conversion Rate Deferral Account, pursuant to Sections 70(1) and 80 of the Act.

Requests for Information by
Newfoundland Power Inc.

NP-NLH-001 to NP-NLH-039

October 24, 2017

Requests for Information

NP-NLH-001 Reference: Hydro's *2017 General Rate Application (2nd Revision)*, Chapter 1: Corporate Overview, Page 1.13. Hydro states that:

"*Key aspects of the new organizational structure include…a Production division, encompassing Hydro Generation, the Holyrood Thermal Generating Station, Hydro's fleet of gas turbines and diesels, and Exploits Generation, as well as Resource and Production Planning.*"

Please confirm that Hydro's management is responsible for the operation of Exploits Generation.

NP-NLH-002 Reference: Hydro's *2015 & 2016 Supply Cost Recovery Application Evidence, October 11, 2017*, Page 6. Hydro states that:

"*The decreased power purchases from Nalcor Exploits were primarily due to operational issues experienced at Exploits in 2015.*"

Please describe in detail each of the operational issues experienced at Nalcor Exploits in 2015, and whether and for what reason each of these operational issues were outside the control of management.

NP-NLH-003 Reference: Hydro's *2016 Standby Fuel Deferral Application, February 5, 2016*, Page 3, Chart 1.

Please explain what Hydro's "minimum storage target" represents and describe in detail how Hydro manages energy production, and in particular thermal production, to ensure reservoir levels do not fall below minimum targets or exceed levels that may cause spill to occur.

NP-NLH-004 Reference: Hydro's *2016 Standby Fuel Deferral Application, February 5, 2016*, response to Request for Information NP-NLH-003. Hydro states:

"*…Hydro uses guidance from the results of the Vista Decision Support System which provides recommended hydro and thermal generation schedules using simulations of all historic inflow scenarios. In addition, other factors are taken into consideration such as: weather and load forecasts, snow pack, distribution of the storage within the reservoir system, and the available thermal capacity.*"

Please describe the process whereby the Vista Decision Support System ("Vista") determines whether additional thermal production is required to support hydraulic reservoir levels and indicate if there are circumstances when management intervention in the process occurs.

NP-NLH-005 Reference: Hydro's *2016 Standby Fuel Deferral Application, February 5, 2016*, response to Request for Information NP-NLH-003. Hydro states:

"*…Hydro uses guidance from the results of the Vista Decision Support System which provides recommended hydro and thermal generation schedules using simulations of all historic inflow scenarios. In addition, other factors are taken into consideration such as: weather and load forecasts, snow pack, distribution of the storage within the reservoir system, and the available thermal capacity.*"

Please describe each instance when managerial decisions overrode Vista recommendations in 2015 and 2016.

NP-NLH-006 Reference: Hydro's *2016 Standby Fuel Deferral Application, February 5, 2016*, response to Request for Information NP-NLH-003. Hydro states:

"*…Hydro uses guidance from the results of the Vista Decision Support System which provides recommended hydro and thermal generation schedules using simulations of all historic inflow scenarios. In addition, other factors are taken into consideration such as: weather and load forecasts, snow pack, distribution of the storage within the reservoir system, and the available thermal capacity.*"

Did Hydro continue to use thermal and standby generation to support reservoir levels once Vista indicated it was no longer necessary to do so? If so, please indicate how much energy from thermal and standby generation sources was used for this purpose in each instance after Vista recommended it was no longer required.

NP-NLH-007 Reference: Hydro's *2016 Standby Fuel Deferral Application, February 5, 2016*, Page 1. Hydro states:

"As a result of the fourth lowest inflows in 65 years, Hydro has proactively increased its level of thermal production."

Please provide a table showing (i) instances where Hydro proactively increased its level of thermal production for hydraulic reservoir support and (ii) the amount of increased thermal production, in GWh, that was produced in each instance.

NP-NLH-008 Please provide a table listing all incidents where Hydro spilled water at each of its reservoirs in 2016 including (i) the dates of each separate incident, (ii) the reservoir, (iii) the amount of spill stated in terms of GWh of lost production, and (iv) the reason for the spill.

NP-NLH-009 For each instance listed in the response to Request for Information NP-NLH-008, please provide evidence to indicate whether the additional thermal production for hydraulic reservoir support contributed to the amount of spill.

NP-NLH-010 Did Hydro purchase energy from Non-Utility Generators at times when it was spilling water in 2016? If so, please provide a table showing (i) when such purchases occurred, (ii) the amounts of energy purchased during the period of each purchase, and (iii) the cost of each purchase.

NP-NLH-011 Reference: Hydro's *2015 & 2016 Supply Cost Recovery Application Evidence, October 11, 2017*, Page 8. Hydro states:

"*As a result of these unit outages, the production at the Holyrood GT was increased to maintain Avalon reserves as well as provide hydraulic reservoir support.*"

Please provide a revised Table 6 – Holyrood Gas Turbine 2016 Operating Data to include actual starts and operating hours associated with hydraulic reservoir support.

NP-NLH-012 Reference: Hydro's *Bi-weekly Energy Supply Report For the Island Interconnected System for the Period Ending February 25, 2016*, Page 2, Figure 1.

Similar to Figure 1 – Total System Energy Storage, please provide a plot of reservoir levels that includes the following:

(i) 2016 actual energy storage,
(ii) 2016 actual energy storage less energy provided by thermal and standby generation sources to support reservoir levels,
(iii) Maximum Operating Level, and
(iv) Minimum Operating Level.

NP-NLH-013 Reference: Hydro's *2016 Standby Fuel Deferral Application, February 5, 2016*, response to Request for Information NP-NLH-010. Hydro states:

"*To demonstrate that the fuel costs associated with the operation of Standby Generation were prudently incurred, at the end of each quarter, Hydro will provide a daily account of the generating units start and end times, durations and reason(s) for operation. Hydro will also provide a monthly summary of energy by unit, fuel consumption and cost. To demonstrate the operation of Standby Generation for low hydrology, Hydro also proposes to provide its weekly generation guidelines.*"

Please provide the information outlined above for 2015 and 2016.

NP-NLH-014 Reference: Hydro's *2015 & 2016 Supply Cost Recovery Application Evidence, October 11, 2017*, Page 1. Hydro states:

"*In Order No. P.U. 49 (2016) (the GRA Order), the Board of Commissioners of Public Utilities (the Board) approved three new supply cost deferral accounts to become effective January 1, 2015: the Isolated Systems Supply Cost Variance Deferral Account (Isolated Systems Deferral); the Energy Supply Cost Variance Deferral Account (Energy Supply Deferral); and the Holyrood Conversion Rate Deferral Account (Holyrood Conversion Deferral).*"

Please provide a table detailing the 2015 deferral account activity by month for the Energy Supply Deferral.

NP-NLH-015 Reference: Hydro's *2015 & 2016 Supply Cost Recovery Application Evidence, October 11, 2017*, Page 1. Hydro states:

"*In Order No. P.U. 49 (2016) (the GRA Order), the Board of Commissioners of Public Utilities (the Board) approved three new supply cost deferral accounts to become effective January 1, 2015: the Isolated Systems Supply Cost Variance Deferral Account (Isolated Systems Deferral); the Energy Supply Cost Variance Deferral Account (Energy Supply Deferral); and the Holyrood Conversion Rate Deferral Account (Holyrood Conversion Deferral).*"

Please provide a table detailing the 2016 deferral account activity by month for the Energy Supply Deferral.

NP-NLH-016 Reference: Hydro's *2015 & 2016 Supply Cost Recovery Application Evidence, October 11, 2017*, Schedule 1, Appendix F & G.

For each of 2015 and 2016, please provide the average fuel cost, in ¢/kWh, for operating each of (i) the Holyrood thermal generating station, (ii) the Holyrood GT, (iii) the Hardwoods gas turbine, and (iv) the Stephenville gas turbine.

NP-NLH-017 Reference: Hydro's *2015 & 2016 Supply Cost Recovery Application Evidence, October 11, 2017*, Page 5, Table 4.

In Table 4, Hydro indicates that in 2015, the Holyrood GT was operated for spinning reserve 28 times for a total of 205.5 actual operating hours. Please provide the total cost of fuel consumed, and cost of overtime incurred in operating the Holyrood GT in 2015 for spinning reserve.

NP-NLH-018 Reference: Hydro's *2015 & 2016 Supply Cost Recovery Application Evidence, October 11, 2017*, Page 7, Table 6.

In Table 6, Hydro indicates that in 2016, the Holyrood GT was operated for spinning reserve 35 times for a total of 238.6 actual operating hours. Please provide the total cost of fuel consumed, and cost of overtime incurred in operating the Holyrood GT in 2016 for spinning reserve.

NP-NLH-019 Reference: Hydro's *2018 Capital Budget Application*, responses to Requests for Information NP-NLH-004 and NP-NLH-005.

In the response to Request for Information NP-NLH-005, the evidence was that there were 36.4 equivalent starts in 2015 and 70.2 equivalent starts in 2016 associated with using the Holyrood GT for spinning reserve. Also, in the response to Request for Information NP-NLH-004, the capital cost associated with each equivalent start was indicated to be $33,000. Please confirm that the capital cost associated with using the Holyrood GT in support of spinning reserve was approximately $1.2 million in 2015 and $2.3 million in 2016.

NP-NLH-020 Reference: Hydro's *2016 Standby Fuel Deferral Application*, response to Request for Information CA-NLH-006.

Please provide a table, in the form provided in the response to Request for Information CA-NLH-006, providing the derating history for Holyrood Units 1, 2, and 3 for 2015 and 2016.

NP-NLH-021 Reference: The *Electrical Power Control Act, 1994*, Section 3(b).

Please describe in detail how the operation of Hydro's gas turbines at minimum load is consistent with the *most efficient production* of power as set out in the *Electrical Power Control Act, 1994*.

NP-NLH-022 Please provide the criteria that guides Hydro's operation of thermal generation, including emergency and standby generation, in support of the Island and Avalon reserve requirements.

NP-NLH-023 Please explain how Hydro differentiates between spinning reserve and non-spinning reserve in meeting its generation reserve criteria.

NP-NLH-024 For the years 2007-2016, please provide a table showing (i) each under frequency load shedding event, (ii) the cause of each under frequency load shedding event, (iii) the amount of load shed, (iii) whether the Holyrood GT was operating at the time, (iv) and the amount of Island and Avalon generation reserves at the time of the under frequency load shedding event.

NP-NLH-025 Please provide a detailed explanation of whether or not Hydro operates its emergency and standby generation to avoid under frequency load shedding events.

NP-NLH-026 Reference: Hydro's *2015 & 2016 Supply Cost Recovery Application Evidence, October 11, 2017*, Page 6. Hydro states:

"*…the use of the Holyrood GT in 2015 was in support of spinning reserves and to provide generation during the loss of a major generating unit, and also required to reliably facilitate planned generation and transmission outages.*"

Did Hydro make any changes to its approach to using emergency and standby generation for *spinning reserves* over the 2015–2017 period? If so, please describe the changes and why they were made.

NP-NLH-027 Reference: Hydro's *2015 & 2016 Supply Cost Recovery Application Evidence, October 11, 2017*, Page 6. Hydro states:

"*…the use of the Holyrood GT in 2015 was in support of spinning reserves and to provide generation during the loss of a major generating unit, and also required to reliably facilitate planned generation and transmission outages.*"

Did Hydro utilize the Holyrood GT to provide spinning reserve during 230kV transmission line outages in 2015 and 2016? If so, for each occurrence please provide (i) the duration the Holyrood GT was used, (ii) the average loading of the Holyrood GT, and (iii) the cost of fuel consumed.

NP-NLH-028 Reference: Hydro's *2015 & 2016 Supply Cost Recovery Application Evidence, October 11, 2017*, Page 6. Hydro states:

"*…the use of the Holyrood GT in 2015 was in support of spinning reserves and to provide generation during the loss of a major generating unit, and also required to reliably facilitate planned generation and transmission outages.*"

Has Hydro evaluated the costs and benefits of utilizing the Holyrood GT as non-spinning reserve vs. spinning reserve? If so, please provide the evaluation. If not, why not?

NP-NLH-029 Reference: Hydro's *Application for Approval of the Procurement and Installation of a Combustion Turbine at Holyrood*, April 10, 2014, response to Request for Information GT-NP-NLH-007.

Hydro indicated the anticipated time to start the Holyrood GT and place the unit online is in the range of 40 minutes (20 minutes to start the gas turbine and 20 minutes to load the unit to 100 MW) when start-up power is provided by the Island grid. What has the experience been since the unit was commissioned?

NP-NLH-030 Complete the following table with the hourly data for each of March 9, 2015; April 30, 2016; September 20, 2016; September 29, 2016; October 15, 2016; October 18, 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								

NP-NLH-031 For each date specified in NP-NLH-030, please explain why the Holyrood generators, including the thermal units and the gas turbine, were operated at the loads recorded on that day.

NP-NLH-032 Please provide and explain the dollar impact of the operation of the Holyrood generators on November 26, 2016 on the RSP, the Holyrood Conversion Deferral and the Energy Supply Deferral.

NP-NLH-033 If all of the energy produced by the Holyrood GT on November 26, 2016 had been produced by Holyrood Units 1, 2, and 3, what would the dollar impact have been on the operation of the RSP, the Holyrood Conversion Deferral and the Energy Supply Deferral?

NP-NLH-034 Reference: Hydro's *2015 & 2016 Supply Cost Recovery Application Evidence, October 11, 2017*, Page 1. Hydro states:

"*In Order No. P.U. 49 (2016) (the GRA Order), the Board of Commissioners of Public Utilities (the Board) approved three new supply cost deferral accounts to become effective January 1, 2015: the Isolated Systems Supply Cost Variance Deferral Account (Isolated Systems Deferral); the Energy Supply Cost Variance Deferral Account (Energy Supply Deferral); and the Holyrood Conversion Rate Deferral Account (Holyrood Conversion Deferral).*"

Please provide a table detailing the 2015 deferral account activity by month for the Holyrood Conversion Deferral.

NP-NLH-035 Reference: Hydro's *2015 & 2016 Supply Cost Recovery Application Evidence, October 11, 2017*, Page 1. Hydro states:

"*In Order No. P.U. 49 (2016) (the GRA Order), the Board of Commissioners of Public Utilities (the Board) approved three new supply cost deferral accounts to become effective January 1, 2015: the Isolated Systems Supply Cost Variance Deferral Account (Isolated Systems Deferral); the Energy Supply Cost Variance Deferral Account (Energy Supply Deferral); and the Holyrood Conversion Rate Deferral Account (Holyrood Conversion Deferral).*"

Please provide a table detailing the 2016 deferral account activity by month for the Holyrood Conversion Deferral.

NP-NLH-036 Reference: Hydro's *2015 & 2016 Supply Cost Recovery Application Evidence, October 11, 2017*, Page 9. Hydro states:

"*The Holyrood TGS conversion rate can be affected by unit loading and fuel BTU content*."

Please provide a curve of conversion rate versus unit loading for each of the 3 thermal units assuming fuel BTU content that meets Hydro's standard fuel specification.

NP-NLH-037 Reference: Hydro's *2015 & 2016 Supply Cost Recovery Application Evidence, October 11, 2017*, Page 10. Hydro states:

"*…No. 6 fuel deliveries in 2015 and 2016 contained a lower average BTU content than what was forecast in the 2015 Test Year. This lower BTU content contributed to the lower actual conversion rates in both 2015 and 2016. As a result of the actual BTU variance, Hydro received a discount on its purchase of No. 6 fuel which was passed on to customers through the RSP*."

Provide evidence, including calculations, showing the extent to which the discount on the purchase of lower BTU content No. 6 fuel offsets the financial impact of the lower BTU content on the Holyrood Conversion Deferral.

NP-NLH-038 Reference: Hydro's *2015 & 2016 Supply Cost Recovery Application Evidence, October 11, 2017*, Page 15. Hydro states:

"*The RSP Hydraulic Variation Account has a credit balance of approximately $28.7 million as at August 31, 2017. A copy of the August 2017 RSP Report is included as Schedule 2 to this evidence.*"

Please provide Hydro's RSP Report for September 30, 2017.

NP-NLH-039 Reference: Hydro's *2015 & 2016 Supply Cost Recovery Application Evidence, October 11, 2017*, Page 17. Hydro states:

"*In addition, Hydro's proposal is consistent with past practice of the Board as noted in Board Order No. P.U. 8(2007).*"

Please explain why Hydro has not proposed a transfer *from* the RSP hydraulic balance, as approved in Order No. P.U. 8 (2007).

RESPECTFULLY SUBMITTED at St. John's, Newfoundland and Labrador, this 24th day of October, 2017.

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