



THE NEW BRUNSWICK BOARD OF COMMISSIONERS OF PUBLIC UTILITIES

**IN THE MATTER OF a Generic Hearing concerning
the Cost Allocation and Rate Design Process of the
New Brunswick Power Corporation**

D E C I S I O N

April 15, 1992

**THE NEW BRUNSWICK BOARD
OF COMMISSIONERS OF PUBLIC UTILITIES**

IN THE MATTER OF The Public Utilities Act, R.S.N.B. 1978, Ch. P-27
as amended

IN THE MATTER OF a Generic Hearing concerning the Cost Allocation and
Rate Design Process of the New Brunswick Power Corporation

Board:	David C. Nicholson	- Chairman
	B. Fernand Nadeau	- Vice-Chairman
	Claudette Stymiest	- Commissioner
	Paul E. LeBlanc	- Commissioner
	Ivan McLean	- Commissioner
	Frank E. Kane	- Commissioner

NB Power:	Thomas B. Drummie, Q.C., Karen M. Colpitts and L. Paul Zed, Solicitors
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The Large Power Users Group:	E. Neil McKelvey, Q.C., and James F. LeMesurier, Solicitors
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The Power Commission of the City of Saint John:	David G. Barry, Q.C., Solicitor
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Public Intervenors:	Robert L. Kenny, Q.C. and Ivan Robichaud, Solicitors
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Board:	Harry G. Colwell, Solicitor
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INTRODUCTION

By application dated April 20, 1990, the New Brunswick Power Corporation (NB Power) requested that The New Brunswick Board of Commissioners of Public Utilities (the Board) approve a specific change to its rates. In a Memorandum filed on the same date, NB Power indicated that the primary purpose of the application was to vest jurisdiction in the Board. This enabled the Board to hold hearings to review the basic background principles (generic issues) that impact on the level of rates for services performed by NB Power within the Province.

A pre-hearing conference was held on June 13 and 14, 1990, to consider which generic issues should be reviewed and in which order public hearings should be conducted. Proposals were received by the Board as to the issues that were relevant and opinions were expressed as to the order in which they should be examined. The Board concluded that the appropriate generic issues and the order in which they would be examined was as follows:

- (1) Accounting and Financial Policies
- (2) Depreciation Policies
- (3) Capacity Planning
- (4) Cost Allocation
- (5) Rate Design

(6) Customer Service Policies.

Public hearings have been held with respect to Accounting and Financial policies, Depreciation policies and practices and the Capacity Planning process and the Board has issued decisions on all three.

The hearing on the Cost Allocation and Rate Design process of NB Power began on November 12, 1991, and concluded on November 19, 1991.

A number of intervenors took part in the public hearing. One intervenor was referred to as the Large Power Users Group (LPU) and consisted of the following companies:

Brunswick Mining and Smelting Corporation, Ltd.
Fraser Inc.
Irving Oil Limited
Irving Paper Limited
Miramichi Pulp & Paper Inc.
NBIP Forest Products Inc.
Potacan Mining Company
St. Anne-Nackawic Pulp Company Ltd.
Stone Consolidated Inc.

David Barry, Esq., Q.C. appeared on behalf of The Power Commission of the City of Saint John. Robert Kenny, Esq., Q.C. and Ivan Robichaud, Esq., participated as the public intervenors appointed by the Attorney General of the Province of New Brunswick.

NB Power presented a panel of witnesses comprised of the following:

- | | | |
|-------------------------|---|---|
| Mr. Herbert Vander Veen | - | Independent Consultant |
| Mr. Carl Flynn | - | Senior Advisor, Strategic & Technical Affairs, NB Power |
| Mr. Navin Bhutani | - | Manager Rates & Load Forecasting, NB Power |

The following panel appeared on behalf of the LPU:

- | | | |
|-------------------|---|--|
| Ms. Sharon Chown | - | Executive Vice President, Industrial Economics, Incorporated |
| Mr. Robert Knecht | - | Principal, Industrial Economics, Incorporated |

The public intervenors presented a panel of witnesses as follows:

- | | | |
|-----------------------|---|---|
| Mr. Robert O'Rourke | - | Associate Professor, University of Prince Edward Island |
| Mr. Thomas Richardson | - | Consulting Electrical Engineer |

The remainder of this document contains the Board's comments with respect to NB Power's Cost Allocation and Rate Design process.

OVERVIEW

The costs incurred by NB Power in serving its customers must be recovered from those who receive service. The purpose of the hearing was to review how NB Power presently assigns costs.

A principle widely accepted is that costs should be shared between customers on the basis of cost causation. In theory, this means that the actual cost of serving each customer should be recovered from that customer. In practice, it is impossible to do so.

The practical approach is to group customers into rate classes which have similar characteristics of electricity use. Rates are then set for each class. The rates vary from one class to another but within each class, all members pay for service at the same rate. The specific rates have generally evolved over time rather than from an effort to have revenues precisely match costs for each class.

For this reason, the revenue derived from a class may not bear a reasonable relationship to the utility's costs of providing service to that class. Although many factors must be considered in determining what is reasonable under any particular set of circumstances; a cost of service study is almost always used as the

primary indicator. A cost of service study apportions the utility's revenue requirement between the various rate classes. The cost of serving each class is then compared with the revenue obtained from that class and this is referred to as a revenue to cost ratio.

A revenue to cost ratio for a particular class of service indicates whether or not the costs incurred to provide that service are recovered by the revenues received from the sale of that service. A ratio of one means that revenues equal costs. A ratio greater than one means the class of service is being charged more than the costs incurred to provide service to it. A ratio of less than one means that the customers of that service are not paying the full costs associated with providing that service.

However, considerations other than cost also influence the actual level of rates. Such considerations include value of service, social and public policy objectives. All participants in the hearing accepted cost of service as the principal criterion.

Electric rates must recover the utility's costs and should be easy to administer and understand. They should also be equitable and promote the efficient use of electricity.

Certain of these objectives may conflict. Therefore,

rate design involves some degree of compromise and prioritization of objectives.

Rate design is limited by the necessity of basing rates on the measurable characteristics of electricity use. These consist of the amount of electricity used, the peak rate at which it is delivered and the number of customers served. Even so, numerous types of rates are available to the designer.

The various rate levels determine the manner in which costs are shared between classes. The details of each rate design determine how costs will be shared between customers within any one class. Thus, proper rate design is essential to an equitable rate structure.

The procedures used in cost of service studies for electric utilities have become highly standardized over decades of use. There are three major steps involved in all cost of service studies. These are:

- functionalization
- classification
- allocation.

In functionalization, the utility's costs for the period

covered by the study are first separated according to the operating function to which they relate. The main functions are generation, transmission and distribution. They may be divided into sub-functions, depending on the size of the utility and the nature of its facilities. Distribution is the part of the utility's system which carries electricity from the transmission lines to each individual customer. Primary distribution is the part of the distribution system which delivers electricity at high voltage to communities and districts. Secondary distribution delivers at lower voltage to individual customers, for example, along residential streets.

In the second step, (classification) the functional costs are classified as demand, energy, or customer-related costs. Demand is the rate at which electrical energy is delivered. Demand costs are those costs incurred in proportion to the demands of the utility's customers. Energy costs are those incurred in the production and delivery of electrical energy. Customer related costs are those incurred in proportion to the number of customers served.

The final step is the allocation of the classified costs to customer classes in proportion to their peak demand, energy use and number of customers.

While this process is standard, a number of alternative methods exist, particularly for classification and allocation. These alternate methods influence the distribution of cost between classes.

To illustrate the cost of service methodology it proposes, NB Power prepared a cost of service study for its fiscal year 1988/89, using actual costs and system data. The issues presented, positions of the parties and opinions of the Board are set out in the remainder of this decision.

COST OF SERVICE STUDY METHODOLOGY

Functionalization

The functions used by NB Power in its cost of service study were generation, transmission, primary distribution and secondary distribution.

All costs were assigned to one of these four categories. For example, the fixed costs of the Point Lepreau generating station were assigned to generation. Costs without a direct connection to a particular category were assigned on the basis of various allocating factors.

On cross-examination, Mr. Vander Veen indicated that the level of analytical detail in the study was somewhat below that usually provided in cost of service studies filed in rate hearings. He further stated that the cost of service study was limited by the lack of accounting detail on operating costs and by insufficient information on plant costs.

Mr. Bhutani said that NB Power's accounting system could provide more detailed information on operating costs. The Board considers that use of such data is necessary to provide a proper functionalization of costs.

In the Board's opinion, the functions used in the study are appropriate for future use. The Board considers that the functionalization was acceptable for the purposes of illustration. However, in future, the Board will require NB Power to provide more detail on both operating and plant costs and to provide a comprehensive description of how these costs are assigned to the four functions.

Classification

Generation Costs

NB Power proposed that non-fuel generation costs be

classified as 40% demand and 60% energy. NB Power stated that their proposed classification was based on the practices of other Canadian utilities, external methods of classification and the embedded cost structure of NB Power.

There was considerable discussion at the hearing on what constituted the practices of other Canadian utilities. Both NB Power and the LPU presented tables showing different percentages for demand and energy for the same utilities. The Board considers that these tables were not prepared on a consistent basis. It has attached little weight to the evidence presented with respect to the practices of other Canadian utilities.

Concerning the external methods of classification, the Board considers that these were simply alternate ways to analyze the demand/energy split. These methods produced a range for energy classification of 42.5% to 63.75%. This is a sizeable variation considering the large amount of dollars involved. The Board also notes that there are other acceptable methods which could have been used to analyze the demand/energy split but were not used. The Board, therefore, has placed little weight on NB Power's reference to the external methods of classification in determining an appropriate split.

NB Power stated that its embedded cost structure reflects

the fact that its system is planned so that demand and energy requirements are in balance. For example, it has invested significant sums in its nuclear plant in exchange for lower cost fuel.

The LPU recommended that all capital related costs be classified as 100% demand. This position was based on the proposition that there is no justification for arguing solely that higher capital costs were incurred to realize lower energy costs. This led the LPU to propose consideration of the fixed/variable method of classification. This method requires that all non-fuel generation costs, which would include all the capital costs associated with generation facilities, be classified as demand-related costs. In their use of the incremental cost approach, the LPU also classified all capital costs as 100% demand.

The Public Intervenor recommended that the Board accept NB Power's classification.

The Board considers that the classification of generation costs is not possible by use of a single formula. It requires careful consideration of the nature of NB Power's system. The Board does not accept the proposition that generation costs should be classified as 100% demand. Decisions on the construction of major generation facilities have been made on the basis of

comprehensive reviews of both capital and energy costs. It is highly likely that future decisions on generation facilities will be made on the same basis. The Board, therefore, considers that generation costs should be classified as partly demand and partly energy. NB Power has proposed a 40% demand, 60% energy split based on its review of its system. There was little in the way of supporting documentation for this specific split and the mix of generation facilities may well change over time. However, the Board will accept NB Power's proposed classification of generation costs as 40% demand and 60% energy but orders NB Power to prepare a comprehensive study supporting the 40/60 split both on a current and future basis. This study should review the possible use of a load factor split of non-fuel generation costs. This study is to be filed with the Board by the end of 1992.

Transmission Costs

NB Power classified all transmission costs as demand costs. In support of this treatment, Mr. Vander Veen stated that NB Power designs its transmission to carry system peak loads and that the cost of the transmission system is not at all affected by energy use.

LPU witnesses supported this classification. The Public Intervenor witnesses recommended further study.

The Board is of the opinion that NB Power's proposed classification is proper from the standpoint of cost causation, but that it could result in off-peak users paying nothing for use of the transmission system. The Board, therefore, accepts the proposed classification but requests NB Power to review the matter and report its conclusions by the end of 1992.

Fuel Costs

NB Power classified all fuel costs as energy-related. Under the fixed/variable split of generation costs proposed by LPU, both fuel and variable operating costs would be classified to energy. The PI witnesses supported the NB Power classification of fuel.

The Board accepts NB Power's classification of fuel costs.

Distribution Costs

It is generally accepted that a portion of distribution system costs is attributable to the number of customers served and that the balance of cost is attributable to the various demands of customer classes served.

NB Power's testimony was that it did not have sufficient data to apply recognized methods of analysis; that it estimated 47% of the cost was attributable to the number of customers served; that it had rounded this estimate to 50%, the figure used in the cost of service study for operating costs and most plant costs.

Mr. O'Rourke recommended a study to determine the appropriate demand/customer split. NB Power's approach was not challenged by the other intervenors.

The Board notes that NB Power's classification of distribution costs may contain appreciable error due to data deficiencies; that its estimate of customer costs was rounded up from 47% to 50% and that NB Power provided no justification for rounding up rather than using the 47% figure or rounding down to 45%.

The Board, therefore, orders NB Power to review its classification, taking into account the circumstances above, and to report its conclusions by the end of 1992. The Board accepts NB Power's classification of distribution cost pending such a review and encourages NB Power to acquire more complete data for use in future cost of service studies.

Allocation

Generation and Transmission Costs

In its cost of service study, NB Power allocated generation and transmission demand costs to rate classes in proportion to the contribution of each class to system peak demand. System demand is defined by NB Power as being the average number of kilowatts required to serve customers in each 15-minute period. The system peak demand is the largest system demand recorded in any 15 minute period during the year. The system is designed to meet this peak, which is thus a major determinant of generation and transmission costs. This is commonly referred to as the coincident peak method of allocation. With this method demand costs are allocated to the rate classes in proportion to their use of electricity at the time of the system peak.

LPU witnesses supported this method.

The Public Intervenor witnesses advocated the allocation of generation and transmission demand costs by the use of the average and excess method. This method uses the maximum demand at any time during the year for each customer class. Such maximum demands usually do not occur at the time of system peak demand and are, therefore, referred to as class non-coincident demands.

Average demand is simply the average number of kilowatts required to serve customers in each 15-minute period throughout the year. This average demand is necessarily incurred in order to supply the system energy requirement and, therefore, that part of the generation and transmission demand costs required to supply the system average demand is allocated to rate classes in proportion to their individual average demands.

The remaining, or excess, demand costs are allocated to rate classes in proportion to class excess demands. The excess demand of each class is its non-coincident demand less its average demand.

The average and excess method is used by some other Canadian utilities, including NS Power and Saskatchewan Power. In these cases, the method is applied to all fixed costs. By contrast, the Public Intervenor witnesses proposed that such fixed costs be first split 40/60 between demand and energy classifications and that the average and excess method then be applied only to the 40% of fixed costs classified to demand. This proposal would result in a 17/83 demand energy split.

Mr. Vander Veen characterized the Public Intervenor's proposal as double counting. LPU witnesses shared this view.

The Board is of the opinion that the coincident peak demand method of allocation more closely reflects cost causation in NB Power's system and therefore approves NB Power's approach to the allocation of generation and transmission demand costs.

Energy Costs

In its cost of service study, NB Power allocated energy costs in proportion to class energy use including losses incurred in delivery. This method of allocation is standard. There were no intervenor criticisms. The Board approves.

Distribution Costs

NB Power allocated distribution demand costs to rate classes in proportion to class non-coincident peak demands. No intervenor evidence was presented and intervenors did not criticize this feature of NB Power's study.

In the Board's opinion, non-coincident peak demands provide the best measure of cost causation for that portion of distribution plant classified to demand. The Board, therefore, accepts NB Power's allocation method.

Customer Costs

In its cost of service study, the utility used three sets of allocation factors for customer costs. Costs relating to primary distribution were allocated to rate classes on the basis of the number of customers using the primary distribution system. This includes all customers served at distribution voltage. Customer costs related to secondary distribution were allocated on the number of customers served at secondary voltage only.

Metering and certain other costs were allocated on the weighted number of customers. The weightings were chosen to reflect the difference in meter cost between customers in the various classes. For example, residential customers received a weighting of 1, while large industrial customers served at transmission voltage received a weighting of 450, which results in each such customer being allocated 450 times the cost allocated to a residential customer.

No objection to such weighting was raised by intervenors.

Customer cost includes a number of different costs such as meter reading, billing, revenue collection, and customer service, as well as interest, depreciation and maintenance costs related to meters, services and the customer portion of

distribution plant. The Board is not convinced that all such costs can be accurately allocated by using only one weighted and two unweighted sets of allocation factors. However, the Board recognizes the limitations imposed on allocation by the aggregated nature of the book costs which formed the study input.

Accordingly, the Board accepts in principle the method, of allocating customer costs, illustrated in the study filed for the purpose of this hearing. It orders NB Power to re-examine the extent to which customer costs should be disaggregated and separately allocated and to file a report on this with the Board by the end of 1992.

Cost of Service Data

The accuracy of cost of service results depends on the use of both appropriate methods and reliable input data. In respect to the latter, NB Power acknowledged the need for better information as to the coincident and non-coincident demands of rate classes. Testimony on this point was generally as follows:

While the energy use and number of customers in each class could be readily obtained from billing records, the same was not true of demand data. No demand meters were installed in the case of residential and smaller general service customers. Even

where revenue meters were installed to measure peak demand they did not record the time at which peaks had been set. However, the type of metering installed for most large industrial customers recorded all necessary data.

Mr. Bhutani testified that the need for better data had been recognized; that a residential load research program had been designed; that equipment, installation and first year operating costs had been included in the 1992/93 budget, but this still required approval by the Board of Directors of NB Power. He estimated that the program could begin 6 to 12 months after budgetary approval and that usable results would be available after 18 to 24 months of operation.

Mr. Flynn said it was NB Power's intention to extend the load research program to the general service class. However, this would follow the residential program in order to ensure a least-cost approach. Also, the data deficiency was not as large for this class.

The Board agrees with the need for load research, concurs with the planned approach and will expect the Board of Directors of NB Power to recognize the importance of accurate cost of service data and to authorize the necessary expenditures.

Cost of Service Study Frequency

Circumstances do change over time and, for this reason, it is important to have a regular review of the cost of service to ensure that the functionalization, classification and allocation remains appropriate over time. As a minimum, the Board will require that a current cost of service study be filed in connection with any general rate application.

The Board notes that NB Power stated at the hearing that it may perform cost of service studies annually. If so, the Board requests that NB Power file a copy of each study with it as soon as available, whether or not a general rate application is planned in that year.

RATE DESIGN

Objectives

The need to have rates that accurately recover the utility's costs and that are easy to understand and administer was not questioned by any of the parties and may be regarded as a practical necessity.

Equity

Equity requires that rates should reflect costs of service so that no cross-subsidization exists between rate classes or between customers within each class.

NB Power's testimony indicates that a degree of cross-subsidization may now exist within certain rate classes; that its level and form of rates have been shaped by historical objectives and that these objectives may no longer be appropriate today.

With respect to the relative costs of serving larger versus smaller customers, Mr. Flynn stated that load research would be necessary before the existence or extent of any imbalance could be determined. He also stated that some rate features may be inappropriate now but that NB Power does not, at present, have an overall policy direction for rate changes.

The Board considers that the proper course is to improve equity through a process of gradual adjustment. This could best be achieved through the establishment by NB Power of long-range rate objectives, together with a plan for attaining them. The Board accepts that all the information desirable for this purpose may not be available until load research data for all classes is at hand. Nevertheless, it considers that some planning to improve

intra-class equity can be undertaken with the information now available and should commence in 1992.

Efficiency

Economic theory asserts that rates should reflect the total cost to society of the service provided; that when this occurs, customers will make correct purchase decisions, thus maximizing economic welfare. The LPU witnesses supported this view. Ms. Chown testified that "what you're really trying to do in cost allocation ... and subsequently in the rate designs is send a proper price signal to consumers...." (Transcript pages 3183/84).

Rates that send the proper signals to customers may create practical difficulties. This is because in order to send the correct signal rates should reflect the costs that will be incurred to provide additional capacity and energy. If these incremental costs do not equal the utility's embedded costs the revenue produced will exceed or fall short of the amount necessary to meet the current costs of the utility.

Mr. Vander Veen testified that long-run marginal cost considerations could be reflected in rates without prejudice to accuracy in meeting the revenue requirement but that this was not true of short-run costs.

The LPU witnesses used long-run cost in their approach to cost classification.

In his closing argument, Mr. Kenny categorized efficiency as a social objective rather than a rate objective and advised thorough study of the implications before any decision to move to marginal cost-based rates.

The Board directs NB Power to include long-run incremental cost (LRIC) in its study of rate objectives. Questions to be addressed are the extent to which LRIC can be reflected in rates without prejudice to accuracy or equity. The study should also address the potential benefits from using LRIC in setting rates with respect to encouraging the efficient use of electricity.

Revenue/Cost Ratios

In-Province

The existing revenue to cost ratios have, to a large extent, developed over time as a result of the application of traditional rate making practices. The ratios for the different classes range from significantly below one to well above one regardless of which cost of service methodology is used. This is illustrated by Table 4 from page 18 of the LPU evidence which the

Board has reproduced as Appendix 1. There was considerable discussion at the hearing as to what the appropriate range should be and over what period of time the various classes should be moved within the appropriate range.

NB Power recommended an initial range of .85 to 1.15. The NB Power witnesses suggested that the Board should initially start with a fairly broad range that perhaps may lead to the least immediate change in its rate structure, and take a gradual approach to moving that range into a narrower range over a period of years. They also suggested that recommendations be made as to what the utility should do to bring its customer classes within the range.

The LPU proposed a range of .95 to 1.05 and were concerned that use of a broad range could burden industrial customers with unfairly high rates for many years. They recommended that NB Power develop a strategy to move classes within this range while at the same time having due regard to the avoidance of rate shock. The Power Commission of the City of Saint John also favoured a range of .95 to 1.05 in order to achieve equitable rates. The Public Intervenor recommended a range of .90 to 1.10 and that NB Power be required to move classes inside this range within a period of three to five years.

The Board had only one informal presentation during the

hearing. This was by the Tourism Industry Association of New Brunswick and they recommended a range of .95 to 1.05 to ensure fair treatment of small business in New Brunswick.

The Board considers that the target range for revenue to cost ratios should be such that fairness can be achieved while still permitting flexibility. The Board is of the opinion that merely setting an appropriate range will not cause rate shock. Careful consideration of the timing of any necessary changes to move classes within the range will ensure that rate shock does not occur.

The Board considers that a range of .85 to 1.15 will not provide sufficient stimulus to achieve fairness in a reasonable period of time. A target of 1 to 1 is impossible to achieve in light of the ongoing changes in costs and revenues and the inherent inaccuracies in any cost of service study. The Board considers that a long term target range of .95 to 1.05 for revenue to cost ratios is reasonable. The Board recognizes that rate impact considerations will require that some classes be moved gradually to or within this range. There is also a need to develop more precise data on the characteristics of electrical consumption by the various customer classes to ensure that any proposed changes are appropriate.

Appendix 1 clearly shows that there are certain classes

that lie outside any of the proposed ranges. Therefore, the Board will expect NB Power, at the time of its next general rate application, to propose changes which will narrow the existing range of revenue to cost ratios. The Board also expects NB Power to develop a plan to move all classes within the approved range of .95 to 1.05 over a period of time which will permit proper consideration of the desire to avoid rate shock.

Export Revenue Impacts

A separate but related issue is how net export revenues should be treated with respect to the calculation of the revenue to cost ratios. NB Power recommended that export revenues, net of fuel cost, be recognized as a revenue credit to each class of service. This approach eliminates the need to define costs associated with export sales. The Public Intervenor and the Power Commission of the City of Saint John both supported the use of a revenue credit approach.

The LPU proposed that the net export revenues be subtracted from the cost of each class of service as some of the non-fuel costs are caused by the existence of the export customers.

As noted during the hearing, the absolute dollar difference between revenues and costs for each class is not

affected by the use of either a revenue credit method or a cost credit method. It is the revenue to cost ratios which are affected. Use of the revenue credit method moves the ratios closer to unity while the cost credit method widens the range.

The non-fuel costs are fixed and do not vary with the amount of export sales. Further, the existence of these costs does not guarantee the presence of export revenues and certainly does not ensure export sales of any particular amount. Non-firm interruptible sales can, by definition, disappear at a moment's notice and firm sales may not be renewed when contracts expire. For these reasons, the Board considers it more appropriate to show the costs as they are and to account for any net export revenues by way of a credit to the revenue of the existing in-province customer classes, showing clearly the amount and how it was calculated.

The Board encourages NB Power to continue its efforts to obtain profitable export sales which are made possible by existing spare capacity. The Board hopes that any new construction of generation facilities will be based on in-province requirements and/or appropriate firm contracts for export sales.

The Board requests NB Power to prepare and file with it a study which identifies how the revenues and costs associated with

export sales are identified and accounted for by NB Power.

Seasonal Rates

The LPU advocated seasonal rates as a means of better reflecting the manner in which costs are incurred and in order to manage the load through appropriate price signals. The LPU witnesses pointed out in their testimony that energy costs averaged 1.38¢/KWh in winter compared to 1.04¢/KWh in summer and that larger users in the residential class have a significant seasonal pattern of use which peaks in the winter months. They attributed this to the electric heating load.

The witnesses testified that the cost of providing power in winter is significantly higher than in summer, both because of higher fuel costs and the fact that winter peak loads drive the system capacity requirement. They advocated allocation of costs on a seasonal basis and seasonal rates.

In argument for NB Power, Mr. Drummie suggested that by allocation of demand costs on the coincident peak which occurs in winter, seasonal effects were already taken into account and that the main seasonal factor was the spring run-off which allowed thermal plants to be shut down for maintenance. He conceded that seasonal rates might merit examination at a later date.

The Public Intervenor and counsel for the Power Commission of the City of Saint John both took the position that the subject should be further researched prior to any decision.

It appears to the Board that an adequate analysis of seasonal costs may involve more than a comparison of energy costs. Higher winter energy costs may occur because during that season, more use is made of generating units with low capital cost and high energy cost. If so, and if the higher winter energy costs are to be selectively allocated to rate classes, then it would be appropriate to allocate the lower capital costs in like manner.

The Board is of the opinion that seasonal rates merit further investigation to determine the difference between seasonal costs and, if there is a material difference, the practicality of seasonal rates. It, therefore, directs NB Power to review this matter and present its conclusions by the end of 1992.

Specific Rate Forms and Design

The LPU recommended that the Board direct NB Power to replace the declining block rate structure with a flat rate and study the potential for an increasing block tariff.

There is insufficient evidence on the record for the

Board to make any findings with respect to these recommendations. The Board directs NB Power to prepare a report on the desirability of these recommendations and to file the report with the Board by the end of 1992.

The Power Commission of the City of Saint John raised some concerns with regard to the way in which the wholesale rate is calculated. The Board suggests that NB Power meet with representatives from the Power Commissions of Saint John and Edmundston to determine if a mutually satisfactory change can be negotiated. If so, such a proposal could then be put to the Board for review and discussion.

The revenue to cost ratio for water heaters is below one. There are alternate sources of supply for water heaters and the providers of these heaters must compete with NB Power in obtaining customers. The Board considers that NB Power must at least recover all of its costs associated with water heaters. The Board, expects NB Power to immediately file new rates which will result in a revenue to cost ratio of at least one for the rental of water heaters.

A customer classification study was recommended by the Public Intervenor's witness and also by the Power Commission of the City of Saint John.

It is the Board's understanding that the objective of such studies is to structure rate classes so that the customers within a class are as similar as possible in terms of the timing and nature of their electricity requirements. The evidence indicates that load research is needed to provide a better understanding of such details; in particular, the degree to which the demands of various types of customers contribute to class non-coincident demand and system peak demand.


In consequence, it is the opinion of the Board that it would be prudent to defer consideration of such a study until the appropriate load research data is available. This will depend upon favourable action by the Board of Directors of NB Power as noted earlier.

GS I AND GS II Rates

There was some discussion at the hearing concerning the general service categories. The hearing on cost allocation and rate design was made possible by NB Power's application to discontinue offering General Service II to new customers. However, a full supporting rationale has not yet been provided for this request. The Board will require complete documentation of the proposal and its effect and will provide an opportunity for full

public discussion prior to making a final decision on the application. The appropriateness of any adjustments to the General Service I category could also be discussed as part of that process as could any other minor rate design matters which may arise.


Dated at the City of Saint John, N. B. this 15th day of
April, 1992.


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David C. Nicholson
Chairman


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B. Fernand Nadeau
Vice-Chairman


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Claudette Stymiest
Commissioner


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Paul E. LeBlanc
Commissioner


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Ivan McLean
Commissioner


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Frank E. Kane
Commissioner

APPENDIX 1

NB POWER REVENUE TO COST RATIOS (%)

<u>Customer Class</u>	<u>Classification Methods</u>		
	<u>NB Power Proposed (HJV-3)</u>	<u>Fixed/Var Method (App.II)</u>	<u>50/50 Split (App.IV)</u>
Residential	87%	79%	81%
General Service (I)	129	135	136
General Service (II)	114	113	114
Small Industrial	120	127	127
Large Industrial	103	115	111
Contract Sales	92	95	95
Street Lighting	147	170	165
Water Heaters	86	86	86
Wholesale	112	110	112