

November 10, 2009

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:

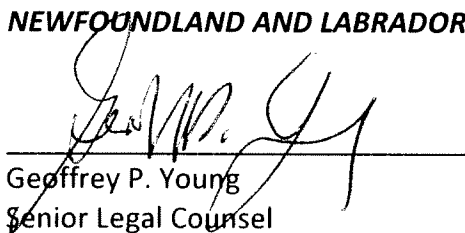
Re: Newfoundland and Labrador Hydro (Hydro) – 2011 Capital Budget Application

Enclosed please find ten copies of Hydro's Final Submission with regards to the above-noted application.

Should you have any questions, please contact the undersigned.

Yours truly,

NEWFOUNDLAND AND LABRADOR HYDRO



Geoffrey P. Young
Senior Legal Counsel

GPY/jc

cc: Gerard Hayes/Peter Alteen – Newfoundland Power (3)
Paul Coxworthy – Stewart McKelvey Stirling Scales
Dean Porter – Poole Althouse
Thomas Johnson – Consumer Advocate (2)

**A REPORT TO
THE BOARD OF COMMISSIONERS OF PUBLIC UTILITIES**

**2011 CAPITAL BUDGET APPLICATION
FINAL SUBMISSION
NEWFOUNDLAND AND LABRADOR HYDRO**

November 10, 2010



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1 **IN THE MATTER OF** the *Public*
2 *Utilities Act*, (the “Act”); and

3
4 **IN THE MATTER OF** an Application by
5 Newfoundland and Labrador Hydro for
6 an Order approving: (1) its 2011 capital budget
7 pursuant to s.41(1) of the Act; (2) its 2011
8 capital purchases, and construction projects
9 in excess of \$50,000 pursuant to s.41 (3) (a)
10 of the Act; (3) its leases in excess of
11 \$5,000 pursuant to s. 41 (3) (b) of the Act;
12 and (4) its estimated contributions
13 in aid of construction for 2011 pursuant to
14 s.41 (5) of the Act and for an Order pursuant to
15 s. 78 of the Act fixing and determining its average
16 rate base for 2009.

17
18
19 **TO:** The Board of Commissioners of Public Utilities (“the Board”)

1 **1 Introduction**

2 Hydro filed its 2011 Capital Budget with the Board of Commissioners of Public Utilities (the
3 Board) on August 2, 2010 seeking approval under Section 41 of the *Public Utilities Act* (the
4 Act) of \$65.1 million in capital expenditures and seeking approval under Section 78 of the
5 Act of its 2009 rate base in the amount of \$1,473,477,000. On November 2, 2010 Hydro
6 revised its Application seeking approval of a reduced amount of capital expenditures of
7 \$60.2 million, having removed two projects from its Application and having reduced the
8 amount being sought for two others.

9

10 Interventions were filed in this matter by Newfoundland Power, the Consumer Advocate,
11 and the Industrial Customers. The Board, the Consumer Advocate and the Industrial
12 Customers filed Requests for Information (RFIs); and the Consumer Advocate and the Island
13 Industrial Customers filed final submissions in this matter, both of which were filed on
14 November 8, 2010.

15

16 Hydro seeks approval of its 2011 Capital Budget, as revised, and approval of its 2009 rate
17 base, and in support of that Application, makes the following submissions.

1 **2 Legislative Framework**

2 Hydro is required by Section 37 of the Act to provide electrical service and facilities that are
3 safe and adequate and just and reasonable. Section 41 of the Act requires Hydro to obtain
4 approval from the Board for its annual capital budget. In addition, Section 3 of the *Electrical*
5 *Power Control Act, 1994* requires that Hydro provide electrical service that is efficient, that
6 is provided such that its customers have equitable access to an adequate supply of power,
7 and that is provided at least cost consistent with reliable service. The projects proposed in
8 Hydro's 2011 capital budget are necessary to enable Hydro to comply with these legal
9 duties.

3 Compliance Matters

The projects in the Application have been filed in accordance with Order No. P.U. 7(2002-2003) and the Capital Budget Application Guidelines.

Section H to the Application is a report on the status of the 2010 capital expenditures including those approved by Orders No. P.U. 1 (2010), projects under \$50,000 not included in these Orders, and the 2009 capital expenditures carried forward to 2010.

Section I to this Application is a report on the ten year Plan of Maintenance Expenditures for the Holyrood Generating Station filed in accordance with Order No. P.U. 14 (2004).

3.1 Response To Intervenors' Submissions

3.1.1 Project Prioritization

In previous years, some intervenors have expressed concerns that Hydro appeared to give all of its capital projects the same weight or importance in its Capital Budget Applications, a tendency which was stated to have been at odds with the way that non-regulated industries go about capital planning. Hydro assures the Board that all of the project proposals that have been submitted are prudent and are essential to the provision of reliable service in a manner that is least cost, however, Hydro is pleased to provide in the present Application information as to its Project Prioritization methodology¹. It is hoped that the prioritization information included in the present Application provides greater transparency to Hydro's project selection process and permits the Board and the intervenors to gain a better understanding of the relative importance of the projects.

¹ NLH 2011 Capital Budget Application, Vol. 1, 2011 Capital Plan, page 6; CA-NLH-5; CA-NLH-6

1 While this is a very helpful tool to gain a better understanding of the projects and of the
2 overall capital budget, it is important that the use to which this Project Prioritization is to be
3 put is not misunderstood. For instance, the Industrial Customers seem to have taken
4 exception to the statement in CA-NLH-5 that the lowest ranked project's rank score of 53
5 was a number that is merely incidental to the application of the methodology. It is clear
6 from the explanations provided in Hydro's Capital Plan and in responses to CA-NLH-4 and
7 CA-NLH-5 that the Project Prioritization methodology is not designed to accept or reject
8 projects with some particular raw score. Each project must still be assessed according to its
9 own merits; each must achieve the objects of the relevant legislation in accordance with the
10 judgment and discretion of the Board. The purpose of the ranking is not pass-fail based
11 upon the score achieved, rather, the ranking is intended to provide greater insight into the
12 overall and relative importance of each project and provides insight and understanding into
13 the information and analysis used by Hydro in choosing the projects. In this regard, we note
14 that the Consumer Advocate has, in his submission, endorsed the Project Prioritization
15 methodology and believes it should become a routine filing requirement.

16
17 In Hydro's view, the Project Prioritization is useful supplemental information to assist Hydro
18 in determining the scope of the annual Capital Budget. It is not intended to replace any
19 aspect of the Capital Budget Guidelines nor is it intended to supplant other methods of
20 testing and scrutiny that Hydro would put into its Capital Budget proposals or the Board
21 would use in considering the capital budget or any capital project.

22 23 3.1.2 Supplemental Applications

24
25 Section 41 of the Act requires that Hydro file its annual capital budget with the Board. For
26 its own budget and work planning purposes, it is highly preferable for Hydro to be able to
27 plan all of its capital work in advance. Unfortunately, in the real world that Hydro deals
28 with, needs arise at times that are not synchronized with the capital budget cycle. In other
29 cases, problems in fitting projects with the capital budget cycle arise because some items,

1 particularly specialized assets that have to be fabricated, have delivery times that change on
2 relatively short notice, depending upon global demand. The lead time problem is often
3 complicated by a narrow timeframe in which the work can be carried out (the outage
4 windows for the assets involved). Further, some projects require considerable up-front
5 engineering effort before the projects can be released.

6
7 These real-world constraints prevent Hydro from being able to always fit its capital projects
8 in its annual capital budget cycle. This is unfortunate and it is something that Hydro strives
9 to control, however, it must be recognized that dealing with capital project needs that arise
10 outside of the usual capital schedule timeframe is unavoidable when running and regulating
11 utilities.

4 Individual 2011 Capital Budget Projects

4.1 Upgrade Stack Breeching Unit 1, Holyrood, page B-5 (\$1,769, 600)

This project is justified primarily upon reliability. Hydro has identified through thickness scanning that there are places where the steel casing needs to be replaced to ensure stack breeching structural integrity. This project was revised from its original because further engineering and testing determined that a less expensive capital project was available to cure the problems encountered.

Nonetheless, the problem with the stack breeching remains and must be addressed to ensure reliable service. It is estimated that a failure of the stack breeching in operation would cause a forced outage of four weeks. Due to the largely seasonal use of Holyrood and the essential role it plays in providing capacity during the winter peak, it was reasonable to consider the impact of a failure during the winter peak.

The Industrial Customers have indicated that neither Hydro nor its consultant engineering firm, Alstom Canada Inc. (Alstom), have identified when a failure of the breeching would be likely to occur. Unless an asset is run to near failure, it cannot reasonably be expected that a utility or its consultant would be able to accurately and reliably predict when an asset is going to fail. Capital repairs to, or replacement of, critical assets ought to be carried out in advance of failure, otherwise Hydro's ability to comply with its legislated responsibility to provide reliable power would be in jeopardy. Further, Alstom was not requested to predict the timing of failure nor was it consulted primarily for the purpose of assessing whether the stack breeching required refurbishment. The nature and purpose of its report is to provide information as to most economic and effective remedy to the deterioration problem that has already been identified by Hydro. Alstom's report indicated that in the utility boiler industry, stack breeching has a limited life requiring periodic replacement or repair.

1 Hydro submits that the stack breeching project is justified based upon the need to take
2 prudent measures to preserve its integrity for the coming years during which it will be
3 needed.

4
5 **4.2 Refurbish Fuel Storage Facility, Holyrood, page B-8, (\$2,637,900)**
6

7 This project is required to ensure that Hydro can provide reliable service from its Holyrood
8 facility and avoid the risks of an oil spill due to a deteriorating fuel tank. This project is
9 already behind schedule according to the recommendations that Hydro received from its
10 consultants.² The problems that need to be rectified include the replacement of floor plates
11 and the installation of a roof platform. Hydro has stated that Tank 3 has deteriorated to the
12 point where there is significant risk of oil leakage and inoperability.³
13

14 The Industrial Customers and the Consumer Advocate have questioned the need to
15 refurbish this tank given Hydro's recent fuel storage history. This is based upon fuel storage
16 data for the past two years, as was requested in an RFI.⁴ Hydro would caution reliance
17 upon this data as being representative of fuel storage needs for the coming years.
18

19 As the Board is aware from other matters before it, Hydro has experienced reductions in
20 Industrial Customer load in these years. The Board can reasonably conclude that Hydro's
21 corresponding fuel storage requirements for these years would be lower than its
22 requirements when loads are higher. Hydro has used all four storage tanks since 1977.⁵
23 Hydro will require the full energy generating capacity of Holyrood at least until the
24 commissioning of the HVDC in-feed and for some period after.⁶

² IC-NLH-24

³ Report – Refurbishment of the Fuel Oil Storage Facility, Vol. 1, Tab 3, page 8.

⁴ IC-NLH-23

⁵ Report – Refurbishment of the Fuel Oil Storage Facility, Vol. 1, Tab 3, page 4.

⁶ 2001 Capital Plan, Volume 1, Page 16

Hydro's Island Interconnected System load forecast for the period between now and 2015 indicates an increase in load in excess of 1,000 GWh per year from 2010 levels.⁷ Using the present Holyrood efficiency of 630 kWh/bbl, this amounts to an additional annual fuel consumption of approximately 1.5 million bbls of fuel. This amount of additional thermal energy will, quite obviously, require considerably more storage capacity than the present lower load levels. If Hydro cannot rely upon one of its four tanks to safely and reliably store fuel, it will have to take that tank out of service. This is not a plausible option given expected Island Interconnected System load increases. Using a questionable tank will risk a spill and a loss of product potentially in excess of 200,000 barrels at a cost of approximately \$15,000,000 in addition to clean up and remediation cost.

Hydro submits that refurbishing this fuel tank at this time is prudent and necessary to ensure the continued reliability of the generating facility and to ensure that the environment is not harmed by an oil spill. Hydro submits that this project is justified and that all four of its fuel tanks should be maintained in service while there is a need to serve significant amounts of electrical load from Holyrood.

4.3 Upgrade Power Transformers, page B-59 (\$865,900)

Most of Hydro's power transformers of capacities of 69 kV and above are in excess of 30 years old and approximately 34% of them are in excess of 36 years old.⁸ A 36 year-old transformer is at the point of its life when the probability of failure increases.⁹ This project is intended to allow Hydro to intervene with capital improvements to its aging transformers to extend their service lives. This is not a matter of operating maintenance, performed to ensure the assets operate reliably within their anticipated life cycle. Compared to some other assets, there are relatively few major components to a transformer and replacing

⁷ Generation Planning Issues 2010 Mid-Year Update, Vol. 2, Tab 38, page 5

⁸ Report – Upgrade Power Transformers – Various Sites, Vol. 2, Tab 25, page 6

⁹ Report – Upgrade Power Transformers – Various Sites, Vol. 2, Tab 25, page 14

1 those major components provides an opportunity to rejuvenate the asset and extend its
2 service life. A systematic replacement of a failing component of a power transformer
3 constitutes a material investment that is properly treated as capital. Hydro's responsibility
4 to achieve least cost requires that Hydro attempt to prolong the life of this major
5 infrastructure, and make appropriate capital expenditures to do so.

6
7 Hydro submits that this project is prudent and reasonable, that it has been justified and that
8 it is properly categorized as capital.

9
10
11 **4.4 Upgrade Burnt Dam Spillway Structure, page C-2 (\$257,900)**

12
13 This spillway structure is one of the essential control structures on the Bay d'Espoir
14 Reservoir system. It provides control of the water level in the reservoir and ensures
15 releases of water into the White Bear River in accordance with an agreement with the
16 Department of Fisheries and Oceans. A number of deficiencies have been identified by
17 Hydro's engineering consultant, Hatch Ltd. (Hatch), that have been further investigated and
18 cost estimated by Hydro in preparing a four-year capital program to rehabilitate this
19 structure. The work proposed to be performed in 2011 comprises the replacement of the
20 stop log hoist and associated motor, bus bars, housing and access platform. All of these
21 items were identified by Hatch as requiring attention to address reliability and safety
22 concerns.¹⁰

23
24 Hydro is surprised by the dismissive reaction of the Industrial Customers to the fact that
25 both spillway gates have been required to be opened simultaneously in the last 18 years on
26 four occasions. The safe and reliable operation of the spillway is critical to the operation of
27 the reservoir in terms of safety, environmental management, and economics. It is essential
28 that all aspects of this structure operate properly and reliably when called upon. Due to the

¹⁰ Volume 1, Tab C, pages C-7, C-36, C-40 - C-42.

1 nature of this reservoir and the particular role and location of this spillway, this spillway has
2 been operated with both gates opened relatively rarely. This does not detract from the
3 need for the facility to operate reliably when called upon to operate in that mode.
4 Spillways, by their nature, must be maintained in reliable working order even if it is hoped
5 and expected that they are never used.

6
7 Hydro's 2011 works with regard to this spillway structure project have been selected as
8 those that are most critical and require immediate attention, a position that is fully
9 supported and documented by Hydro's consultant. In the coming years of this project,
10 Hydro will propose specific additional work to be undertaken for each additional budget
11 year.

12
13 Hydro submits that this spillway project is justified as being required and prudent to ensure
14 that the reservoir can be managed safely and reliably.

15 16 17 **4.5 Install Weatherhoods for Vent Fans, Holyrood, page C-44 (\$208,000)**

18
19 This project is justified based upon a safety concern relating to air quality inside the
20 Holyrood Thermal Generating Station. The problem arises when windy conditions interfere
21 with the ability of the vent fan system to remove exhaust gases, fumes and heat from the
22 generating station. A simple and proven method has been used to ensure that the
23 ventilation system is effective; in some locations at Holyrood (Stage 2, i.e. Unit 3) vent
24 hoods have been installed at the exterior of the building at the fan sites so that high winds
25 do not interfere with the efficacy of the fans. The quantitative data and analysis that has
26 been provided with Hydro's report clearly demonstrate the advantage of having fan hoods
27 installed.¹¹

¹¹ Volume 1, page C-50.

1 The data was recorded on days when the wind was coming from the south or south-west
2 and thus interfering with the southerly exposed fan vents. The proposal is to place
3 weatherhoods on the unprotected fan vents, some which face south and some which face
4 north. The Industrial Customers have raised questions as to whether northerly winds are
5 experienced at Holyrood and whether ineffective venting of exhaust gases cause air quality
6 problems, and proposes that the project be disallowed until this information has been
7 provided. In Hydro's view, the Industrial Customers' objections to this project do not merit
8 serious consideration.

9
10 Hydro submits that the weatherhood project has a demonstrated benefit to the operating
11 safety and working conditions of the Holyrood powerhouse and that the project is prudent
12 and justified.

13 14 15 **4.6 Replace Off-Road Track Vehicles, Bishop's Falls and Fogo – B-53 (\$1,103,700)**

16
17 These vehicles are near the end of their useful lives and do not have the needed lifting
18 capability to do the jobs required of them. This project will replace them with new vehicles
19 that are better equipped and better suited to enable Hydro crews to carry out their work in
20 a timely and efficient basis. Hydro submits that the replacement of these vehicles is
21 prudent and justified.

22 23 24 **4.7 Construct Transmission Line Equipment Off-Loading Areas, B-63 (\$791,000)**

25
26 This project is the continuation of a program of capital projects to construct off-loading
27 ramps. These ramps provide safe access to and from secondary highways by Hydro's
28 transmission line crews and keep these areas safe for the traveling public. Hydro
29 coordinates the location of these off-loading areas with the Provincial Department of

1 Transportation and Works to ensure that safe sight lines and stopping distances are
2 maintained.

3
4 The Consumer Advocate has indicated that this road building project should not proceed in
5 a year in which another road related project is proceeding (Upgrade Burnt Dam Access Road
6 Phase 2, C-2). There is no merit to this suggestion; the projects are in no way functionally
7 related or interchangeable. Hydro does acknowledge the Consumer Advocate's observation
8 that this project ranks higher in the Project Prioritization ranking than the Burnt Dam road
9 project and, if there was any rational reason to choose only one of these, the Project
10 Prioritization ranking would favour this project.

11
12 Hydro submits that it has justified this project. It is reasonable and prudent to construct
13 these ramps to ensure the safety of Hydro's employees and contractors, and of the
14 traveling public who use the secondary highways in the Province from which Hydro gains
15 access to its transmission lines.

16 17 18 **4.8 Remove Safety Hazards, C-204 (\$252,400)**

19
20 The Consumer Advocate has taken issue with this project, not on its merits but on the
21 Board's power to grant approval of such a project under the Act. Reference is made to
22 Section 41(3) which requires the approval of the Board before a public utility proceeds with
23 the construction, purchase, or lease of improvements or additions to its property.

24
25 There are, in fact, other projects where the Board grants approval for a category of capital
26 improvements without knowing in advance the specific details of the works to be done—
27 the specifics are worked out later by the utility as the need arises. Examples include
28 Hydro's project in this Application, *Upgrade Distribution Systems*, B-38, and Newfoundland
29 Power's *Reconstruction* project. Under both of these projects, the utility is permitted to

1 spend an amount of capital money on distribution plant replacements as the needs arise.
2 Due to the nature of these assets, it is not practicable to make separate applications for
3 every instance where, for example, a distribution structure is discovered to be damaged or
4 unreliable or is otherwise determined to be in need of replacement.

5
6 Another category of allowable capital expenditures occurs under Hydro's contingency
7 allowance and Newfoundland Power's Allowance for Unforeseen Items. These capital
8 approvals allow the utility to react quickly to deal with problems that are encountered
9 during the year that cannot be specifically predicted in advance. An example of this is storm
10 damage. Due to our challenging and dramatic climate, it can be expected that weather
11 related damage will occur that requires capital spending but it cannot be predicted where
12 this damage will occur or what plant will be affected.

13
14 The present project is of a generally similar nature. Safety concerns are identified during
15 the year that, due to the primary importance of safety, are required to be addressed
16 immediately.

17
18 Employees are encouraged to be constantly vigilant and to seek and report safety concerns
19 to their supervisors. The *Occupational Health and Safety Act* contains provisions that
20 impose positive duties upon employees to make their workplace safe for themselves and
21 their fellow workers and to refuse work if there are unsafe working conditions:

22
23 Sections 7(a) and 8 of the *Occupational Health and Safety Act* read as follows:

24
25 7. A worker

26 (a) shall co-operate with his or her employer and with other workers in the
27 workplace to protect

28 (i) his or her own health and safety,

29 (ii) the health and safety of other workers engaged in the work of the
30 employer,

1 (iii) the health and safety of other workers or persons not engaged in the work
2 of the employer but present at or near the workplace;

3
4 8. A worker shall not

5 (a) carry out work where there exists an imminent danger to his or her or
6 another worker's health or safety or the health or safety of another person; or

7 (b) operate a tool, appliance or equipment that will create an imminent danger
8 to his or her or another worker's health or safety or the health or safety of
9 another person.¹²

10
11 Section 16 of the *Public Utilities Act* provides the Board with broad powers to supervise and
12 monitor the activities of the utilities it regulates to ensure general compliance with the law
13 and with the spirit of the Act. The purpose which underpins this project is one which is
14 supported by a legal duty and this project provides the practicable means of ensuring that
15 safety related improvements are made expeditiously. The Board always retains the power
16 to review these improvements to ascertain that the capital improvements are consistent
17 with the approved purposes of the project and that least cost means have been used to
18 bring about that result.

19
20 Hydro submits that this project is justified and that approving these works in this manner is
21 squarely within the Board's powers and is consistent with its long-standing capital approval
22 practices.

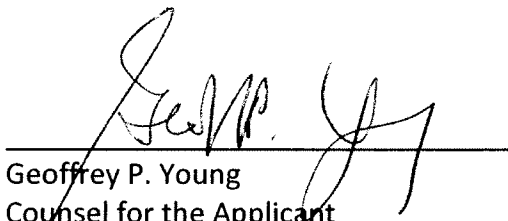
¹² Occupational Health and Safety Act, R.S.N.L. 1990, C.O-3

5 Conclusion

Hydro submits that the projects included in its revised Application are all prudent and necessary to provide reasonable, adequate, safe and reliable service to its customers, at least cost. Hydro asks that the Board approve its 2011 capital budget as revised.

Hydro further asks that the Board approve its 2009 rate base in the amount of \$1,473,477,000.

ALL OF WHICH IS RESPECTFULLY SUBMITTED on behalf of the Applicant, Newfoundland and Labrador Hydro, this 10th day of November, 2010.



Geoffrey P. Young
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