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?

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?

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?

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?

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?

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.

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?

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?

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.

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?

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

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.

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?

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.

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

Please provide a copy of the referenced paper.

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.

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.

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.

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.

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.

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.

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?

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.

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.

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.

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.

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.

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.

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?

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.

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?

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.

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.

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.

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.

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.

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.

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.

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".

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".

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.

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.

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.

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?

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?

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)?

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.

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.

EES Consulting

NLH-200 PUB (Re: Page 6, Lines 21-23)

The evidence states, "Under the Fixed Variable Method those costs that are fixed in nature are classified as demand-related. This includes depreciation, return on rate base and taxes. Variable costs are classified as energy. This includes fuel and O&M expenses".

Does EES mean that under this methodology all O&M expenses are classified as being energy-related or only O&M expenses that are related to the production of energy, such as boiler maintenance?

NLH-201 PUB (Re: Page 8, lines 2-3)

The evidence states, "While the precedent for Hydro is based on the load factor method, this is not the most common approach used today in ratemaking in North America", and on lines 15-16: "The peak credit is most theoretically correct in our opinion, as it accounts for what type of costs would be incurred to serve the demand component alone. It is also widely used and is representative of what occurs in market prices in those jurisdictions where there is ample competition on a wholesale basis".

Please provide evidence that the peak credit method is more commonly used in North America than either, e.g., the full-fixed variable method or the load factor method. For examples within the U.S., provide FERC references as appropriate.

NLH-202 PUB (Re: NLH-201 PUB)

Please provide rationale to support the use of the peak credit method for hydraulic as well as thermal generating plant.

NLH-203 PUB (Re: NLH-201 PUB)

Has EES investigated the circumstances regarding the method used by each utility with consideration of the type of generation each utility has as well as regulatory mandates, as applicable?

NLH-204 PUB (Re: Page 8, line 10)

EES states, "The base/intermediate/peak method has a sound theoretical rationale..." Would EES agree that this statement is subjective and that the B-I-P method is itself controversial?

NLH-205 PUB (Re: Pages 10-12)

To what extent would EES agree or disagree that the zero-intercept method most accurately achieves the goal of identifying the theoretical skeleton system needed to connect customers to a source of supply and that by virtue of the rather considerable data needed to properly employ this methodology, the minimum system approach is often used as a practical alternative.

NLH-206 PUB (Re: Pages 11, lines 34-39)

In discussing the zero-intercept method, EES states, "It also has a potential problem that the zero-sized facility could result in a negative cost outcome". In its experience in performing zero-intercept regressions, does EES believe that all best-fit curves are necessarily linear throughout the entire range? Also, does EES believe it can be appropriate to adjust for observation points in which there are few units of property installed, on the premise that larger projects tend to have lower unit costs?

NLH-207 PUB (Re: Page 8, lines 20-25)

Please provide the evidence that was relied on for the statement that natural gas is available in Newfoundland and Labrador.

NLH-208 PUB (Re: Page 22, lines 21-23)

Please provide the evidence that was relied on that any Newfoundland Power generation is embedded in Hydro's service territory.

NLH-209 PUB (Re: Page 22, line 35)

Please provide the evidence that was relied on that the Holyrood plant is used as a peaking unit.

NLH-210 PUB (Re: Pages 23-25 on the Tail Block Rate)

Given that hydraulic generation is primarily increased for peak loads except during unusual circumstances when gas turbines are used as described in NP-172 NLH, explain how shifting energy consumption from on-peak hours to off-peak hours will change system energy costs.

NLH-211 PUB (Re: Page 26, lines 11-32)

Please show the $/kW-month rate that would apply using the example ratcheted billing determinants using the NP Native Peak Assumptions in the following table. Show the 2004 annual cost to NP using this example rate, the 2004 annual cost to NP if the actual peak was 100 MW over forecast and compare this to the SWMCI proposed method under the same conditions.

NP Native Peak Assumptions (MW)		
	2003	**2004**
January	1157	1179
February	1099	1120
March	1007	1026
April	908	921
May	814	825
June	696	705
July	566	574
August	542	550
September	625	634
October	790	801
November	955	968
December	1108	1124

NLH-212PUB (Re: Pages 33-35, regarding a NP Generation Tariff)

Is a NP Generation Tariff necessary for NP Generation within NP's service area? Please explain.

NLH-213 PUB (Re: Pages 33-35, regarding centralized dispatching)

Please explain how this is different from the current practice of Hydro as outlined in Exhibit JRH-3 Appendix A, given there is only one steam generating station, Holyrood, and Hydro dispatches NP thermal generation as per step 5 of the referenced instruction.