

REPORT
OF
THE BOARD OF COMMISSIONERS OF PUBLIC UTILITIES.
TO
THE HONOURABLE LEO D. BARRY
MINISTER OF MINES AND ENERGY
GOVERNMENT OF NEWFOUNDLAND
ON
THE RATE PROPOSALS FILED BY
NEWFOUNDLAND AND LABRADOR HYDRO
ON APRIL 20, 1981.

NEWFOUNDLAND AND LABRADOR

BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

St. John's, Nfld

P. O. Box 9188, A1A 2X9

Telephone 709 726-6432

1981 07 29

Honourable Leo D. Barry,
Minister,
Department of Mines & Energy.
Eastern Canada Building,
95 Bonaventure Avenue,
St. John's,
Newfoundland.

Dear Minister:

Pursuant to Section 8 of the Electrical Power Control Act, the Board submits herewith a copy of its report on the rates of Newfoundland and Labrador Hydro which were referred to the Board on April 20, 1981 in accordance with Section 7 of the Act.

The Board of Commissioners of Public Utilities

J. A. G. MacDonald, P. Eng.,
Chairman.

R. E. Good,
Vice-Chairman.

TABLE OF CONTENTS

PART I - INTRODUCTION

1981 Referral of Hydro	1
Rates Proposed for NLP	3
Rates Proposed for PDD	3
Procedural Order	5
The Board's Consultants	8
Snyopsis of Hearings	11

PART II - SUMMARY OF EVIDENCE AND ARGUMENT

Forecasting Assumptions	15
Peak and Energy Requirements	15
Capital Requirements	22
Interest Coverage Ratio	24
Hydro's Submission on Interest Coverage Ratio	27
NLP's Submission on Interest Coverage Ratio	36
FOM's Submission on Interest Coverage Ratio	37
Revenue Requirements	40

Total Requirements	40	
Fuel Oil Costs		41
Fuel Adjustment Charge	49	
Water Equalization Reserve	51	
Depreciation	52	
Power Purchased	53	
Interest		53
Method of Estimating	55	
Salaries & Fringe Benefits	56	
Other costs	56	
Rates	57	
NLP's Submission on Rates	60	
FOM's Submission on Rates	63	
Summary of Argument of FOM	65	
Summary of Argument of NLP	73	

PART III - THE BOARD'S CONCLUSIONS AND RECOMMENDATIONS

Forecasting Assumptions	82
Interest Coverage Ratio	87
Interest charged to CFLCo	89
Rates	89
Hydro's Recommended Rates to Retailers	94

NEXTRECORD

PART I - INTRODUCTION

1981 REFERRAL OF NEWFOUNDLAND AND LABRADOR HYDRO

This is the third Referral of Newfoundland and Labrador Hydro (Hydro) to the Board of proposed rates for the supply of power to Newfoundland Light & Power Co. Limited (NLP) and the Board of Trustees of The Power Distribution District of Newfoundland and Labrador (PDD) since the Newfoundland House of Assembly passed The Electrical Power Control Act, hereinafter called EPCA, on June 17, 1977.

Following receipt of the report of the Board, dated February 28, 1980 on Hydro's second referral, the Lieutenant-Governor in Council, on March 13, 1980, approved:

- (1) a rate of 20.70 mills per kilowatt hour (kwh) and a fuel adjustment charge to recover the cost of Bunker 'C' fuel in excess of a base price of \$7.50 a barrel, for energy generated and supplied to NLP.

NEXTRECORD

- (2) A rate of 6.50 mills/kwh for firming up secondary energy purchased from The Bowater Power Company Limited (Bowater Power) and delivered as firm energy to NLP.
- (3) An energy rate of 20.70 mills/kwh, a fixed charge of \$101,474 per month and the fuel adjustment charge for energy supplied to PDD on the Island portion of Newfoundland.
- (4) An energy rate of 3.7 mills/kwh and a fixed charge of \$148,315 per month for energy supplied to PDD in Labrador.

The approved rates went into effect on April 1, 1980.

NEXTRECORD

Rates proposed for the supply of power and energy to NLP

On April 20, 1981 Hydro referred to the Board a proposal to charge NLP a monthly energy rate for all power and energy, other than for secondary energy supplied by Bowater Power, of 23.48 mills/kwh and a fuel adjustment charge per kwh which would pass on to NLP increases in fuel costs over and above \$7.50 per barrel.

For secondary energy supplied by Bowater Power to Hydro and delivered as firm energy by Hydro to NLP the proposed firming rate is 7.81 mills/kwh.

Rates proposed for the supply of power and energy to PDD

In the same referral Hydro also proposed to alter the rates charged to PDD. Two rates were proposed for PDD; one for electricity supplied on the Island portion of Newfoundland and another for Labrador.

NEXTRECORD

The rates proposed for the Island are a fixed charge of \$245,813 per month, an energy charge at the rate of 23.48 mills/kwh and a fuel adjustment charge to be calculated in the same manner as that passed on to NLP.

The rates proposed for Labrador are a fixed charge of \$154,089 per month and an energy charge at the rate of 3.7 mills/kwh.

Hydro have requested that the proposed rates become effective on August 1, 1981.

These rates were revised on June 16 and July 20, because of errors and omissions identified during the hearing. The revised rates are shown on page 94 of this report.

NEXTRECORD

Procedural Order

Forthwith upon receipt of Hydro's referral the Board issued Order No: P.U. (15) 1981 dated April 20, 1981. In it the Board ordered that:

1. Phase 1 of the hearing will commence at 10:00 A.M. on May 14, 1981 at the Board's Hearings Room, 2nd. Floor, East Wing, Prince Charles Building, 120 Torbay Road, St. John's, Newfoundland.
2. Hydro shall file with the Board on or before 5:00 P.M. on April 28, 1981, 25 copies of a typewritten submission and supporting exhibits, containing in detail the evidence to be submitted in support of the proposed alterations.

NEXTRECORD

3. Hydro shall, in addition, provide copies of its submission and the supporting exhibits to each of its customers which retail power and to any other person upon request.

4. Any customer or other person wishing to make a submission to the Board or to participate in the hearing shall file with the Board and with Hydro on or before noon on May 11, 1981, notice of such intention, containing a concise statement of the facts from which his interest and the nature and scope of his intended participations may be determined, the name of his counsel, if any, and the address to which communications should be sent; such notice if delivered, shall be delivered:

NEXTRECORD

- (a) to the Board at its head office, 2nd Floor, East Wing, Prince Charles Building, 120 Torbay Road, St. John's, Newfoundland.

- (b) to Hydro at its head office, Philip Place, Elizabeth Avenue, St. John's, Newfoundland,

and such notice if sent by registered mail shall be addressed:

- (c) to the Board at P.O. Box 9188, St. John's, Newfoundland, A1A 2X9, and

- (d) to Hydro at P.O. Box 9100, St. John's, Newfoundland, A1A 2X8.

NEXTRECORD

5. The object of the Phase 1 hearing is to assist interested persons in better understanding the issues, to discuss any problems relating to the filing of interventions and the preparation of evidence, to fix a date on which to commence Phase 2 of the hearings and to establish the general procedures to be followed during the hearings.
6. Notice of the Phase 1 hearing shall be published by the Clerk of the Board as a display advertisement twice in each daily newspaper published in the Province.

The Board's Consultants

The Board retained R. G. Noseworthy & Associates Ltd, Financial Consultants and D. W. K. Dawe, Q.C. as Director of Enquiry to assist the Board in its examination of Hydro's operation.

NEXTRECORD

The terms of reference given to R. G. Noseworthy & Associates Ltd were generally to review the methodology and assumptions which underly Hydro's financial forecasts and evaluate the reasonableness and prudence of the costs used by Hydro to determine their proposed rates for retailers. More specifically, they were requested to:

1. Determine if there has been any changes in the accounting Principles and Procedures since the last hearing.
2. Examine the method of estimating revenues, expenditures and earnings for the years set out in their proposal.
3. Compare the estimates made and assumptions used in the evidence at the previous hearing to the actual results for 1979 and 1980, and any estimates that were made for future years at that time.

NEXTRECORD

4. Comment on the reasonableness and prudence of administrative and operating expenses in relation to sales of power and energy and check the allocation of any expenses incurred for purposes other than supplying power and energy to Newfoundland Light & Power Co. Limited and The Power Distribution Districts.
5. Comment on allocation of costs for service as recommended by the Board in the past.
6. Any other item that falls within the general Terms of Reference.

NEXTRECORD

Synopsis of the Hearings

The hearings were held in the Board's Hearing Room in St. John's on May 14, 1981 and from June 15, 1981 to June 25, 1981.

The Board received interventions from NLP, the Newfoundland and Labrador Federation of Municipalities (FOM) and Eugene R. Hiscock, M.H.A. for the District of Eagle River, Labrador.

Frederick S. Bishop, LL.B. appeared on behalf of Hydro. Douglas C. Hunt, Q.C. appeared for NLP and Joseph S. Hutchings, LL.B. appeared for FOM.

Evidence was given by the following officials of Hydro

V. L. Young, Chairman and Chief Executive Officer.

D. W. Mercer, Vice-President, Corporate Planning.

J. P. Henderson, Vice-President, Operations.

M. D. Wright, Corporate Comptroller.

J. Baxter, Vice-President, Finance and Administration.

NEXTRECORD

The following witnesses were called by the Intervenors

For NLP

A. D. Cameron, President.

A. E. O'Reilly, Director of NLP and Assistant Manager of the
Management Consulting Division of Montreal
Engineering Company Limited.

D. S. Templeton, Vice-President and General Manager.

C. R. Vivian, Manager of Customer Services.

For FOM

R. K. House, President R. K. House & Associates Ltd.

NEXTRECORD

The Board called as a witness

R. G. Noseworthy, C.A. of R. G. Noseworthy & Associates Ltd.

The Burin Town Council wrote to the Board, on March 21, 1981, opposing the application and requesting that it be denied.

The Board received a copy of a letter sent to Stephen A. Neary, M.H.A., LaPoile District, from the Town Council of Isle aux Morts objecting to the proposed rate increase of Hydro.

PART 11 - SUMMARY OF EVIDENCE AND ARGUMENT

In compliance with Section 11 of EPCA, the following is the Board's summary of the information and views submitted during the hearing.

Since the Board's last report, on February 28, 1980, to the Honourable Minister of Mines & Energy, the 75 megawatt (MW) hydro-electric generating facility at Hind's Lake came into service (in December 1980).

NEXTRECORD

Construction activity continues on the Upper Salmon hydro-electric development in the Bay D'Espoir watershed which is expected to come into full production in the fall of 1982.

The Roddickton mini-hydro plant was completed in December 1980. Hydro is assessing the performance of the plant to test the concepts and economics of mini-hydro plants.

The rural electrification program, designed to connect isolated diesel systems to the provincial power grid continued, taking some 690 householders off diesel generation and onto the main power grid.

In April 1980 all the fixed assets of PDD were transferred to Hydro for one dollar and the current assets and liabilities of PDD were transferred to Hydro at cost. All new assets will be funded and constructed by Hydro. PDD will pay Hydro for the costs of providing these assets including interest and depreciation. Normal operating costs are billed monthly to PDD.

NEXTRECORD

Forecasting Assumptions

Peak and Energy requirements

Hydro's present forecast, which was prepared in 1980, of the power and energy requirements which Hydro expects to be called upon to serve from 1981 to 1987 predicts lower Island loads than it forecast in 1979.

Principal causes of the reduction in loads are a lowering in the assumed rate of growth in consumption within the residential and general service sectors of the utility load. These reductions reflect Hydro's assessment of the likely impact that higher electricity prices and the encouraging trend toward new publicly supported energy conservation initiatives will have on consumption during the forecast period. In addition, aggregate industrial customer needs are expected to be somewhat lower than predicted in 1979.

NEXTRECORD

Hydro has reduced the annual energy output which it assumes for planning purposes can be made available from each of the units at its Holyrood thermal plant from 1,000 gigawatt hours (GWH) to 935 GWH, or 65 GWH per unit, for a total reduction of 195 GWH for the three units. This change was made following a review of Hydro's operating records at Holyrood and after discussions with other Canadian utilities, who have oil-fired thermal units similar to those installed at Holyrood, to determine their operating experience and the output which they assume available from such units when planning.

This downward adjustment was partially offset by an increase in the firm energy capability which Hydro assumes to be available from Bay D'Espoir. Hydro's operating experience at this plant, since the installation of a seventh generating unit, has shown that it can produce 200,000 kwh more energy per billion cubic feet of water than had previously been possible. The firm energy capability of the Bay D'Espoir plant has therefore been increased by 37 GWH (from 2250 to 2287).

NEXTRECORD

Finally, Hydro's discussion with Price (Nfld) Ltd.. in 1980 revealed the possibility that they will refurbish their Bishop's Falls hydro plant. If this is undertaken, the firm output of the plant could rise by 35 GWH in 1984 and a further 13 GWH in 1987.

The net effect of all of these changes has been to reduce the Island's firm energy capability, which Hydro assumes available for planning purposes, by 158 GWH commencing in 1981, with subsequent increases of 35 GWH and 13 GWH in 1984 and 1987 respectively from the reduced 1981 level.

With the completion of the Upper Salmon in 1981 Hydro will have sufficient generating capability, with a loss of load probability (LOLP) of "one day in five years" to supply all of the needs of the Island under firm water conditions until 1984. In 1984 the system will not meet Hydro's LOLP criteria but this is not considered a critical deficiency which would justify building a major new plant as no energy deficiency is expected.

NEXTRECORD

After 1984, the Island faces the possibility of both power and energy shortages unless it has access to a new source of generation.

Because of the many uncertainties which surround the timing and source of a Labrador interconnection Hydro believes a new Island based source of generation would be needed prior to a Labrador infeed.

The main options were (i) the Cat Arm 127 megawatt (MW) hydro-electric development on the Great Northern Peninsula, capable of supplying 597 GWH of firm annual energy, at a total estimated capital cost of \$287 million and (ii) a fourth 150 MW oil-fired unit at Holyrood, capable of supplying 935 GWH of energy, and having a total estimated capital cost of \$115 million.

NEXTRECORD

Both financial and cost-effective analysis were used to compare technically equivalent plant addition sequences which included Cat Arm and Holyrood Unit 4. The analysis showed that Cat Arm was the preferred energy source option. Hydro's consideration of the Cat Arm project included an evaluation of its environmental impact. This is the first major project which Hydro have assessed and submitted for consideration under Government's Environmental Assessment Act of 1980. All of the required detailed field studies have been completed, and an Environmental Impact Statement on the Cat Arm development has been approved by the Minister of the Environment, subject to Hydro taking all the mitigative measures outlined in the Statement.

NEXTRECORD

The Lieutenant-Governor in Council has decided that Hydro should proceed with the Cat Arm development and the scheduled completion date is the late fall of 1984.

Cat Arm will satisfy the power and energy needs of the Island through 1986.

If Labrador power arrives in 1987 and if Hydro's current load forecast is accurate, then no additional major energy source will be needed in the foreseeable future. However, if the Island's electrical load increases more rapidly than Hydro is currently projecting, perhaps because of increased population growth and economic activity related to off-shore oil and gas development, then it may be necessary to build Holyrood Unit 4. A delay in a Labrador infeed would similarly indicate the need to build Holyrood 4.

NEXTRECORD

In 1979 Hydro undertook initial feasibility analysis of four river systems. In Labrador, it examined the Pinware River and on the Island the Cloud River, Lake Michel, and Dry Pond Brook. These sites have potential for small hydro developments in the 1 MW to 30 MW size range.

As a result of Hydro's initial analysis, the Pinware River was dropped, essentially for environmental reasons, and the Cloud River Scheme was found to be economically unattractive. Engineering and environmental work is proceeding, however, on Dry Pond Brook and Lake Michel. Both sites appear to be environmentally sensitive and hence no construction funds have been provided for them in 1981 or 1982. Hydro are planning, however, to spend in total approximately \$545,000 for environmental and limited engineering work on these sites in 1981 and the early months of 1982.

NEXTRECORD

In the mid seventies Hydro proposed that it do an environmental study with respect to the Lloyd's River Diversion but because of the public outcry the study was not proceeded with. If the Lloyd's River was diverted it would flow through both the Upper Salmon plant and the Bay D'Espoir plant and would provide approximately 180 additional GWH through the Bay D'Espoir plant and 50 GWH through the Upper Salmon plant at an estimated cost of 10 mills/kwh. It would take about three years to complete an environmental study and if the plant were to be built it would take about two years. The plant would displace about 380,000 barrels of oil per year.

Capital Requirements

Hydro's capital budget is approved by its management and Board of Directors.

NEXTRECORD

Section 37(1) of the Newfoundland and Labrador Hydro Act requires Hydro to submit to the Minister of Mines & Energy not later than the 30th day of November in every year a budget containing its estimated capital and operating expenses for its next succeeding fiscal year.

Section 37 (2) states that the Lieutenant-Governor in Council may either approve or disapprove any borrowing program reflected in the budget.

Section 26 requires the prior approval of the Lieutenant-Governor in Council for Hydro to borrow or to secure the repayment of moneys borrowed.

It will be noted that Hydro is not required to refer its proposed capital expenditures or its proposed methods of raising capital funds to the Board for a public hearing and recommendations thereon.

NEXTRECORD

Hydro estimated that in order to serve its forecasted electrical load growth, additions to its generation, transmission and terminal plant and equipment, general properties and environmental studies will call for capital expenditures of \$108 million in 1981 and \$147.8 million in 1982.

Interest Coverage Ratio

In its report of May 14, 1978 to the Honourable Minister of Mines and Energy the Board recommended and the Lieutenant-Governor in Council accepted that an interest coverage in the range of 1.15 to 1.25 times gross interest would enable Hydro to maintain a sound credit rating. The Board used a coverage of 1.2 times gross interest in determining the rates recommended for retailers in the said report.

NEXTRECORD

The Board's report of February 28, 1980 recommended rates for sales to retailers that would give Hydro the opportunity to attain an interest coverage of 1.2 times gross interest for the period April 1, 1980 to December 31, 1980. The report stated, "The Board believes that this margin conforms with the provincial power policy and it falls within the range of 1.15 to 1.25 times gross interest recommended by the Board in its previous report". The Lieutenant-Governor in Council accepted this recommendation.

In its present submission Hydro proposes rates, to be effective August 1, 1981, that would allow it to achieve a 1.15 interest coverage in 1981 and a 1.2 interest coverage in 1982 with respect to its contracts with NLP and PDD.

NEXTRECORD

In 1978 Hydro was only able to achieve a 0.85 interest coverage on its sales to retailers, mainly because the rates were not implemented until March 17, 1978 and exchange fluctuations increased the Canadian dollar cost of debt in foreign currencies.

On October 16, 1979, following an interim report of the Board, the Lieutenant-Governor in Council approved a rate increase to be effective from October 18, 1979 to March 31, 1980, which would give Hydro the opportunity to achieve an interest coverage of 1.0 in 1979 on its sales to NLP and PDD. The interest coverage earned in 1979 was 0.96 which resulted in a revenue deficiency of \$1,000,000 on sales to its retail customers.

In 1980 Hydro achieved an interest coverage of 1.12 (\$3,800,000) times gross interest on its sales to NLP and PDD. The reasons for the lower margin are that Hydro's sales to NLP were 150.6 GWH lower than forecast and the rates recommended by the Board in its interim report for the first three months of 1980 were lower than that requested by Hydro.

NEXTRECORD

Hydro's submission on Interest Coverage Ratio

Mr. Young testified that insular Newfoundland's requirements for electricity have out-stripped the availability of economically attractive and environmentally acceptable hydro-electric potential. The Cat Arm development is the only major hydro project available on the Island. Therefore, it is absolutely critical that an interconnection to Labrador power and energy be achieved as the means of avoiding the highly undesirable alternatives of providing for further load requirements by becoming increasingly reliant on oil-fired generation, or switching to coal-fired generation. Whatever the future sources, capital investments will be immense and Hydro's overall financial position will be critical to the financing of such future sources.

NEXTRECORD

The achievement of a sound financial position for Hydro is vital when the borrowing requirements for a Labrador electrical interconnection are examined. Its basic component is a \$1.5 billion transmission line to carry power from Churchill Falls, Gull Island or Muskrat Falls. Depending on the energy source the capital costs of the projects, including transmission to the Island, are quite different and will require differing financial support from the Government of Canada. For instance, the total capital costs of Gull Island including transmission is in excess of \$4 billion and the total cost of Muskrat Falls is in excess of \$3 billion. Accessing Churchill Falls power would require capital expenditures of \$1.5 billion for the transmission line alone and the total outlay could be substantially more depending on the result of the Water Rights Reversion legislation and associated court action.

NEXTRECORD

Even with financial support from Canada to develop the Lower Churchill sites or to construct the transmission line from Churchill Falls, a key element in the support package and in the investors' perception of the acceptability of a Labrador interconnect will be the ability of Hydro to pay for the energy produced and transmitted. Lenders will look extremely carefully at the financial position of Hydro as the major power purchaser and as a participant in the financing plan.

If Hydro as the customer for Lower Churchill power is not financially sound, then the power contract which it signs with the Lower Churchill Development Corporation (LCDC) cannot be sufficiently meaningful to support the development. At the present time, Canada's support is envisaged as an equity contribution and a last resort guarantee on the debt of LCDC, while the Newfoundland Government support is envisaged as equity financing. However, the combined participation by the two shareholders will not mean Hydro can relinquish its

NEXTRECORD

responsibility to be a financially sound partner in a Lower Churchill development and/or a transmission line from Upper Churchill. In particular, the Government of Canada would look with grave concern upon a situation where they were being requested to give substantial credit support to an energy project while the main purchaser of that energy had a financial record that placed in doubt its ability to hold up its side of the arrangement.

Mr. Young said that the prospects for the electrical energy sector in this Province without an electrical interconnection with Labrador are grim. Without a Labrador interconnection, the achievement of a sound financial position for Hydro is an even more crucial matter. Therefore, it is critically important to the long term future of electrical consumers that Hydro be a responsible corporation with a prudent financial structure. What must be demonstrated to the investors is that (i) Hydro is not a burden on the Province's credit, (ii) the electrical energy sector is being effectively and efficiently managed, and (iii) the financial objectives being targeted by Hydro are prudent and responsible thereby resulting in access to world capital markets at reasonable interest rates.

NEXTRECORD

Hydro has been fortunate, over the last eighteen months, in arranging two twenty year loans from the Province of Alberta at interest rates equivalent to triple "A" credits. Hydro issued \$75 million in Debentures in November of 1979 at an effective rate of 11.65% and issued a further \$75 million in Debentures in January of 1981 at an effective interest rate of 13.425%. Hydro will continue to use, where possible, these favourable cost borrowings from Alberta, but it is readily apparent that Hydro's future borrowing program will necessitate large borrowings from both the Canadian and the United States capital markets.

In proposing the rate changes for 1981 and 1982, Hydro was guided by the established range for interest coverage of 1.15 to 1.25. Hydro also gave consideration to the relationship between the margin which could be achieved with the proposed rates and its growing capital program, as well as its debt equity ratio target.

NEXTRECORD

Mr. Young submitted the following table summarizing the improvement in Hydro's financial position since 1979 which he stated indicates achievement of financial results which are consistent with the parameters set down in past Public Utilities Board hearings:

OVERALL FINANCIAL MEASUREMENTS

Measurement	1979	1980	1981	1982
Capital Program (millions)	\$69.0	\$68.6	\$108.0	\$147.8
Gross Interest (millions)	\$37.4	\$43.6	\$55.1	\$71.8
Margin (millions):				
Utility (NLP & PDD)	\$ (1.0)	\$ 3.8	\$ 5.8	\$ 10.1
Industrial	1.8	2.9	3.1	4.3
The Iron Ore Company of Canada (IOC)	1.4	1.7	1.7	1.8
TOTAL		\$ 2.2	\$ 8.4	\$10.6
\$16.2				
Reinvested Margin as % of Capital Program	3.2%	12.2%		9.8%
11.0%				
Interest Coverage Utility (NLP & PDD)	.96	1.12	1.15	1.20
Interest Coverage Total	1.06	1.19	1.19	1.23
Debt:Equity Ratio	96:4	95:5	94:6	93:7

NEXTRECORD

In 1981 and 1982 Hydro will build new generation and transmission facilities totalling \$250 million. In both of these years, approximately 10% of its requirements will be provided through the margin while practically all of the remaining 90% will be borrowed from the capital markets of the world. The margin represents a contribution to the capital program from consumers, which reduces borrowing requirements and the associated long term interest costs as well as enhancing Hydro's financial stability and how it is perceived by credit rating agencies. While the benefits of reinvestment of margin begin immediately, it will have its greatest impact in the future, particularly as Hydro moves towards the implementation of a Labrador power development strategy.

NEXTRECORD

The improvement in Hydro's financial position since 1979 is a signal to investors that the electrical energy sector in Newfoundland is being prudently and responsibly managed. These improved perceptions will impact favourably on Hydro's access to capital markets, the size of its bond issues, and eventually on the credit rating of the Province and Hydro, which in turn will result in comparatively lower interest rates. By the end of 1982, Hydro will have demonstrated its ability to meet its interest coverage objectives on a consistent basis for a number of years and to achieve a measure of financial soundness as it pursues the challenge of fulfilling the long term energy objectives of Newfoundland and Labrador.

NEXTRECORD

Mr. Young pointed out that there has been a substantial change in the conditions of financial markets. In the last year alone the long term issuing rate for Hydro's debt has risen by 4% and in addition the yield spread between Newfoundland bonds and those of other borrowers has been increasing while the overall availability of long term issues has been decreasing in a volatile environment. Financial analysts are looking more carefully at financial performance, financial stability and favourable financial ratios. Under such difficult market and credit rating conditions the competition for reasonably priced long term money becomes stronger and lower rated issuers such as Hydro will have less opportunity for successful borrowings. This makes it imperative that Hydro demonstrate its ability to achieve at least an interest coverage of 1.2 on a regular basis and thereby continue to improve its existing debt equity ratio.

NEXTRECORD

Mr. Young stated that he believed the rates proposed are reasonable and responsible and are consistent with the targets set previously by the Board as well as being prudent in relationship to the ongoing capital requirements of Hydro.

NLP's submission on interest coverage ratio

Mr. Cameron examined the background of the development of financial criteria for Hydro, the financial criteria adopted for other electric utilities and their financial performance and the impact of improvement in Hydro's financial performance on its financing costs. including a financial analysis model of possible trends in Hydro's financial performance.

NEXTRECORD

Mr. Cameron stated, "in the light of the financial criteria found reasonable for Hydro by the Board, Hydro's heavy capital expenditures in the near future and the present state of the financial markets, I have concluded that the attainment of an interest coverage of 1.2 times in 1982 is a reasonable objective for Hydro".

FOM's submission on interest coverage ratio

Hydro's interest coverage has been calculated on Gross Interest which includes Interest During Construction (IDC).

Hydro capitalizes interest on the funds used in capital projects monthly, based on the most recent long term borrowing rate (IDC).

NEXTRECORD

Dr. House contended that including IDC in the calculation of interest coverage violates sound rate making practice and may violate provisions of EPCA.

He stated "It is common practice in most regulatory jurisdictions to recognize that the current construction program confers no benefit upon the current subscribers or ratepayers but is being undertaken to ensure that future ratepayers will be properly served. Thus to my knowledge virtually all regulatory authorities and students of the subject hold the view that because plant under construction is not "used and useful" and confers no benefits on the current ratepayers the investment in plant under construction and the return on that investment should not enter into the determination of the rates to be paid by the current subscribers".

NEXTRECORD

It was also Dr. House's view that to comply with Section 15(2) of EPCA, the margin on IDC should be excluded from the current revenue requirements of Hydro. It should be capitalized as IDC is and recovered through future depreciation charges.

Section 15(2) of EPCA states:

"In considering the rates charged by the Hydro Corporation for the purposes of a reference under this Act, the Public Utilities Board shall take no account of expenditures or revenues of that Corporation or its subsidiaries that are not attributable to the supplying of power to retailers."

If the margin on IDC is capitalized it would reduce Hydro's revenue requirements by \$1,708,000 in 1981 assuming a 1.2 coverage and \$4,089,800 in 1982.

NEXTRECORD

Dr. House submitted that this procedure would match the provision of service with the recovery of costs and would provide some direct relief for current ratepayers as the cost of the margin on IDC would be recovered over the life of the plant through depreciation rather than being recovered in one year. This would force Hydro to borrow more than it would under the present procedures and would reduce Hydro's current cash flow.

Revenue Requirements

Total Requirements

Hydro's total revenue requirements from retailers and industrial customers for 1981 are forecast to be \$117,794,000 an increase of \$34,097,000 over 1980, and for 1982 are forecast to be \$165,732,000 an increase of \$47,938,000 over 1981. The revenue requirements include total interest coverage in 1981 of 1.16 (1.15 from retailers only) and in 1982 of 1.20 (1.20 from retailers only).

NEXTRECORD

Hydro has no assets dedicated to the supply of power to IOC and the purchase of power by IOC is treated as a separate item. Hydro's total revenue requirements do not include revenue from IOC and no cost of service is applicable. By including revenue received from IOC, less the cost of power purchased from Churchill Falls (Labrador) Corporation Limited (CFLCo) for IOC, Hydro estimates it will earn a total interest coverage of 1.19 in 1981 and 1.23 in 1982.

Fuel Oil Costs

In 1980 the cost of fuel was \$23,156,000 which is 55% of the forecasted cost of fuel in 1980 of \$42,052,000 even though consumption increased by 267,000 barrels over 1979.

NEXTRECORD

This was due to the fact that the Federal compensation program pays a subsidy based on the average cost of crude oil brought into Eastern Canada and in 1980 the price of crude was rising at the same time that the price of Bunker 'C' was dropping during the first eight months of the year. In the latter four months Bunker 'C' prices rose rapidly when a shortage occurred after war broke out in the Middle East. This resulted in the prices Hydro paid for Bunker 'C' varying from \$10.99 per barrel in January down to \$5.57 per barrel in April and up to \$21.40 per barrel in December, giving an average cost of fuel consumed at the Holyrood thermal plant of \$10.08 per barrel compared to Hydro's estimate of \$15.04 per barrel. This reduction was passed on to Hydro's consumers by lower fuel adjustment charges.

Fuel oil costs are forecast by Hydro to be \$41,528,000 in 1981 and \$78,761,000 in 1982.

NEXTRECORD

These amounts do not include the estimated cost of the oil amounting to \$1,713,000 in 1981 and \$5,543,000 in 1982 that is estimated to be used to generate electricity due to loss of production at Bay D'Espoir resulting from the building up of storage at the Upper Salmon.

During the construction of the Upper Salmon Hydro Development, which is a development in the upstream watershed of Bay D'Espoir, some of the water will have to be used to raise the water levels so that the water can be diverted through the Upper Salmon plant. In accomplishing this diversion, some of the water will have to be impounded as dead storage. This will amount to 4.24 billion cubic feet (BCF) or 51.7 GWH in 1981 and 10.59 BCF or 129 GWH in 1982.

NEXTRECORD

The build up of the water level at the Upper Salmon reservoir results in a one time loss of water to Bay D'Espoir and a consequent increase in thermal production. This volume of water equates to 86,000 and 215,000 barrels of oil in 1981 and 1982 respectively.

Hydro has reduced oil costs and increased the Upper Salmon capital cost by the value of the oil priced at the projected oil cost at the time the water is lost to Bay D'Espoir.

Hydro's fuel estimates are based on the amount of energy it will have to produce in its thermal plants and the price it has to pay for fuel.

Fuel requirements for the Holyrood thermal plant are based on an average net production of 600 kwhs per barrel or 10,500 BTU (British Thermal Units) per kwh, for gas turbines 430.5 kwh per barrel and for diesel plants 525 kwh per barrel.

NEXTRECORD

Hydro's oil prices are based on the latest prices paid for fuel oil adjusted for any changes in price that it was aware of up to April 1, 1981 plus escalation based on the National Energy Program (N.E.P.) announced in late 1980. The N.E.P. will result in increasing costs by \$1.00 per barrel on September 1, 1981, March 1, 1982 and September 1, 1982 and \$2.50 per barrel on January 1, 1983. These prices also include the seventy-five cent per barrel levy that was imposed by the Federal Government after Alberta reduced its oil production on March 3, 1981.

These prices do not presume an allowance for Canadianization of the oil industry, any additional levy for settlement between the Federal and Alberta Governments or any changes in the Compensation Program.

NEXTRECORD

Hydro's present contract for Bunker 'C' fuel oil has an escalation clause that varies the price up and down depending on the published New York Cargo price which is a reflection of the supply and demand which is greatly influenced by what happens in the Middle East. In addition the Federal Government Compensation Program reimburses importers of fuel oil and crude oil equally, based on the average cost of crude oil brought into Eastern Canada.

Mr. Henderson, testified that since Hydro's evidence was filed on April 27th., the following changes in fuel costs have occurred: "Up to June 4 there was an increase of \$3.50 per barrel in the Federal Compensation Levy and a reduction of 52¢ per barrel in the amount of compensation the Federal Government pays. There was also a reduction of \$3.75 per barrel in the price of Bunker 'C' resulting in an overall increase of 27¢ per barrel to a price of \$21.15. The drop in Bunker 'C' brought the price down to 81% of the price of crude oil.

NEXTRECORD

I believe that this relationship is a good one to use over the forecast period because of the apparent oversupply of Bunker contemplated over that period of time, and is certainly a conservative price to use. Using the \$21.15 per barrel price and escalating it in accordance with the National Energy Program will amount to less than 1 1/2% difference between the figures used in my evidence, and I therefore have not changed my estimates because this is well within the estimated accuracy.

Since June 4 we have been advised that the compensation has dropped by .75¢ per barrel and the price of Bunker by \$2.50 per barrel or a further reduction to us of \$1.75 per barrel bringing the price we pay today to \$19.40 per barrel. This results in the price of Bunker being 75% of the price of crude which is extremely low and one that will change in September when the market for Bunker 'C' increases.

NEXTRECORD

I therefore feel that using an average year water inflows into our storage, and the load forecast that has been presented that the estimates I have given are as accurate as I can forecast at this time."

Hydro estimates that in 1981 66.95% of its production will be generated by its Hydro plants and 33.05% by thermal generation. In 1982 its Hydro plants will generate 57.44% of its production and thermal generation will provide 42.56%.

In 1981 fuel consumption is expected to increase by 98,000 barrels and the average cost per barrel is expected to increase from \$10.08 to \$18.46. The total increase in oil costs, less the capitalization of fuel costs related to the Upper Salmon Project is \$18,700,000. Of this amount \$18,000,000 is recovered through the fuel adjustment charge with the balance being included in the cost of service.

NEXTRECORD

In 1982 fuel consumption is expected to increase by 1,124,000 barrels and the average cost per barrel is expected to increase from \$18.46 to \$24.32. The total increase in oil costs, less the capitalization of fuel costs related to the Upper Salmon Project is \$37,233,000. Of this amount \$28,000,000 is recovered through the fuel adjustment charge with the balance being included in the cost of service.

Fuel Adjustment Charge

The rates proposed by Hydro in this application have been calculated on the basis of a fuel adjustment charge which allows Hydro to pass on all costs of oil and other fuels used in the generation of electricity over and above a basic price of \$7.50 per barrel of Bunker 'C' oil.

NEXTRECORD

This results in an estimated fuel adjustment charge of \$15,334,103 in 1981 and \$33,345,200 in 1982 for NLP and \$1,041,326 in 1981 and \$2,261,986 in 1982 for PDD.

Mr. Young pointed out "The exact extent of fuel escalation charges in 1981 and 1982 is difficult to predict as it depends upon (i) the Federal subsidy program for imported oil, (ii) the relationship between the price of Bunker 'C' and crude oil in the world markets, and (iii) the consumption of oil at Holyrood which in turn depends upon electrical demand and water levels. Considering the 1980 experience the most critical factor could again be the relationship between the price of crude oil and the price of Bunker 'C', in the world market.

NEXTRECORD

Given the uncertainties surrounding the oil situation, I do not wish to exaggerate the potential impact of fuel escalation, but I think the consumers should be made aware that if oil consumption and prices escalate then they would be faced with substantial increases in their bills, due to the oil situation over which none of us have any control. The increases could vary from 15% to 20% in 1982 over rates experienced in the twelve month period ending August 1, 1981."

Water Equalization Reserve

As 1979 and 1980 were below average for hydro generation, it was necessary to increase thermal generation. To the extent that extra oil was burnt because of lower hydro generation the cost up to \$7.50 per barrel was recovered from the long term account receivable due from the Province. In 1979 a payment of \$1.4 million reduced the receivable from \$10.7 million to \$9.3 million. In 1980 a further payment of \$1.5 million reduced the balance to \$7.8 million.

NEXTRECORD

Depreciation

Depreciation is forecast to increase from \$6,724,000 in 1980 to \$7,281,000 in 1981 and \$7,760,000 in 1982.

Pending the completion of the depreciation study, Hydro has continued with the same depreciation policy as outlined in previous reports.

Hydro expected to have the physical inventory of its assets completed during 1980 and the records set up on a units of property basis. With the exception of the Telecontrol equipment, the inventory is now finished, and will be completed by the end of July, 1981. Hydro has experienced some delay in recording the assets by units of property and preparing an engineering assessment of the remaining life of the assets. It now expects to finish the recording by units of Property and reconciling this record of its existing plant ledger balances by the end of 1981. At that time Hydro will start on an engineering assessment of the remaining life of the assets and upon completion of this assessment can examine the appropriateness of its depreciation methods.

NEXTRECORD

Because the calculation of depreciation under the sinking fund method results in a low depreciation cost in early years of the life of the facility and a high depreciation cost in the later years there are not sufficient funds provided by depreciation to meet the sinking fund requirements of the bonds. The deficiency in 1981 will be \$1,294,400 and \$1,709,000 in 1982.

Power Purchased

The cost of purchased power is expected to be \$1,141,000 in 1981 and \$1,255,000 in 1982.

Interest

Cost of interest is estimated to increase from \$31,437,000 in 1980 to \$41,777,000 in 1981 and \$45,129,000 in 1982.

NEXTRECORD

The bulk of the increase in 1981 over 1980 is due to Hinds Lake coming into production on December 12, 1980 and interest on that facility is charged to expenses from that date.

Part of the increase in 1981 over 1980 and part of the increase in 1982 over 1981 is due to new assets coming into service, higher interest rates and higher foreign exchange rates on the U.S. dollar and the Swiss franc.

\$119,000 of the increase in 1981 over 1980 and \$937,000 of the increase in 1982 over 1981 is due to a change in accounting treatment in the calculation of interest chargeable to Hydro's investment in Churchill Falls (Labrador) Corporation (CFLCo).

Since 1975, Hydro's practice has been to group a portion of the debt associated with the purchase of CFLCo with the amount of its construction program and any funds advanced to other subsidiaries

NEXTRECORD

and strike an average rate for the total, based on the cost of the aggregate of Hydro's most recently acquired debt, equal to the total funds so employed.

In January 1981 this policy was changed to specifically allocate \$75,000,000 of the CFLCo debt to an 11.25% loan obtained from the Province of Alberta in December 1979 (net proceeds \$71,000,000 at 11.65%).

The effect of this is that the interest charged to CFLCo associated with this amount is fixed at 11.25% calculated monthly and does not fluctuate with the current pooled interest rate which is presently set at 14.5% without including the 11.25% loan in the pool.

Method of Estimating

The Board's financial consultants have reviewed the procedures followed by Hydro in estimating revenue, expenditures and earnings for 1981 and 1982 and found them to be consistent with those used in prior years and as disclosed in the evidence.

NEXTRECORD

Salaries & Fringe Benefits

In 1980 salaries and fringe benefits were \$13,673,000. In 1981 they are estimated to be \$15,457,000 and \$17,120,000 in 1982.

The Board's Financial Consultant has reported that he accepts the number of staff and the level of salaries and fringe benefits as being reasonable.

Other Costs

The Board's Financial Consultant has determined that the administrative and operating expenses are reasonable and prudent. The allocations of costs for service are in accordance with the recommendations of the Board.

NEXTRECORD

Rates

During the course of the hearings, there were several errors and omissions identified, which required Hydro to submit new cost of service studies for 1981 and 1982. These revised cost of service studies have been used in the Summary of Evidence.

The items corrected in the revised cost of service studies are:

- (1) The 1981 depreciation expense estimate has been increased from \$6,945,405 to \$7,281,270 and the 1982 depreciation expense estimate has been increased from \$7,123,709 to \$7,760,102.
- (2) The 1981 interest estimate has been increased from \$41,100,000 to \$41,777,000 and the 1982 interest estimate has been increased from \$43,700,000 to \$45,129,000.

NEXTRECORD

- (3) The 1981 power purchased cost estimates have been reduced by \$6,000 to \$1,141,000 and the 1982 power purchased cost estimate has been reduced by \$9,000 to \$1,255,000.
- (4) There were several minor changes to the capital program estimates, which changed the plant balances and average plant balances used in the cost of service study to allocate specifically assigned costs.
- (5) The Roddickton mini hydro cost is specifically assigned to PDD.

As a result of these changes Hydro amended its proposed rates as shown in the following table:

NEXTRECORD

	Existing Rate -----	April 27/81 Referral Rate for Aug. 1/81 -----	June 15/81 Rate for Aug. 1/81 -----	July 20/81 Rate for Aug. 1/81 -----
NLP				
Energy mills/kwh plus fuel escalation over \$7.50/barrel	20.70	23.48	23.99	23.97
PDD (Island)				
Energy mills/kwh	20.70	23.48	23.99	23.97
Fixed Charges/month plus fuel escalation over \$7.50/barrel	\$101,474	\$245,813	\$252,879	\$249,100
PDD (Labrador)				
Energy mills/kwh	3.70	3.70	3.70	3.70
Fixed Charges	\$148,315	\$154,089	\$160,097	\$159,922
NLP				
Firming up charge (mills/kwh)	6.50	7.81	8.14	8.12

NEXTRECORD

NLP's Submission on Rates

Mr. O'Reilly submitted two schedules to show the relationship between rate of return on residential class expressed as a percentage of rate of return on industrial class of a number of public utilities in the United States and a third schedule showing a comparison of relationships between residential and industrial rates and cost of service of six Canadian public utilities.

Mr. O'Reilly testified:

"the investigation of the relative magnitude of rates charged to the domestic and industrial classes vis-a-vis cost of service indicates that the result of applying generally accepted public utility rate making practices is domestic rates that are lower relative to the cost of service than are industrial rates. While it is not possible to say, as a result of this investigation, what factors other than cost of

NEXTRECORD

service may have entered into the determination of these rates it is fairly obvious that, in the main, rates for domestic customers are set at a level that returns a lower proportion of the cost of service than the rates set for industrial customers."

Hydro's proposed rates, combined with fuel adjustment charges will result in increases to NLP of 29.5% and 28.3% in 1981 and 1982 respectively for a total increase of 66.1% over the 1980 level.

Hydro's proposed increases in its basic rate and secondary firming charge on August 1, 1981 will result in an increase of the order of 7.3% to 8.0% on NLP's basic rates effective on the same date. This increase, when combined with estimated fuel adjustment charges, will result in an overall average increase in retail customers' costs of 14.1% to 14.3% in 1981 and 18.3% to 18.6% in 1982.

NEXTRECORD

Mr. Templeton testified that NLP serve some 156,000 customers, the majority, 85%, are domestic to whom 55% of the energy is sold. NLP's general service customers with loads of less than 350 KVA account for 11% of total customers and use 25% of the energy sold. These domestic and general service customers are a very diverse group and give NLP a very stable load which is 80% of the total.

He stated that Mr. O'Reilly has made a survey of an aspect of rate making practices of a large group of electric utilities in Canada and the United States. From this survey it can be seen that the common practice of other utilities is to allocate less than 100% of the cost of service to domestic customers. It is NLP's view that under Subsection (2) of Section 4 of the Electrical Power Control Act, the Board has the power to apply such tests as are consistent with generally accepted sound public utility practices, and that the common practice referred to by Mr. O'Reilly of allocating less than 100% of the cost of service to domestic customers should be applied in setting a rate to retailers such as NLP.

NEXTRECORD

In his opinion a reasonable apportionment of cost of service would be about 95% for domestic customers and 105% for others. Applying this apportionment to the case of NLP, 80% of whose sales is to domestic and small general service customers, results in a weighted average of 97% ($0.8 \times 95\% + 0.2 \times 105\%$) of cost of service appropriate to this retailer. Mr. Templeton believes this would be a fair and reasonable apportionment of the cost of service to NLP.

FOM'S Submission on Rates

As in previous hearings, Dr. House urged a restructuring of the tariff and more aggressive steps towards load management through some variant of peak load pricing.

Submission of Mr. Hiscock

Mr. Hiscock, on behalf of the Liberal Party of Newfoundland and Labrador, opposed Hydro's requested rate increase because consumers are being continually confronted with an increasing cost of living which makes it more difficult to meet their commitments and maintain their standard of living.

NEXTRECORD

He pointed out that the consumer whose electricity is generated by diesel pays a much higher rate for his power than a consumer who is supplied electricity from the Island and Labrador grid. The end block of electricity is cheaper than the first block for consumers supplied from the grid whereas the end block is more expensive than the first block for the consumer supplied by diesel.

He stated that his Party believes there should be one uniform rate for electricity throughout the Province regardless of the means of providing electricity. This would allow people in diesel areas to convert to electric heating and would eliminate forced conservation in these communities.

He said that his Party is rather concerned that Hydro has no long range plan to take the coastal communities of Labrador off diesel power and interconnect them with the Labrador hydro grid.

NEXTRECORD

He pointed out that the residents of Norman Bay and Pinsents Arm on coastal Labrador have to supply their power from their own diesel generators and other communities in the Straits area want three phase power but cannot obtain it.

Summary of Argument of FOM

FOM argued that the Board cannot base its report on the proposal of Hydro as it does not comply with the mandatory provisions of Section 15(2) of EPCA which states:

"In considering the rates charged by the Hydro Corporation for the purposes of a reference under this Act, the Public Utilities Board shall take no account of expenditures or revenues of that Corporation or its subsidiaries that are not attributable to the supplying of power to retailers."

NEXTRECORD

FOM quoted Webster's New Dictionary definition of "attribute" as meaning when a verb "to explain by indicating a cause" and contended that the costs attributed to an activity are therefore, those "caused by" that activity and this is a distinction taken among economic analysts.

FOM stated it is clear that a large proportion of Hydro's costs are associated with its fixed plant, notably interest and depreciation. This fixed plant is necessary in order to have the capacity to meet the demand on the system at its coincident peak with an adequate reserve. These costs are, therefore, caused by the customers of Hydro who contribute to that coincident peak in proportion to their contribution.

The method used to allocate demand costs, the average and excess demand method (AED) takes no account of coincidence, but is calculated using the non-coincident peaks of all the customers. The use of the coincidence factor of 0.95 deals simply with the system as a whole and does not attempt to relate the AED factor to the timing of the individual customer peaks.

NEXTRECORD

FOM asserted that the principal reason why Hydro did not achieve its interest coverage for retailers for 1980 was the failure of the Abitibi-Price load to materialize as forecast.

Hydro's common costs are allocated to customers using two percentages: common demand costs by the AED factor and common energy costs by the energy responsibility factor. If the Abitibi-Price load had come on as forecast the interest coverage would have been slightly in excess of 1.2 which means that comparisons made in Hydro's evidence between 1980 forecasts and 1980 actuals are invalid and, to the extent that Hydro relies upon a failure to achieve its interest coverage objectives from sales to retailers as a reason for the present proposed increase, it implies that the comparison is valid. Perhaps more importantly it reflects very unfavourably on the value of the cost allocation system now used by Hydro.

FOM requested a specific indication from the Board as to whether or not the Board wishes to entertain any further submissions with regard to the cost allocation procedures followed by Hydro.

NEXTRECORD

FOM claimed that the evidence establishes error on the part of Hydro vis-a=via Section 15(2) of the Act in applying its reserve capacity criterion-LOLP. The index is calculated on Total Island Load. However, this procedure means that Hydro is providing reserve capacity for the generation of other producers of electricity on the Island, not only NLP but Bowater Power and Price Newfoundland. The total cost of the generating plants on the Island go into the cost of service study and, therefore, the retailers are paying a large part of the cost of providing reserve capacity to the industrial customers who have their own generation, this cost being "an expenditure not attributable to the supplying of power to retailers".

Further, the LOLP index for 1981, 1982, and 1983 is below the target of 0.2, i.e. there is more capacity on the system than required to meet the necessary reserve. This excess capacity not only fails to meet the test of being "used and useful", but the

NEXTRECORD

cost associated with it is not attributable to the supplying of power to retailers. Retailers pay 70% of the cost of any excess capacity under present cost allocation systems.

FOM submitted that, in the revised Cost of Service Study to be provided to the Board before rates are set, Hydro must be directed to calculate the LOLP index excluding the effect of backing-up the industrial customers' own generation and that only such proportion of Hydro's generating plant as is required to bring the LOLP index to 0.2 be considered in the Study. FOM also suggest that short-term forecast figures for 1981 and 1982 for Hydro's load be used in these calculations, as these are the most accurate figures available.

It is improper, in FOM's view, to calculate a rate for 1982 and then impose that rate, designed to recover higher 1982 revenues, to meet higher 1982 costs, on consumers in 1981 or any part of 1981.

NEXTRECORD

The cost of service plus margin for NLP for 1981 produces a net annual unit cost of 22.85 mills per kwh. Even if Hydro were to get full 1.2 interest coverage for 1981 by collecting \$11.127 million in margin instead of the budgeted \$8,384 million, the net annual unit cost of service would be only 23.51 mills per kwh, which is less than the rate applied for. This, coupled with the fact that the rate applied for, if in force for the full year 1981, would give excessive interest coverage of 1.3, demonstrates that the proposal before the Board fails to meet the generally accepted sound public utility test of matching costs and revenues, involves what amounts to a catch-up on earlier expenses in 1981 and asks for an inappropriate, unreasonable and unjustly discriminatory rate for 1981.

In order to be consistent, Hydro should not request more than a rate of 22.85 mills per kwh for effect on August 1, 1981, moving to 23.99 mills per kwh on January 1, 1982. For other reasons, given below, FOM have suggested that these figures ought to be reduced by the Board.

NEXTRECORD

FOM noted that Hydro's evidence always deals with several interest coverages, both forecast and actual. The three usually referred to are coverages on:

- (a) sales to retailers;
- (b) sales to retailers and industrials, excluding IOC, and
- (c) sales to retailers and industrials, including IOC.

They also pointed out that Mr. Young agreed in his evidence that investors will look at the overall operations of Hydro in relation to its debt coverage, including its profitable industrial contracts. FOM submitted, therefore, that, in considering the interest coverage required from sales to retailers, the Board should recognize that Hydro has other operations which will affect its credit rating in the financial markets of the world and prescribe rates which will provide an interest cover on sales to retailers which, when considered with the other aspects of Hydro's operations, will give Hydro, overall, a sound credit rating.

NEXTRECORD

Assuming for the moment that a 1.2 interest cover is required for Hydro overall, FOM submitted that the rate presently proposed is excessive as it produces, overall, a coverage of 1.23 including sales to IOC in 1982. This is not taking into account revenues from industrial sales as prohibited by Section 15(2), but merely defining what constitutes a "sound credit rating" for Hydro as is the duty of the Board under the Act. One cannot ignore the fact of the existence of the IOC contract any more than one could ignore the existence of the provincial guarantee in deciding what is necessary in the way of financial performance to allow Hydro to raise money in the markets.

Hydro is now faced with unprecedented, and in FOM's view totally unreasonable, increases in the price of oil and the consumer must pay these through the fuel adjustment charge. Hydro is faced at the same time with record-breaking and, in FOM's view totally unreasonable, levels of interest rates, which are fed directly into the cost of service which the consumer must pay.

NEXTRECORD

FOM asked if it is reasonable to ask the consumer who must cope with outrageous cost increases today to contribute to the capital program for the benefit of tomorrow's consumer. Bearing in mind the range of interest coverage established by the Board in its first report in 1977 of 1.15 to 1.25 and the unprecedented cost increases faced by today's consumer, it is submitted that the Board should approve a rate allowing Hydro the minimum revenue requirement necessary to attain its financial objectives which FOM feel, consistent with the Board's earlier decision, would be a rate to produce an interest coverage ratio not greater than 1.15.

Summary of Argument of NLP

NLP stated that, in the main, Hydro's case is based on reasonable premises and while it feels it has a duty on behalf of its customers to press the Board to support all measures which will reduce the rates to consumers except where this support violates sound public

NEXTRECORD

utility practise, NLP acknowledges that as far as it is concerned it cannot in conscience argue against the basic case Hydro has presented.

NLP disagreed with Hydro's assumption that after Cat Arm is developed there are no further hydro sites on the Island.

NLP does not minimize the benefits of preserving the environment. It feels strongly however that the strident voice of the environmental minority should not constitute a veto on the development of needed energy projects. NLP recognizes the difficulty of quantifying environmental costs and benefits, but because it is difficult is no reason that it should not be done. In fact, techniques are available and have been used to evaluate, for instance, the value of the recreational benefits of preserving the environment. In today's world of expensive energy, NLP believes that no economic energy project should be denied to the Province until the costs and benefits of development and the costs and benefits of preserving the environment have been quantified and assessed.

NEXTRECORD

NLP stated that one of the most effective methods that any utility can use to control its costs is to reduce its capital expenditures to the absolute minimum. In order to do this it is essential that its load forecast be as accurate as possible.

The cost of service submitted to the Board by Hydro was based upon a load forecast prepared during April of this year. This forecast, however, did not form the basis of Hydro's long term planning. The forecast which Hydro uses for planning purposes is prepared annually around mid-year and, hence, the most recent long term forecast available was prepared during the middle of 1980.

The most current forecasts are reviewed before Hydro make any decisions however it does not appear that this procedure is given any priority but that rather the long term forecast, once prepared, dominates all subsequent decisions until another forecast is prepared.

NEXTRECORD

While it is recognized that the most recent data may contain some short term aberrations, which will have to be factored out, it is still the most reliable information available and probably the best indication of what the future holds. NLP suggest that Hydro make use of the most recent load forecasts before making any major capital expenditure decisions and continue to review such decisions as more up to date load forecasts become available.

It appears that in evaluating the amount of firm and secondary energy available from the island hydroelectric generating plants, Hydro has calculated the respective firm and secondary energy available from each plant separately and then totalled these to arrive at overall firm and secondary values for the annual hydroelectric energy output of the interconnected system. Information should be provided to indicate the effect of evaluating the firm and secondary energy from the total interconnected system, rather than the sum of the values calculated for the individual plants. A higher overall firm output and smaller secondary output could result from this exercise. The application of this method to the

NEXTRECORD

NLP plants resulted in a substantially greater firm value than that which was calculated by summing the values for the individual plants. Whether this procedure would be of much benefit would depend on the relative size of the respective hydro plants and if the critical periods of these plants tend to coincide. It may or may not be that existing hydro facilities owned by other customers are available to be operated to maximize firm output to the interconnected grid, but if they are not, Hydro's own plants together with NLP plants should be evaluated in this regard.

In generation planning, Hydro should investigate all opportunities to defer capital expenditures by prudent use of gas turbines. One step in the evaluation of generation alternatives which Hydro should use is to determine if it would be appropriate to raise the amount of firm hydro energy available by using energy from gas turbines in the critical dry years to firm up secondary energy.

NEXTRECORD

The cost of this gas turbine energy should then be reduced by a factor corresponding to the probability of a critically dry year occurring. The resulting cost would then be compared to the carrying cost of the next source of generation to determine if the project should proceed.

With regard to the change in capacity factor of Hydro's thermal units for planning purposes, the appropriate values to be used are those which are reasonable, not only with respect to past experience, but also with respect to both design values peculiar to that type of unit and proposed changes to make the plant more reliable. If higher than average capacity factors were used for planning purposes previous to this, then there must have been good reason for doing so, now however, despite a substantial capital addition to improve the reliability of the station, the plant capacity factor used for planning purposes is reduced.

NEXTRECORD

In cross-examination Hydro has stated that one of the sources of its information leading to a reduction in the capacity factor of the Holyrood plant was information from the Alberta Electric Utility Planning Council. The thermal units in Alberta are coal fired and it is generally recognized that coal fired plants have, on average, lower capacity factors than oil fired units. The other source was Nova Scotia Power Corporation, whose thermal plants include coal fired units. Therefore, using values from these plants as a basis for decision might be questionable.

PART 111 - THE BOARD'S CONCLUSIONS AND RECOMMENDATIONS

In carrying out its responsibilities, the Board obtains its direction from EPCA.

NEXTRECORD

Section

22 of the Newfoundland and Labrador Hydro Act states:

"22. Notwithstanding anything to the contrary contained in The Public Utilities Act, the Board of Commissioners of Public Utilities constituted pursuant to that Act has no jurisdiction over the Corporation for any purpose whatsoever."

However Section 5 and 15 of EPCA state:

"5.(1) Notwithstanding the Hydro Act, this Act applies in respect of the Hydro Corporation.

(2) Where the Hydro Corporation proposes to alter any rates or class of rates to be charged by the Hydro Corporation to a retailer, no approval shall be given thereto by the Lieutenant-Governor in Council until the Public Utilities Board has reported thereon to the Minister with its recommendations as in this Act provided."

NEXTRECORD

15(2) In considering the rates charged by the Hydro Corporation for the purposes of a reference under this Act, the Public Utilities Board shall take no account of expenditures or revenues of that Corporation or its subsidiaries that are not attributable to the supplying of power to retailers."

The Board interprets the above quoted Sections of EPCA as giving it the authority to deal with those matters that are fundamental to rates charged to retailers by Hydro.

Section 11 (1) (a) of EPCA states:

"11.(1) A final report of the Public Utilities Board under this Act to the Minister shall contain

(a) a summary of the information presented and the views expressed at the public hearing together with the recommendation of the Public Utilities Board and its reasons therefor with respect to the matter or matters reported on;"

NEXTRECORD

The Lieutenant-Governor in Council approves Hydro's capital budget and its borrowing program (page 23).

Hydro has used the hearings as a forum to explain the rationale for their long term forecasts and capital expenditures and consequently invited the views of the intervenors thereon. The Board has summarized the views presented, but will deal, in its recommendations, only with the matters referred to the Board under EPCA.

Forecasting Assumptions

FOM argued that the verb "attribute" used in Section 15(2) of EPCA means "caused by".

The Board is not convinced that the interpretation of FOM is necessarily the only or appropriate one to be used.

The Board is of the opinion that in normal usage "attribute" means "to assign" which is a definition given in "The Living Webster Encyclopedia Dictionary of the English Language".

NEXTRECORD

FOM stated that the principle reason Hydro did not achieve its interest coverage for retailers in 1980 was the failure of the Abitibi-Price load to materialize as forecast.

Hydro's loads must be looked at in aggregate, (some of which occurred and some of which did not), which results in the actual load. Had Hydro possessed perfect foresight and omitted the Abitibi-Price load from their estimates for 1980 then the burden assigned to the retailers would have been higher and a correspondingly higher rate for retailers would have been requested and recommended.

In its argument FOM requested direction from the Board as to whether or not it wishes to consider any further submissions with regard to the general acceptability of Hydro's cost allocation procedures.

The Board believes it would be improper for it to prescribe the scope of FOM's submission. FOM is free to make any submission which it feels is relevant and material, without direction from the Board.

NEXTRECORD

FOM submitted that Hydro should recalculate the LOLP index to exclude the effect of "backing up" the industrial customers' own generation and that only such proportion of Hydro's generating plant as is required to bring the LOLP index to 0.2 be included in the cost of service study.

Bowater Power, Price (Nfld) Pulp & Paper Limited (Price) and NLP have hydro generating facilities. NLP is able to firm up its hydro generation by its own diesel plants however in a dry or minimum water year Hydro has the responsibility to supply additional energy if required to Bowater Power and Price.

Hydro's planning for reserve is done on the basis of the Island peak which is a seasonal peak that usually occurs in January or February. The Board concurs therefore with Hydro's calculation of the LOLP.

NEXTRECORD

The Board, at previous hearings has approved Hydro's method of determining and allocating costs and no evidence has been presented at this hearing to cause the Board to recommend any change. Accordingly Hydro's method of allocating costs in the present referral is accepted by the Board in reaching its conclusions.

The latest addition to Hydro's generating capability is the 75 MW Hind's Lake hydro plant which has an average net generation of 319 GWH and under firm conditions 273 GWH.

In adding generation, it is necessary to add the entire capability of the new plant to the system. It will inevitably follow that at times the target reserve will be exceeded and at other times it will not be achieved. It takes several years to build a facility and as Mr. Bishop points out "you can't build part of a unit".

NEXTRECORD

Mr. Young testified that Hind's Lake displaces 530,000 barrels of oil annually and the growing annual savings in oil costs far exceeds the additional annual financing charges. In other words the increase in the cost of service because of the building of Hind's Lake will be more than offset by a reduction in the fuel adjustment charge.

The Board accepts Hydro's evidence that Hind's Lake is cost justified and that its cost should be included in the cost of service study.

NLP questioned the change in the capacity factor of Hydro's thermal units for planning purposes from 1,000 GWH to 935 GWH.

The Board has noted NLP's argument, however the Board accepts Hydro's decision which is based on its experience and judgement.

NEXTRECORD

Interest Coverage Ratio

The margin of profit that is required by Hydro to achieve and maintain a sound credit rating in the financial markets of the world is an amount of dollars which can be expressed as a ratio using one of several bases, e.g. gross sales, cost of service, equity, gross interest or net interest, all of which would give a different ratio but would not change the number of dollars required.

The ratio that has been chosen by Hydro is one that has been supported in evidence by lending institutions and financial advisors.

The profit is not the result of either the base or the ratio. It is a judgement of the amount of money required to enable Hydro to achieve a sound credit rating.

NEXTRECORD

It is the opinion of the Board that if FOM's method of capitalizing the margin on IDC is adopted, investors will require a higher margin so that the cash margin will remain the same.

FOM did not present evidence but argued that because of unprecedented cost increases faced by consumers, the Board should recommend rates that will produce an interest coverage not greater than 1.15.

The Board is aware that the credit ratings of the Province and Hydro are the lowest of any Province or Crown Utility in Canada and that there is intense competition for long term funds. Hydro must borrow large sums of money in 1981 and 1982 to finance its capital requirements. The Board believes it is of the utmost importance that Hydro maintain access to the long term bond market and that any lowering of its financial objectives would have a detrimental effect on the perception by investors of Hydro as having a sound credit rating.

NEXTRECORD

The Board will recommend rates that will allow Hydro the opportunity to earn a profit of \$5,800,000 in 1981 (if recommended rates are effective August 1) and \$10,100,000 in 1982. If this profit margin is achieved Hydro will attain an interest coverage of 1.15 times gross interest in 1981 and 1.20 times gross interest in 1982 on its sales to retailers.

The Board believes that this margin conforms with the provincial power policy and so far as it is practical to do so, is consistent with sound public utility principles. It falls within the range of 1.15 to 1.25 times gross interest recommended by the Board in its previous reports.

Interest charged to CFLCo

The Board agrees that Hydro's method of allocating interest attributable to CFLCo is fair and reasonable.

Rates

FOM advocated a restructuring of the rates as a means of controlling peak loads and thereby reducing the requirement for future system capacity.

NEXTRECORD

The subject of rate design is a complex one. The Board is aware that research and test applications are being carried on in many jurisdictions and that a study is presently being conducted by Hydro and NLP.

The Board will not make any recommendations on restructuring the tariff until this study is completed, the results have been explained to users of the various classes of service and these users have presented their views to the Board.

FOM argued that it is improper to calculate a rate for 1982 and implement that rate for a portion of 1981. If the rate was in effect for all of 1981 it would give Hydro excessive interest coverage for that year.

The Board rejects FOM's argument. Hydro's rates are determined so as to enable Hydro to recover its cost of service and a margin of profit based on its 12 month annual financial report.

NEXTRECORD

At approved rates a utility will earn above or below the target from month to month. The target is for the entire year. Investors look at the audited annual report.

Hydro will not overearn in 1981 and the recommended rates will only allow it the opportunity to attain a 1.15 interest coverage.

NLP requested that the rate charged by Hydro to NLP should be 97% of the cost of service as 80% of its sales are to domestic and small general service customers and it is common utility practice to allocate less than 100% of the cost of service to domestic customers.

NLP agreed that Hydro should recover its full cost of service which, in order to do so, would require Hydro to increase its rates to the industrial customers.

NEXTRECORD

The Board has no authority under EPCA either to recommend a discount to NLP or a surcharge to the industrial customers. Section 15(2) of EPCA does not allow the Board to take any account of Hydro's revenues and expenditures that are not attributable to the supplying of power to retailers and Section 3 states that the rates to be charged by Hydro either generally or pursuant to specific contracts for the supply of power should enable it to recover its cost of service and a margin of profit sufficient to maintain a sound credit rating.

NEXTRECORD

COST OF SERVICE PLUS MARGIN BY CUSTOMERS

1982 ESTIMATED

		SPECIFICALLY ASSIGNED COSTS	COMMON DEMAND COSTS	COMMON ENERGY COSTS	SUB- TOTAL	FUEL ESCALATION	TOTAL
		-----	-----	-----	-----		
Newfoundland Light & Power	\$1,532,894	\$50,366,595	\$49,124,189	\$101,023,678	(\$33,345,200)		\$67,678,478
Power Distribution District	5,191,480	3,492,766	3,366,337	12,050,583	(2,261,986)		9,788,597
Other	733,978	21,415,778	28,626,035	50,775,791			
		-----	-----	-----			
		\$7,458,352	\$75,275,139	\$81,116,561			\$163,850,052

NEXTRECORD

Hydro's cost of serving retailers developed from the foregoing conclusions are shown in Table 1. Based on the estimated consumption of electricity in 1982 the following rates would produce sufficient revenue to meet Hydro's cost of service.

Hydro's Recommended Rates to Retailers

A (i) For energy generated and supplied to NLP.....23.97 mills/kwh plus fuel escalation charge.

(ii) For secondary energy supplied by Bowater Power, and delivered as firm energy to NLP.....8.12 mills/kwh.

B For energy supplied to PDD in the Island of Newfoundland:

A fixed charge of \$249,100 per month; and an energy rate of 23.97 mills/kwh, plus fuel escalation charge.

NEXTRECORD

C. For energy supplied to PDD in Labrador:

A fixed charge of \$159,922 per month, and an energy rate of 3.70 mills/kwh.

The Board recommends that these rates be approved by the Lieutenant Governor in Council.

The Board will hold a hearing under the Public Utilities Act to consider an application by NLP to approve a Schedule of Rates, Tolls and Charges which will increase its revenues by an amount equivalent to the increased expense NLP will bear as the result of any increase in Hydro's rates.

The Board requests that the Lieutenant-Governor in Council defer the implementation date of any increase in Hydro's rates to Retailers until 14 days after an Order-in-Council has been issued so that the Retailers will have an opportunity to have their rates adjusted to reimburse them for their additional cost in purchasing electricity from Hydro.

NEXTRECORD

Costs

Section 14 of EPCA authorizes the Board to:

1. Fix the costs incidental to referrals by Hydro and to are order by whom costs are to be paid and to whom they to be allowed, and
2. Order the parties concerned in the reference to pay the expenses of the Board in connection therewith.

The Board grants leave to FOM to file with the Board a detailed statement of its claim.

The Board will Order Hydro to pay the expenses of the Board arising out of this reference and an Order will be issued accordingly after the amount of the expenses has been determined.