

IN THE MATTER OF the *Public Utilities Act*
(the “Act”) and

IN THE MATTER OF an application by
Newfoundland and Labrador Hydro for
approval of: (1) its 2004 capital budget
pursuant to s. 41(1) of the Act; (2) its 2004
capital purchases, and construction projects
in excess of \$50,000 pursuant to s.41(3)(a)
of the Act; and (3) its estimated contributions
in aid of construction for 2004 pursuant to
s. 41(5) of the Act.

INDUSTRIAL CUSTOMERS’ SUBMISSION

INTRODUCTION

Abitibi Consolidated Company of Canada, Stephenville and Grand Falls Divisions, Corner Brook Pulp and Paper Company Limited and North Atlantic Refining Limited (collectively referred to as “Industrial Customers”) are the only industrial customers served by Newfoundland and Labrador Hydro (“Hydro”) on the Island of Newfoundland. Together, they are being asked to pay approximately \$52.3 million to Hydro for electricity in 2004¹, an increase of roughly \$5.5 million dollars over the 2002 final forecast revenues from the Industrial Customers as filed in August 2002 in response to P.U. 7 (2002/2003). This increase is in addition to the increased amounts demanded under the Rate Stabilization Plan, the total increase being approximately 30%.

The proposed 2004 capital budget would contribute \$1,938,696² to the 2004 forecast system costs and more than that to subsequent years, as the capital costs are only charged for the part of the year when the projects are completed. For Industrial Customers, IC-12 provides the impact over the 4 years 2004-2007 as \$615,000 while Newfoundland Power customers can expect to pay \$3.056 million over the same time period arising solely out of the proposed 2004 capital budget.

Thus, the proposed 2004 capital budget will have a direct impact on revenue requirement for 2004 and for industrial and other rates in 2004 and beyond. Moreover, the 2003 capital budget approved by the Board in P.U. 29 (2002-2003) will contribute an additional \$4.5 million to the 2004 revenue requirement³ for a total revenue requirement impact of roughly \$6.5 million in 2004 from those two capital budgets.

This clearly indicates the significant impact that capital expenditures have on revenue requirements and rates.

THE CAPITAL BUDGET FRAMEWORK

The Industrial Customers submit that a balanced approach is required in reviewing Hydro's proposed capital expenditures for any year. Achieving that balance requires a careful analysis of the applicable legislative framework.

Section 41 of the Public Utilities Act⁴ clearly states that a public utility not only requires the approval of the Board for its capital projects for the following year but also prohibits proceeding with the proposed capital expenditures without the prior approval of the Board.

Section 3(b) of *The Electrical Power Control Act, 1994* provides that it is the power policy of the province that

“all sources and facilities for the production, transmission and distribution of power in the province should be managed and operated in a manner

- (i) that would result in the most efficient production, transmission and distribution of power,
- (ii) that would result in consumers in the Province having equitable access to an adequate supply of power,
- (iii) that would result in power being delivered to consumers in the province at the **lowest possible cost consistent with reliable service**.”⁵

(emphasis added)

Section 3(b) further directs that “where necessary, all power, sources and facilities of the province are to be assessed and allocated and re-allocated in the manner that is necessary to give effect to this policy.”⁶

Moreover, pursuant to Section 4 of the *Electrical Power Control Act, 1994* the Board, in carrying out its duties and exercising its powers under the *EPCA* or under the *Public Utilities Act*, is directed to implement the above power policy and “in doing so shall apply tests which are consistent with generally accepted sound public utility practice”.⁷

In other words, the Board must receive sufficient information from Hydro to satisfy itself that the proposed capital budget complies with the power policy. In order to do that Hydro must prove to the Board, on the balance of probabilities, that its proposed projects meet the criteria mandated in the power policy set out in Section 3 of the *EPCA*. If the Board is not satisfied then it must reject the proposed capital budget or portion of it.

The Industrial Customers submit that there is insufficient evidence before the Board in relation to a great many of the proposed projects to satisfy a reasonable person that they would result in the most efficient production, transmission and distribution of power and would result in power being delivered to consumers in the province at the lowest possible cost consistent with reliable service. The Industrial Customers submit that the legislature’s choice of “lowest possible cost” indicates the emphasis intended to be placed by the Board on the cost element.

INDUSTRIAL CUSTOMERS' POSITION

The Industrial Customers have a great deal at stake when dealing with these issues. On the one hand, they need reliable service because they operate manufacturing enterprises which are sensitive to power interruptions. On the other hand, the Industrial Customers are also sensitive to energy cost increases which have an impact on their cost of production and competitiveness in the international marketplace. The Industrial Customers therefore approach the capital budget with a considerable amount of caution. They are not reckless, nor, as Hydro has previously suggested, do the Industrial Customers take "the scatter gun approach... attack as much as you reasonably think you can in the hopes that something will stick." ⁸

Despite their active participation in both the 2002 and 2003 Capital Budget hearings, the Industrial Customers were not aware until June, 2003, through Hydro's response to IC-5 that the Board had ever issued or approved guidelines for the minimum filing requirements for new generation and transmission projects on the Island Interconnected System. Moreover, the Industrial Customers were shocked to discover that those guidelines had been developed jointly by the two electrical utilities in the Province which the Board regulates, without any input from stakeholders, resulting in a situation where the regulated bodies have effectively set the guidelines by which they are to be regulated with respect to new generation and transmission projects.

While that is certainly disconcerting, in the present case it is of little import since there are no new generation or transmission projects proposed on the Island Interconnected System. Moreover, the Board in its letter dated August 19, 1999, did direct the utilities to focus on lowest cost and on options in relation to those types of projects. However, the presence of these guidelines cannot be taken as an indication that other projects require less information or scrutiny. Regardless of the nature of the project, the power policy of the province must be applied and the Board must exercise its duties and powers to ensure that it is applied.

Equally, the existence of PU-36 (2002-2003) dated December 23, 2002 requiring Newfoundland Power to attend “a technical conference where the issues of process and filing requirements for capital budget applications will be addressed” and where “It is also expected that this conference should serve to clarify the responsibilities of the utility and the Board with respect to the capital expenditure approval process as required under the *Act*”⁹ does not relieve the Board of responsibility to ensure that each project proposed by Hydro in this hearing meets the objectives stated in the power policy.

It is obvious from the submissions of the Industrial Customers on capital budgeting with respect Hydro’s 2002 and 2003 Capital Budget hearings, that the Industrial Customers have great concern with the “capital expenditure approval process”.

Despite extensive participation by the Industrial Customers in the 2003 Hydro Capital Budget hearings, PU-29 approved every single capital budget item proposed by Hydro.

The Board, in its findings,¹⁰ accepted Hydro's 2003 Capital Budget without any analysis of or reference to the power policy or any of the significant issues raised by the Industrial Customers. The Industrial Customers fear that the Board has reversed the burden of proof with respect to Capital Budget hearings. In other words, instead of requiring Hydro to prove, not only that its proposed projects are necessary for reliable service, but also that they are at least cost, the Board requires an intervener to prove that they are not. The Industrial Customers submit that is the wrong test.

It is not intended that the Board approve a capital budget based on blind faith. This is a legal proceeding and the Board must act on the basis of the evidence before it. The Board is entitled to hear all the evidence which reasonably bears upon the decisions it must make. It is not sufficient that the Board conclude that Hydro has exercised its judgment, or even its best judgment, in putting forward the project in question; the Board must be able to reach a conclusion of its own that the capital expenditures are appropriate and least cost, consistent with the legislation which the Board must apply.

CAPITAL PROJECTS TO WHICH THE INDUSTRIAL CUSTOMERS DO NOT OBJECT

At the settlement conference on June 18, 2003 the Industrial Customers indicated that, with respect to projects not affecting Industrial Customer costs, namely, those found at pages C-2, B-25, B-43, B-45, B-47, B-48, B-51 and B-52 the Industrial Customers are not making any specific submission.

With respect to projects at pages B-29, B-39, B-41, B-85 and B-86 of the Application, the Industrial Customers requested additional clarification on cost assignment related to those projects. Having reviewed Hydro's letter dated June 24, 2003 to counsel for the Board, the Industrial Customers have advised that they are not making any submission with respect projects at pages B-39, B-41, B-85 and B-86 of the Application.

With respect to the project at page B-29, the Industrial Customers have taken no position with respect to the portions of the project relating to protection for lines TL-239 and TL-226.

As a result of the information provided on cross-examination during the course of the hearing, the Industrial Customers make no submission respecting the projects at pages B-14, B-16, B-28, B-30, B-31, B-33, B-35, B-37, B-73 and B-75.

Further, the Industrial Customers do not object to the allowance of 1 million dollars for unforeseen events.

The Industrial Customers reiterate that their lack of objection to the above noted projects should not be taken as consent.

PROJECTS TO WHICH THE INDUSTRIAL CUSTOMERS OBJECT

The Industrial Customers have serious issues and concerns with respect to the following Projects:

Replace Unit No. 7 Exciter – Bay d’Espoir	\$750,000.00	B-5
Replace Gate Hoist No. 2	\$508,000.00	B-8
Replace Unit 2 Governor Controls – Cat Arm	\$540,000.00	B-10
Replace Unit 2 Exciter – Cat Arm	\$519,000.00	B-12
Upgrade Control System – Holyrood	\$1,553,000.00	B-17
Purch/Inst Ambient Monitoring System Enhancement	\$728,000.00	B-19
Upgrade Civil Structures	\$78,000.00	B-22
Replace Insulators TL233	\$1,055,000.00	B-27
Upgrade 138 Kv and 66 Kv Protection – Deer Lake et al	\$150,000.00	B-29
Replace EMS – Energy Control Centre	\$4,293,000.00	B-53
Corporate Application Environment	\$540,000.00	B-59
Applications Enhancements	\$463,000.00	B-60
Security Program – Centralized Log Monitoring	\$83,000.00	B-62
Security Program – Secure Remote Access	\$75,000.00	B-64
End User and Server Evergreen Program	\$2,000,811.00	B-66
Peripheral Infrastructure Replacement – 2004	\$101,000.00	B-69
Replace VHF Mobile Radio System	\$3,048,000.00	B-71
Replace Remote Terminate Unit for Hydro – Phase 5	\$314,000.00	B-77
Replacement of Operational Data and Voice Network – Ph 2	\$971,000.00	B-79

Replace Vehicles – Hydro System – 2003	\$1,142,000.00	B-81
Replace Vehicles – Hydro System – 2004	\$1,081,000.00	B-83

REPLACE UNIT NO. 7 EXCITER BAY D'ESPOIR \$750,000.00, PAGE B-5

This is a project for which a very small portion was approved for engineering in the 2003 capital budget.

During the 2003 Hydro Capital Budget application, the Industrial Customers raised considerable questions with respect to projects for which only one or two percent approval, in the way of engineering, was requested for 2003.

As noted in PU-29 (2002-2003):

“Board Counsel, Ms. Newman, questioned the witnesses regarding the inclusion of expected future years’ capital expenditures in the ‘Explanations’ sheets provided by Hydro. Mr. Haynes explained that approval of the expenditures projected beyond 2003 will be sought in future years’ Capital Budget applications. He admitted, however, that in some cases where projects are carried into future years before completion, and bearing in mind that each year’s capital budget required Board approval in the prior year, there is a possibility of costs being stranded if future years’ budgets are not approved.”¹¹

The Industrial Customers are therefore fully entitled to explore and object to such projects in this hearing.

As of May 31, 2003, none of the funds that had been approved for 2003 with respect to this item had been spent. Mr. Haynes suspected that that was still the case as of July 7, 2003.¹²

Mr. Haynes testified that based on consultant information and industry practice, 20 to 30 years is a typical useful life for an exciter. It is possible to get more.¹³

The unit in question was installed in 1977. It was to be depreciated over a term of 50 years.¹⁴

Appendix G, Tab 1, from the 2003 capital budget, contains a report on the exciter which was done by Generation Engineering in 2000. The report, at section 2.1, indicates that performance of the No. 7 Exciter over the previous five years “could be described as excellent”. The report also outlines the service history of Exciter No. 7 and indicates that there was one forced outage on October 23, 1997.

Page B-15 of the 2003 Capital Budget Application under “Operating Experience” indicates that the most recent repair of the exciter was a fan failure in September, 2000. In the current 2004 Capital Budget Application, the operating experience section indicates that the most recent repair is the same fan failure from September, 2000. There is no evidence of any significant existing problems with the No. 7 Exciter at Bay d’Espoir.¹⁵

The only substantive justification provided for this project is that General Electric has identified two cards that are obsolete and no longer manufactured. Hydro has one of these cards in stock, according to page B-6 of the Application. However, Hydro does not have a spare "Field Temp Simulation" card.¹⁶

The 2000 report prepared by Generation Engineering¹⁷ indicates on page 6 that General Electric offers a return and repair option for the obsolete cards and will continue to provide technical support on the exciter in the near future. While GE can't guarantee parts availability, it indicates that in the event that the cards become obsolete, re-engineering may be required.

Mr. Haynes testified that Hydro has not investigated the cost of a re-engineered Field Temp Simulation card.¹⁸

Mr. Haynes also indicated that Hydro has not, to his knowledge, attempted to get a spare Field Temp Sim card from other sources¹⁹ even though Hydro has known since 2000 that there were two cards which were no longer available.

In an e-mail dated February 10, 2000 from General Electric to Hydro, General Electric suggests review of the cost of stocking enough components for a five-year period. Mr. Haynes stated that this was not done.²⁰

Hydro has provided no information justifying the replacement of the No. 7 Exciter at Bay d'Espoir in 2003. The 2000 report indicates a technical lifetime of 30 years. The static exciter electronic components are expected to have a service life of 20 to 25 years. Obtaining a spare Field Temp Sim card from sources other than the manufacturer has not been tried. In addition, Hydro has not explored the cost of obtaining a re-engineered card to hold as a spare. Given the expected life of the electronic components, it would be anticipated that a replacement of the original cards, with spares, would extend the life of the exciter to its full 30-year predicted life span.

Hydro has not provided any information to establish that replacing the Unit No. 7 Exciter at Bay d'Espoir in 2004 is the least possible cost option for reliable service. The record is clear that with proper planning there are other alternatives consistent with reliable service. The relative cost of those alternatives is unknown.

REPLACE GATE HOIST NO. 2 – EBBEGUNBAEG CONTROL STRUCTURE
\$507,900.00, PAGE B-8

This is another project for which a very small portion of the cost for engineering/specification development was approved in the 2003 capital budget. The Proposed Project contemplates the replacement of the existing screw stem hoist mechanism for gate number 2 with a wire rope type hoist. No expense had been incurred with respect to the 2003 portion of this project as of May 31, 2003.²¹

Hydro has established that it is encountering significant difficulty with the existing gate hoist No. 2. Although the two screw stems, drive nuts and extensions were replaced in 2000, slight bends have since developed and the drive nuts were replaced again and screws straightened in December, 2002.

Hydro proposes that upon removal of the existing hoist, it will be retained to provide spare parts for the remaining two gates. It is not anticipated that the hoist for the remaining two gates will need to be replaced. The primary gate used is gate number 2 because it is hydraulically preferred.

The Industrial Customers do not question that high reliability with respect to the operation of this gate is important.

Notwithstanding the foregoing, however, the Industrial Customers do have difficulty with this proposal.

Hydro has not provided any information with respect to the cost of maintaining the existing gate hoist No. 2 over the next three to five years. Hydro has not undertaken that exercise. In addition, Hydro has not investigated the cost of replacing the existing gate hoist with another, more sturdy, screw stem hoist.²²

Mr. Haynes acknowledged that the Board really does not have anything specific in front of it to demonstrate that this is the least possible cost option.²³

REPLACE UNIT 2 GOVERNOR CONTROLS – CAT ARM, \$540,000.00, PAGE B-10

The Unit 2 governor controls at Cat Arm have been in service since 1984 or roughly 19 years. The average service life expected of the exciters, including the governor controls, was 25 years.²⁴ Thus, the Unit 1 and Unit 2 governor controls at Cat Arm would have been expected to be in service until 2011.

The Project Justification indicates that the replacement is required due to the manufacturer's decision to discontinue repair or replacement of electronic cards by the end of 2004. Hydro does have some replacement electronic cards. There is no suggestion in the project justification that spares are no longer available. In fact, it is clearly implied that spares will be available until the end of 2004.

Hydro does not appear to have looked at the cost associated with stocking additional spares nor has it provided any information on the maintenance costs associated with maintaining the governor controls versus the cost associated with new governor controls.

Hydro has suggested that the parts from the Unit 2 governor controls would be held to be used as replacements in the event of failure in the Unit 1 governor controls.

However, Hydro has done no analysis of the benefit, in terms of extended life, if any, of the Unit 1 governor controls as a result of replacing those on Unit 2 and keeping the parts.

In addition, there is no explanation why Hydro has chosen to replace the Unit 2 governor controls over the Unit 1 governor controls other than the fact that hydro proposes to change the Unit 2 exciter. The only explanation for the project at all is found in the evidence of Mr. Haynes at page 35 of the July 8, 2003 transcript. He indicated that the reason it is considered necessary to replace the governor control now is "because there is little future support". He does not indicate that there is no support.

Mr. Haynes confirmed that the most recent quote obtained on the governor controls was obtained in July, 2000. We do not know if what is contemplated is now the most up-to-date technology.

There does not appear to be any compelling reason to replace the Unit 2 governor controls at Cat Arm in 2004. There is spare parts availability at the present time which would allow parts to be stocked.

There has been no cost benefit analysis with respect to the potential extended life of the Unit 1 governor controls. There has been no projection as to maintenance costs on these controls if nothing is done in 2004.

The Industrial Customers submit that there is nothing before the Board to indicate that this is the least possible cost option for 2004 consistent with reliable service.

REPLACE UNIT 2 EXCITER – CAT ARM, \$518,000.00, PAGE B-12

The existing exciter was installed in 1984. The report on the exciter prepared by Generation Engineering in 2000 and found at Appendix G, Tab 1 to the 2003 Capital Budget Application indicates at page 5 that performance during the period 1995 to 2000 was excellent. There has only been one problem since that time. That occurred in September, 2001. The field breaker was successfully repaired.

Hydro acquired spare parts for this exciter and for the other exciter at Cat Arm in 1999. Those spare parts are still in inventory. In addition, the Unit 1 exciter was replaced in 2002 and that would have generated spare parts.²⁵

Hydro has not looked at the cost associated with keeping the existing exciter.²⁶

Maintenance capability is still available. There is no evidence of any real risk with respect to reliability associated with maintaining the existing unit.²⁷

The Industrial Customers submit that the evidence demonstrates that the least possible cost alternative consistent with reliable service is maintaining the existing exciter.

UPGRADE CONTROL SYSTEM – HOLYROOD, \$1,553,000.00, PAGE B-17

This project, if approved, would involve expenditure in 2004 of \$1,552,600.00 with a planned further capital expenditure in 2005 of \$1,034,100.00 for a total \$2,586,700.00.

In its project justification Hydro states that “A replacement is necessary to maintain plant availability and reliability” (emphasis added). However, as the evidence progressed, it became clear that the aforementioned statement was somewhat misleading.

The project is described as replacing “obsolete distributed control systems” on each of the three units at Holyrood. The distributed control systems (DCS) on Units 1 and 2 are WDPF Level 6 which were installed in 1988. The Unit 3 DCS is WDPF Level 7 installed in 1992. However, according to PU19 (1999/2000) Hydro spent an additional \$476,000.00 in 2000 to purchase and install DPUs for Units 1 and 2, an indication that some of them are fairly current.

In answer to IC-27 Hydro provided a Life Cycle Planning Program Sales Evaluation and Report Guide dated March, 2001 (the “Guide”). The introductory paragraph of that

document indicates that the goal of the Westinghouse/Emerson system life cycle program is to help users of WDPF and Ovation systems develop the best short and long term process automation strategies for their plant. It also indicates that “final decisions regarding strategy would need to be determined within the greater context of the customer’s system functionality requirement, plans for future expansion, budgetary constraints and overall business strategy.” (emphasis added)

As part of this project Hydro submits that it must replace its WDPF levels 6 and 7 systems with the Ovation system. However, the Westinghouse/Emerson Guide’s short term planning recommendation is to upgrade to a 486 level DPU and PCH or WEstation while the long term planning recommendation is to “consider” migration to Ovation.²⁸

When Hydro installed WDPF level 7 on Unit 3 in 1992, WDPF level 7 had already been replaced by WDPF level 8. WDPF level 7 was “active” but had been replaced by a more current product.²⁹ We therefore know that Hydro does not always choose the most current product. We also know that the technology is constantly changing.

Page 6 of the Westinghouse/Emerson Guide contained in IC-27 indicates that one possibility is to upgrade to WEstation and later upgrade to Ovation if a gradual migration is desired. The Guide indicates that the life of the current system will thereby be extended and that this provides a migration path to Ovation which is fully supported. On page 8 the Guide indicates that, with respect to classic engineer MMI, if long term planning involves migration to Ovation, then the migration path is the WEstation

Engineer. A similar comment is made on pages 9, 10 and 11 with respect to the other components of WDPF level 6. For the Unit 3 WDPF level 7, the DPUs can be upgraded to 486 while, if long term planning involves migration to Ovation, then the migration path for the other components is WEstation with the exception of PCH, the functions of which can be replaced by either WEstation or Ovation.

Notwithstanding Hydro's evidence, it is clear from the Life Cycle Planning Report dated November, 2002 prepared by Hydro,³⁰ that alternatives 2 and 3 do not compare the options contained in the Westinghouse/Emerson Guide found in IC-27.

Mr. Haynes testified, in response to an undertaking, that alternatives 2 and 3 follow the short term recommendations put forth by Westinghouse for all the relevant systems at Holyrood.³¹

A review of page 6 of the Report prepared by Hydro in Section G, Tab 2 indicates that the capital cost for alternative 2 includes the purchase of used and/or "last buy spares." This contributes \$92,760.00 in cost to the alternative. In addition, alternative 2 contemplates that the upgrades to WEstation occur over a period of 7 years from 2004 to 2011. That option then projects extremely high maintenance costs in the period 2004 to 2011 which greatly distorts the comparison to alternative 2. In addition, Hydro's total projected engineering and labour costs associated with alternative 1 over the period to

2020, totals \$140,000.00 whereas for alternative 2, engineering and labour is projected to be \$209,480.00. There is no explanation.

In order to do a proper comparison of migration to Ovation versus upgrading to WEstation and later migrating to Ovation, the upgrade to WDPF level 8 and WEstation would have to occur over the two years 2004-2005. For WDPF level 6 this would involve upgrading the DPU's with the highest cycle time and database usage to 486 with upgrade to WEstation Engineer, WEstation Operator, WEstation Historian and WEstation Logger.

For WDPF level 7 used on Unit 3, alternative 2 should include upgrading the DPU's to 486, upgrading to WEstation Engineer, WEstation Operator, WEstation Historian and to ISA based PC and DHC data highway interface together with the other component replacements described in pages 7 – 17 of the Westinghouse/Emerson Guide. This would eliminate from alternative 2 the last buy spares and should have a significant impact on the labour and engineering costs. It would also result in decreased operating costs and provide a more fair comparison.

Alternative 3 does not contemplate the third option set out in the Westinghouse/Emerson Guide which involves an upgrade to PCH or WEstation without migration to Ovation. That has not been considered.

On the other hand, alternative 3, which purports to be maintaining the current WDPF and analyzing migration annually, contains replacement assumptions and cost assumptions for which there is no supporting data.

Hydro, at page 6 of its Report, indicates that alternative 2 is eliminated for practical purposes because WDPF level 8 is assigned “active” status with a support commitment date of January, 2012. This is inconsistent with the information contained in the Westinghouse/Emerson Guide. Although support for WDPF level 8 will terminate in 2012, the recommendation for the short term indicates that WEStation is the migration path to Ovation. This implies that the later upgrade from WEStation to Ovation is a reasonable and likely cost-effective alternative.

A further problem with this project and the analysis is that Hydro, in its Report, concludes on page 2 that upgrading or migrating is more cost efficient than implementing a DCS from a different supplier. However, according to the evidence, Hydro has not investigated the cost of acquiring a DCS from a different supplier.³²

While Hydro has provided evidence that some amount may need to be spent in 2004 to upgrade and/or replace some components of the distributed control systems for the three units at Holyrood, Hydro has provided no comparison of the relative cost of its preferred alternative 1 to the transitional short term and long term recommendations made by the manufacturer involving upgrading to WDPF level 8/WEStation and later

migrating to Ovation or other alternatives in the Guide. Hydro has also not looked at the cost of systems from other suppliers.

Hydro has not provided reliable financial information to enable the Board to determine that its proposed capital project is the least possible cost alternative consistent with reliable service.

AMBIENT MONITORING SYSTEM ENHANCEMENT - \$728,000.00, PAGE B-19

The Holyrood Thermal Generating Plant has been in place since 1971. The following air quality monitoring projects have been approved since 1995:

1996 - four permanent Ambient Monitoring Stations to measure SO ₂ and TSP	\$414,000.00;
1999 (TU32) (98/99) opacity meters installed on stacks to monitor visible emissions (smoke density) of exit gasses	\$403,000.00;
2002 – approval for CEM system to monitor NO _x , CO ₂ , CO and O ₂ at the stacks and to manage emissions through the control of combustion process	\$801,000.00;
2003 – mobile ambient monitoring station to monitor fine particulate, NO _x and SO _x at different places from the permanent stations -	\$184,000.00;
2003 – study to investigate technologies to reduce air emissions including particulates from the Holyrood Thermal Plant -	\$150,000.00
Total: \$1,952,000.00	

Of the above amount, \$1,538,000.00 has been approved since 1999.

The 2002 project to install the continuous emission monitoring system at the stacks and to manage emissions through the control of the combustion process is not yet completed. It is not expected to be completed until some time in 2003.

The mobile Ambient Monitoring Station to monitor fine particulate, etc. at different places from the permanent stations and approved as part of the 2003 capital budget is not yet in place and the study approved as part of the 2003 capital budget to investigate technologies to reduce air emissions including particulates from the Holyrood Thermal Plant was not started as of May 31, 2003.

Having yet to receive any data from the projects approved for 2002 and 2003, Hydro now proposes to spend an additional \$728,100.00 from monitoring, bringing its five-year total just to monitor and study air emissions to \$2,266,100.00.

In 2003, the mobile Ambient Monitoring System was justified on the basis that it is moveable and thereby more flexible in its application. The cost of that unit is roughly 25% of the cost of this project to monitor two of the same items, fine particulates and NO_x which are to be monitored if this project is approved.

There is no evidence that this project is required by any existing regulatory or governmental agency. It is admitted that it is not required by statute. The cost of acquiring one or two extra ambient monitoring systems is less than half of what is proposed here and would cover two of the sites and still provide mobile capability. However, there is no cost to Hydro associated with rejecting this project. It is not required by the regulator. It has no impact on service. It has no effect on Hydro's ability to supply its customers. There has been no analysis of alternative ways to approach the monitoring. In fact, there is not even any evidence of an ongoing problem at any of the proposed locations.

The Industrial Customers submit that this project should be rejected in its entirety. There is no demonstrated need for it and it does not meet the criteria of least possible cost consistent with reliability. It is also premature given the lack of available data from the projects which have already been approved but which are not yet up and running.

UPGRADE CIVIL STRUCTURES – HOLYROOD, \$78,5000.00, PAGE B-22

The Industrial Customers understand that all of the \$78,500.00 proposed as part of the 2004 capital budget is related to engineering and corporate overhead, etc. associated

with the proposed work on boiler stack NO. 2 which Hydro will include as part of its 2005 capital budget.

A similar replacement of the stack liner on Unit No. 1 was approved by the Board in 2003. At that time, all of the work, including the engineering, was planned to be done within the capital budget year. Hydro expects the replacement of the stack liner on Unit No. 1 to be completed in 2003 as originally planned.

Hydro has provided no information or evidence to justify doing the engineering for this project in 2004. The engineering is less complicated given the work on the other stack. It clearly can be deferred to 2005 without compromising any potential work on stack No. 1 in that year.

The Industrial Customers submit that this project should be rejected for the 2004 capital budget.

REPLACE VEHICLES-HYDRO SYSTEM-2003, \$1,142,000.00, PAGE B-81
REPLACE VEHICLES-HYDRO SYSTEM-2004, \$1,081,000.00, PAGE B-83

These two projects involve the replacement of vehicles in four categories as described at page B-81.

There are two problems with these projects:

1. The replacement criteria utilized by Hydro is unsupported by any cost or other evidence;
2. Hydro's application of its own replacement criteria in the context of its proposed expenditures for 2004 is suspect.

Mr. Reeves testified that the vehicles included in the \$1,142,000.00 shown for 2004 under the heading "Vehicle Replacement – 2003" have not yet been ordered. Hydro is getting the requisitions ready to order those.³³

With respect to cars and minivans, Mr. Reeves testified that it is not likely that there is any location in the common areas where there is only one car or one minivan.³⁴ Those cars and minivans are used to transport staff around the city or to other parts of the Province. The primary purpose is to transport people from one office to another and they are used for technicians when they go out to do testing.³⁵ Mr. Reeves testified that

there are a total of 59 cars and minivans and 152 pick-ups and service vans with 13 light trucks and 57 medium/heavy trucks.

The vehicles to be replaced as part of the 2004 capital budget items are shown in IC-36.

For those included in Replace Vehicles – 2003 for delivery in 2004, only one meets Hydro's combined criteria of age and kilometers driven. That is V4401 purchased in 1990 and driven 433,000 kilometers. That vehicle exceeds both the age limit proposed of nine years and the 200,000 kilometer criteria. One other vehicle, V4438, is eight years old and has been driven in excess of 219,000 kilometers. There is, however, no evidence on its maintenance history or its condition.

The remaining vehicles are either less than seven years old or have less than 200,000 kilometers driven. There is no evidence of any problems with these vehicles relating to condition. There is no history indicating excessive maintenance costs which would justify their replacement. Indeed, the fact that there are two 12-year old boom trucks and one 13-year old truck tractor which are still in service indicates that there is no magic in a seven to nine year criteria for medium/heavy trucks.

The same problem occurs under the third category on IC-36 "Replace Vehicles – 2004 for delivery in 2005". None of the vehicles in question has been used for over 200,000 kilometers. Two of the vehicles are eight years old, one is six years old and one is four

years old. However, the aerial devices described in this category are proposed to be replaced with far less mileage accumulated than those being replaced in the “2003 for delivery in 2004” category. Hydro has provided no information to indicate why these vehicles are to be replaced.

With respect to the light trucks shown on IC-36 as part of Replace Vehicles – 2004, while all have mileage in excess of 180,000 kilometers, all are barely six years old. Hydro has provided neither reasonable explanation for choosing an 180,000 kilometer standard nor any indication why the combination of age and mileage for each of these vehicles together with maintenance cost and condition justifies their replacement.

A similar analysis can be carried out with respect to the remainder of the cars, minivans, pick-ups and vans described in IC-36. There is no information provided with respect to the condition of any of these vehicles. It appears that most receive fairly light use. There is no reasonable or reasoned explanation for choosing 150,000 kilometers as a criterion in relation to a vehicle five to seven years old. In fact, 150,000 kilometers seems extremely low for a five to seven-year old vehicle and implies fairly light use of most of these vehicles which should serve to extend their life.

Hydro has adopted these criteria without reference to best practices relating to these types of vehicles.

Many of the vehicles in the car/minivan/pick-up category are likely not yet four years old and will be barely five years old if they are replaced in 2004.

The Industrial Customers submit that the Board should approve an allotment equal to half of the dollar value sought by Hydro with respect to those vehicles. Hydro can then prioritize those which it needs or wishes to replace in 2004. The issue of appropriate vehicle replacement standards can then be investigated, perhaps as part of a technical conference in which all the parties can take part, prior to the next capital budget.

B-27 REPLACE INSULATORS

From Mr. Reeves evidence it would appear that problems are caused by these insulators only when at least two in a string of 13 fail. With an observed failure rate of 6%, statistically only .78 insulators in 13 in should be defective. The failure rate seems to be increasing but, in the submission of the Intervenors, until the statistical projection is at least 1 failure per string, there is no compelling reason to pursue these replacements.

B-29 UPGRADE PROTECTION

The relays sought to be replaced here are functional and no compelling reason has been give to justify immediate replacement. Nothing in the evidence demonstrates that

these relays will create problems unless replaced in 2004. This project can be deferred. The Industrial Customers comment only on the lines which are classified as common; the rural lines are left for the Board's consideration.

INFORMATION SYSTEMS AND TELECOMMUNICATIONS - GENERAL

In specialized areas, such as information technology, the Board must be satisfied by expert opinion that the proposed expenditures are the appropriate ones and meet the legislative tests. Reliable expert opinion requires more than specialized knowledge of the subject matter. It will be characterized by a level of scientific objectivity—a willingness to share all available information, the ability to convey complex ideas in a comprehensible way and an ability to evaluate available alternatives in a reasoned and rational manner.

The Industrial Customers submit that the evidence produced by Hydro in connection with its Information Systems and Technology projects in this hearing largely fails to meet these tests. It was characterized by partial disclosure, sometimes having the effect of being actually misleading. Witnesses fell back on jargon and undefined technical language where explanation and precision of expression was needed. Terms with generally accepted meanings were used in some kind of “in-house” Hydro context which inevitably caused confusion for the participants in the hearing.

This failure to produce reliable expert opinion is reflected in the failure of Hydro to prioritize its capital projects. Hydro lives in a cost-plus world—any expenditure which the Board approves as reasonable is translated into a rate which is legally enforceable against customers who, for the most part, have no alternative source for the commodity which Hydro sells.

In a competitive environment, the limits on the ability of companies to control their revenues means that priorities must be assigned with respect to all expenditures, including capital expenditures. Priorities are assigned on a reasoned and rational basis, balancing risks and potential rewards. To exclude this possibility and refuse to prioritize is to deny that there is room to debate the relative urgency of particular expenditures—such a denial is wholly inconsistent with the scientific objectivity that must be the hallmark of reliable expert evidence.

B-71: REPLACE VHF MOBILE RADIO SYSTEM

Direct answers to direct questions characterize reliable expert opinion. At p. 94 of the Transcript of July 7 at line 13, Mr. Alteen asked if the \$5.7 million capital cost in Appendix A-1 for the VHF system came from the consultant's report. The clear answer was "no"; the answer given was "the costs are consistent with what was in the consultant's report". By the time the cross-examination was complete, the Appendix A-1 costs were for a totally different system than anything mentioned in the consultant's

report. The fact that the numbers were similar was completely co-incidental.

Reliable expert opinion reflects care in the giving of testimony to ensure that accurate evidence is given. Characteristic of reliable expert opinion is the willingness to concede lack of knowledge. At p. 99 of the Transcript of July 7 at lines 14-16, it is indicated that the materials portion of the VHF Radio project included a test bed and spare equipment. We discover on July 10 at p. 9-10 of the Transcript that costs for those items were included in the contractor's costs and not in the materials. In the absence of the demand which gave rise to the production of the detailed costing, this inaccurate answer would have remained on the record and might have been relied upon by the Board.

In Hydro's presentation at p. 76-79 of the Transcript of July 7, the evidence is that the repeater equipment for the VHF Radio system had been manufacturer discontinued, spares were not being produced, the radios were manufacturer discontinued, system expansion was not possible and the technology could not be bought. At p. 116-117, we find that the transmitters and receivers can be replaced with compatible equipment, which will be manufacturer supported and for which spares will be available. Obviously, a compatible switch can be sized for expansion.

In Hydro's presentation at p. 82 lines 2-11 of the Transcript of July 7, we are told about "Industry Canada's new channel requirement of twelve and a half kilohertz" [emphasis added]. In the answer to NP-3, Hydro speaks of being "required by Industry Canada to

utilize 12.5 kilohertz radio channels” and this is given as the reason why staged replacement of repeaters, radio and switch was not considered and not evaluated. At p. 119 line 20 to p. 120 line 21, it becomes clear that changing a portion of the system (a staged replacement) would not bring the 12.5 kHz requirement into play and this that requirement is not really an issue.

The Board has inadequate information to determine which parts of this project, other than replacement of the switch are necessary. There is no information to determine whether switch replacement is the least cost option.

In the context of this dubious reliability of the opinions which Hydro has proffered, the Board needs to consider the following projects:

B-59 CORPORATE APPLICATIONS ENVIRONMENT

In light of the cross-examination at p. 119-132 of the Transcript of July 8 which makes it clear that many of the enhancements sought here are irrelevant to Hydro’s operation, is this required? Hydro is looking for improvements but doesn’t identify a real problem that these improvements are intended to fix. Is Hydro’s policy being driven by the “encouragement” of vendors wishing to sell these services or a sound business judgment that the expense is necessary?

B-60 APPLICATIONS ENHANCEMENTS

These three unrelated projects need to be separately considered. The first part is mis-described as Hydro has priced specific items to be covered here rather than retaining this amount as an allowance for “unforeseen” items as described.

The second part is not justified since Hydro has never made it clear exactly what is being “enhanced” relative to its Internet/Intranet and what value the enhancements will provide. This is clearly an optional item for which economic justification needs to be offered.

As to the third part of this “project”, there is no evidence to suggest that the Enterprise Project Management System will save costs and no other justification has been offered.

B-62 SECURITY PROGRAM – CENTRALIZED LOG MONITORING

Hydro says it is “prudent” to have a separate server for this log monitoring system but has not even prioritized the sensitivity of its data to justify this. (Transcript July 8, p. 144 lines 8-12; p. 145 line 2-5) There is nothing here to establish a need for another server in addition to all the new ones being acquired under other projects. Surely there must be a lesser cost option for sharing this server capacity, but all the Board is being offered is Hydro’s judgment relative to “prudence” with no alternatives presented.

B-64 SECURITY PROGRAM – SECURE REMOTE ACCESS

This Secure Access project appears to contemplate purchasing \$35,000 worth of RSA tokens before it has been determined what the “solution” will be and how a virtual private network can be used instead of or in addition to the RSA system. Remote access is an issue that needs to be addressed; there is nothing in the application as filed or the evidence produced which shows that this project is either the preferred or the least cost solution.

B-66 END USER AND SERVER EVERGREEN PROGRAM

The evidence in respect of this project illustrates the real concern about the information being provided by Hydro to the Board. If Hydro was confident that its choices relative to the replacement of computer equipment were supportable, it would provide full and accurate information at every stage. Instead, Hydro chooses to play games with the information as can be seen from a review of the Transcript of July 9 at p. 150-151.

While it may amuse the witnesses to provide a literal response to a question from counsel knowing that the answer doesn't deal with the substance of the issue and is, in fact, misleading, the idea that Hydro would assume the risk of misleading the Board is a matter of grave concern and may taint all the evidence the Board has heard.

The evidence in connection with this project extends through the Transcript from July 8,

p. 148-162; July 9, p. 9-11; July 9, p. 13-14; July 9, p. 147-158; July 9, p. 228-230; July 10, p. 16-23; July 10, p. 52-58 and July 10, p. 64-71. It illustrates the real and continuing problem of extracting information from Hydro with respect to this project as well as the lack of care on Hydro's part to ensure that the information is accurate and complete.

The project is apparently driven by "Gartner's Best Practices" but there is nothing to indicate if that is an appropriate standard for this utility. This seems to be a convenient touchstone to allow Hydro to avoid addressing the real issues. The requirement to replace monitors at the same time as replacing desktop computers is wholly unsupported—not even Gartner speaks to that and the evidence before the Board from Mr. Barreca is to the contrary. Cascading of equipment, which the evidence shows is economically sound, is just not practiced in Hydro. It is not considered.

As the record stands, Hydro is apparently paying over \$200,000 for one Citrix server and its licensing fees when the evidence is that servers tend to cost \$5,000-\$10,000. This expenditure is so obviously beyond the bounds of reasonableness that it ought to be disallowed unless and until Hydro produces evidence at a subsequent capital budget hearing to support it.

As to the entire project, Hydro should be directed to re-file a project intended to replace only the equipment which, on a balance of probabilities, will become non-functional

before the end of 2004.

B-69 PERIPHERAL INFRASTRUCTURE REPLACEMENT – 2004

This project for replacement of printers and other peripherals engages the same considerations as the previous one for computers. Hydro plans on purchasing expensive and sophisticated equipment without any documented effort to determine the real needs or the least cost alternative, one such alternative always being to wait a year and replace was is non-functional then.

B-71 REPLACE VHF MOBILE RADIO SYSTEM

The deficiencies in the justification of this project are obvious. Hydro puts forward a business case and consultant's report to justify this \$8.5 million expenditure and neither of those documents addresses the system which Hydro now regards as its preferred alternative. Hydro admittedly did not evaluate staged replacement—it decided to jump to a Passport type system with 12.5 kHz channels without ever justifying why either was needed. Hydro buries within this project six new locations which should be the subject of a separate economic analysis, being intended to add to an existing system and address problems which are said to be longstanding and have not, to date, prevented work from getting done. There is no analysis of the failure reports to establish a need to replace even the switch.

The issue of moving from Aliant sites has not been fully explored relative to the least cost option. Hydro apparently does not even know if it could get regulatory relief from the huge cost increases Aliant is attempting to impose on it. Hydro might properly submit a project to study what will be the best and most economical way to meet its needs for field communications if it does not have sufficient in-house expertise to reach a conclusion on this point. What it is doing now is asking ratepayers to write an \$8.5 million cheque for a purpose (to provide field communications) rather than a project, i.e. the acquisition of identifiable capital assets for which a need has been shown in the relevant fiscal year.

B-77 REPLACE REMOTE TERMINATE UNIT FOR HYDRO – PHASE 5

Given the operating history of these Remote Terminal Units, the record does not demonstrate that this project needs to be done in 2004. As later expenditure of dollars is always a lesser cost alternative than earlier expenditure (except in the odd case of some kind of bargain basement sale—one year only), to approve this project would be contrary to the policy contained in the *Electrical Power Control Act*.

B-79 REPLACEMENT OF OPERATIONAL DATA AND VOICE NETWORK – PHASE 2

The Intervenor is not convinced that Hydro understands what it is proposing in this project. This is a communications project. The Industrial Customers' expert, Mr. Barreca, was unable to tell from the description what was intended and was still left in doubt even after hearing the evidence. Counsel for Hydro suggested in cross-examination that there may be reports or literature on this topic which might explain or justify the project. Neither the existence nor the contents of any such report is before the Board in evidence.

Hydro produces failure statistics for its existing system which on their face are alarming. However, these statistics were shown to be misleading in that a significant proportion of them referred to failures which were unrelated to the equipment sought to be replaced. Approval of this project should be denied unless and until, at some future budget hearing, Hydro can explain exactly what they are intending to do, why the expenditure is necessary and that their proposed solution is the least cost alternative.

B-53 REPLACE EMS – ENERGY CONTROL CENTRE

We wish to address also the project at B-53—replacement of the Energy Management Control System. This is a pure electrical utility project which, while it utilized communications facilities, is not, in essence, a communications project. Mr. Barreca did

not presume to speak to this project specifically, given its nature. However, taking into account the dubious reliability of the opinions of Hydro's witnesses on other matters, it would be appropriate, in our submission, given the enormously high value of the project, for the Board to order an independent evaluation of this proposal. In light of the manner in which Hydro has treated the least cost alternative rule in other areas, the Board can have no confidence that this mandatory principle is being implemented here.

CAPITAL BUDGET PLANNING CRITERIA

In IC-3, the Industrial Customers asked Hydro to identify any budget criteria it has adopted with respect to the magnitude of annual capital budgets. The response directed the Industrial Customers to page 4 of the Finance evidence to find the guidelines which Hydro considered.³⁶

Mr. Roberts testified with respect to the capital budget process used at Hydro. He agreed that he shares responsibility for ensuring compliance with the provision of the *EPCA*. He also agreed that this role includes satisfying the Public Utilities Board that Hydro is achieving the objectives set out in power policy including the requirement that power be delivered to consumers in the Province at the lowest possible cost consistent with reliable service.³⁷

Mr. Roberts also acknowledged that Hydro has not specifically adopted as a criterion that projects must be focused on the lowest possible cost consistent with reliable service.³⁸

Mr. Roberts testified that Hydro has adopted a guideline that the capital program should not normally exceed cash flow from operation. That consists primarily of net income, depreciation and other non-cash items. He stated:

“What was decided was that a rule of thumb to use would be as outlined here, that it would be net income primarily plus depreciation, that gives you an order of magnitude of \$30 to \$50 million. That was felt to be a reasonable guideline to follow in reviewing your capital program, recognizing that it was only a guideline and there would be exceptions to any guideline, but at least this was a place to start.”³⁹

There is no reference in the guidelines to least cost planning. In addition, Mr. Roberts testified that no efforts were made by Hydro to try and determine the practices of other utilities in Canada or elsewhere with respect to capital budget planning in circumstances where capital budgets are regulated and required to be least cost.⁴⁰

Mr. Barreca testified on behalf of the Industrial Customers. It is clear from his pre-filed evidence and from his oral testimony that Mr. Barreca has considerable experience with capital budgets in a public utility context.⁴¹ In his evidence, Mr. Barreca indicated that Hydro’s target of a capital budget between the depreciation expense of approximately

\$34,000,000.00 at the bottom of the range and net income plus depreciation and other non-cash items at the top of the range is an indication that the capital budget is intended to be internally financed.⁴²

Mr. Barreca testified that “As a general rule of thumb in most utilities I have been acquainted with over the years they consider being internally financed to be an objective.” He also testified that there are other factors that you have to consider “For instance, your past depreciation rates, were they higher than they should be or lower than they should be”.⁴³

Mr. Barreca also testified that while Bell South was required, not by legislation, but by regulatory rules issued by the Public Service Commission to do the most economical alternative, he has not worked with a jurisdiction that he knows of where it was mandated that the least cost alternative be selected.⁴⁴

The Industrial Customers agree that, in the absence of exceptional circumstances, Hydro’s capital budget should be internally financed. The difficulty with the Industrial Customers have with Hydro’s budgeting process is that it appears to establish a “floor”, that is, Hydro does not make any conscious effort to have a capital budget which is below its depreciation cost.⁴⁵

In addition, the fact that Hydro makes no attempt to prioritize projects, or to rank them in the various categories according to some type of priority system, helps underscore the point that Hydro makes no conscious effort to ensure that its overall capital budget meets the requirement of the *EPCA*

In short, Hydro's evidence is clearly that it does not focus its capital budget planning process on lowest possible cost consistent with reliable service.

Mr. Barreca also suggested that directing hydro to adopt a priority system along the lines of the one used in Manitoba might be useful. The Board itself, in its August 19, 1999 letter on the Guidelines for Minimum Filing Requirements, asked that the new generation and transmission projects be classified "according to one of three primary justification categories: cost reduction, reliability, or load."⁴⁶ Given that Mr. Barreca has testified that Hydro has in any number of projects bundled together elements that are necessary with those which are justifiable but not necessary and others which are not even justifiable, such criteria would require the utilities to prioritize their projects according to need, rather than desire.

CONCLUSION

The Industrial Customers submit that Hydro has the burden of establishing that the projects which it proposes meet all of the requirements of the power policy of the

Province as set out in Section 3(b) of the *Electrical Power Control Act*, 1994. Moreover, the Board, in exercising its powers under that Act and under the *Public Utilities Act* is required to implement the power policy and apply tests which are consistent with generally accepted sound public utility practice.

The Industrial Customers called evidence through Mr. Barreca and through cross examination of Hydro's witnesses, to demonstrate that Hydro has not, on the balance of probabilities, provided evidence which can satisfy the Board that many of its proposed projects will result in:

1. the most efficient production transmission and distribution of power;
2. consumers in the Province having equitable access to an adequate supply of power; and
3. power being delivered to consumers in the Province at the lowest possible costs consistent with reliable service.

Most of that evidence was not challenged by any of the other parties.

While there may be projects which could result in the most efficient production, transmission and distribution of power, those two elements, standing alone, are not adequate. Hydro must also demonstrate to the Board that these projects would result in power being delivered to consumers at the lowest possible cost consistent with reliable service.

The Industrial Customers wish to make it clear to the Board that they are not being obstructionist or unreasonable in questioning these projects. The issues which the Industrial Customers have raised are legitimate and deserve respectful consideration. It is not relevant that the Board has accepted a different standard at previous hearings.

The Industrial Customers are not necessarily advocating increasing the quantity of the documentation required from public utilities in the course of examining their capital budgets nor are the Industrial Customers interested in lengthening capital budget hearings. The issue for the Industrial Customers is the quality of the material submitted by Hydro in support of each of its proposed capital projects and whether it is capable of satisfying the Board that the statutory requirements have been met.

The Industrial Customers submit that the Board cannot approve the projects to which the Industrial Customers have objected as currently presented as there is insufficient evidence to satisfy the Board that the power policy of the province is satisfied.

DATED at St. John's this 23rd day of July, 2003.

STEWART MCKELVEY STIRLING SCALES

POOLE ALTHOUSE

Per: _____
Janet M. Henley Andrews, Q.C.

per: _____
Joseph S. Hutchings, Q.C.

- TO: G. Cheryl Blundon
 Director of Corporate Services and Board Secretary
 Board of Commissioners of Public Utilities
 Suite E210, Prince Charles Building
 120 Torbay Road
 P.O. Box 21040
 St. John's, NL A1A 5B2
- TO: Maureen P. Greene, Q.C.
 Vice-President Human Resources, General Counsel & Corporate Secretary
 Newfoundland and Labrador Hydro
 Hydro Place, Columbus Drive
 P.O. Box 12400
 St. John's, NL A1B 4K7
- TO: Mr. Peter Alteen
 Newfoundland Power
 55 Kenmount Road
 St. John's, NL A1B 3P9
- TO: Dennis Browne, Q.C.
 Browne Fitzgerald Morgan & Avis
 Barristers & Solicitors
 Churchill Park Law Offices
 P. O. Box 23135
 Terrace on the Square
 St. John's, NL A1B 4J9
- TO: Mr. Mark Kennedy
 Mark Kennedy Law Office
 1st Floor
 357 Duckworth Street
 St. John's, NL A1C 5H5

¹ Hydro's 2003 GRA, Greneman, 2004 Forecast Cost of Service, Schedule 1.2, Page 1 of 6

² IC-8

³ Hydro's 2003 Capital Budget Application, IC 3a and IC 11

⁴ *Public Utilities Act*, RSNL 1990, chapter P-47, as amended

⁵ *Electrical Power Control Act*, 1994 S.NL 1994 c. E-5.1, ss. 3(b)

⁶ ibid

⁷ ibid Section 4

⁸ Transcript, December 4, 2002, page 11, lines 13 to 23.

⁹ PU-36 (2002-2003)

¹⁰ PU-29 (2002-2003) Appendix 2, pages 22 to 23

¹¹ PU-29 (2002-2003) Appendix 2, page 15

¹² Transcript, July 7, 2003, page 142, lines 9-25

¹³ ibid, page 143

¹⁴ Transcript, July 8, 2003, page 2, lines 1-6

¹⁵ Transcript, July 8, 2003, pages 3-6

¹⁶ Transcript, July 8, 2003, page 8, lines 7-12

¹⁷ 2003 Capital Budget Application that Appendix G, Tab 1

¹⁸ Transcript, July 8, 2003, page 10, lines 4-8

¹⁹ ibid, page 11, lines 21-25 and page 12, lines 1-2

²⁰ Transcript, July 8, 2003, pages 13-14

²¹ F-4, Revised

²² Transcript, July 7, 2003, pages 155-151

²³ ibid, page 161, lines 21-25

²⁴ Transcript, July 8, 2003, page 35, lines 16-21

²⁵ Transcript, July 8, 2003, pages 43-45

²⁶ ibid, page 46, lines 5-18

²⁷ ibid, page 47, lines 1-25

²⁸ IC-27, pages 4-12

²⁹ Section G, Appendix 2, page 1, first paragraph

³⁰ Tab B in Section G to the 2004 Capital Budget Application

³¹ Transcript, July 9, 2003, page 2, lines 14-19

³² Transcript, July 8, 2003, page 81, lines 14-25

³³ Transcript, July 11, 2003, page 84, lines 18-24

³⁴ ibid, page 88

³⁵ ibid, page 89

³⁶ IC-3

³⁷ Transcript, July 10, 2003, pages 85 and 86

³⁸ ibid page 86 lines 11 through 21

³⁹ Transcript, July 10, 2003, pages 90-91

⁴⁰ ibid pages 106-108

⁴¹ Pre-trial testimony, outline of experience and Transcript, July 10, 2003, pages 116-120

⁴² Transcript, July 11, 2003, page 33, lines 5-25 and page 34, lines 1-3

⁴³ Ibid, pages 34-35

⁴⁴ Transcript, July 11, 2003, page 39, lines 10-20

⁴⁵ Transcript, July 10, 2003, pages 92-93

⁴⁶ IC-5