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HAND DELIVERED

October 3, 2008

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

Attention: Ms. Cheryl Blundon
Board Secretary

Ladies & Gentlemen:

Re: Newfoundland Power's 2009 Capital Budget Application


Enclosed are the original and 8 copies of Newfoundland Power's Brief of Argument.

For convenience, the Argument is provided on three-hole punched paper.

A copy of this letter, together with enclosures, has been forwarded directly to Geoffrey Young, of Newfoundland & Labrador Hydro and Mr. Thomas J. Johnson, the Consumer Advocate.

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

Yours very truly,



Peter Alteen
Vice President, Regulatory Affairs
& General Counsel

Enclosures

c. Geoffrey Young
Newfoundland & Labrador Hydro

Thomas Johnson
O'Dea Earle Law Offices



Join us in the fight against cancer.

IN THE MATTER OF the *Public
Utilities Act*, (the "Act"); and

IN THE MATTER OF capital expenditures
and rate base of Newfoundland Power Inc.; and

IN THE MATTER OF an application by
Newfoundland Power Inc. for an order pursuant
to Sections 41 and 78 of the Act:

- (a) approving its 2009 Capital Budget of \$61,571,000; and
- (b) fixing and determining its average rate base for 2007
in the amount of \$793,703,000.

**BRIEF OF ARGUMENT
OF
NEWFOUNDLAND POWER INC.**

OCTOBER 3, 2008

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1 **1.0 INTRODUCTION**

2 Newfoundland Power's 2009 Capital Budget was filed with this Board on July 11, 2008. The
3 approximately \$61.6 million budget is larger than the 2008 capital budget, principally due to the
4 Rocky Pond Hydroelectric Plant penstock replacement project and the power transformer
5 replacement at Horsechops Hydroelectric Plant. These two projects account for \$7.9 million of
6 the budget increase over last year.

7

8 The 2009 Capital Budget Application (the "Application") seeks an Order of the Board:

9 (1) pursuant to Section 41(1) of the Public Utilities Act, approving proposed 2009 capital
10 expenditures totalling \$61,571,000 and (2) pursuant to Section 78 of the Public Utilities Act,
11 fixing and determining Newfoundland Power's average rate base for 2007 in the amount of
12 \$793,703,000.

1 **2.0 OVERVIEW**

2 To provide context for the Board's consideration of the Application, this submission will:

3
4 First, review the legislative framework under which the Application is brought;

5
6 Second, address specific compliance requirements;

7
8 Third, summarize the process engaged in by the Board and participants in the consideration of
9 the Application;

10
11 Fourth, address specific matters raised in the Consumer Advocate's Submission; and

12
13 Finally, conclude with Newfoundland Power's formal submissions with respect to the
14 Application.

3.0 LEGISLATIVE FRAMEWORK

Section 37(1) of the *Public Utilities Act* states that a public utility shall provide service and facilities that are reasonably safe and adequate and just and reasonable. Section 37(1) is a cornerstone of Newfoundland Power's obligation to serve its customers.

Section 3(b) of the *Electrical Power Control Act, 1994* states that all sources and facilities for the production, transmission, and distribution of power in the province should be managed and operated in a manner that would result in:

- i. the most efficient production, transmission, and distribution of power,
- ii. consumers in the province having equitable access to an adequate supply of power, and
- iii. power being delivered to customers in the province at the lowest possible cost consistent with reliable service.

Section 3(b) does not create a hierarchy between these three principles; rather, each is equally important in the management and operation of electrical facilities in the province.

Section 41(1) of the *Public Utilities Act* requires that Newfoundland Power submit to this Board "an annual capital budget of proposed improvements and additions to its property" for the Board's approval.

1 Section 41(3) of the *Public Utilities Act* prohibits a utility from proceeding with an improvement
2 or addition in excess of \$50,000 or a lease in excess of \$5,000 per year without the Board's prior
3 approval.

4
5 The focus of this proceeding is whether Newfoundland Power's proposal for \$61.6 million in
6 capital expenditures in 2009 is reasonably required for it to meet its statutory obligation to serve
7 its approximately 230,000 customers.

8
9 Newfoundland Power submits that its 2009 Capital Budget represents the capital expenditures
10 necessary to maintain its electrical system and to continue to meet its statutory obligations under
11 Section 37(1) of the *Public Utilities Act* and Section 3(b) of the *Electrical Power Control Act*,
12 1994.

1 **4.0 COMPLIANCE MATTERS**

2 **4.1 *Board Orders***

3 In Order No. P.U. 27 (2007) (the “2008 Capital Order”), the Board required specific information
4 to be filed with the Application. The Application complies with the requirements of the 2008
5 Capital Order.

6
7 In Order No. P.U. 35 (2003) (the “2004 Capital Order”), the Board required specific information,
8 and in particular a 5-year capital plan, to be provided with the Application. The Application
9 complies with the requirements of the 2004 Capital Order.

10

11 In Order No. P.U. 19 (2003) (the “2003 Rate Order”), the Board required that evidence relating
12 to deferred charges and a reconciliation of average rate base to invested capital be filed with the
13 Application. The Application complies with the requirements of the 2003 Rate Order.

14

15 **4.2 *The Capital Budget Application Guidelines***

16 In the Capital Budget Application Guidelines dated October, 2007 (the “CBA Guidelines”), the
17 Board outlined certain directions on how to define and categorize capital expenditures. Although
18 compliance with the CBA Guidelines necessarily requires the exercise of a degree of judgment,
19 the Application, in Newfoundland Power’s view, complies with the CBA Guidelines while
20 remaining reasonably consistent and comparable with past filings.

21

22 Section 2 of the *2009 Capital Plan* provides a breakdown of the 2009 Capital Budget by
23 definition, classification, costing method and materiality segmentation as required in the CBA
24 Guidelines.

1 **5.0 PROCESS**

2 **5.1 *Proceedings of Record***

3 On August 7, 2008, the Board and the Consumer Advocate issued a total of 39 RFIs to
4 Newfoundland Power. Newfoundland Power responded to all RFIs on August 15, 2008.

5
6 No intervenor evidence was filed in the proceeding, and no intervenor requested a technical
7 conference or formal hearing of the Application.

8
9 **5.2 *Consumer Advocate's Submission***

10 The Consumer Advocate filed written submissions in the proceeding on September 24, 2008.

11 The written submissions addressed (1) the condition assessment of the Rocky Pond forebay
12 intake structure, (2) the deferral of the plant control system component of the Horsechops
13 Protection, Control and Governor Replacement project, and (3) the introduction of post-
14 demolition assessments for penstock replacement projects into the capital budget approval
15 process.

16
17 Following is Newfoundland Power's response to the Consumer Advocate's Submission.

6.0 Response to Submission

6.1 Rocky Pond Forebay Intake Structure

The Rocky Pond Plant has provided 66 years of reliable energy production to the Island Interconnected System, producing an average of 14.1 GWh of energy annually. The Rocky Pond Project as proposed in the 2009 Capital Budget application includes the following:

1. the replacement of the woodstave penstock;
2. the replacement of the intake gate and gate guides;
3. the replacement of the main valve;
4. the rewinding of the generator;
5. implement governor upgrades;
6. rebuild forebay distribution and communications line;

This project is necessary at this time due to the age and physical condition of plant assets.

Reference: Schedule B, page 2 of 81; *1.2 Rocky Pond Hydro Plant Refurbishment*, pages 1 and 3.

The Consumer Advocate is unsure of the basis for the Company's assertion that the intake gate and gate guides are "in poor condition".

Reference: Consumer Advocate's Submission, page 7.

In the *Rocky Pond Hydro Plant Refurbishment Report*, the Company's engineers state:

"The intake gate and gate guides are original to the 1942 construction and are in poor condition. Excessive flows currently bypass the gate when the plant is shutdown and the penstock is dewatered. This prohibits safe access to the intake when the penstock is dewatered to perform regular inspection and maintenance on the intake. It is recommended that the intake gate and gate guides be replaced."

Reference: *1.2 Rocky Pond Hydro Plant Refurbishment*, pages 4 and 5.

1 In the reply to CA-NP-10 the Company provided inspection reports and assessments as requested
2 by the Consumer Advocate. Specific reference has been made by the Consumer Advocate to an
3 August 17, 2007 *Rocky Pond Operator's Inspection Checklist* (the "Inspection Checklist") where
4 it was indicated that the infrastructure related to the dam, spillway and intake was in "good"
5 condition.

6 Reference: CA-NP-10, Attachment B, page 359 of 386.

7
8 While on the surface the engineering condition assessment in the *Rocky Pond Hydro Plant*
9 *Refurbishment* report and the August 17, 2007 Inspection Checklist may appear at odds, they are
10 in fact two different forms of assessment. The engineering condition assessment is a
11 professional assessment of all relevant factors. The observations of power plant maintenance
12 staff on the August 17, 2007 Inspection Checklist that the infrastructure is in "good" condition
13 were, in effect, observations relative to the last time the site was visually inspected. The August
14 17, 2007 Inspection Checklist indicated there was no new damage, vandalism or unexpected
15 conditions visible that needed to be reported.¹

¹ A similar *apparent* difference in engineering condition assessment and Inspection Checklist also exists in respect of the Rocky Pond penstock. Hatch's December 2006 *Assessment of Rocky Pond Woodstave Penstock* is an engineering condition assessment that recommends replacement of the penstock (see: Appendix B to *Rocky Pond Hydro Plant Refurbishment* June 2008, at p. 4-1). The need to replace the penstock is also visually apparent from the recent photographs in CA-NP-7. The Inspection Checklist for October 4, 2006, on the other hand, indicates penstock components in *good* condition. (see Attachment B of CA-NP-10, p. 348 of 386). But, in all the circumstances, the Inspection Checklist for October 4, 2006 (see Attachment B of CA-NP-10, p. 348 of 386) raises no serious question regarding the need to replace the penstock.

This difference can be observed from the detailed maintenance logs included in Attachment A of CA-NP-10 where the same power plant maintenance staff reported:

“Headgate closed to drain penstock. A lot of leakage around gate when closed. Repair or replace headgate.” (Work Order No. 32982, July 19, 2004).

“In order to carry out repairs/preventative maintenance on the wicket gate bushings in the turbine we need to have a diving crew attempt to plug the head gate to stop or slow the leakage” (Work Order No. 43147, July 27, 2005).

Reference: CA-NP-10, Attachment A, pages 42 and 43 of 386.

The examples above were included in maintenance logs from 2004 and 2005. Clearly, the need for replacement of the intake gate and gate guides was recognized by the same power plant maintenance staff who completed the August 17, 2007 Inspection Checklist.

The engineering condition assessment that was the basis of the decision to replace the intake gate and gate guides included in the *Rocky Pond Hydro Plant Refurbishment* report was a more in depth analysis than the relatively cursory visual inspection reported on the August 17, 2007 Inspection Checklist. The engineering condition assessment included a review of all inspection reports and maintenance logs. Most importantly, it considered the performance of the intake gate when it was closed. As identified in the maintenance logs the performance of the gate in the closed position is poor and requires intervention by divers to seal the gate.

The Rocky Pond Plant is currently operated with a view to avoiding the de-watering of the penstock unless absolutely necessary. This determination is the result of the condition of the penstock as well as the poor performance of the intake gate and places a serious operating limitation on the plant. With the installation of a new penstock the intake gate will be operated

more frequently to complete maintenance of turbine components. As a result a properly functioning intake gate will be critical to the operation and maintenance of the plant.

Reference: *1.2 Rocky Pond Plant Refurbishment*, page 4.

It is submitted that the August 17, 2007 Inspection Checklist does not, in the circumstances, raise a serious question regarding the need to replace the intake gate and gate guides, particularly when the headgate is leaking and the leakage presents a serious operating limitation on the Rocky Pond Plant.

6.2 Horsechops Protection, Control and Governor Refurbishment

Newfoundland Power's *2009 Facilities Rehabilitation Project* includes an item to refurbish the Horsechops protection, control and governor equipment. Specifically, this item includes the replacement of the control portion of the 54 year old gate shaft governor, upgrading of the electromechanical protective relays to modern digital multifunction relays, upgrading of the switchgear, installation of a programmable logic controller to control the plant, and the upgrading of the AC and DC electrical distribution systems inside the plant.

The Consumer Advocate states that Newfoundland Power has not established that the refurbishment of the Horsechops Governor Control System (\$127,000) and the Plant Control System (\$442,000) cannot be reasonably deferred.²

Reference: Consumer Advocate's Submission, pages 12 - 13.

² It is observed that the evidence filed with the 2009 Capital Budget Application in respect of replacement of these systems is substantially similar to that filed for previous projects undertaken to replace 1950s vintage plant and governor control systems. Refer to 2008 Capital Budget Application, *1.1 2008 Facilities Rehabilitation (Cape Broyle Plant)*; 2007 Capital Budget Application, Volume II, Appendix E, *Rattling Brook Hydro Plant Refurbishment*; 2006 Capital Budget Application, *1.2 Petty Harbour Plant Refurbishment*; and 2004 Capital Budget Application, *Schedule B New Chelsea Hydro Plant Refurbishment*.

1 The existing Governor Control System and the Plant Control System are deteriorated and require
2 replacement.

3 Reference: Schedule B, page 4 of 81; CA-NP-17; CA-NP-18; CA-NP-19; CA-NP-21.

4

5 Newfoundland Power intends to replace the Governor Control System in 2009. By then, it will
6 have been in service for 55 years. This is *twice* as long as the average life indicated by the US
7 Army Corp of Engineers³ and *40% longer* than the indicated upper range of service life indicated
8 by the US Army Corp of Engineers.⁴

9

10 The long life of the Governor Control System relative to recognized engineering experience is
11 persuasive evidence supporting Newfoundland Power's engineering assessment of deterioration
12 of the Governor Control System.

13

14 The *age and obsolescence* of the Governor Control System is relevant in terms of the reasonable
15 choices available to Newfoundland Power to replace the *deteriorated* equipment. The Woodward
16 Model HR Governor Control System is obsolete, so it is not appropriate as a replacement choice at
17 the Horsechops plant. But, Newfoundland Power is not proposing to replace *all* of its Woodward
18 Model HR Governor Control Systems in 2009. It only seeks to replace the *deteriorated*
19 Woodward Model HR Governor Control System at the Horsechops plant.

20 Reference: CA-NP-17.

³ $(15 + 40) \div 2 = 27.5$ years.

⁴ 55 (age of Governor Control System on replacement) $\div 40$ (upper range of service life estimated by Army Corp of Engineers) = 140%.

1 The evidence before the Board specifically indicates that the Horsechops Plant Control System is
2 (i) critical to plant operation; (ii) is 54 years old; (ii) is in deteriorated condition; and (iv) that it
3 has corrosion damage making its operation unreliable.

4 Reference: *1.1 Facility Rehabilitation*, pages 3 - 4; CA-NP-21.

5
6 The Consumer Advocate submits that plant availability statistics for the Horsechops Plant should
7 be considered by the Board and observes that the availability for the period 2006 through 2008 is
8 relatively high.

9 Reference: Consumer Advocate Submission, page 11.

10
11 Newfoundland Power observes that plant availability, particularly over relatively short periods of
12 time, is not an indicator of plant condition. For example, Rocky Pond availability for the 2006 to
13 2008 period is similar to that at the Horsechops plant. Similarly, in 2007 the Rattling Brook
14 plant was substantially refurbished even though it had relatively good plant availability in the
15 previous two years.

16 Reference: CA-NP-5; 2007 Capital Budget Application, CA-1.0 NP.

17
18 The capital expenditures proposed for 2009 to refurbish the Horsechops Governor Control
19 System and Plant Control System are necessary to replace deteriorated equipment in order to
20 ensure the continued provision of 43.0 GWh of low cost energy from Horsechops plant.

21 Reference: 2009 Capital Budget Application, *1.1 2009 Facility Rehabilitation*, page 1.

1 The Consumer Advocate submits that Newfoundland Power's proposed replacement of the
2 Horsechops Governor Control System and Plant Control System may not meet evidentiary
3 requirements, at least partially, because it is not shown that replacement cannot reasonably be
4 deferred.

5 Reference: Consumer Advocate's Submission, pages 12 – 13.

6
7 Newfoundland Power submits that the evidence before the Board clearly indicates both of these
8 systems have been in service for a long time; are deteriorated; and, in Newfoundland Power's
9 assessment, should be replaced.

10
11 The Consumer Advocate recognizes that the assets at Horsechops Plant have been well
12 maintained over the 54 year life of the facility.

13 Reference: Consumer Advocate's Submission, page 12.

14
15 Newfoundland Power has substantial experience in life assessment and replacement of Plant
16 Control Systems. It has successfully installed Plant Control Systems, similar to that proposed for
17 Horsechops, in 7 separate hydro plants. An 8th installation is occurring in 2008 at Cape Broyle.

18 Reference: CA-NP-21.

19
20 The record does contain a recent example of a circumstance where Newfoundland Power
21 effectively overestimated the life of a critical engineered component in a power plant with
22 catastrophic results.

23 Reference: CA-NP-20, footnote 2.

1 Ultimately, Newfoundland Power cannot accurately or responsibly predict the timing of a failure
2 of a critical engineered component of a power plant with the precision suggested by the
3 Consumer Advocate's submission. Given the evidence on the record in this proceeding, it is
4 submitted that no serious question regarding the reasonable deferral of the Governor Control
5 System or Plant Control System at Horsechops beyond 2009 arises.

6 7 **6.3 Post Demolition Assessments**

8 The Consumer Advocate has recommended that the Board direct Newfoundland Power to
9 provide a follow-up report on the Rocky Pond penstock.

10 Reference: Consumer Advocate's Submission, page 6.

11
12 The Consumer Advocate maintains that a post-demolition assessment of the Rattling Brook
13 penstock with respect to the deferral of that project would assist the Board in its deliberation on
14 the merit of the current project to replace the Rocky Pond penstock.

15 Reference: Consumer Advocate's Submission, page 5

16
17 In its 2007 Capital Budget Application, the Board through a request for information asked
18 Newfoundland Power if it was aware of follow-up reports that provide an evaluation of the
19 actual state of a penstock that has been replaced in either Newfoundland & Labrador, or in other
20 jurisdictions. In response to this request for information Newfoundland Power stated that it was
21 not aware of reports comparing the actual condition of demolished penstocks with the condition
22 established by prior engineering inspections and assessments. This remains the case.

23 Reference: 2007 Capital Budget Application, PUB 1.0-NP.

1 A follow up report was not completed on the Rattling Brook penstock project undertaken in 2007.

2 Reference: CA-NP-6.

3
4 It is Newfoundland Power's position that the justification for the replacement of Rocky Pond
5 penstock is not related to the other penstock replacements, or projects in other jurisdictions. The
6 decision to replace the 66 year old Rocky Pond woodstave penstock is based upon engineering
7 assessment that indicates that the penstock is in poor condition with deterioration along its entire
8 length. The bedding is saturated, a problem compounded by severe leakage and poor drainage.
9 Many of the steel bands are heavily corroded and adjustment is no longer possible. The *Rocky*
10 *Pond Refurbishment Report* includes an assessment by an engineering consultant recommending
11 that the penstock be replaced.

12 Reference: *1.2 Rocky Pond Hydro Plant Refurbishment*, page 3; *1.2 Rocky Pond Hydro Plant*
13 *Refurbishment*, Appendix B.

14
15 Newfoundland Power has, over the past decade, installed steel replacement penstocks in a
16 number of cases. This is economically and environmentally appropriate and appears consistent
17 with current industry practice.

18 Reference: CA-NP-12.

19
20 Newfoundland Power is at the disposal of the Board and is prepared to provide any and all
21 information necessary to assist the Board in their deliberations. However, Newfoundland Power
22 submits that such reporting should have a reasonable clear purpose. No such purpose is evident
23 on the record of this proceeding to justify the follow-up report recommended by the Consumer
24 Advocate.

1 **7.0 CONCLUSIONS**

2 **7.1 *Capital Projects***

3
4 **7.1.1 *General***

5 The projects presented in Newfoundland Power's 2009 Capital Budget Application are necessary
6 to: respond to customer growth and changes in customer requirements; replace deteriorated,
7 defective or obsolete equipment; address safety and environmental issues; and maintain or
8 improve customer service levels and operational efficiency gains.

9
10 With the exception of the matters raised in the Consumer Advocate's Submission, which matters
11 are addressed above, no specific challenge has been made to the numerous engineering
12 judgments and assessments that form the basis of the capital expenditures proposed in
13 Newfoundland Power's 2009 Capital Budget.

14
15 Newfoundland Power's proposed capital expenditures for 2009 are necessary to provide service
16 to customers that is safe and adequate and just and reasonable, and they are consistent with the
17 provision of least cost electrical service.

18
19 **7.1.2 *Newfoundland Power's Capital Management Practices***

20 To provide a broad context for the Board's consideration of the Application, Newfoundland
21 Power's 2009 Capital Plan provides overviews of (i) the Company's capital management
22 practice and how it is reflected in its annual capital budgets, (ii) the 2009 capital budget and (iii)
23 the 5-year capital outlook through 2013.

The 2009 Capital Plan contains an overview of the Company's capital management practices with special emphasis on the impact of increasing utility infrastructure cost. In recent years, Newfoundland Power has experienced increased cost in both material and contract labour associated with constructing utility infrastructure. This experience is consistent with national trends.

Reference: 2009 Capital Plan.

7.1.3 Sound Engineering Judgment

The provision of service and facilities which are "reasonably safe and adequate and just and reasonable" as required by Section 37(1) of the *Public Utilities Act* requires the exercise of judgment. In particular, the timing, necessity and appropriateness of the investment to meet the obligation to serve on a least cost basis involve sound engineering judgment.

To assist the Board in determining whether the engineering judgments reflected in the 2009 Capital Budget are sound, it is submitted that there was no evidence before the Board in this proceeding that:

- contradicts the engineering judgments reflected in the capital projects presented in the 2009 Capital Budget;
- demonstrates reasonable alternatives that were not considered by Newfoundland Power; or
- demonstrates that not proceeding with a particular capital project represented is a preferable alternative.

1 *7.1.4 Submission*

2 Newfoundland Power submits that the 2009 Capital Budget contained in the Application
3 represents the capital expenditures required to meet its statutory obligations, including the
4 delivery of electrical power at the lowest possible cost consistent with reliable service. Pursuant
5 to Section 41 of the *Public Utilities Act*, the 2009 Capital Budget should be approved in its
6 entirety by the Board.

7
8 *7.2 Rate Base*

9 *7.2.1 General*

10 Newfoundland Power has requested that the Board fix and determine the 2007 average rate base
11 for the purpose of regulatory continuity and certainty, in the same manner as the Board has
12 exercised this regulatory supervisory power since 1999.⁵

13
14 Newfoundland Power's actual average rate base for 2007 is shown in Schedule E to the
15 Application.

16
17 *7.2.2 Submission*

18 Based upon the evidence before the Board and pursuant to section 78 of the *Public Utilities Act*,
19 the Board should fix and determine Newfoundland Power's average rate base for 2007 at
20 \$793,703,000.

21

⁵ See Order No. P.U. 24 (2000-2001).

1 **RESPECTFULLY SUBMITTED** at St. John's, Newfoundland and Labrador, this 3rd day of
2 October, 2008.

3
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