



NEWFOUNDLAND AND LABRADOR  
**BOARD OF COMMISSIONERS OF PUBLIC UTILITIES**  
120 Torbay Road, P.O. Box 21040, St. John's, Newfoundland and Labrador, Canada, A1A 5B2

2015-03-03

**ELECTRONIC DISTRIBUTION**

Mr. Geoff Young  
Newfoundland and Labrador Hydro  
P. O. Box 12400  
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St. John's, NL A1B 4K7  
E-mail: gyoung@nlh.nl.ca


Dear Sir:

**Re: Newfoundland and Labrador Hydro – Amended General Rate Application – Prudence Review – Requests for Information**

Enclosed are Information Requests PR-PUB-NLH-1 to PR-PUB-NLH-47 regarding the above-noted application. The deadline for filing the responses to the Requests for Information is Monday, March 16, 2015.

If you have any questions, please do not hesitate to contact the Board's Legal Counsel, Ms. Jacqui Glynn, by email, jglynn@pub.nl.ca or by telephone, 709-726-6781.

Yours truly,

  
Cheryl Blundon  
Board Secretary  
/bds  
Encl.

cc. **Newfoundland & Labrador Hydro**  
Mr. Fred Cass, E-mail: fcass@airdberlis.com

**Consumer Advocate**

Mr. Thomas Johnson, E-mail: tjohnson@odeaearte.ca  
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**Vale Newfoundland and Labrador Limited**

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**Grand Riverkeeper\* Labrador Inc.**

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**Newfoundland Power Inc.**

Mr. Gerard Hayes, E-mail: ghayes@newfoundlandpower.com  
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**Island Industrial Customer Group**

Mr. Paul Coxworthy, E-mail: pcoxworthy@stewartmckelvey.com  
Mr. Dean Porter, E-mail: dporter@pa-law.ca

**Towns of Labrador City, Wabush, Happy Valley-Goose Bay and North West River**

Mr. Edward Hearn, QC, E-mail: miller&hearn@crstv.net

**Yvonne Jones MP, Labrador**

Ms. Yvonne Jones, MP Labrador, E-mail: Yvonne.Jones.A1@parl.gc.ca  
Yvonne.Jones.C1@parl.gc.ca

**Mr. Danny Dumaresque**

Mr. Danny Dumaresque, E-mail: danny.liberal@gmail.com  
Mr. William Kennedy, E-mail: wkennedy@kennedylawoffice.ca

**Sierra Club Canada**

Mr. Fred Winsor, E-mail: winsorf@nl.rogers.com

1 **IN THE MATTER OF** the *Electrical Power*  
2 *Control Act, 1994*, SNL 1994, Chapter E-5.1 (the  
3 "*EPCA*") and the *Public Utilities Act*, RSNL 1990,  
4 Chapter P-47 (the "*Act*"), as amended, and regulations  
5 thereunder; and

6  
7 **IN THE MATTER OF** a general rate application  
8 filed by Newfoundland and Labrador Hydro on  
9 July 30, 2013; and

10  
11 **IN THE MATTER OF** an amended general rate  
12 application filed by Newfoundland and Labrador  
13 Hydro on November 10, 2014; and

14  
15 **IN THE MATTER OF** a prudence review relating to  
16 certain actions and costs of Newfoundland and Labrador Hydro.

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**PUBLIC UTILITIES BOARD  
REQUESTS FOR INFORMATION**

**PR-PUB-NLH-1 to PR-PUB-NLH-47**

**Issued: March 3, 2015**

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- 1 **PR-PUB-NLH-001** Black Start: Please provide all Hydro documents that establish or describe  
2 objectives and standards with respect to black start at the Holyrood Plant.  
3
- 4 **PR-PUB-NLH-002** Black Start: Please provide any studies conducted on the feasibility and  
5 cost-effectiveness of repairing/refurbishing the Holyrood black start GT  
6 after AMEC's condition assessment.  
7
- 8 **PR-PUB-NLH-003** Black Start: Please confirm that Hydro lacked black start capability at the  
9 Holyrood Plant in the winters 2011-2012, 2012-2013 and 2013-2014.  
10
- 11 **PR-PUB-NLH-004** Black Start: With the completion of the new Holyrood CT, black start was  
12 to be provided by that new unit and the 8 leased diesels returned. Please  
13 describe the physical work associated with this transition. When will this  
14 transition (or did this transition) take place? Please explain the reasons for  
15 any delays experienced in making the transition.  
16
- 17 **PR-PUB-NLH-005** New Combustion Turbine: Please provide the orders, decisions, and other  
18 documents arising from or in response to the Board within the past ten  
19 years that set forth or describe the supply planning criteria to which Hydro  
20 has been expected by the Board or stakeholders to design and operate the  
21 Island Interconnected System and any such documents prior to ten years  
22 that Hydro believes continue to bear on such expectations and criteria  
23 through to the present.  
24
- 25 **PR-PUB-NLH-006** New Combustion Turbine: In 2013, the Industrial Customers suggested  
26 that Hydro consider acceleration of the then-planned 50-60 MW CT in  
27 order to supply black start capability at Holyrood. Did Hydro consider this  
28 option and, if so, please provide any analyses performed?  
29
- 30 **PR-PUB-NLH-007** New Combustion Turbine: Please provide all generation planning studies,  
31 if any, including load forecasts, prepared after the 2012 Generation  
32 Planning Issues Report and before December 31, 2013.  
33
- 34 **PR-PUB-NLH-008** New Combustion Turbine: Progress reports on the new CT indicate that  
35 labor hours are more than 50% higher than planned. In addition,  
36 considerable overtime became necessary to maintain the schedule.  
37 However, costs are reported as below plan. Please explain this potential  
38 inconsistency.  
39
- 40 **PR-PUB-NLH-009** Restoration of Holyrood Unit 1: In the January 2013 Holyrood Unit 1  
41 incident, the restart of the secondary source of lube oil upon startup of the  
42 emergency diesel-generator caused several local fires. Does Hydro have  
43 any procedures or training that alerts operators to the danger of a restart  
44 when bearings have become overheated? If so, please provide them.

- 1 **PR-PUB-NLH-010** Restoration of Holyrood Unit 1: Please state whether there are any  
2 continuing issues with the Holyrood Unit 1 turbine-generator that may  
3 have resulted from the damages of January 2013 and whether the vibration  
4 issue that persisted through 2013 and into 2014 has been eliminated.  
5
- 6 **PR-PUB-NLH-011** Capacity Related Supply Costs: Regarding the added supply costs  
7 encountered by Hydro in the first quarter of 2014 as a result of a supply  
8 shortage, costs were incurred in January after the early January supply  
9 emergency and costs were also incurred in February and March. Please  
10 explain the nature and reasons for these post-emergency added costs.  
11
- 12 **PR-PUB-NLH-012** Holyrood Unit 3 Forced Draft Fan Motors: Please provide any analyses  
13 conducted, through 2013, on the need for spare motors at the Holyrood  
14 Plant.  
15
- 16 **PR-PUB-NLH-013** Holyrood Unit 3 Forced Draft Fan Motors: Please provide the 2014  
17 analysis that resulted in the approval to purchase four spare motors at the  
18 Holyrood Plant.  
19
- 20 **PR-PUB-NLH-014** Black Tickle Diesel Plant: Please provide Hydro's policy on fire  
21 suppression systems at its remote diesel plants and provide any supporting  
22 documentation.  
23
- 24 **PR-PUB-NLH-015** Black Tickle Diesel Plant: Please describe and explain under what  
25 circumstances Hydro would not provide a fire suppression system at a  
26 remote diesel plant, to what extent such circumstances were present in the  
27 past at Black Tickle and the decision-making process and associated  
28 required approvals.  
29
- 30 **PR-PUB-NLH-016** Black Tickle Diesel Plant: Please provide the actual load on the Black  
31 Tickle system in 2013 and 2014 and the forecast of load in the future.  
32
- 33 **PR-PUB-NLH-017** Black Tickle Diesel Plant: Hydro has estimated the loss of load  
34 attributable to the closing of the Black Tickle fish plant. Please describe to  
35 what extent Hydro also estimated further reductions due to people leaving  
36 the community and whether people leaving the community resulted in  
37 further load reductions.  
38
- 39 **PR-PUB-NLH-018** Black Tickle Diesel Plant: Please provide all analyses performed of the  
40 risks of delay due to the securing of materials and equipment required to  
41 address the consequences of the Black Tickle diesel plant fire.  
42
- 43 **PR-PUB-NLH-019** Black Tickle Diesel Plant: Please provide all analyses performed of  
44 possible configurations other than the one chosen to address the  
45 consequences of the Black Tickle diesel plant fire.

- 1 **PR-PUB-NLH-020** Sunnyside Replacement Equipment: Please describe and provide all  
2 procedures, standards, and other guidance addressing policies or  
3 requirements regarding the conduct of analyses of the potential failure of  
4 critical terminal station equipment.  
5
- 6 **PR-PUB-NLH-021** Sunnyside Replacement Equipment: Please provide all available Hydro  
7 and AMEC documentation indicating, before the January 2014  
8 transformer failures, analyses (including but not limited to failure risk) or  
9 conclusions regarding the purchase of a spare 125MVA transformer for  
10 the two 230kV loops.  
11
- 12 **PR-PUB-NLH-022** Sunnyside Replacement Equipment: If no analyses of spare transformers  
13 for the two 230kV loops was performed, please explain why not.  
14
- 15 **PR-PUB-NLH-023** Sunnyside Replacement Equipment: Please: (a) verify that Hydro had  
16 assumed over the years that the gassing in its 125MVA transformers was  
17 caused by leakage of gas-containing oil, via the tap changer bushings or  
18 compartment gaskets, from the tap changer compartment into the main  
19 transformer oil, (b) verify that Hydro had not replaced the gaskets on the  
20 transformers before 2014, (c) verify that in 2014, Hydro *did* replace the  
21 gaskets for the tap changer bushings, or compartment on one of the  
22 125MVA transformers, (d) explain if Hydro replaced the tap changer  
23 gaskets on a 125MVA transformer in 2014, whether that corrected the  
24 transformer, and (f) explain the justification for not implementing projects  
25 for replacing leaking tap changer gaskets years ago, when the gassing  
26 condition was first identified.  
27
- 28 **PR-PUB-NLH-024** Sunnyside Replacement Equipment: Please: (a) describe the issue  
29 involving the use of improper lubrication used in the ABCBs, (b) identify  
30 which parts of the breakers were affected by the issue and under what  
31 weather conditions, (c) describe how and when this lubrication issue was  
32 identified, (d) state what type of lubricant was improper and what type  
33 was used to replace the improper lubricant, (e) explain the reason why  
34 Hydro found improper lubrication in B1L03 during its investigation after  
35 the January 2014 event, even though it was to be re-lubricated in 2007.  
36
- 37 **PR-PUB-NLH-025** Sunnyside Replacement Equipment: Please verify that the Sunnyside T1  
38 transformer had 138kV breaker failure protection.  
39
- 40 **PR-PUB-NLH-026** Sunnyside Replacement Equipment: Please describe all Hydro evaluations  
41 and considerations on the installation of a 230kV transformer breaker with  
42 breaker protection for T4 transformer at Sunnyside to provide protection  
43 to the transmission system for a T4 transformer failure.

- 1 **PR-PUB-NLH-027** Sunnyside Replacement Equipment: Please: (a) identify the number of  
 2 separate station service sources that were available at Sunnyside terminal  
 3 station under normal conditions, (b) state whether any of those sources  
 4 would have been available, if the fire had not damaged the equipment,  
 5 while the transmission system was down, (c) state how many sources are  
 6 available at Sunnyside now, and (e) state whether and when Hydro has  
 7 considered installing a backup generator (black start) at Sunnyside and at  
 8 other critical terminal stations.  
 9
- 10 **PR-PUB-NLH-028** Sunnyside Replacement Equipment: Please provide all Hydro's analyses  
 11 from its past January 2014 investigation that show why it was more cost  
 12 effective or otherwise preferable to install a 230kV transformer breaker for  
 13 T1 transformer than it would be to install transfer tripping to the line  
 14 breakers at the remote terminal stations.  
 15
- 16 **PR-PUB-NLH-029** Sunnyside Replacement Equipment: Recognizing that this project has two  
 17 principal components (to replace the T1 transformer and the equipment  
 18 damaged by the T1 transformer fire and to install a new 230kV  
 19 transformer breaker and breaker failure protection), please provide a list of  
 20 major equipment replaced because of the fire and another list of major  
 21 equipment installed for the new breaker and breaker failure protection.  
 22
- 23 **PR-PUB-NLH-030** Sunnyside Replacement Equipment: Please provide listings of the  
 24 estimated versus the actual engineering, equipment, material, labor, and  
 25 commissioning costs incurred for these elements of the project:  
 26
- 27 a. Moving T8 transformer from Holyrood
  - 28 b. the new 230kV transformer and associated equipment for  
 29 Holyrood
  - 30 c. the repair of the B1L03 230kV breaker at Sunnyside
  - 31 d. replacing the B1T1 -1 230kV disconnect switch and insulators
  - 32 e. the B1T1 -- 230kV Breaker (New breaker for 2015)
  - 33 f. the B2T1 138kV breaker replacement
  - 34 g. installation contracts for 2014 and 2015
  - 35 h. the station service transformer and transfer switch replacement
  - 36 i. high voltage risers and connectors for 2014 and 2015
  - 37 j. power and control cables for 2014 and 2015
  - 38 k. transformer protection panels and relays for 2014 and 2015
  - 39 l. other major expenses.  
 40
- 41 **PR-PUB-NLH-031** Sunnyside Replacement Equipment: Please provide the estimated and the  
 42 actual engineering, equipment, material, labor, and commissioning costs  
 43 incurred for expediting the new 125MVA transformer and other  
 44 equipment and installing and commissioning the new 125MVA  
 45 transformer at Holyrood.

- 1 **PR-PUB-NLH-032** Western Avalon T5 Tap Changer: Please state whether and, if so, how  
 2 Hydro instructs System Operators and Terminal Station Operators not to  
 3 re-energize any transformer after it has tripped out before the cause of the  
 4 trip out has been determined and provide any applicable system operations  
 5 or training documents.  
 6
- 7 **PR-PUB-NLH-033** Western Avalon T5 Tap Changer: Please provide the maintenance and re-  
 8 lubrication activities conducted on breaker B1L37 since the year 2000 and  
 9 indicate whether Hydro found improper lubricants in this breaker during  
 10 its investigation and repair after the January 4, 2014 malfunction.  
 11
- 12 **PR-PUB-NLH-034** Western Avalon T5 Tap Changer: Please provide the oil quality testing  
 13 result records for the Western Avalon T5 transformer tap changer  
 14 compartment for 2010 to January 2014.  
 15
- 16 **PR-PUB-NLH-035** Western Avalon T5 Tap Changer: Please provide the various elements of  
 17 this project, provide their estimated versus actual costs and describe the  
 18 causes of all variances.  
 19
- 20 **PR-PUB-NLH-036** Sunnyside and Holyrood Breakers: Please verify that ABCBs SSD B1L03  
 21 and HRD B1B17 were both replaced with SF6 breakers in 2014 and  
 22 provide the date when they were replaced.  
 23
- 24 **PR-PUB-NLH-037** Sunnyside and Holyrood Breakers: Please verify the accuracy of the  
 25 information in the tables below and explain why the material and  
 26 consultant costs for the overhaul of HRD B1B17 was much higher than for  
 27 the overhaul of SSD B1L03, as indicated in the table below from Hydro's  
 28 letter to the Board dated May 5, 2014: Allowance for Unforeseen Events-  
 29 Holyrood BL17 230 KV Breaker Overhaul.  
 30  
 31

32 **Table 7.1**  
 33 **Sunnyside B1L03 230kV Breaker Final Overhaul Project Cost**

Category	Cost (\$000)
Labor	38.9
Overtime	26.6
Materials	72.1
Consultants	15.0
Travel	8.3
Total	160.9

**Table 7.2**  
**Holyrood B1L17 230kV Breaker Final Overhaul Project Cost**

Category	Cost (\$000)
Labor	36.9
Overtime	49.0
Materials	165.9
Consultants	108.2
Total	360.0

4  
5 **PR-PUB-NLH-038** Labrador City Terminal Stations: Please explain why the project  
6 construction work did not substantially commence until 2011.  
7

8 **PR-PUB-NLH-039** Labrador City Terminal Stations: Please explain why Hydro, by the end of  
9 2011, was not able to more accurately revise the total budget for this  
10 project to near the actual final cost of \$16,844,000 (rather than the amount  
11 of \$12,650,000).  
12

13 **PR-PUB-NLH-040** Labrador City Terminal Stations: Please: (a) describe the approach Hydro  
14 used to manage this project, (b) show the project management  
15 organization, positions of responsibility and accountably, (c) identify  
16 progress reporting procedures, (d) provide examples of project reports  
17 used, (e) describe the nature of, timing of, and response to the principal  
18 cost and schedule affecting issues, (f) explain any changes in Hydro's  
19 project management methods occurring during and after this project, and  
20 (g) describe any project management "lessons learned" actions taken after  
21 from this project.  
22

23 **PR-PUB-NLH-041** Labrador City Terminal Stations: Please: (a) describe the estimating  
24 methods used for estimating the hours and pricing of each element of this  
25 project, (b) describe how Hydro validated the labor and pricing estimates  
26 for P.U. 36 (2008) and the 2009 Capital Budget, (c) describe whether and  
27 how Hydro factored in anticipated increases in equipment prices and labor  
28 costs, (d) state whether Hydro has modified its project estimating method  
29 since 2009, and (e) describe any project estimation practices "lessons  
30 learned" actions taken after this project.  
31

32 **PR-PUB-NLH-042** Labrador City Terminal Stations: Please explain, for each year 2009  
33 through 2013, the project elements planned and the project elements  
34 actually completed, explain discrepancies between the original plans and  
35 the actual work completed and provide project progress and budget versus  
36 actual costs charts used for the project from 2009 through 2013.  
37

38 **PR-PUB-NLH-043** Labrador City Terminal Stations: Please explain the reasons for delay in  
39 completion for each project element and discuss the degree to which



1 delays were caused by conditions, by resource constraints, or by fiscal  
2 constraints.  
3

4 **PR-PUB-NLH-044** Labrador City Terminal Stations: Please: (a) provide a tabulation  
5 comparing the 2009 cost estimates included in Hydro's 2009 Capital  
6 Budget Application, Table 9.1, as indicated below, with the actual costs,  
7 (b) provide explanations for the variances, (c) break down each element  
8 (such as cost of transformers and circuit breakers, and need for equipment  
9 not included in the original budget) sufficiently to explain cost increases,  
10 (d) show how much of the labor costs were overtime differential costs, (e)  
11 show how much resulted from non-productive hours due to weather  
12 conditions, and (f) show how much resulted from non-productive hours  
13 due to other reasons (such as equipment not being ready).  
14

15 Project Cost: (\$ x 1,000)	2009	2010	2011	TOTAL
16 Material Supply	50.0	1,919.0	3,409.0	5,378.0
17 Labour	83.0	231.2	200.5	514.7
18 Consultant	0.0	0.0	0.0	0.0
19 Contract Work	83.0	890.0	800.0	1,773.0
20 Other Direct Costs	15.0	67.5	89.2	171.7
21 O/H, AFUDC & Escln.	29.1	476.3	864.0	1,369.4
22 Contingency	23.1	310.8	449.9	783.8
23 TOTAL	283.2	3,894.8	5,812.6	9,990.6

24  
25  
26 **PR-PUB-NLH-045** Please refer to the Newfoundland and Labrador Hydro – 2013 Amended  
27 General Rate Application, Section 3: Finance, page 3.23. For  
28 Extraordinary Repairs, Hydro proposes that \$1.2 million of 2015  
29 preventative and corrective maintenance be deferred and amortized over 5  
30 years. Please provide the actual expenses and estimates broken down at  
31 the greatest level of detail available as well as all work papers that support  
32 these calculations and amounts.  
33

34 **PR-PUB-NLH-046** From Liberty's Interim Report, Hydro had not been meeting long-term  
35 objectives of six-year cycles for preventive maintenance on its 105 power  
36 transformers, and also had substantial backlogs in terminal station  
37 corrective maintenance prior to the January 2014 outages. Please provide  
38 the calculations and amounts for preventive transformer maintenance if  
39 Hydro had maintained the six-year transformer maintenance schedule for  
40 the six years from 2010 through 2015.  
41

42 **PR-PUB-NLH-047** From Liberty's Interim Report, Hydro had not been meeting long-term  
43 objectives of four-year cycles for preventive maintenance on its circuit  
44 breakers prior to the January 2014 outages. Please provide the calculations  
45 and amounts for preventive breaker maintenance if Hydro had maintained

1  
2

the four-year breaker maintenance schedule for the six years from 2010 through 2015.

**DATED** at St. John's, Newfoundland this 3<sup>rd</sup> day of March 2015.

**BOARD OF COMMISSIONERS OF PUBLIC UTILITIES**

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Cheryl Blundon  
Board Secretary