Newfoundland & Labrador

BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

IN THE MATTER OF THE

2008 CAPITAL BUDGET APPLICATION

FILED BY

NEWFOUNDLAND AND LABRADOR HYDRO

DECISION AND ORDER OF THE BOARD

ORDER No. P. U. 30(2007)

BEFORE:

Robert Noseworthy
Chair and Chief Executive Officer

Darlene Whalen
Vice-Chair

NEWFOUNDLAND AND LABRADOR
BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

AN ORDER OF THE BOARD

NO. P. U. 30(2007)

IN THE MATTER OF the *Public Utilities Act*, RSNL 1990, c. P-47 (the "*Act*");

and

IN THE MATTER OF an application by Newfoundland and Labrador Hydro ("Hydro") for an Order pursuant to Sections 41 and 78 of the *Act*:

(a) approving its 2008 capital budget of $45,061,000;
(b) approving its 2008 capital purchases and construction projects in excess of $50,000;
(c) approving the proposed estimated contributions in aid of construction for 2008; and
(d) fixing and determining its average rate base for 2006 in the amount of $1,472,184,000.

BEFORE:

Robert Noseworthy
Chair and Chief Executive Officer

Darlene Whalen, P. Eng.
Vice-Chair

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I BACKGROUND

1. Current Industry Structure

Electrical services in the Province of Newfoundland and Labrador are provided by two utilities: Newfoundland and Labrador Hydro Corporation (Hydro), which is a Crown Corporation; and Newfoundland Power Inc. (NP), an investor owned subsidiary of Fortis Inc. Hydro is principally responsible for generation and transmission in the Province, with a relatively small amount of distribution in rural areas. NP operates on the Island portion of the Province and is primarily a distribution utility with some generating capacity.

Together, Hydro and NP generate, transmit and distribute electricity to approximately 265,000 domestic and general service customers. NP's operations on the Island serves approximately 87% of all general service and domestic customers. Hydro serves the remaining 13% of general service and domestic customers on the Island and in Labrador, as well as four industrial customers using regulated rates and two industrial customers using non-regulated rates.

2. The Application

In accordance with the provisions of the *Act* Hydro filed its 2008 capital budget application (the "Application") with the Board of Commissioners of Public Utilities (the "Board") on July 23, 2007. In the Application Hydro requests that the Board make an Order:

(i) approving its 2008 Capital Budget of $45,061,000;
(ii) approving the proposed 2008 capital purchases and construction projects in excess of $50,000;
(iii) approving the proposed estimated contributions in aid of construction for 2008; and
(iv) fixing and determining its average rate base for 2006 in the amount of $1,472,184,000.

The Application, in accordance with historical practice, Board guidelines and relevant legislation, includes an explanation of each proposed expenditure setting out a description, justification, projected expenditures, costing methodology and future commitments, as applicable. Additional studies and reports, including detailed engineering reports, are provided in relation to a number of projects.

3. Board Authority

i) Legislation

Section 41(1) of the *Act* requires a public utility to submit an annual capital budget of proposed improvements or additions to its property to the Board for approval no later than December 15th in each year for the next calendar year. In addition, the utility is also required to include an

estimate of contributions toward the cost of improvements or additions to its property which the utility intends to demand from its customers.

Section 41(3) prohibits a utility from proceeding without the prior approval of the Board with the construction, purchase or lease of improvements or additions to its property where (a) the cost of the construction or purchase is in excess of $50,000; or (b) the cost of the lease is in excess of $5,000 in a year of the lease.

Section 78 gives the Board the authority to fix and determine the rate base for the service provided or supplied to the public by the utility and also gives the Board the power to revise the rate base. Section 78 also provides the Board with guidance on the elements that may be included in the rate base.

Board procedures and processes are established by regulation, guidelines or rules of procedure established in accordance with this legislation. This Application was filed in the context of specific capital budget guidelines established by the Board in June of 2005.

ii) Process

Notice of the Application was published in newspapers throughout the Province beginning on July 28, 2007 inviting participation in the proceeding. Details of the Application and supporting documentation were posted on the Board's website.

Notices of intention to participate were received from the Island Industrial Customers (Abitibi-Consolidated Company of Canada, Grand Falls Division; Aur Resources Inc.; Corner Brook Pulp and Paper Limited; North Atlantic Refining Limited; and Voisey's Bay Nickel Company Limited) through their solicitors Stewart McKelvey and Poole Althouse, as well as from Newfoundland Power Inc.

The Board established a schedule for the proceeding, setting out the dates for the filing of Requests for Information (RFIs) and related responses. A total of 185 RFIs were issued and answered. No request for a public hearing was received and the Board determined the Application would be considered on the basis of the written record.

The Industrial Customers filed a final written submission on October 12, 2007 and Hydro filed its final written submission on October 16, 2007. NP did not file any information requests or make a final submission.

Grant Thornton, the Board's financial consultants, reviewed the calculations of the 2006 average rate base and filed a report on October 10, 2007 which was copied to all participants.

II PROPOSED 2008 CAPITAL BUDGET

1. Overview

Hydro's proposed total capital budget for 2008 is $45,061,000. The proposed expenditures by asset class are as follows:

Asset Class	Budget (000s)
Generation	
Hydraulic Plant	$3,974
Thermal Plant	3,461
Gas Turbines	31
Tools and Equipment	705
Total Generation	**$8,171**
Transmission and Rural Operations	
Terminal Stations	$3,246
Transmission	5,137
Distribution	8,986
Generation	1,956
Properties	2,714
Metering	659
Tools and Equipment	2,353
Total Transmission and Rural Operations	**$25,051**
General Properties	
Information Systems	$3,444
Telecontrol	3,956
Transportation	1,826
Administrative	1,612
Total General Properties	**$10,838**
Contingency Fund	**$1,000**
Total Capital Budget	**$45,061**

In its written final submission to the Board the Island Industrial Customers state that they have significant concerns with Hydro's proposed 2008 capital budget. In particular the Industrial Customers express concern about the size of the proposed capital budget and also the amount of information in Hydro's initial filing. The Industrial Customers suggest that Hydro has made no

apparent effort to adjust the capital budget application to the goals of the Province's Energy Plan, released on September 11, 2007. In addition, a number of specific projects were identified by the Industrial Customers as projects which should not be approved as presented. These concerns and the disposition advocated, along with Hydro's response and the Board's findings, are set out in the following sections.

2. Overall Capital Budget

The Industrial Customers have concerns about the relative size of Hydro's proposed 2008 capital budget, stating at pg. 4 of their final submission:

> *"While the legislation mandates an ex post facto review by the Board of Hydro's presentation, rather than a pre-emptive direction relative to the size of the capital budget, the Board's function remains to control the capital budget so as to ensure that it meets the legislative direction to provide electricity at the lowest possible cost consistent with reliable service."*

It was pointed out by the Industrial Customers that the approval being sought in this Application represents an increase of almost 20% over the amount approved by the Board for 2007 [Order No. P. U. 35(2006)] and almost a 65% increase over the amount approved for 2004 [Order No. P. U. 29(2003)]. The Industrial Customers state at pgs. 5 & 6 of their final submission:

> *"Nowhere in Hydro's filings does it even address the notion that there ought to be a limit to capital spending. All of its material is specifically project related and there is no recognition of the concept that capital expenditures should be limited either by the amount of the projected depreciation expense or by any other standard. Given that Hydro apparently fails to address this issue at all in its capital spending proposals, the necessity for the Board to impose this control is even more greatly highlighted."*

Hydro responded in its final submission at pg. 8 stating that:

> *"…prejudging an absolute level of appropriate capital spending, divorced from the realities of, e.g. pressing asset replacement requirements, would be tantamount to a tethering of the Board's jurisdiction, and would require the Board to disregard its governing legislation and long accepted public utility regulatory principles."*

The Island Industrial Customers presented a similar argument concerning rising annual capital expenditures in respect of Hydro's 2007 capital budget. On this point in Order No. P. U. 35(2006) the Board concluded:

> *"Each project is justified individually as being necessary to provide least cost reliable power. The Board approves the total capital budget and the individual projects based on the evidence filed, subsequent information provided through information requests, technical conferences and public hearings where necessary, along with written submissions. Because of the nature of the system Hydro operates it is reasonable to expect variation in annual capital budgets and the nature of projects to be undertaken in any given year would be*

> *expected to be different. The Board is of the view that to set a targeted limit on the level of capital investment is inappropriate and may deny consideration of projects that are justified."*

The Board confirms this position that a limit on capital investment as argued by the Island Industrial Customers is inappropriate and could possibly result in the denial of justified and appropriate projects in any given year. Therefore the Board does not concur with the Island Industrial Customers' position to place a specific controlling limit on Hydro's 2008 Capital Budget. The Board does note, however, that the fundamental premise upon which this finding was reached is that capital spending is approved based on a project by project assessment of information available through the application, RFIs, written submissions and other processes prescribed by the Board, including technical conferences and public hearings where necessary or required. While guidelines have been put in place to provide guidance to Hydro in the submission of its proposed annual capital budget application, the Board has in this Order rejected several projects where Hydro has failed to document the justification needed for Board approval. The Board is prepared, however, to reconsider these projects upon resubmission by Hydro and where fully supported by the requisite information. While the Board is not persuaded to impose arbitrary limits on capital spending the Board notes the onus rests with Hydro to satisfactorily prove its case to the Board before regulatory approvals are granted.

While not agreeing with the Island Industrial Customers' proposal to set a general limit on capital investment, the Board acknowledges the importance of monitoring levels of capital spending. The importance of sound capital planning in this regard cannot be underestimated and will provide useful information to the Board in exercising its regulatory oversight. The Board notes that Hydro's proposed capital expenditures for 2005, 2006 and 2007 have remained relatively stable with proposed capital spending in 2008 showing a 6.9% increase over the average proposed expenditures for this prior three-year period. The Board also observes that the capital budgets approved by the Board for 2004 and 2007, the years referenced by the Island Industrial Customers in terms of significant increases, were actually lower than proposed by Hydro because of the non-approval by the Board of certain projects in each of these years. However, more importantly, with respect to future proposed capital budgets, the Board notes Hydro's Capital Expenditures/Budgets 2002-2011 on Page E-1 of its Application shows that in 2010 the forecast spending of $65,348,000 exceeds the current 2008 request of $45,061,000 by approximately 45%, with substantial increased investment shown in generation and general properties.

In this area it would assist the Board if Hydro, within the context of its annual capital budget submissions, provided a five-year Capital Expenditure Plan focusing on strategic spending priorities beginning with the current year of the capital budget application. This Capital Expenditure Plan should report shifts in Hydro's spending priorities over the five-year period, identify changing circumstances contributing to these shifts and set out alternative approaches that are being considered by Hydro. The Board would expect that the five-year Capital Expenditure Plan for 2009 would address the Provincial Energy Plan and its impact on the Holyrood Thermal Generating Station, provide broad rationalization in terms of the level of expenditures associated with changing priorities, appropriately explain any significant future

fluctuations in capital spending, and provide insight into the future borrowing requirements of Hydro with respect to its capital programs. This five-year capital expenditure plan would provide a descriptive review and analysis of the information required by the Board along with appropriate financial schedules.

3. The Provincial Energy Plan

The Province's recently released Energy Plan outlines a timeframe for major decisions on the future of energy supply for the Province. In particular decisions to be made in 2009 regarding the development scenarios for the Lower Churchill Project may have significant impact on the future of the Holyrood Thermal Generating Station. According to the Industrial Customers, Hydro has proposed a number of projects in relation to the Holyrood plant which are justified not as matters of urgency or of short-term necessity, but rather for maintaining the Holyrood facility in its present configuration. The Industrial Customers state that this is a "business as usual" approach by Hydro to the future of the Holyrood facility which ignores the expressed intent of Government as set out in the Energy Plan that, from 2009 forward, decisions will be made about the Holyrood facility which will either render it obsolete, or at a minimum significantly modify the facility's current configuration. It was submitted that in light of these clearly expressed goals as set out in the Energy Plan and their unavoidable impact on the current configuration of the Holyrood facility, there should be a pause, at least until the critical decision year of 2009, on expenditures justified as being necessary for the long-term maintenance of the Holyrood plant.

In its final submission Hydro indicates it is vigorously pursuing the infeed[1] option with a view to its introduction in 2015 while observing that the fate of the Holyrood facility post HVDC infeed is yet undetermined. Hydro advises that studies are in progress to determine the long-term requirement for the Holyrood plant with these requirements to be confirmed in 2008-2009. As an example, Hydro points out on pg. 10 of its final submission:

> *"The Energy Plan also stated the government's intention of developing the infeed and scrubber/precipitator option in parallel. This is why Hydro submitted a proposal for a feasibility study of a scrubber/precipitator facility for Holyrood. This study will result in a preliminary design, capital cost and cash flow estimate, operating cost estimate and other information required to enable Hydro to immediately initiate this project in 2009, should this option for reducing emissions be selected."*

With respect to on-going expenditures at the Holyrood plant, Hydro concludes on pg. 9 of its final submission:

> *"In the meantime, the Holyrood plant is encountering a number of issues caused by age and deterioration that require capital works to extend the life of the plant beyond the present. In most cases where a system is failing, or is incapable of functioning as required, it is not meaningful to*

[1] Hydro states: "*The preferred solution is a High Voltage Direct Current (HVDC) infeed from the Lower Churchill project, which would eliminate Holyrood air emissions altogether, as opposed to scrubbers and precipitators, which reduce most emissions but actually increase the emission of greenhouse gas (Carbon Dioxide).*"

inquire whether an upgrade is required to bring the life of the plant beyond 2015 or to some other date; the replacement of the asset will be required in either case. In a 500 MW thermal plant, there will be very few instances where a half-measure will be possible to ensure the reliable operation of a critical system."

The Board does not concur with the Island Industrial Customers' proposal that a pause in certain capital expenditures be ordered until the long-term future of the Holyrood facility is better established in 2009. The Board remains convinced, however, that each proposed capital project at the Holyrood plant should be appropriately justified in terms of the current known circumstances. The Board does appreciate that considerable uncertainty exists associated with the long-term requirements of the Holyrood plant beyond 2015. These requirements depend on the viability of the HVDC infeed and also whether or not the scrubber/precipitator option to reduce emissions will be selected and then commenced as planned in 2009. Hydro in its evidence points to the fact that both Government and Hydro are committed to a seemingly critical path to have these decisions concluded within a 2009 timeframe.

While not wishing to delay current justifiable expenditures at Holyrood, the Board acknowledges the fact that these critical decisions will serve to influence capital spending projects at the Holyrood facility, both in the short-term and undoubtedly in the long-term. With a view to understanding the significance of these decisions on the future configuration of the Holyrood plant, the Board will require Hydro to include in its five-year Capital Expenditure Plan to be filed with its 2009 Capital Budget submission a separate section relating to the Holyrood Thermal Generating Station. This section should, in the absence of any final decision on the HVDC infeed, include an impact statement concerning alternative development scenarios reflecting how related decisions associated with each scenario might influence the physical plant, environmental considerations, operational and management imperatives as well as forecast maintenance and capital requirements for the ensuing five years. Each individual project at the Holyrood plant contained in the annual capital budget submission can then be reconciled, justified and costed in respect of one or more development scenarios. Hydro will be required to continue to file the 10-year plan of projected operating maintenance expenditures for the Holyrood plant.

4. Capital Projects Over $50,000

Hydro's Application was filed and reviewed in the context of the Board's provisional capital budget guidelines. These guidelines direct the utility in the manner in which the capital budget is to be presented and require the utility to provide certain information. Each capital expenditure over $50,000 must be defined and classified according to the guidelines. As well expenditures must be segmented by materiality. Expenditures are defined as clustered, pooled or other; and classified as mandatory, normal capital, or justifiable. A project classified as mandatory is one which the utility is obliged to carry out as the result of legislation, Board Order, safety issues, or risk to the environment. A normal capital expenditure is one that is required based on identified or historical patterns of repair and replacement. Justifiable expenditures are those which are justified based on the positive impact the project will have on the utility's operations.

In Section C of its Application Hydro provides a summary of its proposed capital projects over $50,000, which comprise $42,047,000 of the total proposed capital budget of $45,061,000. This summary shows that the majority ($36,612,000 or 87%) of Hydro's 2008 capital projects over $50,000 are classified as normal. Of the remaining 2008 expenditures $4,568,000 or 11% are classified as mandatory, and $867,000 or 2% are classified as justified.[2]

The Board has reviewed Hydro's proposed capital projects in excess of $50,000 as set out in Section B, pages B-1 to B-222, and the additional information filed by Hydro in its responses to RFIs. The following discussion addresses the particular projects which the Industrial Customers suggest should not be approved. The Board is satisfied that the remaining projects, not specifically addressed, are adequately justified based on the evidentiary record and are appropriate and necessary in the circumstances. The Board therefore will approve all projects over $50,000 that are not assessed below.

Hydro has proposed a number of projects which involve expenditures beyond 2008. The Board notes that capital budget spending in the utility context is often long term with projects spanning more than one financial year. This fact has been acknowledged in the Capital Budget Application Guidelines whereby the Board may provide approval for the utility to proceed with a project which may involve spending over the course of several years. In relation to the projects in the Application which require expenditures beyond 2008, the Board will approve the expenditures for future years as a part of its approval of Hydro's 2008 capital budget. This approval to proceed with these multi-year projects is provided consistent with the provisions and requirements of the Capital Budget Application Guidelines.

<u>Page B-9, Arc Flash Analysis, $341,800 - Mandatory</u>

This project consists of the completion of arc flash analysis studies for 9 hydraulic sites, 3 gas turbines, and 24 diesel plants. The studies are intended to quantify the maximum arc flash energy present, the arc flash boundary area, and the flash hazard category for 4160 Volt buses and breakers, 600 Volt switchgear and motor control centers, and 600 Volt power panels. The equipment will be labeled in accordance with the requirements of the Canadian Electrical Code (2006). Investigations and recommendations will be made as to what modifications can be made to equipment to reduce the arc flash levels and associated risks to acceptable levels. Hydro states that the results of the studies will define either capital upgrades or replacement of equipment necessary to minimize or eliminate the energy release during an arc flash.

The Industrial Customers state that, although Hydro has identified this project as mandatory, it has failed to identify any change in legislation that would bring the project into that category. Hydro's reference in its reply to IC 1-NLH to a proposed amendment to the *Occupational Health and Safety Regulations* is not sufficient justification for this project, according to the Industrial Customers, since the regulations have apparently not yet been enacted. The Industrial Customers

[2] The balance of the total proposed 2008 capital budget of $45,061,000 consists of $2,014,000 for projects less than $50,000 and $1,000,000 for a contingency fund.

submitted that, although this project may or may not be valuable and/or necessary, it is not justified on the basis of the material that Hydro has provided.

In its final submission Hydro states that arc flash studies have become a common practice by utilities and industry to provide essential information to workers as to the risk levels and proper procedures and equipment to be used when working on energized equipment. According to Hydro the *Occupational Health and Safety Regulations* and the Canadian Electrical Code require that electrical equipment be marked so that safe work practices and personal protective equipment are used at sites where arc flash hazards are present. Hydro also states that a portion of the funding will be used to acquire software and training to enable Hydro to carry out this work with its own resources in the future.

The Board shares the Industrial Customers' view that the project was not shown to be mandatory but is nevertheless satisfied that this project should be approved. It is clear from the evidence that the results of the studies to be carried out will improve worker safety through enhanced safe work practices and the use of appropriate personal protective equipment at sites where arc flash hazards are present. Since a portion of the capital funds will be used by Hydro to acquire software and training, cost savings may be realized in the future as a result of this work being carried out using Hydro's own resources.

<u>Page B-14, Replace 40 kW Diesel Generator, $157,000 (2008), $103,100 (2009) - Normal</u>

This project involves the replacement of the existing 40 kW diesel generator (genset) at Burnt Dam with a new 50 kW genset, exhaust, radiator and switchgear. Hydro states the unit has reached the end of its useful service life and can no longer reliably meet load requirements. It was acquired in 1986 and has been overhauled five times, with the last overhaul five years ago.

According to the Industrial Customers the information provided by Hydro in its Application and in its replies to RFIs does not provide sufficient justification for this proposed expenditure. The Industrial Customers suggest that the existing 75 kW genset in conjunction with the existing 25 kW genset is capable of providing all of the service necessary for operations at Burnt Dam, and there is no justification for the purchase of a third genset to replace the existing 40 kW genset.

In its written submission Hydro states that the two smaller gensets (65 kW combined capacity) at Burnt Dam cannot meet the total load requirements at the site, as suggested by the Industrial Customers. Replacement of the existing 40 kW unit with a 50 kW unit will allow all peak requirements to be met with the largest single unit out of service, which forms part of Hydro's reliability criteria. The difference in cost between a 40 kW and a 50 kW unit is $5,000. Hydro also states that, since the costs of replacing the unit were lower than for a rebuild, a cost/benefit analysis was not necessary.

The Board is satisfied that this project should be approved. While Hydro provided limited information in relation to this project in its Application, the responses to RFIs provided additional detail and clarification. The evidence shows that the existing 40 kW unit has reached the end of its useful life and should be replaced. The Board agrees with Hydro's position that the

replacement of the existing unit is more cost effective than a rebuild. If the existing 40 kW unit is taken out of service the remaining gensets are not able to provide sufficient power at peak. The addition of the 50 kW genset at a minimal incremental cost will provide additional reliability for load requirements at this site. The Board will therefore approve the proposed expenditures for both 2008 and 2009, in accordance with the Capital Budget Application Guidelines.

Page B-23, Salmon Spillway Stoplog Handling System, $140,600 - Mandatory

This project involves the construction of a structural steel rail and dolly system for storage and handling of the stoplogs at Salmon Spillway. The function of the stoplogs is to provide access to the main spillway gates for servicing, and also for yearly operational testing to ensure gates are available for use when required. The stoplogs are currently lifted with boom trucks which, according to Hydro, is unsafe and poses a high potential for work injury. Hydro states that this project will provide a ground level storage and handling system, eliminating the safety risks associated with boom truck operation.

The Industrial Customers submit that, although Hydro classifies this project as mandatory, Hydro is not able to identify any change in regulations which would justify this classification. This method of operation has been in place since the Bay d'Espoir plant was commissioned in the 1960s. The mobile cranes were replaced with boom trucks in 1993 and, according to the Industrial Customers, there is no indication of any actual injury resulting from the present system.

In its final submission Hydro states that the argument of the Industrial Customers in respect of this project contains two flaws of logic: (1) it overlooks the fact that the movement of the stoplogs without injury could have been the function of good fortune, not proof of a safe work practice; and (2) it ignores the established method of reducing workplace injuries through diligence and constant improvement. In its submission Hydro reiterated the safety risks associated with the existing method of handling the stoplogs, which were first identified through Hydro's internal occupational health and safety processes and resulted in a work refusal. The corrective action set out in this project proposal is intended to address this safety concern.

The Board is satisfied that this project should be approved as proposed, regardless of whether it should be considered mandatory. The boom trucks were installed in 1993 (before the Board reviewed and approved Hydro's capital budgets) and the evidence clearly shows that this method of lifting the stoplogs is unsafe and presents a risk of worker injury. According to the evidence there has been at least one instance of worker refusal because of unsafe work conditions (Hydro, Final Submission, pg. 16). This project shows that the occupational health and safety processes within Hydro are working as intended. The Board is satisfied that, having identified the safety issue, Hydro now should address it. The proposed stoplog handling system will result in a ground level handling system, eliminating the safety risks associated with the boom trucks.

Page B-30, Upgrade Access Trail - Venom's Bight, $63,700 - Normal

This work involves the mobilization of contract forces to the site to excavate the trail, at specific locations, to grades acceptable for safe use. The access trail is the main access route to the powerhouse and all other site infrastructure.

The Industrial Customers submit that the information provided by Hydro in respect to this project does not demonstrate any requirement that this project proceed.

In its written submission Hydro states that access to the Venom's Bight hydro-electric station can be gained only via this ATV trial, which has been in use continuously since construction of the plant in 1956. Because of the deterioration of the trail, Hydro argues employees are exposed to potential injury and materials and equipment are subject to damage during transport.

The Board is satisfied that this project should be approved as proposed. This trail provides the only access route to the site and, based on the photographic evidence, maintenance of the trail is required.

Page B-36, Tank Farm Upgrade (Holyrood), $500,000 - Normal

This project consists of work necessary to upgrade the fuel oil storage tanks, associated pipelines and dyked drainage system at the Holyrood Thermal Generating Station. The proposal is based on a report completed by an engineering consultant, which outlined the work necessary to upgrade the facilities for a further life extension of 20 years. The implementation plan is basically for a four-year period commencing in 2009 so the bulk of the work is not scheduled to start until that year. However because critical work is required on the interior of tank 2, Hydro proposes to implement the upgrade work for the interior of tank 2 as recommended in the report in 2008.

The Industrial Customers submit that Hydro has failed to demonstrate the necessity for this project at this time. According to the Industrial Customers, while Hydro has stated in its Application that the project is required to extend the life of the facility by 20 years, Hydro indicated in its response to IC 13-NLH that the work is required in order to allow the facility to continue in operation for 8 years. In light of this information the Industrial Customers submit that the project should be revisited with that criterion in mind. As well, the Industrial Customers indicate that, according to the response to IC 18-NLH Hydro has not fixed upon what work actually needs to be done under this project, and maintain it would be inappropriate to approve funding until a specific plan is in place. The Industrial Customers also submit it is not clear from the consultant's report that the work is urgent in nature or *"that anything critical turns upon whether this work is commenced in 2010 as opposed to 2009 (assuming this project is still deemed to be necessary or advisable at those later dates)."*

In its written submission Hydro states that in order to extend the useful life of the tanks for a further 20 years, or indeed through to 2015, upgrades are required. While it has been decided to defer to 2009 many of the upgrades recommended by its consultant, Hydro has determined that

there are cost savings in the range of $200,000 if the upgrades for the tank are effected when the tank is drained for repairs in 2008 instead of waiting until 2009.

The Board is satisfied that the project for the upgrades to tank 2 should be approved as proposed. The extent of the work required was assessed and determined based on an independent inspection report. While the bulk of the recommended work on the tanks is not proposed by Hydro in its 2008 capital budget and is anticipated to be included in the 2009 capital budget, Hydro is proposing to commence work on the upgrade of tank 2 to coincide with critical work that has to be undertaken in 2008 on the interior of tank 2. In the Board's view this is a reasonable and cost effective approach since it avoids the necessity and expense of having to drain the tank twice.

Page B-38, Replace Unit 2 High Pressure Heater - Holyrood, $19,600 (2008), $919,400 (2009) - Normal

This project consists of the replacement of high pressure heater number 5 on Holyrood Unit No. 2, reusing all existing valves and controls. According to Hydro the existing heater was installed in 1989 and, because of its age, many of the tubes have experienced up to 80% wall loss, resulting in numerous leaks that can only be repaired by plugging the tubes. As the tubes are plugged the area available for heat transfer is reduced, thus decreasing the efficiency of the heater. Hydro also states that failure to replace the heater could result in the loss of this feedwater heater resulting in increased fuel consumption.

The Industrial Customers question the justification of this $1 million project based on a rationale of efficiency loss and point to a lack of evidence for a total loss scenario. The increased annual cost of $81,000 due to increased fuel consumption identified by Hydro in its response to IC 23-NLH must be weighed against the capital cost of approving an expenditure of almost $1.0 million for complete replacement in 2008-2009. According to the Industrial Customers Hydro's suggestion that there is a risk of total failure is not supported by the evidence of its supplier, nor is there any evidence as to the degree of risk so that the risk can be weighed against the cost of total refurbishment. According to the Industrial Customers, *"This project should be deferred to at least 2009, to review whether total replacement is prudent given the future operational life for the current Holyrood plant configuration, as will be better able to be identified in 2009, and to consider whether lesser-cost refurbishment is an available and more appropriate option in 2009."*

In its written submission Hydro notes that after 18 years in service this heater has deteriorated significantly such that at present 28.6% of the tubes are plugged. This compares to the industry standard reflecting an acceptable ratio of 10%. Hydro also reiterated that, because of this deterioration, a sudden tube failure can be expected at any time, requiring that this heater and also heater number 4 be removed from service. The increased operating costs associated with such a failure would be expected to be in the range of $1.3 million.

The Board notes that this proposed expenditure is significant, with $19,600 to be spent in 2008 and $919,400 to be spent in 2009. The 2008 expenditure is related to the expected 14-month

procurement and installation cycle for a new heater. Hydro submitted a one-page justification for this project. RFIs from the Board and the Industrial Customers provided additional information, including a letter from Thermal Engineering International (TEI), the company that inspected the feedwater heater in late 2006. This letter indicates that the condition of the heater is about average for its age, with the unit about 5% plugged as of November 14, 2006. TEI recommended that, when the percentage of units plugged reaches 10%, consideration should be given to refurbishment or replacement. Hydro provided information as to the current condition of the heater in IC 21-NLH (1st Revision) indicating that 28.6% of the tubes are now plugged, resulting in a drop of 1 degree Celsius of feedwater temperature, and associated higher fuel costs of approximately $81,000 per year.

The Board accepts Hydro's evidence that the Unit 2 High Pressure Heater is nearing the end of its useful life. It was installed in 1989 with a 15 to 20 year life expectancy. In the normal course the anticipated replacement date would be between 2004 and 2009. The evidence shows that 28.6% of the tubes are now plugged and that consideration should be given to refurbishment or replacement of the unit when 10% of the tubes are plugged. The evidence also points to an ongoing increased operational cost of $81,000 a year as a result of the current condition of the tubes. The Board is concerned about the potential significant operational cost of $1.3 million associated with the increased fuel consumption for the length of time required to obtain and install a replacement heater in the event of the failure of this heater. The Board notes that there is a discrepancy in the evidence as to the particular consequences of a failure with IC 123-NLH indicating that a failure would result in three heaters being taken out of service whereas Hydro's final submission indicates that one other heater would be taken out of service. However, the estimated cost of the increased fuel consumption associated with a failure is estimated to be $1.3 million in both IC 123-NLH and Hydro's final submission.

The Board is satisfied that this project should be approved on the basis of the age of the heater, the current level of plugging in the context of a recommendation to refurbish or replace the unit at a much lower level of plugging, the elimination of annual operating costs associated with the lower feedwater temperature resulting from the plugging, and the avoidance of significant operating costs associated with failure of the heater. While the Board acknowledges that a decision may be made in 2009 as to the long term future of the Holyrood Thermal Generating Station, the Board is satisfied that the project is reasonable and necessary to ensure the continued efficient operation of the station in the short to medium term. The Board will therefore approve the proposed expenditures for both 2008 and 2009, in accordance with the multi-year project Capital Budget Application Guidelines.

<u>Page B-39, Upgrade Continuous Emissions Monitoring System (CEMS), $688,900 - Mandatory</u>

This project consists of the installation of new analyzers, data acquisition, and associated tubing and cabling necessary to convert the existing time-shared CEMS to a system with analyzers dedicated to each unit. This will enable the continuous and uninterrupted monitoring of emissions data from the Holyrood Thermal Generating Station. Hydro states this work is necessary for compliance with the requirements of the Holyrood Thermal Generating Station Certificate of Approval.

The Industrial Customers submit that the request by Hydro for approval of this project as part of its 2008 capital budget approval is premature. As indicated in responses to IC 25-NLH and IC 26-NLH Hydro submitted a plan of proposed actions with respect to the CEMS to the provincial Department of Environment and Conservation, as contemplated in Hydro's Certificate of Approval. This CEMS Compliance Plan (submitted in August 2006 according to IC 26-NLH) is still under review by the Director of the Pollution Prevention Division (the "Director"). According to the Industrial Customers, while it is not clear whether the proposed 2008 CEMS work encompasses all of the work outlined in the CEMS plan, it is evident that Hydro's justification for this 2008 capital budget proposal is based on the presumption that the CEMS Compliance Plan or components of it are necessary to bring the Holyrood emissions monitoring regime within applicable Federal and Provincial requirements, and that the plan must be implemented by January 2010. The Industrial Customers state that these are all presumptions which are still subject to review and change by the Director.

In its written submission Hydro reiterated that the CEMS currently in use at the Holyrood Thermal Generating Station does not meet the requirements of the Holyrood Thermal Generating Station Certificate of Approval. Hydro states: "*In particular, with the adoption into the Certificate of Approval of the federal standard (Environment Canada's 1993 Report Protocols and Performance Specifications for Continuous Monitoring of Gaseous Emissions from Thermal Power Generation (EPS 1/PG/7)), the uptime requirements of the CEMS have to be upgraded.*" Hydro states that its proposal will provide this capability so that Hydro can adhere to the Certificate of Approval that governs its operations at the Holyrood plant and its impacts on the environment.

Hydro states in the Project Justification on page B-40 of its Application:

> "*In February 2006, the Provincial Department of Environment and Conservation issued a new site Certificate of Approval in which it mandated that the Holyrood Thermal Generating Station comply with all requirements of Environment Canada's 1993 Report Protocols and Performance Specifications for Continuous Monitoring of Gaseous Emission from Thermal Power Generation (EPS 1/PG/7), including those aspects related to reliability (uptime). To maximize the probability that operating and reliability (uptime) requirements are met, the plant needs to convert the time-shared CEMS to a dedicated design*."

In its project justification Hydro does not however explain or identify the relevant standards in relation to operating and reliability (uptime) requirements and how the proposed project will improve the probability of meeting these standards. Hydro has also not demonstrated how the specific aspects of the proposed work will bring Hydro into compliance. The Board notes page 4 of 6 of the Continuous Emissions Monitoring (CEM) System Plan for Compliance with EPS 1/PG/7, August 2, 2006 (IC 26-NLH) which states:

> "*The following primary equipment modifications will require a period of system operation and monitoring to evaluate the level of compliance prior to implementation:*

- *Upgrade/replace DAS system and associated software (mandatory for compliance);*
- *Upgrade from time-shared system to three dedicated extractive systems;*
- *Tube bundle replacement;*
- *Upgrade heated filter and sampling probe;*
- *Building/infrastructure changes."*

According to this list of equipment modifications, only one aspect is identified as mandatory for compliance. The project description provided by Hydro in its Application describes the project as involving the installation of new analyzers, data acquisition and associated tubing and cabling necessary to convert the existing time-shared CEMS to a system with analyzers dedicated to each unit. It may be that all these aspects of the proposal are required to satisfy the requirements of the Certificate of Approval but Hydro has failed to show either what specific requirements are to be met or how the proposed project will meet these requirements.

In response to IC 24-NLH regarding whether the existing CEMS system was in non-compliance, Hydro states:

> "*Yes, the present "time-shared' system is in non-compliance with the new site Certificate of Approval dated February 2006 in so far as it does not meet the requirements of Environment Canada's 1993 Report Protocols and Performance Specifications for Continuous Monitoring of Gaseous Emissions from Thermal Power Generation (EPS 1/PG7), as required by article 72 of the Certificate."*

The response does not set out what aspects of the existing system are in non-compliance and what provision of EPS 1/PG/7 apply. Article 72 of the Certificate of Approval for the Holyrood Thermal Generating Station states the following:

> *"By August 2, 2006 HYDRO shall submit to the Director a plan for the automated CEMS to meet the requirements of Environment Canada's 1993 Report Protocols and Performance Specifications for Continuous Monitoring of Gaseous Emissions from Thermal Power Generation (EPS 1/PG/7), or its successor. The plan shall identify the proposed actions to be taken by HYDRO and shall include the time-lines for completion. Upon review of the plan and in consultation with HYDRO, the Director will establish a reasonable deadline for completion of activities necessary for the CEMS to meet the requirements of EPS 1/PG/7, or its successor. Notwithstanding this, application of specific requirements of EPS 1/PG/7 to the CEMS may be modified subject to approval by the Director."*

It is clear from Article 72 that EPS 1/PG/7 has been incorporated into Hydro's Certificate of Approval; however Hydro did not provide an explanation of how it is in non-compliance. As set out above Hydro was required to submit by August 2, 2006 a plan for the automated CEMS to meet the EPS 1/PG/7 requirements, identifying the proposed actions to be taken by Hydro and including timelines for completion. Hydro has complied with this requirement. In addition the Board notes Article 72 states that the application of specific requirements of EPS 1/PG/7 to the CEMS may be modified with the approval of the Director. The Director is also to set out the deadline for completion of the activities necessary for the CEMS to meet the requirements of

EPS 1/PG/7, which may influence the timing of the project. Hydro has not provided confirmation as to the position of the Director either in respect of the EPS 1/PG/7 requirements or the timing of the required modifications. It may be that the Director will modify the plan or delay its implementation which, according to page 5 of the plan, was to be substantially completed in 2007.

The Board notes that the existing CEMS was purchased and installed in 2003 at a cost of $684,000. In the Application Hydro identifies limitations with the current system:

i) the existing time-shared system is more difficult to run than the proposed system;
ii) small problems in one unit can lead to data loss from all three units;
iii) maintenance on the system can lead to overall system downtime;
iv) for the certification testing, the existing system requires a unit to be operated as a stand alone system with no switching from unit to unit resulting in data loss for the period of testing; and
v) the existing system is unable to individually bias the data from each stack with variables measured during the third party certification.

Having set out these limitations Hydro would be expected to show how the existing system is inadequate for the intended purpose, the available alternatives, and the net present values of the alternatives or other evaluating factors. Hydro has not justified this proposal on this basis especially given the relative newness of the existing system.

This Board is of the view that Hydro has failed to justify this project as either mandatory or otherwise reasonable and necessary in the circumstances. The Board would have expected Hydro to specifically reference the provisions of EPS 1/PG/7 which are not satisfied with the existing system and what specific changes are proposed to satisfy these requirements. Having established that the project is mandatory Hydro would then be required to show that all reasonable alternatives were considered, why the proposal was chosen and how the chosen alternative was least cost. In addition the Board would expect to see evidence of confirmation that the proposed plan was acceptable to the Director both in terms of substance and timing. The necessary information required with respect to this project has not been provided and therefore the Board will not approve the project as proposed. Hydro may choose to reapply for this project when it can supply appropriate supporting material and further updates as to the review by the Director of Hydro's plan for the automated CEMS to meet the requirements of EPS 1/PG/7.

<u>Page B-89, Replace Line Camp 98 - TL-228, $500,000 - Normal</u>

This project involves the demolition of the existing 35 year-old brick clad wood frame survival building located near structure 98 on TL-228 and replacement with a concrete block metal clad survival building at the same location. According to Hydro the project is required to ensure the timely restoration of transmission line TL-228 in the event of a catastrophic failure during winter storm conditions. The building is considered to be the most critical of the 15 survival buildings owned by Hydro. Hydro states *"Due to infrequent use and maintenance neglect, the building is not currently habitable."*

The Industrial Customers object to this proposed project on the basis that Hydro has ruled out possible alternatives to the construction of a new building to serve the intended purpose. According to the Industrial Customers temporary accommodations such as insulated and heated tent facilities as are used by persons involved in mining exploration in Labrador should be examined as a viable alternative. The Industrial Customers state that an expenditure of $500,000 on this type of project without ruling out any and all possible alternatives simply defies logic.

In its written submission Hydro states that it considered alternatives to survival camps. Hydro determined that helicopter travel is not an option because it can be unsafe and often impossible in extreme weather. Also, according to Hydro, a temporary structure such as a heated tent facility would not be a safe or dependable alternative because the cold and windy conditions experienced in the area would endanger the line crews and because the survival camp is left unattended for years on end.

While this building has not been used since the mid 1980s, the Board agrees with Hydro that the frequency and duration of use is not determinative given the isolated location of this important transmission line in the context of the probability of extreme weather. More information as to the other options that are available and examples of approaches taken by other utilities working in remote areas with similar climates would have assisted the Board in its review of this project. The Board, however, recognizes the importance of ensuring worker safety but questions why Hydro allowed this and perhaps the other survival structures to deteriorate to the point of needed replacement.

In response to PUB NLH-41 as to why there was maintenance neglect in relation to this structure which is now reported to be the most critical of the 15 survival buildings, Hydro answered:

> *"The transmission line ground maintenance crew performed regular preventative maintenance on all survival buildings. This crew was eliminated more than ten years ago to reduce staffing levels at Hydro, as a cost reduction measure."*

Hydro did not explain why remedial action was not taken in response to the inspection that was completed in June 2005 and documented in a report dated September 14, 2005 (PUB NLH-42). The report identified significant deficiencies in the structure but concluded, at that time, the overall condition of the building was good. The report set out a list of recommended work. Hydro did not advise whether the recommended work was carried out and, if not, why not. It is also not clear whether the completion of this work would have avoided the current proposed expenditure. The Board also notes that this 2005 report references an in-depth study completed in 2000 in relation to this structure and others on this line. The results of this study were documented in a report, dated June 30, 2000, but a copy of this report was not provided by Hydro.

Based on the information provided the Board has serious concerns in relation to the proposed expenditure to replace line camp 98 on TL-228. While the Board accepts that this may now be Hydro's most reasonable option in the current circumstances, it appears that it was Hydro's own

maintenance neglect which has substantially contributed to the level of capital expenditure now necessary. In this context the Board will approve the proposed project on condition that the costs of this project should not be born by customers. Therefore, unless Hydro is able to provide in a subsequent application evidence of prudence in its decision making in relation to these survival structures, the Board will not permit recovery, in part or in whole, of the associated costs from customers, either in rate base or in operating costs such as financing or depreciation expenses.

Page B-93, Construct Transmission Line Equipment Off-Loading Areas, $301,800 - Mandatory

This project was previously submitted as part of Hydro's 2007 capital budget application and was not approved by the Board. Hydro included this project in a subsequent application for additional 2007 capital expenditures but withdrew its request because of the lateness in the construction season. The project was carried forward to the current 2008 capital budget application. The scope of the proposed project for 2008 includes the construction of off-loading areas or ramps at 20 sites along the Buchans and Burgeo highways. The primary justification for the project is the safety of the motoring public and of Hydro's employees. A secondary justification is reduced times and reduced numbers of personnel to deploy off-road vehicles and maintenance staff to carry out work. Hydro confirmed in its response to IC 58-NLH that the responses provided in PUB 1-NLH to PUB 26-NLH in the 2007 Additional Capital Expenditures Application are complete and appropriate for the present capital project proposal.

The Industrial Customers refer to their previous submission on this project in the 2007 Hydro Additional Capital Expenditures Application where they objected to Hydro's proposal, stating that at a policy level provision for off-loading ramps should be the responsibility of the provincial government. According to the Industrial Customers, *"Presumably, other utilities, telephone companies, cable companies and anyone with remote sites to service are facing the same challenges as Hydro in this regard."* The Industrial Customers also raised concerns about the intended process that would be required for individual site review and approval, suggesting that the time and resources involved would likely increase the costs of this proposal. The safety of the proposed "back-in ramps" and the ability of Hydro to restrict access and use of the off-loading ramps once they are constructed was also questioned. The Industrial Customers submit that: *"The proper approach for Hydro is to join with other users of the highway system and present a case to government for provision of proper shoulders on the highways, such as apparently exist in Manitoba, which will solve the problem without exacerbating the cost of electricity consumed in the province."*

In response to RFIs relative to its 2007 Additional Capital Expenditure Application, Hydro indicated the off-loading ramps are intended to reduce the risk of collisions involving work crews and Hydro's mobile equipment and the traveling public. This safety concern was raised primarily by Hydro's work crews that carry out the off-loading operations. The intent of the project is to move the off-loading operations off the roadway shoulder to reduce the risk to both Hydro's workers and the travelling public. Alternatives such as mobile ramps or increased traffic control in off-loading areas were not found by Hydro to be acceptable in terms of addressing the safety concerns. The following additional information was also provided:

(a) Off-loading ramps are expected to be constructed within the road right-of-ways for the applicable secondary highways;
(b) Ramps will be constructed only where safety is an issue during the off-loading process;
(c) There are no plans to construct ramps along the Trans Canada Highway as the design of this highway provides sufficient shoulder widths for safe unloading of equipment and material;
(d) Each off-loading ramp will require specific approval from the Department of Transportation and Works (DOTW) area staff once final site selection has been established;
(e) Preliminary site selection will be undertaken in conjunction with DOTW to ensure the proposed sites do not have obvious issues;
(f) Hydro will be responsible for the maintenance of the off-loading ramps; and
(g) Signage will be erected indicating the ramps are not to be used by unauthorized people.

In regards to the submission by the Industrial Customers that Government should take responsibility for the provision of proper shoulders on highways, Hydro responded that the ramps are intended to be used solely to support maintenance activities of the transmission lines and are not intended to provide any direct benefits to the general public other than reducing risks associated with the off-loading and loading of mobile transmission equipment. According to Hydro the costs of a general road improvement program, as opposed to the construction of off-loading ramps, would likely be very high and is unwarranted. As part of the current application Hydro also provided a record of its consultation to date with DOTW regarding this project.

The Board acknowledges and accepts the importance of safety to both Hydro's employees and to the travelling public. Based on photographic documentation provided in the report accompanying the Application the Board agrees that there is a potential safety risk for both Hydro employees and the travelling public associated with loading and off-loading of mobile transmission equipment at certain sites. The issue then is whether the solution proposed by Hydro to construct off-loading ramps is the most reasonable and cost effective in the circumstances.

In Order No. P.U. 35(2006) the Board expressed concern regarding the lack of evidence demonstrating appropriate consultation with DOTW regarding these proposed off loading ramps. The Board notes Hydro's submission in the previous application referenced a number of discussions with DOTW regarding this proposal but indicated detailed assessments were held off pending approval of the project by the Board. However it is not clear from the evidence whether the proposed solution by Hydro is acceptable to DOTW or whether there are other alternatives or options that may be considered. As the owner and responsible Ministry for the province's highways, and the department with the expertise in this area, it would be expected that DOTW would have to provide final approval for the design and use of these ramps to ensure safety to the travelling public. Additional information consists of copies of emails to and from DOTW, which indicate that DOTW is prepared to consider the ramps on a case-by-case basis.

Another consideration for the Board is the fact that, while narrow shoulders seem to present similar problems in other jurisdictions, there appears to be no accepted industry standard for dealing with safe and efficient off-loading ramps. None of the other jurisdictions surveyed and reported on in Hydro's submission appear to have implemented permanent ramps as a solution to this problem. As expressed in the previous Order, the Board is also concerned that these ramps, once constructed, will be used by recreational and other users and may not be accessible to Hydro when needed. Another concern noted by the Board was whether the proposed signage will in and of itself be an effective deterrent to unauthorized use.

According to Hydro the proposed five-year plan has prioritized the sites selected so that the areas presenting the highest hazard will be addressed first. The proposed 20 sites for 2008 along the Buchans and Burgeo highways are the areas of most concern and ramps would be constructed first at these locations. The Board will approve the proposal for the 20 ramps for 2008 at a cost of $301,800. Hydro will have to apply in future years for approval of expenditures in relation to other ramps. Prior to Board approval to construct additional offloading areas beyond 2008, Hydro will be required to report on the progress of the 2008 planned sites in terms of the approval and design process undertaken in conjunction with DOTW and, when and if final approval is granted by DOTW, whether there are any changes required to Hydro's proposal or whether additional safety measures are required. The Board will also be interested in whether there have been any issues with respect to access to and use of the ramps by Hydro once constructed.

<u>Page B-136, Construct Bushing Storage Building, $334,900 - Normal</u>

This project involves the construction of a 15 metre long x 10 metre wide x 8 metre high pre-engineered metal building in Bishop's Falls to house spare bushings. The building will be built on a concrete pier, beam slab foundation, have minimum lighting, and no heating will be required. An overhead crane would be installed to move the bushings. There are 134 bushings of different types and voltage classes, valued at $894,000, used as spares to maintain power transformer and oil circuit breakers currently in service throughout the system. The age of the bushings in service and the critical spare bushings ranges from one year to 40 years.

Hydro justifies this project on the basis that spare bushings are critical spare parts for power transformers and oil circuit breakers, and that proper storage will preserve the condition of the spare bushings. According to Hydro testing has shown that 25 of the stored bushings units, valued at $170,000, are not serviceable and the condition of at least another 25 units of equal value is questionable. Hydro also states that bushing manufacturers recommend storage in a dry indoor location. Hydro states the project is justifiable from both an economic and system security perspective (PUB NLH-80). According to Hydro failure of transformer bushings could result in widespread and extended outages to customers if suitable replacement bushings are not readily available. The lead time for bushing purchases is typically in the order of twenty weeks.

The Industrial Customers submit that, unless a cost benefit analysis was performed to show that the ease of access would in fact save staff time, there is no justification for this project. According to the Industrial Customers the bushings have always been stored outdoors and, other

than convenience of access, this building appears to provide no benefit beyond that which could be achieved by covering these bushings with tarpaulins.

In its written submission Hydro reiterated that the proposed project is necessary to provide adequate protection for these critical equipment components, which are currently all stored outdoors. No alternative warehouse space is available.

The Board acknowledges Hydro's submission that the proposed building may protect the existing assets and provide for future storage. It is not clear from the evidence however why the bushings, which according to Hydro are critical equipment components, have been traditionally stored uncovered outdoors. The evidence indicates that some of the existing bushings which have been stored outdoors are no longer used and useful but does not demonstrate that the storage conditions are the substantial cause of this. In PUB NLH-80 Hydro states that in 2006 several bushings with various current and voltage ranges showed signs of deterioration, but did not report the cause of this deterioration. Also, given the range of age of these bushings, it would be informative to know the age of those bushings that have been determined to be no longer useful. While Hydro has noted that its research suggests that current day suppliers recommend inside storage the Board is also not persuaded that other alternatives were appropriately examined.

The Board therefore will not approve the proposed project. Hydro may reapply supplying appropriate justification which will allow the Board to properly assess the project and its associated expenditure.

<u>Page B-166, Application Enhancements – Work Protection Code, $678,100 - Normal</u>

This project involves the purchase and installation of software, which will provide tools for the safe and effective application of work protection. Hydro states that the implementation of this software system will automate the process of safety code permits in the Holyrood plant and provide workers with a safe area to perform their work.

The Industrial Customers state that, while no one can deny the importance of worker safety, nothing that Hydro has filed demonstrates that worker safety will be enhanced by spending $678,000 on this project.

In its written submission Hydro notes that the project is being proposed so that Hydro can avail of a sophisticated software tool that will help eliminate hazards associated with the issuance, control, monitoring and surrendering of permits under the work protection code. Hydro states:

> *"The complex nature of the HTGS, and the fact that 30% of Hydro's losses and near misses (651 of 2159) that have occurred since 1998 have occurred at the HTGS, indicate that additional resources are required to ensure a safer work place at this facility. The proposed system provides an automated and centralized means for operators to generate, monitor, and control the five to ten work permits generated daily at the Holyrood plant."*

Hydro also indicates that this software is being used successfully by other owners in four thermal plants and 44 hydro-electric plants.

The Board is satisfied that this project will enhance worker safety by providing an automated and centralized means to generate, monitor and control the work permits at the Holyrood plant. The existing manual procedures appear to present a real potential for safety issues to arise. The Board acknowledges that it would be difficult for Hydro to quantify in advance the expected improvements in worker safety but notes that the same software is being used at other plants in other jurisdictions. Based on these considerations the Board will approve this project.

Page B-192, Public Address System (Holyrood), $1,139,100 - Mandatory

This project consists of the replacement of deteriorated and obsolete paging equipment and extension of the coverage area to include areas currently not reached using the existing Public Address (PA) system at the Holyrood Thermal Generating Station. According to Hydro the Holyrood plant's PA system is the primary emergency communications system and is critical for the safe operation of the facility. Hydro justifies this project on the basis that the existing system, which is 37 years old, has reached the end of its useful life and is now obsolete. The system has deteriorated and some replacement parts are no longer available. As well the system cannot be extended to cover certain areas of the facility that must be reached during emergencies, including plant outbuildings, chemical storage building, the tank farm and the marine terminal. Hydro states: *"Failure to upgrade and extend the reach of the current system could result in loss of life, plant, and equipment if personnel are unable to be alerted of dangerous situations."*

The Industrial Customers state in their final submission: *"Given that the project contemplates expenditures in excess of $1.1 million, representing almost 3% of the proposed 2008 capital budget, the material filed does not justify Hydro's suggested approach."* As well, according to the Industrial Customers, given the reasonable assumption that this new system would be intended to be operational for a period at least approaching the useful life of the existing system (25 to 30 years per the response to PUB NLH-112), it is not prudent to consider such a level of expenditure until the future operational life of the Holyrood facility is clarified, in 2009.

In its written final submission Hydro states that the PA system is the fire alarm system and is critical to the functioning of the Station Safety, Communication, Warning and Evacuation Plan. The proposed system will, according to Hydro, ensure that personnel present at all of the plant's facilities can be reached through the PA system so that emergencies can be responded to in a timely fashion including, if necessary, evacuation.

The Board acknowledges the importance of having a well designed and properly functioning communication system operating at the Holyrood plant ensuring both worker safety and protection of plant and equipment, particularly given the prominent role played by the Holyrood Thermal Generating Station in supplying a reliable electricity feed to the Island portion of the Province. However, the Board has concerns regarding the level of information provided by Hydro in light of the size of this expenditure and, more importantly, the nature of the project. According to the evidence this proposal is to replace the existing 37 year old PA system and act

as the primary long-term emergency communications system, for the Holyrood plant. The Board would expect to have seen further detailed information rationalizing the pressing need to install this system as an immediate priority, identifying available options considered by Hydro in meeting such a key emergency requirement and citing specific examples of similar PA systems operating effectively elsewhere. Indeed no evidence was offered of any recent deterioration in the existing system and/or increasing maintenance/operational issues relating to the existing system and/or a change in the operational needs of Hydro which may not be met, on an interim basis at least, by the current system. Any evidence supporting either one of these scenarios or combination thereof may have served to persuade the Board that immediate replacement of the current system is warranted. Given the anticipated 2009 decision in relation to the long-term future of the Holyrood Thermal Generating Station, the Board would have expected Hydro to provide evidence showing that the existing system is in need of replacement in 2008 without consideration of the future configuration of the Holyrood plant. In the absence of such information, the Board can only speculate as to whether or not this proposed PA system may be impacted by the outcome of decisions regarding the future operations of the Holyrood Thermal Generating Station.

The Board agrees with Hydro that worker safety is of paramount importance and does not wish to compromise the on going efforts of Hydro in responding to this stated corporate priority. However the onus rests with Hydro to provide sufficient evidentiary justification to permit the Board to properly assess capital projects, particularly those requiring large-scale expenditures. Indeed the Board would expect Hydro to take particular care in satisfying this obligation where employee safety or significant operational reliability are among the project objectives. This lack of justification prevents the Board from considering the interests of consumers who must ultimately bear the costs of incremental additions by Hydro to an ever-expanding rate base, while at the same time precluding the Board from appropriately evaluating projects that impact critical life safety improvements or address key operational imperatives. Based on the limited information supplied in justifying this project, the Board is not in a position to approve the replacement of the PA system at the Holyrood plant at this time. Hydro may reapply to the Board showing why the system should be replaced now, addressing the proposed timing in the context of the long term future of the generating station and providing particulars as to the nature of the new system or, alternatively, proposing appropriate interim measures awaiting determination of the long-term future of the Holyrood plant. The Board will then be in a position to appropriately exercise its due diligence in reviewing this project and provide Hydro with a timely response.

<u>Page B-212, Upgrade Security System, $906,300 - Normal</u>

This is the second year of a three-year program approved by the Board as part of Hydro's 2007 capital budget. This project consists of the installation of additional security fences/gates, outdoor lighting systems, closed circuit cameras, card access systems, property key-locking systems, intrusion alarms, and anti-climbing devices, etc. Hydro proposes to complete priority items in 2007 and to complete additional upgrades in 2008 and 2009 with funds applied for in this proposal. Hydro justifies this project on the basis of achieving an industry specific standard of care, and states that in order for Hydro to reduce its liability, it is imperative that Hydro's

security program meet or exceed accepted industry practices respecting policies, procedures, along with physical and technical security countermeasures.

The Industrial Customers submit that, while Hydro should take appropriate steps to protect its system, the material filed does not justify expenditures on this scale. The Industrial Customers also submit that, while the role of security has changed since 9/11, much of the attention has focused on actions that might collapse large portions of the North American Grid. The Industrial Customers note Hydro has admitted nothing that happens on the island of Newfoundland could have such a result.

In its written submission Hydro states that it is being guided by its security consultants in this project and that the goal of the program is to ensure that Hydro's security systems meet standards set by the industry.

The Board approved this program as part of Hydro's 2007 capital budget. The Board acknowledges that this is a significant expenditure but accepts that Hydro should continue to ensure that its security systems meet industry standards. The Board will approve the proposed expenditure but will require Hydro to file, as part of its 2009 capital budget submission, a report describing the initiatives completed to date along with their associated costs and also setting out the remaining components of this comprehensive security program yet to be proposed.

5. Summary of Board Findings

The Board will approve all projects in excess of $50,000 as presented by Hydro with the exception of the following:

- Upgrade Continuous Emissions Monitoring System (pg. B-39) $688,900 will not be approved;
- Construct Bushing Storage Building (pg. B-136) $334,900 will not be approved;
- Public Address System–Holyrood (pg. B-192) $1,139,000 will not be approved; and.
- Replace Line Camp 98–TL–228 (pg. B-89) $500,000 is approved but unless otherwise justified Hydro will not recover the costs associated with this project from customers.

The Board will approve Hydro's 2008 capital budget for improvement and additions to its property in the amount of $42,898,000. This amount consists of expenditures in relation to all approved projects in excess of $50,000, including the project to replace Line Camp 98-TL-228, as well as projects under $50,000.

Hydro will be required to file, commencing with its 2009 capital budget application, a five-year Capital Expenditure Plan which will include the information described on pg. 5 of this Decision. This Plan should include a separate section relating to the Holyrood Thermal Generating Station as discussed on pg. 7 of this Decision. Unless otherwise directed by the Board the Capital Expenditure Plan should be updated and filed annually with each capital budget application.

Hydro will be required to file, in conjunction with its 2009 capital budget proposal relating to the three-year program to upgrade security systems, a report describing the projects and initiatives completed to date along with their associated costs. This report should also set out the remaining items yet to be completed as part of the comprehensive security program.

III. 2006 AVERAGE RATE BASE

The following table, taken from Section I of the Application, shows the calculation of the actual average rate base for 2006 compared with 2005:

	($000s)	
	2006	**2005**
Capital Assets	$1,976,170	$1,936,960
Less:		
Accumulated Depreciation	536,691	506,374
Contributions in Aid of Construction	93,713	84,627
Net Capital Assets	1,345,766	1,345,959
Balance Previous Year	1,345,959	1,353,339
Average Capital Assets	1,345,863	1,349,649
Working Capital	3,207	2,711
Fuel	24,886	21,506
Supplies Inventory	20,996	20,084
Average Deferred Charges	77,232	79,809
Average Rate Base at Year End	**$ 1,472,184**	**$ 1,473,759**

Grant Thornton, the Board's Financial Consultants, reviewed the calculation of the actual average rate base for 2006 as contained in Section I of the Application and shown above, and concluded that the calculation is accurate and in accordance with Board Orders and established regulatory practice.

Pursuant to Section 78 of the *Act* the Board will approve all the components of and Hydro's average rate base for 2006 in the amount of $1,472,184,000.

IV ORDER

IT IS THEREFORE ORDERED THAT:

1. **Pursuant to Section 41 of the *Act,* Hydro's proposed capital purchases and construction projects in excess of $50,000 are approved, as set out in Schedule A to this Order.**

2. **Pursuant to Section 41 of the *Act,* the following projects as proposed by Hydro are not approved:**

   i) **Upgrade Continuous Emissions Monitoring System (pg. B-39) $688,900;**
   ii) **Construct Bushing Storage Building (pg. B-136) $334,900; and**
   iii) **Public Address System – Holyrood (pg. B-192) $1,139,100.**

3. **Pursuant to Section 41 of the *Act,* the project "Replace Line Camp 98 – TL-228 (pg. B-89) $500,000" is approved but the costs for this project shall not be recovered from customers unless otherwise directed by the Board.**

4. **Pursuant to Section 41 of the *Act,* the 2008 Capital Budget for improvement and additions to Hydro's property in an amount of $ 42,898,100 is approved.**

5. **Pursuant to Section 78 of the *Act,* the rate base for the year ending December 31, 2006 is hereby fixed and determined at $ 1,472,184,000.**

6. **Unless otherwise directed by the Board, Hydro shall file an annual report to the Board on its 2008 capital expenditures by March 1, 2009.**

7. **Unless otherwise directed by the Board Hydro shall provide, in conjunction with the 2009 Capital Budget Application, a status report on the 2008 capital budget expenditures showing for each project:**

   (i) **the approved budget for 2008;**
   (ii) **the expenditures prior to 2008;**
   (iii) **the 2008 expenditures to the date of the application;**
   (iv) **the remaining projected expenditures for 2008;**
   (v) **the variance between the projected total expenditures and the approved budget; and**
   (vi) **an explanation of the variance.**

8. **Unless otherwise directed by the Board Hydro shall file, commencing with the 2009 Capital Budget Application, a five-year Capital Expenditure Plan in accordance with the findings of the Board in this Decision and Order.**

9. Hydro shall file, in conjunction with the 2009 Capital Budget Application, a report on the System Security Upgrade program in accordance with the findings of the Board in this Decision and Order.

10. Hydro shall pay all costs and expenses of the Board incurred in connection with the Application.

Dated at St. John's, Newfoundland and Labrador this 22nd day of November 2007.

Robert Noseworthy
Chair and Chief Executive Officer

Darlene Whalen, P.Eng.
Vice-Chair

G. Cheryl Blundon
Board Secretary

SCHEDULE A

ORDER NO. P. U. 30(2007)

ISSUED: NOVEMBER 22, 2007

NEWFOUNDLAND AND LABRADOR HYDRO

APPROVED 2008 CAPITAL BUDGET

NEWFOUNDLAND AND LABRADOR HYDRO
2008 CAPITAL BUDGET
PROJECTS OVER $50,000 - APPROVED EXPENDITURES

	2008	2009
	($000)	
GENERATION[1]	7,099	1,183
TRANSMISSION AND RURAL OPERATIONS[2]	23,363	4,569
GENERAL PROPERTIES[3]	9,422	535
CONTINGENCY FUND	1,000	-
TOTAL PROJECTS OVER $50,000	40,884	6,287

[1]**Specific projects set out on Page 2 of 4**

[2]**Specific projects set out on Page 3 of 4, including Replace Line Camp 98-TL-228 which is approved with no cost recovery from customers as set out in Decision/Order.**

[3]**Specific projects set out on Page 4 of 4**

NEWFOUNDLAND AND LABRADOR HYDRO
2008 CAPITAL BUDGET
PROJECTS OVER $50,000
GENERATION

PROJECT DESCRIPTION	2008	2009	Application Page Reference
	($000)		
Upgrade Spherical Valve Maintenance Seals - Cat Arm	1,060	-	B-5
Replace Governor Controls Unit 2 - Cat Arm	975	74	B-7
Arc Flash Study - Various Sites	342	-	B-9
Replace Cooling Water Systems Units 1 and 2 - Bay d'Espoir	264	-	B-10
Replace 40 kW Diesel Generator - Burnt Dam	157	103	B-14
Install Meteorological Stations - Various Sites	222	-	B-16
Hydraulic Structure Life Study - Bay d'Espoir	196	-	B-18
Replace Cooling Water Piping System - Hinds Lake	193	-	B-20
Salmon Spillway Stoplog Handling System	141	-	B-23
Upgrade Intake #4 Gate Controls - Bay d'Espoir	116	-	B-25
Replace Back-Up Air Dryer - Bay d'Espoir	73	-	B-27
Replace Communications Room Air Conditioner - Bay d'Espoir	64	-	B-28
Upgrade Access Trail - Venam's Bight	64	-	B-30
Replace Fire Alarm System - Cat Arm	54	-	B-32
Replace Auxiliary Service Water Pump - Cat Arm	53	-	B-34
Tank Farm Upgrade	500	-	B-36
Replace Unit 2 High Pressure Heater	20	919	B-38
Replace Unit 1 and 2 Condenser Valve Actuators	313	-	B-41
Replace Unit 2 Electromechanical Trip Device	305	-	B-43
Precipitator and Scrubber Installation Study	272	-	B-46
Replace 4160 Volt Motor Relays	172	-	B-48
Replace Unit 2 Main Steam Stop Valve	171	-	B-50
Environmental Effects Monitoring Study of Waste Water	73	87	B-52
Upgrade Ambient Monitoring Station	128	-	B-54
Soot Blowing Controls Study	123	-	B-55
Stack Breeching Study	115	-	B-56
Install Safety Egress Lighting	97	-	B-58
Auto Synchronizing Units 1 and 2	93	-	B-59
Install Stator Ground Fault Protection	85	-	B-61
Upgrade Meteorological Station	75	-	B-63
Construct Beta Attenuation Meter (BAM) Unit Enclosure	60	-	B-65
Programmable Logic Controller Replacement Study	58	-	B-66
Replace Champion Grader V-9797 - Bay d'Espoir	404	-	B-68
Purchase Grounding Trucks	61	-	B-70
TOTAL GENERATION APPROVED	7,099	1,183	

NEWFOUNDLAND AND LABRADOR HYDRO
2008 CAPITAL BUDGET
PROJECTS OVER $50,000
TRANSMISSION AND RURAL OPERATIONS

PROJECT DESCRIPTION	2008	2009	Application Page Reference
		($000)	
Purchase Spare Transformer - Upper Salmon	1,552	-	B-222
Replace Battery Banks and Chargers - Various Stations	430	-	B-71
Replace Disconnect Switches - Cow Head and Daniel's Harbour	368	-	B-73
Upgrade Circuit Breakers - Various Stations	315	-	B-74
Replace Digital Fault Recorder - Buchans	130	-	B-75
Replace Compressors - Buchans	94	-	B-76
Replace Instrument Transformers - Various Stations	74	-	B-78
Replace Surge Arrestors - Various Stations	67	-	B-80
Upgrade Station Services - Hardwoods	59	-	B-82
Wood Pole Line Management Program	2,188	-	B-83
Replace Insulators TL-232 and TL-253	848	970	B-85
Upgrade Corner Brook Frequency Converter	495	1,152	B-87
Replace Line Camp 98 - TL-228[1]	500	-	B-89
Upgrade Line TL-212 - (Sunnyside to Linton Lake)	464	-	B-92
Construct Transmission Line Equipment Off-Loading Areas	302	-	B-93
Replace Insulators - Various Stations	294	-	B-96
Upgrade Distribution Systems - Various Systems	2,727	-	B-98
Upgrade Distribution Systems - All Service Areas	2,293	-	B-101
Provide Service Extensions - All Service Areas	2,158	-	B-103
Replace Poles - South Brook and Bay d'Espoir	700	-	B-105
Replace Insulators - Various Systems	623	-	B-107
Replace Recloser Control Panels - Various Systems	223	-	B-109
Reconfigure Feeders - Happy Valley	151	-	B-112
Replace Submarine Cable Terminator - Gaultois	64	-	B-116
Replace Diesel Units - Norman Bay, Cartwright and Black Tickle	335	938	B-117
Diesel Plant Automation - Makkovik and Rigolet	516	379	B-120
Increase Generation Capacity - Charlottetown	18	577	B-122
Replace Switchgear - Cartwright	383	169	B-125
Replace Mufflers - L'Anse au Loup and St. Anthony	479	-	B-128
Replace Underground Fuel Lines - Little Bay Islands and Grey River	89	-	B-132
Replace Meter House Equipment - Various Sites	75	-	B-133
Install Day Tank and Meter - Hopedale	61	-	B-134
Construct New Office/Warehouse/Line Depot Facilities - Happy Valley	1,248	384	B-135
Upgrade Ventilation System - Makkovik	217	-	B-138
Construct Diesel Plant Extension - William's Harbour	177	-	B-140
Replace Fire Alarm System - Hopedale and Paradise River	168	-	B-142
Install Storage Ramp - Holyrood and Port Saunders	135	-	B-144
Install Chain Link Fencing - Port Hope Simpson	84	-	B-145
Upgrade Parking Lot - Whitbourne	67	-	B-147
Install Waste Oil Storage Tank - Cartwright	53	-	B-149
Survey of Hydro's Primary Right of Ways - Various Sites	52	-	B-151
Install Automatic Meter Reading - Various Systems	567	-	B-153
Purchase Meters and Equipment	67	-	B-156
Replace Off Road Track Vehicles - Bishop's Falls and Whitbourne	746	-	B-158
Installation of Fall Arrest Equipment - Various Sites	405	-	B-162
Replace Boom 6069 on Track Vehicle - Stephenville	236	-	B-164
Purchase Hydraulic Cutters and Presses - Various Sites	66	-	B-165
TOTAL TRANSMISSION AND RURAL OPERATIONS APPROVED	23,363	4,569	

[1]Project approved but costs not to be recovered from customers as set out in Decision/Order.

NEWFOUNDLAND AND LABRADOR HYDRO
2008 CAPITAL BUDGET
PROJECTS OVER $50,000
GENERAL PROPERTIES

PROJECT DESCRIPTION	2008	2009	Application Page Reference
	($000)		
Application Enhancements - Work Protection Code	678	-	B-166
Application Enhancements - Energy Systems Water Management	651	-	B-168
Application Enhancements - Corporate Systems	373	-	B-170
Cost Recovery CF(L)Co	(75)	-	
Application Enhancement - Energy Systems Optimum Powerflow	216	-	B-173
Corporate Application Environment	331	-	B-175
Cost Recovery CF(L)Co	(41)	-	
End User Evergreening Program	451	-	B-178
Upgrade Enterprise Storage Capacity	327	-	B-181
Cost Recovery CF(L)Co	(65)	-	
Replace Peripheral Infrastructure	159	-	B-183
Video Conferencing	140	-	B-185
Security Configuration Auditing	72	-	B-187
Cost Recovery CF(L)Co	(14)	-	
Server Technology Program - 2008	241	-	B-189
Customer Service Application - Hydro Place	768	182	B-193
Replace Power Line Carrier TL-212 - Sunnyside to Paradise River	466	-	B-195
Replace Remote Terminal Units - Various Sites	319	-	B-197
Microwave Site Refurbishing - Gull Pond Hill	202	-	B-199
Replace Dial Backup System - Various Sites	201	-	B-201
Install Recloser Remote Control - Change Islands	194	-	B-202
Replace Radomes - Various Sites	124	-	B-204
Replace Network Communications Equipment - Various Sites	131	-	B-205
Voice Communications Strategy Study - Hydro Place	190	-	B-207
Replace Network Management Tools - Hydro Place	81	-	B-209
Replace Vehicles and Aerial Devices - Various Sites	1,826	-	B-210
Upgrade System Security - Various Sites	906	-	B-212
Purchase Spare Transformer - Hydro Place	87	353	B-214
Install Computer Room Inergen Fire Protection System - Hydro Place	116	-	B-216
Safety Hazards Removal - Various Sites	252	-	B-217
Replace Humidifiers in Air Handling Units - Hydro Place	58	-	B-219
Replace Air Conditioning Units - Hydro Place	56	-	B-220
TOTAL GENERAL PROPERTIES APPROVED	9,422	535	

Newfoundland & Labrador
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