IN THE MATTER OF the *Public Utilities Act*, R.S.N., 1990, Chapter P-47 (the "Act"), and

AND IN THE MATTER OF a General Rate Application (the "Application") by Newfoundland and Labrador Hydro for approvals of, under Section 70 of the Act, changes in the rates to be charged for the supply of power and energy to Newfoundland Power, Rural Customers and Industrial Customers; under Section 71 of the Act, changes in the Rules and Regulations applicable to the supply of electricity to Rural Customers.

Requests for Information

From Newfoundland & Labrador Hydro

(Filed pursuant to ss. 14 and 17 of the *Board of Commissioners of Public Utilities Regulations, 1996*)

Newfoundland & Labrador Hydro, Applicant

September 11, 2003

Newfoundland & Labrador Hydro ("Hydro") 2003 General Rate Application

Requests for Information from Hydro
To Public Utilities Board

Professor Leonard Waverman

NLH-152 PUB (Re: Page 5, lines 1-3)

Dr. Waverman states: "Hydro is a Crown corporation, and, has no common stock equity, and, as such, need not compensate common stockholders for the risks such common stock shareholders face in providing equity capital to investor-owned utilities". Are retained earnings generally regarded as a component of shareholder's equity?

A. Yes, but as a Crown corporation, Hydro enjoys a lower cost of capital that is consistent with its ability to raise funds under Provincial debt guarantees, and the opportunity cost of capital should reflect that fact.

NLH-153 PUB (Re: Page 5, lines 1-3)

Dr. Waverman states: "Hydro is a Crown corporation, and, has no common stock equity, and, as such, need not compensate common stockholders for the risks such common stock shareholders face in providing equity capital to investor-owned utilities". If some of Hydro's past earnings have been retained and reinvested in the company, then has Hydro's shareholder in fact, equity at risk?

A, Yes, but as a Crown corporation, Hydro enjoys a lower cost of capital that is consistent with its ability to raise funds under Provincial debt guarantees, and the opportunity cost of capital should reflect that fact.

NLH-154 PUB (Re: Page 5, lines 1-3)

Dr. Waverman states: “Hydro is a Crown corporation, and, has no common stock equity, and, as such, need not compensate common stockholders for the risks such common stock shareholders face in providing equity capital to investor-owned utilities”. Does Hydro’s shareholder bear any business risk associated with the retained earnings that have been reinvested in Hydro?

A. Yes. Hydro’s business risk is priced by Canadian capital markets and will be a normal part of Hydro’s regulated prices if regulated rates reflect its capital costs—*i.e.*, its embedded cost of debt, and for shareholder’s equity (primarily retained earnings) the marginal cost of debt. As a Crown corporation, Hydro enjoys a lower cost of capital that is consistent with its ability to raise funds under Provincial debt guarantees, and the opportunity cost of capital should reflect that fact.

NLH-155 PUB (Re: Page 5, lines 17-21)

Dr. Waverman states: “Compensating those owners simply means raising through regulated rates funds sufficient to maintain operations and satisfy: (1) the interest obligations on the outstanding guaranteed debt; and (2) the opportunity cost of the Province’s citizens (as represented by the marginal cost of Provincial guaranteed debt) for the shareholder’s equity portion of the capital structure”. Who ranks first in a claim on the net assets of Hydro in the event of serious financial difficulty, Hydro’s bondholders or its shareholder?

A. Its bondholders would rank first.

NLH-156 PUB (Re: Page 8, lines 26-27)

Dr. Waverman states: "…consider allowing an opportunity cost of capital on Hydro's retained earnings that is equal to Hydro's opportunity cost of debt". Please define what you consider to be Hydro's current opportunity cost of debt?

A. I have not quantified Hydro's current opportunity cost of debt. In my testimony dated September 5, 2003 (p. 15) , I stated that:

"I would support an allowed cost that reflects Hydro's opportunity cost of Provincial guaranteed debt, which can be determined by investigating Hydro's cost of new debt. I understand that in Hydro witness Ms. McShane's prepared testimony, she states (p. 21) that the long-term opportunity cost of new debt to Hydro is about 6.75 percent. A review of the yields to maturity of other electric utility Crown corporation debt in Canada, with bond ratings comparable to Hydro, would also be useful."

NLH-157 PUB (Re: Page 9, lines 8-9)

Dr. Waverman states: "The capital attraction—or "opportunity cost"—standard has been key in determining the fair rate of return for public utilities". At its current level of financial leverage and business risk, and given the provincial guarantee applicable to Hydro's outstanding debt, does Dr. Waverman believe that Hydro could attract equity capital in the open capital markets offering a return equal to Hydro's opportunity cost of debt? If yes, please explain.

A. I have not drawn a conclusion on this question. Indeed, Hydro has no common stock equity capital on its books raised from private investors in open markets.

Nevertheless, I would note that, as a Crown corporation, Hydro enjoys a lower cost of capital that is consistent with its ability to raise funds under Provincial debt guarantees, and I would expect that Hydro would continue to raise debt capital in this way.

NLH-158 PUB (Re: Page 9, lines 28-29)

Dr. Waverman states: “the common stock equity risk premium that is a standard component of the cost of common stock equity for IOUs does not exist for Hydro”. Is an equity holder generally any less concerned about risks to their retained earnings equity versus their common stock equity?

A. No. An equity holder in a firm, whether investor-owned or a Crown corporation, would be concerned about risks associated with their investment in the firm, whether in the form of common stock equity or retained earnings. The equity holder would expect the firm to seek to maximize its profitability through efficient operational performance. However, I repeat – there is no common stock equity risk for Hydro: it is not an IOU.

NLH-159 PUB (Re: Page 11, lines 12-14)

Dr. Waverman states: “For companies like Hydro, with only debt capital to raise from the public, the “capital attraction” charges in regulated rates are lower than they are for IOUs who have an extra layer of common stockholders to compensate”. Could retained earnings be viewed as a form of equity capital attraction?

A. Yes, but as a Crown corporation, Hydro enjoys a lower cost of capital that is consistent with its ability to raise funds under Provincial debt guarantees, and the opportunity cost of capital should reflect that fact. Furthermore, I have been consistent in calling the capital invested in Hydro *shareholder's equity* as opposed to *common stock equity capital*, which is raised by IOU's from private investors in open capital markets.

NLH-160 PUB (Re: Page 12, lines 4-6)

Dr. Waverman states: “As a Crown corporation, the owners are the Province’s government and citizens. This fact should tend to ease Hydro’s ability to recover its just and reasonable costs in rates”. Please explain how the fact that Hydro is a Crown corporation, tends to ease Hydro’s ability to recover its just and reasonable costs.

A. As a Crown corporation, owned by the Province’s citizens and not owned by common stock equity investors who acquire shares in the open capital markets of the world, there should be less conflict between ratepayers and owners than is the case for an IOU.

NLH-161 PUB

What regulatory proceedings has Dr. Waverman appeared at before, what were his recommendations, and what was the board decision in each case?

A. I have not kept detailed records of the regulatory proceedings I have appeared at. There are two sets.

First, as a Board member of the Ontario Energy Board I did make and write cost-of-capital decisions. Second, as an expert witness, I have appeared before the Alberta Energy Resources Conservation Board (gas export and natural gas pipeline hearings), the National Energy Board (gas export and national gas pipeline hearings), the Ontario Energy Board (British Gas purchase of Consumer Gas), the Ontario Court of Appeals (oil pricing and taxation). I have also appeared before Competition Policy authorities on energy matters in Canada.

NLH-162 PUB (Re: Page 3, Footnote 4)

Dr. Waverman states, “$22.5 million of share capital is issued and on the books but this is not common stock equity as in a publicly held corporation whose shares are tradable.” Would Dr. Waverman come to the same conclusion regarding the share capital of each of the following:

BC Hydro
Hydro One
Northwest Territories Power
Hydro Quebec
Yukon Energy

A. In my testimony, I have not drawn a conclusion on the share capital of these firms. Nevertheless, I have reviewed the recent annual reports for these companies and find that most of them (BC Hydro appears to be the exception) have some shareholder’s equity but that they do not appear to have common stock equity that is traded in open capital markets.

NLH-163 PUB (Re: NLH-162 PUB)

If the answer to NLH-153 PUB above is no, please explain what would differentiate NLH from each of the Crown Corporations listed above.

A. In my testimony, I have not drawn a conclusion on what would differentiate these firms. Nevertheless based on a review of their annual reports, it appears that most of these companies (BC Hydro appears to be the exception, with only retained earnings and no shareholder's equity) are in a similar position as Hydro, with some shareholder's equity and retained earnings but no common stock equity capital that is traded on open capital markets.

NLH-164 PUB (Re: NLH-162 PUB)

What circumstances would need to be present for Dr. Waverman to conclude that the opportunity cost of the shareholder's equity in a Crown Corporation should reflect the business and financial risks faced by the equity shareholder (i.e., an equity cost) rather than the marginal cost of debt?

A. In my testimony, I have not drawn a conclusion on this question. Nevertheless, the specific facts that I relied upon in drawing my conclusion that Hydro's opportunity cost of debt is appropriate include its ability to raise funds under Provincial debt guarantees rather than rely on raising capital in open equity markets. If a Crown corporation was expected or required to raise capital in open equity markets instead of in debt markets (backed by a provincial guarantee), a rate based on common stock equity cost might be reflective of that Crown Corporation's opportunity cost of capital.

NLH-165 PUB (Re: Page 3, Footnote 3)

Dr. Waverman states, "Retained earnings' is generally defined as the portion of net income retained for reinvestment in the company rather than being paid in dividends to common stockholders. For Hydro, the term refers to the excess of net income over what has been used to make payments to the Province." Please explain what distinction, if any, Dr. Waverman is making between the retained earnings of Hydro and those of an investor-owned utility.

A. I would note that retained earnings will be more important for an IOU's financial integrity. After all, an IOU does not enjoy the backstop of a Provincial debt guarantee.

NLH-166 PUB (Re: Page 5, Footnote 6)

Please provide a copy of the referenced paper.

A. Attached is a copy of Leonard Waverman and Adonis Yatchew, "Regulation of electric power in Canada," *International Comparisons of Electricity Regulation*, R.J. Gilbert and E.P. Kahn, ed. (New York: Cambridge Univ. Press, 1996).

NLH-167 PUB (Re: Page 5, lines 16-17)

Dr. Waverman states that, “the Province’s citizens are its ultimate “owners””. By citizens, does Dr. Waverman mean taxpayers or Hydro customers? Please explain the response, including the basis upon which he arrived at the conclusion.

A. Hydro’s Annual Report for 2002 states (p. 7) that Hydro “is a Crown Corporation, owned by the Province of Newfoundland and Labrador.” As a Crown corporation, owned by the Province’s citizens and not owned by common stock equity investors who acquire shares in the open capital markets of the world, the Province’s citizens are its ultimate owners. Determining precisely who these owners are is less clear-cut than would be the case for an investor-owned utility, whose common stock shareholders can be readily identified. However, assuming that most of the Province’s citizens use Hydro's service, there does not appear to be a meaningful distinction between ratepayers (those who pay the bill) and the citizens (all of whom benefit from the service).

NLH-168 PUB (Re: Page 5, lines 17-21)

Dr. Waverman states, “Compensating those owners simply means raising through regulated rates funds sufficient to maintain operations and satisfy: (1) the interest obligations on the outstanding guaranteed debt; and (2) the opportunity cost of the Province’s citizens (as represented by the marginal cost of Provincial guaranteed debt) for the shareholder’s equity portion of the capital structure.” Does Dr. Waverman believe that the equity in Crown corporations that are not public utilities, e.g. the Newfoundland Liquor Corporation, should be viewed as providing adequate compensation to the owners as long as they cover the marginal cost of debt? Please explain the response.

A. I have not investigated how these other Crown corporations go about raising capital, *e.g.*, whether they raise funds under Provincial debt guarantees, and therefore can express no opinion with respect to their opportunity cost of capital.

NLH-169 PUB (Re: NLH-168 PUB)

Does the conclusion respecting the opportunity cost of the Province's citizens also apply to the unregulated operations of Hydro? Please explain why or why not.

A. I have not investigated the opportunity cost that should be used for Hydro's unregulated operations, although I would note that Hydro's revenues from "other" sources appear to be about one percent of total revenues.

NLH-170 PUB (Re: Page 6, lines 19-21)

Dr. Waverman states, “A moderate level of retained earnings – compared to the level exhibited by investor-owned utilities – is likely both prudent and a way of showing bond analysts that Hydro’s fixed interest payments are manageable.” Please define what Dr. Waverman believes is a moderate level of retained earnings.

A. I have not defined what is a moderate level of retained earnings, although I did point out a “note of caution” in my testimony (p. 13, lines 12-21).

NLH-171 PUB (Re: Page 6, lines 8-11)

Dr. Waverman states, "Thus, Hydro's business risk is priced by Canadian capital markets and will be a normal part of Hydro's regulated prices if regulated rates reflect its capital costs – i.e., its embedded cost of debt, and for shareholder's equity (primarily retained earnings) the marginal cost of debt." Please explain how Hydro's business risk is priced separately from the other risks faced by holders of Newfoundland and Labrador bonds, given that Hydro's bonds are guaranteed by the Province.

A. Hydro bondholders will expect, in the first instance, to be repaid out of Hydro's cash flows, and will therefore take Hydro's net income, cash flows and financial integrity into account when debt is raised by Hydro in bond markets. The Provincial guarantee, which acts as a "backstop" or secondary source of repayment, will also be factored in when capital is raised by Hydro in bond markets.

NLH-172 PUB (Re: Page 6, Footnote 8)

Dr. Waverman states, “While there is also the one percent charged by the Province for Hydro’s use of its credit, I understand that this is recovered as a cost of service, and not as part of the cost of capital”. Please explain on what basis Dr. Waverman concludes that the guarantee fee is recovered as a cost of service, not as part of the cost of capital.

A. Based on additional research, I now conclude that the guarantee fee is included in the embedded cost of debt. For example, see Schedules VII to the testimony of Hydro witness J.C. Roberts in this general rate review.

NLH-173 PUB

Is it Dr. Waverman's view that the shareholders' equity would be adequately compensated by the marginal cost of debt because the retained earnings could be replaced by debt which, in turn, could be raised at the Province's cost of debt?

A. No, it is based on the opportunity cost of incremental new debt capital assuming that Hydro's retained earnings remains in place. In the special case where Hydro raises debt capital to replace its retained earnings, that opportunity cost of debt would likely be higher as Hydro's financial integrity would be weakened if retained earnings were to be replaced with debt.

NLH-174 PUB (Re: NLH-173 PUB)

If the response to NLH-173 PUB above is no, please explain in detail why the opportunity cost to the shareholder is the marginal cost of debt.

A. As a Crown corporation, Hydro enjoys a lower opportunity cost of capital that is consistent with its ability to raise funds under Provincial debt guarantees, and the opportunity cost of capital should reflect that fact.

NLH-175 PUB (Re: NLH-173 PUB)

If the response to NLH-173 PUB above is yes, please explain why the marginal cost of debt should not also include the guarantee fee.

A. Not applicable.

NLH-176 PUB (Re: Page 7, lines 27-28)

Dr. Waverman states that, "cross-utility comparisons are not the foundation for North America's utility rates." Please confirm that this statement is intended to apply more broadly than to Crown Corporations.

A. Yes. A utility's revenue requirement is a function of the utility's operating costs, cost of capital, and rate base.

NLH-177 PUB (Re: Page 7, lines 27-28)

Dr. Waverman states that, "cross-utility comparisons are not the foundation for North America's utility rates." Please confirm that, for investor-owned public utilities that are not publicly-traded, the cost of equity capital is typically estimated by reference to the cost of equity of proxies which are publicly-traded. If it cannot be confirmed, please explain why not.

A. Cross-utility comparisons (e.g., proxy groups) can be used to identify the opportunity cost of common stock capital for investor-owned public utilities. The cost of common stock equity capital is a forward-looking concept. There are few ways of looking into the future, particularly from the perspective of what investors expect to occur. Financial models, such as the discounted cash flow (DCF) or capital asset pricing model (CAPM), are designed to take the limited types of information we can observe to draw conclusions about unobservable investor expectations of the future.

Proxy group are used in conjunction with forward-looking financial models, such as DCF or CAPM because the use of proxy groups of companies produce a more reliable and unprejudiced estimate of the current cost of capital required by capital markets and the computation of proxy group cost of capital estimates is consistent with the principle that reference should be made to return on investments with corresponding risks. Further, the regulatory process in a particular jurisdiction affects investor expectations regarding the particular company whose fair rate of return is being set, leading to a problem of circularity; the use of proxy groups will attenuate the circularity problem.

NLH-178 PUB (Re: Page 7, lines 27-28)

Dr. Waverman states that, "cross-utility comparisons are not the foundation for North America's utility rates." Would Dr. Waverman agree with the following definition of the opportunity cost of capital: "The opportunity cost of capital represents the return an investor would expect from an investment in the next best alternative with similar risk characteristics." If Dr. Waverman disagrees with this definition, please explain why.

A. One must carefully distinguish the types of capital. For Hydro, which issues only debt in public markets, that cost of debt is set by reference to the private debt investor's next best alternative. Thus, I would acknowledge that a review of the yields to maturity of other electric utility Crown corporation debt in Canada, with bond ratings comparable to Hydro, would be a useful part of determining Hydro's opportunity cost of shareholder equity.

NLH-179 PUB (Re: Page 7, lines 27-28)

Dr. Waverman states that, "cross-utility comparisons are not the foundation for North America's utility rates." Would Dr. Waverman agree that the concept of opportunity cost as defined above is compatible with the standard of cost based rates as applied to investor-owned public utilities. If he does not agree, please explain why.

A. As discussed in my response to NLH-177 PUB, cross-utility comparisons (e.g., proxy groups) can be used to identify the opportunity cost of common stock capital for investor-owned public utilities. Thus, while rates are cost-based, the cost of common stock equity capital cannot be measured directly and indirect financial models and proxy groups are used instead.

For Hydro, one must carefully distinguish the types of capital when discussing the opportunity cost concept. For Hydro, which issues only debt in public markets, that cost of debt is set by reference to the private debt investor's next best debt market alternative.

NLH-180 PUB

Dr. Waverman concludes that Hydro does not have common stock equity investors. Please explain under what circumstances, if any, he would conclude that Hydro does have common stock equity investors while remaining a Crown Corporation. For example, if the Province were to raise $100 million in debt and use it to make an equity investment in Hydro, would Dr. Waverman's conclusion that Hydro does not have common equity investors then change?

A. I did not draw a conclusion on this question in my testimony. Nevertheless, Hydro would continue to have shareholder's equity but not common stock equity traded in open capital markets if the Province were to infuse shareholder's equity into Hydro.

NLH-181 PUB (Re: Page 9, lines 24-28)

Dr. Waverman states, “However, as Hydro does not have common stock equity investors, it does not face the risk borne by common stock equity investors in IOUs – for example, the risk that Provincial (or state) rate regulation will create volatility in common stock equity returns or prevent common stockholders from earning a fair return.” Would Dr. Waverman agree that rate regulation for Crown Corporations does not guarantee that the returns on the existing shareholders’ equity (including retained earnings) will not be volatile nor does it guarantee that the shareholders’ equity will not be impaired (i.e., reduced)? If no, please explain.

A. Yes. I agree, although as a Crown corporation, owned by the Province’s citizens and not owned by common stock equity investors who acquire shares in the open capital markets of the world, there should be less conflict between ratepayers and owners than is the case for an IOU.

NLH-182 PUB (Re: Page 13, lines 12-14)

Dr. Waverman states that he, “would be skeptical of Hydro’s ability to support further increases to its ratio of debt to retained earnings, given the already high proportion of debt in its capital structure.” Is it, therefore, Dr. Waverman’s testimony that a target capital structure of approximately 85% debt is reasonable?

A. I have used the actual structure rather than some hypothetical or deemed structure because that capital structure is most relevant for determining the opportunity cost of debt.

NLH-183 PUB (Re: Page 14, line 9)

Dr. Waverman references an embedded cost of debt of 8.28%. Please confirm that the 8.28% includes the 1% debt guarantee fee.

A. It is now my understanding, based on additional research as discussed in my response to NLH-172 PUB, that the 8.28% figure does include the one percent debt guarantee fee.

NLH-184 PUB (Re: Page 15, line 19)

Dr. Waverman recommends not adding the guarantee fee to the opportunity cost of the shareholder's equity. Please explain in detail how adding the guarantee fee to the marginal cost of debt double counts the cost of the guarantee.

A. If the one percent is added to the opportunity cost of capital, say, to make it 7.5% instead of 6.5 percent, my concern was that when that debt was actually issued a further one percent would be added. It should not be added in twice.

NLH-185 PUB (Re: Page 15, line 19)

Dr. Waverman recommends not adding the guarantee fee to the opportunity cost of the shareholder's equity. Please explain in detail why, under Dr. Waverman's theory of the opportunity cost to the shareholder's equity, the debt guarantee fee is not a valid component of the opportunity cost.

A. The one percent debt guarantee fee is payable on embedded debt. Only when debt is actually issued would the one percent fee be payable. Utility customers should not be expected to pay that one percent fee on debt that has not been issued.

NLH-186 PUB (Re: Page 15, line 15)

Dr. Waverman makes reference to the one percent guarantee fee. Please provide all analyses Dr. Waverman has undertaken to determine whether the guarantee fee of one percent provides the Province (and its citizens) reasonable compensation for unconditionally guaranteeing the debt of Hydro.

A. I have not undertaken the analyses referenced in this question.

NLH-187 PUB (Re: Page 15, line 15)

Dr. Waverman makes reference to the one percent guarantee fee. Please explain in detail how, if at all, Dr. Waverman's conclusions and recommendations would change if Hydro paid no fee for the debt guarantee.

A. If no debt guarantee fee was paid, I would expect that it would be removed from Hydro's revenue requirement in the next rate case proceeding.

NLH-188 PUB (Re: NLH-186 PUB)

If the answer to NLH-186 PUB above is “none”, please explain conceptually how Dr. Waverman would go about making that analysis.

A. I have not performed this analysis.

NLH-189 PUB

Dr. Kalymon states at page 16, lines 11-13, “Based on the analysis provided in the previous section, the guarantee fee of the Province is not excessive if recognition is given to the fact that a portion of the fee is providing compensation for the implicit equity investment.” Please provide Dr. Waverman’s views on the validity of Dr. Kalymon’s statement at page 16 that the Province has approximately 26% implicit equity in Hydro.

A. Dr. Kalymon’s premise is that the debt guarantee provides “implicit equity” beyond that recorded on the balance sheet of Hydro. However, this is not shareholder’s equity but rather a hypothetical or deemed capital structure that differs from Hydro’s actual capital structure, as shown in its accounting books. I have used Hydro’s actual structure rather than some hypothetical or deemed structure because that capital structure is most relevant for determining the opportunity cost of debt.

NLH-190 PUB

Would Dr. Waverman agree with the statement, “If the cost of capital for Hydro is set too low, it may encourage uneconomic consumption of electricity”.

A. Yes, the cost of capital should not be set in a way that does not reflect its true costs.

NLH-191 PUB

Would Dr. Waverman agree with the statement, “If the cost of capital for Hydro is set too low, it may encourage uneconomic investment in energy-related projects”.

A. Yes, setting the cost of capital too low would be undesirable from an economic standpoint.

NLH-192 PUB

If Dr. Waverman disagrees with either of the statements in questions NLH-190 PUB and NLH-191 PUB, please explain on what basis.

A. Not applicable.

NLH-193 PUB

Please provide any articles, studies or regulatory decisions of which Dr. Waverman is aware that support his conclusion that the marginal cost of the shareholder's equity in a Crown Corporation is equal to the province's cost debt.

A. I have not collected articles, studies, or regulatory decisions on this question. Instead, I went back to basic economic principles (*i.e.*, opportunity cost concepts) in preparing my testimony.

NLH-194 PUB

To Dr. Waverman's knowledge, have any associates of NERA ever taken the position, in the context of determining the cost of capital for a government-owned utility, that the nature of ownership, whether public or private, should not be a consideration in the cost of capital calculation? If yes, please provide the cases in which this position was taken.

A. I am aware of the attached report prepared by NERA economists in our London office. Please note that this report notes that "[I]n this way the WACC that is estimated will be consistent with the 'market required' rate of return for Aer Rianta in the event that Aer Rianta was privatized." Thus, this report addresses a different situation than that of testimony in this proceeding.

NLH-195 PUB (Re: Page 5, lines 19-20)

Dr. Waverman characterizes the opportunity cost of the Province's citizen's for the equity portion of the capital structure, as being represented by the marginal cost of Provincial guaranteed debt. Implicit in this statement is the assumption that the only alternate use for the funds retained in Hydro is to avoid future provincial borrowings. Does Dr. Waverman agree that these funds could equally be used to reduce future taxation of the Provinces citizens, in which case the applicable 'opportunity cost' could range from the cost of mortgage interest to credit card interest rates or the return that could be achieved by those citizens on similar risk investments?

A. No. This would take the opportunity cost concept outside the realm of feasibility.

NLH-196 PUB (Re: Page 10, lines 10-19)

Dr. Waverman discusses the need to balance the interests of ratepayers and owners. Does Dr. Waverman agree that in keeping with this principle, all assets used in the provision of electrical services and properly included in ratebase should earn a rate of return equal to the cost of capital?

A. This question goes well beyond the scope of my testimony.

NLH-197 PUB (Re: Page 10, lines 10-19)

Dr. Waverman discusses the need to balance the interests of ratepayers and owners. Is there any economic basis for reducing the return that can be earned on some assets in cases where part of the cost of those assets are paid by a different ratepayer than the ratepayer served by those assets (i.e. in cases of cross-subsidization of rates)?

A. I have not investigated this question.

NLH-198 PUB (Re: Page 13, lines 8-21)

Dr. Waverman recommends that the Board use Hydro's actual capital structure. In Hydro's last decision, the Board deemed a capital structure for Hydro, which reflected the disallowance of dividend payments to the Province. Please provide Dr. Waverman's explanation for his recommendation of the actual capital structure of Hydro rather than a hypothetical capital structure as derived by the Board.

A. I used the actual capital structure as it is more consistent with determining the opportunity cost of Hydro's debt.

NLH-199 PUB

Please provide a list of all crown-owned electrical utilities in Canada where the cost of equity for regulatory and rate making purposes is derived from the applicable province's opportunity cost of debt.

A. I have not collected this information.