NEWFOUNDLAND POWER INC.

SUPPLEMENTAL TESTIMONY OF LARRY B. BROCKMAN

SEPTEMBER 2001

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1. INTRODUCTION

Q. Please state your name and address.

A. My name is Larry Brockman. My business address is 1 Memorial Drive Cambridge, Massachusetts. I have previously submitted evidence in this proceeding on August 15, 2001.

Q. What is the purpose of this supplemental evidence?

A. My supplemental evidence has the following purposes:

(1) To address evidence provided in answers to requests for information which was not available when I filed my direct evidence;

(2) To comment upon the evidence filed by Mr. Bowman and Dr. Wilson.

2. HYDRO'S TEST YEAR HYDRAULIC GENERATION FORECAST

Q. Have you had an opportunity to review Hydro's responses to requests for information it received on its forecast of hydraulic production?

A. Yes.

I have reviewed the additional evidence, and it leads me to believe even more strongly that Hydro is under-forecasting hydraulic generation in the test year.

Q. What is the basis of your opinion on Hydro's hydraulic forecast?

A. Hydro originally filed 10 years worth of hydraulic data in its evidence. In response to Request for Information NP-204, Hydro has now filed 50 years worth of hydraulic data. This is reproduced, for ease of reference, in LBB-4.

Hydro used an average inflow of 4,271 GWh of hydraulic generation in their test year, which is very close to the 50 year average of the total hydraulic inflow data (i.e. 4,294 GWh). The most recent 30 year average is 4,477 GWh. This shows what appears to be an increasing trend in the average inflow. The difference between the 30 year average and the 50 year average may be due to a change in the climate, or simply problems with measurement data going back as far as 1950.

To the best of my knowledge, the average used by Hydro is not a moving average, but an average based on cumulative inflow data collected since 1950. A moving average method would better reflect technological improvements in data collection, as well as more accurately represent recent historical inflows.

Q. What is your recommendation to the Board for determining Hydro's hydraulic forecast?

A. I recommend that the Board use a 30 year moving average. A 30 year period is long enough to minimize volatility in the average but recent enough to reflect changes in inflow patterns. This approach would also be consistent with Newfoundland Power's method for determining normal weather in the monthly adjustments to the weather normalization reserve. Newfoundland Power chose 30 years as the basis for determining

"normal" weather as this is consistent with the number of years used by Environment Canada in determining "normal".

In my pre-filed evidence I stated that a 10 year average would result in a forecast of 4,598 GWh. This was to illustrate both Hydro's low forecast and the significant impact of the forecast on revenue requirement. Calculating a hydraulic forecast using a 30 year moving average, based on 1971 to 2000 actual inflows, would result in a forecast of 4,477 GWh. It is clear from the evidence is that the choice of average has a very significant impact upon the result. Based on NP-141 the impact, in dollars, is approximately $3.3 million per 100 GWh variance from forecast. Using the 30 year moving average would therefore result in a reduction in revenue requirement of approximately $6.6 million in the test year.

3. COMMENTS ON MR. BOWMAN'S EVIDENCE

Q. Have you had an opportunity to review Mr. Bowman's evidence?

A. Yes.

Q. Do you agree with Mr. Bowman at page 4, where he says, referring to Hydro's rate to Newfoundland Power: "The current design with only a flat per kWh energy charge sends incorrect price signals to Newfoundland Power and is not reflective of the costs it imposes on the system"?

A. No.

The rate that Newfoundland Power pays flows directly out of the cost-of-service study, and therefore by definition recovers the cost of serving Newfoundland Power. The demands of Newfoundland Power are fully reflected in the cost of service study, and as those demands change, the costs allocated to Newfoundland Power change. These costs only get reallocated in rate cases, but the costs caused by changes in demand are also long-term costs of adding equipment to Hydro's system. These costs are not likely to change in a material way due to short term demand changes by Newfoundland Power.

Q. Do you agree with Mr. Bowman at page 4, where he states: "Newfoundland Power represents over 60% of Hydro's sales in the test year, and over $200 million in annual revenues at current rates. This clearly justifies a more complex rate structure." Do you agree?

A. No.

I do not believe that the size of Newfoundland Power has anything to do with whether they should be served on a demand rate (except that it means demand meters can clearly be afforded). The real issue is whether a demand/energy rate will cause Newfoundland Power to change their rate designs to their customers, or to perform more cost-based DSM, balanced against whether the demand/energy rate will create such volatility in the earnings streams of both utilities that it is inadvisable.

I do not believe a demand/energy rate is justified based simply on Newfoundland Power's size because:

1) Newfoundland Power already offers demand rates to its customers, which in my opinion are reasonably based on cost; and

2) both Newfoundland Power and Hydro feel that a demand/energy rate will create unacceptable volatility.

Q At page 5, Mr. Bowman recommends that the Board eliminate the RSP. Do you agree?

A. No.

I have testified that the proposed operation of the RSP should be changed to give Hydro more incentive for efficiency. Raising the Retail RSP cap to $100 million retail would not achieve this.

I do not advocate the elimination of the RSP. The RSP helps to reduce the volatility associated with dramatic changes in both fuel costs and hydraulic conditions. It was implemented because customers did not want to be exposed to excessive price volatility. In that respect, it has served its purpose well.

Q. At page 6, Mr. Bowman says that the current RSP, "removes any incentive that Hydro might have to better manage its fuel supply costs and improve its forecasting techniques." Do you agree?

A. No.

The RSP does remove ***some*** incentive for Hydro to be efficient, but certainly not all. It can be improved, and I have recommended that the Retail RSP cap be left at $50 million, and modified as I have suggested, to give Hydro more incentives to efficiency.

In my opinion, eliminating the RSP entirely would do nothing to help consumers deal with volatility in oil prices and hydrology levels. The marginal efficiency gains that might be attained by eliminating the RSP would be more than offset by consumer reaction to the increased volatility in electricity rates.

Q. At page 8, Mr. Bowman states that the 4 CP better reflects that the four winter months all contribute to LOLH, and that 1 CP is more volatile. Do you agree?

A. Yes.

As I stated in my direct evidence the 4 CP is clearly more stable than the 1 CP.

Q. Do you agree with Mr. Bowman's statement on page 9 that, "stability is of lesser importance than the other criteria" (i.e., revenue requirement, market efficiency, cost based rates and administrative practicality)?

A. No.

In my experience, rate designers probably spend the most of their time balancing fairness and efficiency. However, I do not believe we can simply ignore the other criteria, as doing so can often result in price volatility. The existence of fixed-rate mortgages,

budget-billing plans, forward and hedging contracts in power markets, and the RSP are all reminders that customers often place a high priority on stability.

Q. Do you agree with Mr. Bowman's statement at page 10, "There is a price to pay to reduce the volatility, and if confronted with the full cost of rate stabilization, it is unlikely that consumers would choose to pay."

A. No.

I find no concrete evidence on the record that increasing the volatility of customers bills in Newfoundland will reduce their costs appreciably. In addition, history has shown that customers do not want to be exposed to significant volatility in their rates.

Q. Do you agree with Mr. Bowman's statement at page 11, that "If Newfoundland Power's wholesale rate were properly designed to reflect marginal supply costs while recovering the revenue requirement, it would not be necessary to look beyond the wholesale rate design"?

A. I agree that if the rates to Newfoundland Power reflected all the marginal costs, there would be no reason to look beyond them, but I have not seen a rate design proposed in this proceeding that does that, nor am I sure that such a rate design is even practical in this situation.

Because of the uncertainly of the system expansion plans of Hydro, there are difficulties in estimating the marginal cost of demand. However, the short-run incremental cost of

Holyrood is 4.59 cents per kWh (from Request for Information CA-179 iii) and the proposed energy only rate is 4.8 cents per kWh. Given these circumstances, one could argue that the current wholesale rate is properly designed to reflect marginal supply costs while recovering the revenue requirement.

Q. At page 13 of his evidence, Mr. Bowman states that, "The notion that Hydro and Newfoundland Power should forego a demand-energy rate because it would tend to create earnings volatility from year to year is difficult to accept." Do you agree?

A. No.

The response to Request for Information CA-184 indicates that earnings volatility is a legitimate concern for both Hydro and Newfoundland Power. The response is provided below for ease of reference:

> The required earnings of Hydro are currently protected through the Rate Stabilization Plan from variations in the forecast of: energy usage of Newfoundland Power; hydraulic production; and, the cost of No. 6 fuel required for production at Holyrood.
>
> The proposed cost-of-service study in JAB, Exhibit 1, page 9 of 94 shows that the revenue requirements for Newfoundland Power are based on demand costs of $86.9 million, energy costs of $102.3 million, and customer costs of $1.2 million (excluding the rural subsidy). If we

removed the $86.9 million (45% of the total cost) of the demand-related revenues from the protected status of the RSP, Hydro's earnings would be more volatile, since any variation in that portion of the revenue will not be subject to recovery through the RSP. In addition, demand is generally more volatile and more difficult to forecast than energy.

The degree of earnings' volatility for Newfoundland Hydro would depend on the structure of the tariff implemented. For example, a wholesale tariff with a high percentage of the demand revenue fixed to a firm demand level would introduce minimal earnings volatility. However, a wholesale tariff in which the demand revenue fluctuated with the customers demand requirements from month to month could introduce significant earnings volatility.

Newfoundland Power's rates are set by the Board to allow it the opportunity to earn a reasonable return on rate base. Variations in the revenue from Newfoundland Power's customers are protected from volatility in hydraulic production and weather by the use of a weather normalization reserve. Monthly RSP charges from Hydro are passed on to customers through a Rate Stabilization Account adjustment that is included in the rate applied to customers' bills and updated annually.

Under the energy-only wholesale rate, the revenues of Newfoundland Power are strongly correlated with the purchase expense. If purchase expense increases in a month, energy revenues also increase a predictable amount. The revenues of Newfoundland Power are broken down (approximately) in the following manner; 75% from energy charges, 10% from demand charges, and 15% from other charges (i.e., mainly customer and street and area lighting). The reason for the high percentage from energy charges is because approximately 60% of the total revenue is from the Residential class, for which there is no demand charge.

Assume a demand/energy wholesale tariff was implemented and the energy component was set to recover 60% of the costs and the demand component was set to recover 40% of the costs. Newfoundland Power would not change the structure of its retail rates as the existing rate structures are reasonable. The effect of the change in the wholesale tariff would, however, have a significant effect on the correlation between revenue and purchase expense.

If the demands of Newfoundland Power customers were 5% above forecast (approximately 50 MW) due to a few very cold winter days, there would likely be minimal impact on revenues to Newfoundland Power (as the vast majority of revenues from the weather sensitive loads come from energy charges). However, purchased power expense (under the assumed

demand/energy tariff) could increase by 2% (i.e., 5% x 40% of wholesale costs recovered in demand charges). Two percent of the Hydro's proposed annual revenue from Newfoundland Power is approximately $4.2 million. For each $90,000 increase in expenses, the return on rate base for Newfoundland Power decreases by approximately 1 basis point. So a $4.2 million dollar increase in annual purchase expense would reduce return on rate base by 45 basis points. The full range of return on rate base set by the Board for Newfoundland Power is ?18 basis points.

With the existing energy-only wholesale tariff, Newfoundland Power would incur no additional purchased power expense in the scenario above. It is this potential revenue volatility that has caused concern for Newfoundland Power in trying to negotiate an agreement with Newfoundland Hydro in the determination of a demand/energy rate.

Q. At page 13, Mr. Bowman says "Hydro's rates and risk exposure would be reduced [with a demand rate] because it would be required to bring on less peaking generation capacity". Do you agree?

A. No.

Newfoundland Power already has demand rates on all general service customers with demands of 10 kW or greater. There is no evidence on the record that Newfoundland Power's rates would change appreciably in response to a demand/energy rate from Hydro,

or that Newfoundland Power's demands upon Hydro would decrease sufficiently to defer construction of a generating plant in the near future. It is also worth noting that Newfoundland Power's actual annual peak demands have not increased in the last decade as shown in the table below.

Year	Newfoundland Power Peak (MW)
2000	1,041,000
1999	1,024,588
1998	1,044,909
1997	1,063,339
1996	1,080,840
1995	1,123,298
1994	1,030,985
1993	1,098,337
1992	1,026,806
1991	1,100,091
1990	1,073,556

Q. Do you have any comments on Mr. Bowman's recommendation on page 16 of his evidence to have "an independent consultant undertake a complete review of Newfoundland's rate designs"?

A. I do not believe there is any reason for the Board to take such action at this time. In August 1998 Government announced an Energy Policy Review which would entail a comprehensive review of the electric rates and marginal costs in Newfoundland. In Newfoundland Power's 1998 General Rate Proceeding the Board deferred reviewing

marginal costs and demand/energy rate forms because of this ongoing review. I understand the Energy Policy Review is not yet complete.

Q. At page 19, Mr. Bowman laments the lack of competition in Newfoundland, and recommends some actions, such as, "For example, multiple distribution companies could be formed and forced to compete against each other." Do you think this can be accomplished?

A. No.

There are only a few places in North America (in Texas, for example) that have multiple distribution companies. This is because the inefficiencies and waste associated with having multiple distribution systems is considered to far outweigh any competitive gains from such systems. In fact, in most states in the U.S. with more than one distribution utility, regulatory commissions assign territories to each utility to prevent such duplication.

Q. At page 20, Mr. Bowman states, "Newfoundland needs to move to a more light-handed form of regulation, providing incentives to utilities to provide power at low costs, with the opportunity to increase returns to their shareholders. Newfoundland needs to study the introduction of incentive and performance based regulatory mechanisms in an effort to give utilities greater latitude " Do you agree?

A. Yes.

Regulatory reform which would provide incentives to utilities to reduce costs and increase returns to shareholders would be beneficial. Newfoundland Power would welcome the opportunity to participate in any study considering this matter. However, I find it a bit difficult to reconcile Mr. Bowman's recommendation to move a more light-handed form of regulation with his recommendations to:

(1) force Hydro to serve one of its major customers (Newfoundland Power) on a rate that neither Hydro nor its customer desire; and

(2) force Hydro to redesign all its rates according to a Board appointed consultant's rate designs.

4. COMMENTS ON DR WILSON'S EVIDENCE

Q. Have you had the opportunity to review Dr. Wilson's pre-filed direct evidence and do you have any comments on it?

A. Yes.

There are two areas where I disagree with Dr. Wilson's recommendations. They are:

(1) to require Hydro to serve Newfoundland Power on a demand/energy rate; and,

(2) to eliminate the RSP.

I also wish to comment on Dr. Wilson's recommendation that Hydro prepare and file seasonal rates.

Q. What are your comments on Dr. Wilson's recommendation that Hydro should prepare and file a seasonal rate?

A. I have no problem with Hydro preparing and filing such a rate, but without seeing the details (and derivation) of such rates, it is difficult to say whether they would represent an improvement over current rates. Presumably, it would also require that Hydro first prepare a seasonal cost of service study.

Before implementing any rate, further study of things like; customer impact, volatility, and fairness must also be evaluated.

Q. Why do you disagree with Dr. Wilson's recommendation to implement a demand/energy rate?

A. I disagree for the same reasons that I have already discussed in my comments on Mr. Bowman's evidence. These can be summarized as:

(1) Newfoundland Power already has demand/energy rates for its customers, where appropriate.

(2) A demand/energy rate would create earnings instability for Newfoundland Power and Hydro that is unacceptable to both parties.

(3) There is no evidence that a demand/energy rate would change the rate designs or demand growth of Newfoundland Power's customers.

(4) There has been relatively little (if any) demand growth for Newfoundland Power's customers over the last decade.

(5) There is uncertainty concerning the generation expansion plans of Hydro caused by negotiations surrounding a possible Labrador infeed.

Q. Do you agree with Dr. Wilson's statement at page 22 that, marginal cost based rates are more allocatively efficient and better embody the principles of fairness?

A. I agree that marginal cost-based pricing leads to more efficient use of society's resources, provided that other goods and services are based on marginal cost. However, I do not agree that marginal cost-based rates are necessarily fairer.

Fairness can mean different things to different people. For example, Dr. Wilson says he believes that marginal cost pricing is fairer, since it is based on his notion of causality. It has been my experience that just as many reasonable people (if not more) believe that if you use something you ought to pay for it, whether you caused it to be built in the first place or not. This is the primary reason we never have complete agreement on how to allocate generation plants in cost-of-service proceedings.

Q. Does this conclude your evidence?

A. Yes it does.