



Legislative Assembly of Manitoba

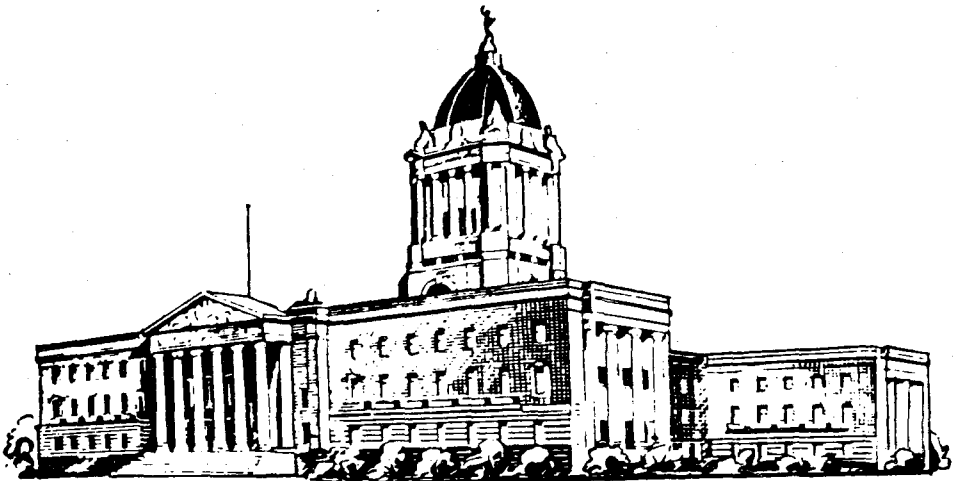
HEARING OF THE STANDING COMMITTEE

ON

PUBLIC UTILITIES AND NATURAL RESOURCES

Chairman

**Mr. Harry Shafransky
Constituency of Radisson**



THURSDAY, April 7, 1977 10:00 a.m.

TIME: 10:00 a.m.

CHAIRMAN, Mr. Harry Shafransky.

MR. CHAIRMAN: Order please. We are ready to proceed. Order please. I believe that there are some outstanding questions that the Chairman of Manitoba Hydro has that were taken as notice, we will call upon Mr. Bateman to give the answers to those questions that he had taken as notice at the last meeting. Mr. Bateman.

MR. LEONARD BATEMAN: Mr. Chairman, members of the Committee. In attempting to provide the Committee with all of the information that has been requested of Manitoba Hydro we are here with support staff again to answer those questions. There were a few outstanding items at the last meeting which — I must admit, I have not gone through the transcript of the last hearing in detail, but in noting what the questions were, I believe, if there is any correction to this, Mr. Chairman, you, and the members of the Committee can point that out as we provide this information.

First of all, the first question that I have noted here that was asked: How many tariffs were in use in Manitoba Hydro prior to 1968? I am going to ask Mr. Cartwright, our Manager of Rates and Economics, to come and take the microphone if that is permissible, Mr. Chairman.

MR. CHAIRMAN: Mr. Cartwright.

MR. BATEMAN: Perhaps Mr. Cartwright you can provide the answer to that question, we will have some information to circulate to the Committee members, Mr. Chairman, if Mr. Cartwright or Mr. Steed could take that. The first outstanding question then Mr. Cartwright: Would you indicate to the Committee what you were able to determine on the basis of the search of the records in those years?

MR. CARTWRIGHT: Mr. Chairman, prior to 1968 Manitoba Hydro had 150 rate codes plus a large number of variations.

MR. CHAIRMAN: Proceed.

MR. BATEMAN: The second question I had, Mr. Chairman, noted here was what was Winnipeg Hydro's attitude to curling club and skating rink billing prior to the rate equalization in 1973? Perhaps Mr. Cartwright you could answer that question?

MR. CARTWRIGHT: Prior to rate equalization in 1973 curling clubs and skating rinks within the Winnipeg Hydro service area were billed on the standard general service rate, no preferential rates were applied.

MR. BATEMAN: So Manitoba Hydro had a preferential rate in the country and the city did not have the preferential rate. Question three, as I recall it, Mr. Chairman, was can Manitoba Hydro supply further historical information on the power demand rates in Manitoba? Mr. Cartwright would you provide the answer to that please?

MR. CARTWRIGHT: Yes, we have circulated a hand-out there. Details of demand rates used in Manitoba Hydro prior to 1968, and up to the 1977 demand rate, are included in Exhibit 1. Prior to 1968 the demand rate was applied to customers with a load of 50 kVa or more, in rural areas, and a load of 250 kVa or greater in suburban Winnipeg. In 1968 the load limit was changed to 100 kVa for all areas of Manitoba. The limit was reduced to 80 kVa in 1974 and to 60 kVa in 1975. The load limit was lowered to 55 kVa in 1976, and this has been retained for 1977.

MR. BATEMAN: Now, I understand, Mr. Cartwright, that the Committee have now been given this Exhibit that you refer to in your answer. I don't have a copy of it myself but would you like to make any reference to that Exhibit at this time?

MR. CARTWRIGHT: The rate schedules that have been distributed, effective November 1, 1967, show there the various power rates that were in effect in rural Manitoba, and you will note that there were demand rates in effect at that time, and there was also an air conditioning and ice making rate, which was similar to the demand rate, except the minimum bills varied, and this is again for rural Manitoba. If you will turn to Page 4 of 6 . . .

MR. BATEMAN: Could we establish first of all, Mr. Cartwright, Page 4 of 6, this seems to be a reproduction of a rate schedule that was in effect in March 15' 1968, issued March 15th, 1968.

MR. CARTWRIGHT: Yes, that is correct. That was a revision to that particular page. You'll note that the previous pages were dated November 1, 1967 and this particular page was a revision to the particular page in question and not the rate itself. But the notes that were in effect at that time, you will note that in Note 1 that \$1.50 per kVa of 80 percent of connected load or established demand. Where a demand meter is installed, the monthly minimum bill or the energy block shall be based on not less than 25 percent of the maximum KVA demand established during the previous 12 months and in no case less than 10 kVa or \$15.00 net.

Similarly, for Note 2.

Note 3 the point I want to make there is that in rural areas there was a different minimum bill there for the air conditioning and ice making. In the in-season, it was \$1.20 per horsepower net for all connected load; in the off-season, it was \$1.50 per horsepower net for 25 percent of the refrigeration load if not used. Non-refrigeration load at the usual \$1.20 per horsepower. The point I want to make

there is that that compared to — if you'll turn the page to Suburban Winnipeg — for November 1, 1967, that's the effective dates of these . . .

MR. BATEMAN: Do you have to turn the page forward or backward, Mr. Cartwright? You're on Table 1(a)(6)?

MR. CARTWRIGHT: Yes, my exhibit numbers . . . it's obliterated here. I believe it is Exhibit 1-A5.

MR. BATEMAN: Exhibit 1-A5 right.

MR. CARTWRIGHT: These are the power service rates in effect in suburban Winnipeg for that particular point in time and you'll notice that the first one is power connected load and the second one there no. 34 is power demand.

You'll also note down the page that there is an air-conditioning and ice-making rate which is similar to the power demand rate. There's a slight difference in the minimum bill and if you will turn to the . . .

MR. BATEMAN: The one important point, perhaps, Mr. Cartwright, in that runoff block, you indicate this is related to the number of hours that it was in use and then the runoff was at .8 cents a kWh whereas I believe the runoff rate today is .77. Is that . . . ?

MR. CARTWRIGHT: That's correct. If you'll turn to Exhibit Page 1-A6, it shows you there how you establish the monthly billing demand and you will note that it is the greater of

(a) the maximum demand registered in a month within the period from March 1st to October 31st, or

(b) 75 percent of the greatest billing demand established in any previous month within the March 1st to October 31st period, or

(c) the greatest billing demand established in the preceding four winter months from November 1st to February 28th.

The point I'm making is that it is quite similar to what we have today.

MR. BATEMAN: Except that, I think Mr. Cartwright, we would have to agree that the billing today is much simpler and perhaps you would point that out to us as you feel the appropriate time. The billing today, I think, is much simpler than the billing was in those days.

MR. CARTWRIGHT: Well, if you'll just refer back to Exhibit 1-A5, you will see there, the number of power service rates in effect, and that's only part of them, there's some more, and you will note that it is rather a complicated system that was there. If we just went over the second one which is the power demand, the first block, the first 75 hours use of established demand at 3.333 cents per kWh; the next 75 hours use of established demand at 2.5 cents; the next 75 hours use of established demand at 1.9; the next 75 hours use of established demand at 1.4; the next 75 hours use of established demand at 1.1.

The runoff in that case was .8 cents per kWh, and the minimum bill \$1.50 net per kVa of established demand and then refer to the notes that I have recited as to Note B.

We do not have all those rate forms today and the rate form which we'll build up to will illustrate that it's far less complicated of course than that.

MR. BATEMAN: All right, do you want to carry through any more comments on the exhibits that you have given to the Committee?

MR. CARTWRIGHT: Yes, if you turn to Exhibit 1-B1 are rates that were effective July 15th, 1968. That was the rate change at that particular time. At that particular time we combined the Winnipeg and rural power service rates into one. And, you will note that we had connected-load or meter-demand rates. The first block was 40 kWh per kVa or of connected load or meter demand used each month at four cents per kWh. The second block was 80 kWh per kWh of connected load or meter demand use for the same month at two cents a kWh. The third block was 80 kWh per kVa of connected load or meter demand used the same month at one cent per kWh and the balance at .08 cents.

We still, in this particular time, had wholesale discounts. I meant to mention that previously in the rural and suburban areas, not only were the rates different but the wholesale discounts were also different prior to July 15th, 1968. After that particular time the wholesale discounts and the prompt payment discount was exactly the same in suburban Winnipeg and rural.

You'll note that under the minimum monthly charges under (b) Meter Demand Billing, it was a \$1.20 per kVa of the monthly established peak, but in no case less than (1) 25 percent of the highest demand established in the previous twelve months, and (2) 100 kVa or \$120.00.

If you will turn to Exhibit 1-B2 and look at Note 2: (c) it says their welding, artificial ice plants for recreational facilities, air conditioning and X-ray equipment shall be assessed at 50 percent of the name plate kVa rating applied on a year-round basis, not just for four months of the year or one month of the year.

MR. BATEMAN: Perhaps a point of clarification, Mr. Cartwright, you could indicate to the Committee that all of these different classifications of load, like ice plants, X-ray plants, arc furnaces and so on are now all included in the power category that we determine as power demand billing.

MR. CARTWRIGHT: That is correct. If you'll now turn to Exhibit 1-B3, in addition to the rates I have just recited, there was an industrial power rate, and you'll note there that it was in two parts, similar to what we have today, there was a monthly demand charge. For the first 5,000 kVa of monthly

billing demand, \$2.40 per kVa. For the next 5,000 kVa of monthly billing demand, \$2.20 per kVa. For the next 10,000 kVa of monthly billing demand, \$1.98 per kVa. Balance of monthly billing demand at \$1.77 per kVa. That's known as a block structure.

The energy charge was in addition to that. You have to add the two together to get your total bill. In addition to the demand charge, the energy used each month shall be billed at a rate of two mills, 0.2 cents per kWh. There were no discounts applicable to this particular rate structure and the minimum charge, the monthly demand charge, but no case less than \$2,400.00

Now, if you'll look to the monthly billing demand structure, shall be the greatest of the following: The maximum demand measured in a month, or the maximum demand measured in any month within the preceding months of November, December, January and February, commencing with the regular November meter reading each year and continuing until the next regular October meter reading, or (c) the minimum demand for power provided by agreement with the customer which shall have regard to the cost of making power available from time to time to a customer, or in no case less than 1,000 kVa. That rate is not in existence today.

If you will now turn to Exhibit 1-C1, these were the rates effective April 1, 1974 on Exhibit 1-C2.

MR. BATEMAN: Perhaps we might just clarify this point, Mr. Cartwright. The rates that you have been referring to were subject to review by the Public Utilities Board when Manitoba Hydro referred its rates to the Public Utilities Board in 1969, I believe it was, and the Public Utilities Board as you recall engaged Basco Services, a consulting firm, to review the Manitoba Hydro rates and that firm made a number of recommendations to the Public Utilities Board and in turn the board made recommendations to Manitoba Hydro about future rates and rate policy.

Now in 1974 when we put the first general rate increase in after 1968 we engaged the Basco Services to review again the procedure that we were implementing leading toward a reduction of the total number of rates within the Manitoba Hydro system and certainly relating to the kVa of maximum demand that would be put on that type of billing.

With that brief clarification perhaps you could proceed, Mr. Cartwright.

MR. CARTWRIGHT: If you will refer to Exhibit 1-C2, about three-quarters of the way down the page, the power rate is expressed there. The demand charge, the first 500 kVa, \$1.50 per kVa. This is for services that took service at 750 volts or less. The next 9,500 kVa at \$1.15 per kVa, and the balance at \$1.05 per kVa. In addition to that you must add the energy charge which is a right form of demand billing, as well. The first 100 kWh per kVa of monthly billing demand at 1.02 cents per kWh; the next 200 kWh per kVa of monthly billing demand at .61 cents per kWh; the next 200 kWh per kVa of monthly billing demand at .5 cents per kWh; over 500 kWh per kVa of monthly billing demand at .45 cents per kWh.

The other items there under the power are for customers that take service over 750 volts to under 20,000 volts, and 20,000 volts to 80,000 volts, over 80,000 volts to 200,000 volts, and over 200,000 volts. Those are larger customers that own their own dedicated transformation and associated equipment.

If you will note, the minimum monthly bill is the demand charge of the amount in the written agreement. The monthly billing demand is the greater of the meter demand in kVa in a month or 75 percent of the greater billing demand in the preceding months of December, January and February, or the amount in kVa in written agreement but not less than 80 kVa.

Now if you will again turn to Exhibit 1-D1 these were the rates effective April 15th, 1975. The form was revised in October of 1975. The rates were not revised.

If you will turn to D2 of that exhibit, under the power rate again, you will note that again it's a two-part rate structure. It's a block demand and a block energy charge. In this case we have just shown the rate that is applicable to customers receiving power below 750 volts. The first 500 kVa is at \$2.00 per kVa, the next 9,500 at \$1.50 per kVa, over 10,000 kVa at \$1.40 per kVa. And to that you must add the energy charge: the first 100 kWh per kVa of monthly billing demand at 1.2 cents per kWh; the next 200 kWh per kVa of monthly billing demand at .7 cents per kWh; the next 200 kWh per kVa of monthly billing demand at .58 cents per kWh; over 500 kWh per kVa of monthly billing demand at .5 cents per kWh. The minimum monthly bill is the demand charge in the amount of the written agreement. The monthly billing demand is the greater of the meter demand in kVa in a month or 75 percent of the highest billing demand in the preceding months of December, January and February, or the amount in kVa in written agreement but not less than kVa.

I would mention in the two rate schedules that I have recited, that is for 1974 and 1975. You will note that we have not defined "in use" like in the previous agreements, that all customers qualifying for the power rate are charged the same rate in all parts of the province regardless of "in use."

Now if you will now turn to Exhibit 1 - E(1), and that is rates that are effective April, 1976, and if will turn to E(2), the right-hand side, refer you to the power standard rate. It is the demand charge \$3.00 per kVa — this is not a block demand charge anymore — plus the energy charge at .75 cent per kWh, this is not a block energy right form of energy charge anymore.

The minimum bill is the demand charge and the billing demand is the greatest of the metered demand or 80 percent of the highest demand measured in the winter months of November, December, January, February or 55 kVa or 25 percent of the contract demand.

If you will now turn to Exhibit 1 - F(1), these are the rates effective in March, 1977, and on the front page of that in the upper left-hand corner, you will notice that the rate form is the same as the previous year, a very simplified type of rate structure. The demand charge at \$3.75 per kVa plus the energy charge at .77 cent per kWh. The minimum bill is the demand charge. The billing demand is the greatest of (a) the meter demand, or (b) 80 percent of the highest demand measured in the winter months of November, December, January, February, or (c) 55 kWh, or (d) 25 percent of the contract demand. No mention there is made of "in use."

MR. BATEMAN: Mr. Chairman, I think that demonstrates the technique of simplification in the rate-making process that has been proceeding in line with the consultants recommendations that were made back in 1970 and again in 1974.

Now the next question I had noted that was unanswered last week was: Will Manitoba Hydro provide authentic details of the operating costs for the curling clubs and skating rinks used to illustrate the relationship between electricity costs and the total operating budgets for those community centres? Mr. Cartwright, would you answer that, please?

MR. CARTWRIGHT: Letters have been written to all the curling clubs and skating rinks in question and a copy of the letter and authorizations to supply the information to this committee, together with detailed operating costs, will be submitted once authorization from the customers affected has been received and we would expect to get that within the next week.

MR. BATEMAN: We will provide that information once the letters of authorization have been received.

The next question I had noted was: Can Manitoba Hydro provide an annual bill comparison based upon the rates applied to curling clubs and skating rinks by electrical utilities from Thunder Bay to the Rockies? Would you answer that, Mr. Cartwright?

MR. CARTWRIGHT: A letter was sent out requesting details of rates applied to curling clubs and skating rinks to the following utilities: Ontario Hydro, Thunder Bay Hydro-electric Commission, Edmonton Power, Saskatchewan Power, City of Calgary Electric System and Calgary Power Ltd.

Billing data for a customer — we used the same Sample A as we had exhibited here in the previous presentation of March 29 last — was provided and each utility was asked to calculate the monthly bills as if the customer was one of that utility's customers and the comparisons are summarized as follows:

The location, Manitoba, all areas except diesel; utility serving, Manitoba Hydro; the annual bill, \$9,847 (that is the bill based on the power standard rate); the average cost in cents per kWh, 2.10.

Number Two, location, Thunder Bay; utility, Thunder Bay Hydro; the annual bill, \$8,295; the average cost in cents per kWh, 1.76 cents per kWh.

No. 3-1 Ontario Rural. Utility serving - Ontario Hydro. Annual Bill - \$9,580.00 Average Cost - 2 cents per kWh.

Location No. 4 - Regina. Utility - Saskatchewan Power. Annual Bill - \$9,247.00. Average Cost - 1.97 cents per kWh.

Location No. 5 - Saskatchewan Rural. They have different rates applying in Regina than they do outside of the area. Utility - Saskatchewan Power again. Annual Bill - \$10,639.00. Average Cost - 2.26 cents per kWh.

Location No. 6 - Calgary. Utility - City of Calgary Electric. The Annual Bill - \$12,744.00. Average Cost - 2.71 cents per kWh.

Location No. 7 Alberta Rural. Utility - Calgary Power. Annual Bill - \$16,655.00. Average Cost - 3.54 cents per kWh.

Location No. 8 Edmonton. Utility - Edmonton Power. Annual Bill - \$13,405.00. Average Cost - 2.8 cents per kWh.

We asked if they gave preferential rates to these particular types of customers and the answer was, "No, they didn't." For example in Edmonton, they apply a 100 percent ratchet over 11 months demand and the meter is read once a year and reset once a year. Calgary Power apply an 85 percent ratchet over 11 months and in Saskatchewan they allow a customer to go on the general service rate in summertime. That concludes the summary of the information we received relative to that question.

MR. BATEMAN: Perhaps just to clarify the positions of some of those utilities, Mr. Chairman, the Edmonton Power is a municipal utility which has its own generation and distribution very similar to Winnipeg Hydro. The Saskatchewan Power rates, I might just make the observation, that my look at their last annual report indicated that the utility was operating in a deficit position and I would expect those rates would be changed this year.

The next question I had, Mr. Chairman, was relating to what is the total demand imposed on the Manitoba hydro-electric system by the 671 curling clubs and skating rinks that we have connected. Would you attempt an answer to that, Mr. Cartwright?

MR. CARTWRIGHT: An analysis of the 65 accounts that have demand meters shows that the non-coincident peak in January 1977 was 9,289 kVa. The non-coincident peak is simply adding arithmetically the demands, it's not a coincident demand. For the remaining approximately 600 accounts no demand information is available. The 65 analyzed cannot be considered as a

representative sample from which an estimate of the demand for the other 600 can be made. The 65 curling clubs and skating rinks on demand billing are obviously the ones with the highest loads and load patterns of the other 600 smaller rinks are probably entirely different.

MR. BATEMAN: All right. The next question I had, Mr. Chairman, was what is the total revenue generated by the 671 curling clubs and skating rinks during the last year and how does this compare with the previous year. Would you like to answer that, Mr. Cartwright.

MR. CARTWRIGHT: From the analysis made to question 6, the total revenue from the curling clubs and skating rinks billed at the demand rate was \$468,760.00. The revenue from the remaining 600 customers is much more difficult to obtain as these customers do not have a special rate code. A computer program would have to be prepared to identify each individual account. Our computer records contain 12 months of consumption and each month a new record is added and one is dropped. This means that the computer program would be required to calculate bills for 12 months for each identified account at the various rates, Winnipeg, cities, towns, applicable and would cover the most recent 12 months. To obtain comparative figures for the previous year would necessitate a manual search of meter books and manual recording of monthly consumption readings. The process would require several months.

MR. BATEMAN: Mr. Chairman, on the basis of the time taken to prepare that information, unless the Committee feels it essential to provide information of that sort, we would like to be relieved of the obligation we undertook to provide that information. It just isn't economically available.

The next question I had, Mr. Chairman, how have the unit costs of electricity to curling clubs and skating rinks changed during the last four years. Mr. Cartwright, I believe you have given me a sheet of information on that which we can project for the benefit of the Committee. a This is just a transparency of typed page, Mr. Chairman. I hope the Committee members can see the figures from there.

MR. CARTWRIGHT: We took four samples at random that we had from 1973-1974 through to 1976-1977. Sample E-1, the average cost was 1.18 cents per kWh, 1974-1975 the honourable member is suggesting unless it is 1974-75 1.34 cents per kWh; 1975-76 1.89 cents per kWh; 1976-77 would be 1.73 cents per kWh.

Sample E-2 . . .

MR. BATEMAN: Perhaps, Mr. Cartwright, I could interrupt at that point and make the observation. If I detect the Note here, you've got this utility going to demand billing in November of 1976. Their average rate consequently dropped in this year to 1.73 cents per kWh. That's one of the cases where demand billing was a benefit to the curling rink. Carry on.

MR. CARTWRIGHT: Sample E-2: 1973-74 — .93 cents per kWh; 1974-75 — 1.17 cents per kWh; 1975-76 — 1.53 cents per kWh; 1976-77 — 1.78 cents per kWh.

MR. BATEMAN: And I should, Mr. Cartwright, perhaps draw the committee's attention to the fact that that demand billing was not in force at that time and the increase in costs in this last year is perhaps due to other causes. Is that an observation . . . ?

MR. CARTWRIGHT: That is correct. Sample E-3: 1973-74 — 1.15 cents per kWh; 1974-75 — 1.47 cents per kWh; 1975-76 — 1.75 cents per kWh; 1976-77 — 2.17 cents per kWh. That particular account went on demand billing in January of 1977.

Sample E-4: 1973-74 — .96 cents per kWh; 1974-75 — 1.14 cents per kWh; 1975-76 — 1.70 cents per kWh; 1976-77 — 2.09 cents per kWh, and that account went on demand billing in December of 1974.

MR. BATEMAN: And that is obviously an account, Mr. Cartwright, where we should be determining from the club in question what the reasons for their increased costs are and try and provide some assistance to a proper load management program.

Now, the next question I have noted was: How have the unit costs of electricity at the power rate changed since 1974? I believe again, Mr. Cartwright, you have given me . . .

MR. CARTWRIGHT : It's a transfer.

MR. BATEMAN: . . . transferency on that which I can put on for the benefit of the committee members.

MR. CARTWRIGHT: In just reviewing this, the average cents per kWh at the power standard rate, we have used a load factor comparison here and maybe it is just as well to outline what we mean by "load factor." Load factor is derived by dividing the consumption by the capacity times the number of hours in a month. It is a measure of the efficiency of utilization. For example, if a light bulb was energized continuously for a month — 730 hours in the average month — the load factor would be 100 percent. If the light bulb were used only 365 hours in the month, the load factor would be 50 percent. So going back to the table, at 20 percent load factor, the average cost in 1974-75 was 1.92 cents per kWh; 1975-76 — 2.41 cents per kWh; 1976-77 — 2.80 cents per kWh; 1977-78 — 3.34 cents per kWh.

At 30 percent load factor, 1974-75 — 1.48 cents per kWh; 1975-76 — 1.84; 1976-77 — 2.12; 1977-78 — 2.48.

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At 40 percent load factor, 1974-75 — 1.26 cents per kWh; 1975-76 — 1.56; 1976-77 — 1.78; 1977-78 — 2.05.

At 50 percent load factor, 1974-75 — 1.11 cents per kWh; 1975-76 — 1.36; 1976-77 — 1.57; 1977-78 — 1.80.

MR. BATEMAN: Could we just make an observation about this. I believe, you have given us the examples, Mr. Cartwright, that the monthly hours . . . these are not monthly or are they yearly?

MR. CARTWRIGHT: These are monthly or annually, either one.

MR. BATEMAN: Either one. Well, I was just thinking that on the basis of . . . The purpose of the Table I would assume is to show that with a better load factor or a better utilization of the customer's equipment and spreading his peak out and making sure that his use is more effective, he has the advantage of getting a better rate and it's not every customer that can do that but we certainly encourage, for instance, community rinks and so on to get their ice-making plant and their other loads if they had electric heating, we wouldn't want them to be fighting each other. One having the electric heat on to keep the curling club warm and the other ice-making plant on to keep the ice frozen. It just wouldn't make good sense. It might use lots of energy but it would have the effect of putting you down in the lower level of load factors where the unit cost of energy would be much higher. If you use good load management techniques and limit those peaks, then you get up into higher load factor and, of course, have a lower per unit cost of energy, which is what we're interested in because we don't have to provide the additional capacity to meet those low load factors. Perhaps you would like to carry on, Mr. Cartwright.

MR. CARTWRIGHT: Well, to illustrate the changes in the general service rate which is an averaging method of billing customers, it's not a utilization method like there is in the demand billing portion, we have before us there the average unit cost at 500 kWh in 1974-75 — 4.2 cents per kWh; 1975-76 — 4.47; 1976-77 — 5.07; 1977-78 — 5.10.

I'll jump from there to 5,000: at 1974-75 it is 2.13; 1975-76 — 2.64; 1976-77 — 2.85; 1977-78 — 2.92.

I'll jump to 20,000: in 1974-75 — 1.83 cents per kWh; 1975-76 — 2.06 cents per kWh; 1976-77 — 2.19 cents per kWh; 1977-78 — 2.36 cents per kWh.

From there I'll jump to 70,000 and I must comment here that the customer would not, under our present rate applications, qualify for this rate at 70,000 kWh. Normally, he would not qualify for the rate. For somewhere in between 15,000 and 20,000 kWh, he would go on to the power rate. So at 70,000 kWh: 1974-75 it was 1.52 cents per kWh; 1975-76 — 1.73 cents per kWh; 1976-77 — 1.84 cents per kWh; 1977-78 — 2.10 cents per kWh.

MR. BATEMAN: Well, I think, Mr. Chairman, that concludes the questions that I had noted at our last meeting of the committee and if there are no further comments about those items we have presented this morning, then we can, at your discretion, Sir, proceed with other matters.

MR. CHAIRMAN: Mr. Lyon, have you a question on this matter?

MR. LYON: No, Mr. Chairman, I have no further questions on demand metering for the continuity of the records. I presume that the tables that Mr. Cartwright has showed us will be included, as the tables were last week.

APPENDIX

Answer to Question 8(a)

UNIT COST (¢ per kWh) FOR CURLING/SKATING CLUBS

	1973/74	1974/75	1975/76	1976/77
Sample E1	1.18¢	1.34¢	1.89¢	1.73¢
Sample E2	0.93	1.17	1.53	1.78
Sample E3	1.15	1.47	1.75	2.17
Sample E4	0.96	1.14	1.70	2.09

Sample E1 Went to demand billing November 1976.
Sample E2 Not on demand Billing.
Sample E3 Went to demand billing January 1977.
Sample E4 Went to demand billing December 1974.

Answer to Question 8(b)

SAMPLE F1 UNIT COST (¢ per kWh) AT POWER STANDARD RATE

Load Factor	1974/75	1975/76	1976/77	1977/78
20%	1.92¢	2.41¢	2.80¢	3.34%
30%	1.48	1.84	2.12	2.48
40%	1.26	1.56	1.78	2.05
50%	1.11	1.36	1.57	1.80

SAMPLE F2 UNIT COST (¢ per kWh) AT TOWNS GENERAL SERVICE RATE

kWh	1974/75	1975/76	1976/77	1977/78
500	4.20¢	4.47¢	5.07¢	5.10¢
1,000	3.05	3.62	4.23	4.60
5,000	2.13	2.64	2.85	2.92
10,000	2.02	2.52	2.67	2.71
20,000	1.83	2.06	2.19	2.36
50,000	1.57	1.78	1.89	2.15
70,000	1.52	1.73	1.84	2.10

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MR. BATEMAN: Mr. Chairman, on the basis of the time taken to prepare that information, unless the Committee feels it essential to provide information of that sort, we would like to be relieved of the obligation we undertook to provide that information. It just isn't economically available.

The next question I had, Mr. Chairman, how have the unit costs of electricity to curling clubs and skating rinks changed during the last four years. Mr. Cartwright, I believe you have given me a sheet of information on that which we can project for the benefit of the Committee. This is just a transparency of typed page, Mr. Chairman. I hope the Committee members can see the figures from there.

MR. CARTWRIGHT: We took four samples at random that we had from 1973-1974 through to 1976-1977. Sample E-1, the average cost was 1.18 cents per kWh; 1974-1975 the honourable member is suggesting unless it is 1974-75 1.34 cents per kWh; 1975-76 1.89 cents per kWh; 1976-77 would be 1.73 cents per kWh.

Sample E-2 . . .

MR. BATEMAN: Perhaps, Mr. Cartwright, I could interrupt at that point and make the observation. If I detect the Note here, you've got this utility going to demand billing in November of 1976. Their average rate consequently dropped in this year to 1.73 cents per kWh. That's one of the cases where demand billing was a benefit to the curling rink. Carry on.

MR. CARTWRIGHT: Sample E-2: 1973-74 — .93 cents per kWh; 1974-75 — 1.17 cents per kWh; 1975-76 — 1.53 cents per kWh; 1976-77 — 1.78 cents per kWh.

MR. BATEMAN: And I should, Mr. Cartwright, perhaps draw the committee's attention to the fact that that demand billing was not in force at that time and the increase in costs in this last year is perhaps due to other causes. Is that an observation . . . ?

MR. CARTWRIGHT: That is correct. Sample E-3: 1973-74 — 1.15 cents per kWh; 1974-75 — 1.47 cents per kWh; 1975-76 — 1.75 cents per kWh; 1976-77 — 2.17 cents per kWh. That particular account went on demand billing in January of 1977.

Sample E-4: 1973-74 — .96 cents per kWh; 1974-75 — 1.14 cents per kWh; 1975-76 — 1.70 cents per kWh; 1976-77 — 2.09 cents per kWh, and that account went on demand billing in December of 1974.

MR. BATEMAN: And that is obviously an account, Mr. Cartwright, where we should be determining from the club in question what the reasons for their increased costs are and try and provide some assistance to a proper load management program.

Now, the next question I have noted was: How have the unit costs of electricity at the power rate changed since 1974? I believe again, Mr. Cartwright, you have given me . . .

MR. CARTWRIGHT : It's a transfer.

MR. BATEMAN: . . . transference on that which I can put on for the benefit of the committee members.

MR. CARTWRIGHT: In just reviewing this, the average cents per kWh at the power standard rate, we have used a load factor comparison here and maybe it is just as well to outline what we mean by "load factor." Load factor is derived by dividing the consumption by the capacity times the number of hours in a month. It is a measure of the efficiency of utilization. For example, if a light bulb was energized continuously for a month — 730 hours in the average month — the load factor would be 100 percent. If the light bulb were used only 365 hours in the month, the load factor would be 50 percent. So going back to the table, at 20 percent load factor, the average cost in 1974-75 was 1.92 cents per kWh; 1975-76 — 2.41 cents per kWh; 1976-77 — 2.80 cents per kWh; 1977-78 — 3.34 cents per kWh.

At 30 percent load factor' 1974-75 — 1.48 cents per kWh; 1975-76 — 1.84; 1976-77 — 2.12; 1977-78 — 2.48.

At 40 percent load factor, 1974-75 — 1.26 cents per kWh; 1975-76 — 1.56; 1976-77 — 1.78; 1977-78 — 2.05.

At 50 percent load factor, 1974-75 — 1.11 cents per kWh; 1975-76 — 1.36; 1976-77 — 1.57; 1977-78 — 1.80.

MR. BATEMAN: Could we just make an observation about this. I believe, you have given us the examples, Mr. Cartwright, that the monthly hours . . . these are not monthly or are they yearly?

MR. CARTWRIGHT: These are monthly or annually, either one.

MR. BATEMAN: Either one. Well, I was just thinking that on the basis of . . . The purpose of the Table I would assume is to show that with a better load factor or a better utilization of the customer's equipment and spreading his peak out and making sure that his use is more effective, he has the advantage of getting a better rate and it's not every customer that can do that but we certainly encourage, for instance, community rinks and so on to get their ice-making plant and their other loads if they had electric heating, we wouldn't want them to be fighting each other. One having the electric heat on to keep the curling club warm and the other ice-making plant on to keep the ice frozen. It just wouldn't make good sense. It might use lots of energy but it would have the effect of

putting you down in the lower level of load factors where the unit cost of energy would be much higher. If you use good load management techniques and limit those peaks, then you get up into higher load factor and, of course, have a lower per unit cost of energy, which is what we're interested in because we don't have to provide the additional capacity to meet those low load factors. Perhaps you would like to carry on, Mr. Cartwright.

MR. CARTWRIGHT: Well, to illustrate the changes in the general service rate which is an averaging method of billing customers, it's not a utilization method like there is in the demand billing portion, we have before us there the average unit cost at 500 kWh in 1974-75 — 4.2 cents per kWh; 1975-76 — 4.47; 1976-77 — 5.07; 1977-78 — 5.10.

I'll jump from there to 5,000: at 1974-75 it is 2.13; 1975-76 — 2.64; 1976-77 — 2.85; 1977-78 — 2.92.

I'll jump to 20,000: in 1974-75 — 1.83 cents per kWh; 1975-76 — 2.06 cents per kWh; 1976-77 — 2.19 cents per kWh; 1977-78 — 2.36 cents per kWh.

From there I'll jump to 70,000 and I must comment here that the customer would not, under our present rate applications, qualify for this rate at 70,000 kWh. Normally, he would not qualify for the rate. For somewhere in between 15,000 and 20,000 kWh, he would go on to the power rate. So at 70,000 kWh: 1974-75 it was 1.52 cents per kWh; 1975-76 — 1.73 cents per kWh; 1976-77 — 1.84 cents per kWh; 1977-78 — 2.10 cents per kWh.

MR. BATEMAN: Well, I think, Mr. Chairman, that concludes the questions that I had noted at our last meeting of the committee and if there are no further comments about those items we have presented this morning, then we can, at your discretion, Sir, proceed with other matters.

MR. CHAIRMAN: Mr. Lyon, have you a question on this matter?

MR. LYON: No, Mr. Chairman, I have no further questions on demand metering for the continuity of the records. I presume that the tables that Mr. Cartwright has showed us will be included, as the tables were last week.

MR. CHAIRMAN: Mr. Minaker do you have a question on this?

MR. MINAKER: Yes, Mr. Chairman, I wonder if Mr. Cartwright could advise what the load factor would be for a rink? If I understand Mr. Cartwright correctly he said that it applied both to an annual load factor or a monthly, and I presume the computer, when it calculated out these costs, assumed so much power used over a period of a year and then took an average peak, and then got the percentage of power used and the load factor used. Now, would you know what the load factor of an average rink would be?

MR. CARTWRIGHT: No, I don't have that information, but if you will turn to the Sample A that we showed last week, I think I can demonstrate there how this is done.

If you take Sample A, we had — possibly, Mr. Chairman, you could put Sample A on the screen. To illustrate how you calculate load factor for a month . . .

MR. MINAKER: Well, Mr. Chairman, I understand how you calculate load factor, I'm just asking if Mr. Cartwright knows what the load factor of an average rink is?

MR. CARTWRIGHT: No, I do not know the answer to that question.

MR. MINAKER: Mr. Chairman, would Mr. Cartwright assume that it would be less than 20 percent?

MR. CARTWRIGHT: For the 33 rinks that have lower rates on demand than if they were on general service, I would assume that they are in excess of 30 percent. Some were in excess.

MR. MINAKER: Mr. Chairman, I am asking Mr. Cartwright, on an annual basis, not on a monthly basis, would the load factor for the year be less than 20 percent? Because if we assume that a rink stays open for six months of the year, even if it operates on 100 percent load factor, which is very unlikely, you would be looking at the best a 50 percent load factor. So if we assume that they are operating under normal conditions, maybe at a 50 percent load factor, you are looking at 25 percent for the year because of the fact they're closed down for six months of the year.

MR. CARTWRIGHT: We could calculate this one if you like and come up with something. We would take the total consumption, 470,400, and divide it by the maximum demand for the year times the number of hours in a year, 8,760. Now, I would presume this one, because in this particular rural station . . .

MR. MINAKER: What was the peak on that?

MR. CARTWRIGHT: The peak was established in February and it was 204 kVa.

MR. MINAKER: Mr. Chairman, what was the total — I don't have my glasses so I can't see that far.

MR. CARTWRIGHT: The consumption.

MR. MINAKER: The total consumption for the year.

MR. CARTWRIGHT: Four hundred and seventy thousand four hundred. Peak demand two hundred and four kVa. It is a yearly billing so it would 8,760 hours.

MR. MINAKER: Mr. Chairman, while I am looking at this, I wonder if Mr. Cartwright could advise the Committee what is the average demand, the peak demand, for a curling club — I'm thinking of an average six-sheet rink in the country that would have a single compressor or two compressors, is it 55 kVa or 100 kVa?

MR. CARTWRIGHT: Well, this particular illustration here, I think, is fairly average, and you will note that the maximum demand here was 204, and if you add up the loads you will get the total

connected load in that particular establishment.

MR. MINAKER: That is all the questions I have at this time, Mr. Chairman.

MR. CHAIRMAN: Thank you. Thank you Mr. Cartwright. Are there any other questions that you had to answer Mr. Bateman.

MR. BATEMAN: No, I think we have concluded the outstanding questions, Mr. Chairman.

MR. CHAIRMAN: Thank you. We can then proceed with the people that I had on the list from the first meeting, Mr. Johannson.

MR. JOHANNSON: Thank you, Mr. Chairman. Some months ago Mr. Bateman there were a series of articles carried in the Winnipeg Free Press, I believe, written by one, Wally Dennison, and parts of these articles, at least some of them, were on the front page of the paper, presumably indicating that they contained news. Did these articles really contain anything new, any real news, Mr. Bateman?

MR. BATEMAN: Well, I find that difficult to answer. I think you might call it news to the extent that some of the claims were new to me, but as far as news, I think I will leave that to the public or the politicians to determine that.

MR. JOHANNSON: Did Mr. Dennison consult you at all before he wrote these articles, did he ask any questions of you?

MR. BATEMAN: No, Mr. Dennison did not consult me, and to put the record straight, he advised our Public Affairs Officer, I believe, one or two days ahead of the time that those articles were to appear in the paper.

MR. JOHANNSON: So he never asked yourself . . . Did he ask the top management of Hydro for any information prior to writing this series of news articles in his paper?

MR. BATEMAN: Well, as far as I am aware he didn't, but we have a number of senior officers of the corporation here today, and any of them that are here, if they had been asked that information, or any information, by Mr. Dennison, in the preparation of those articles, I'd be glad to let them advise the Committee right now.

MR. JOHANNSON: Did Mr. Dennison make use of the very extensive library that Hydro has available for the public, to your knowledge?

MR. BATEMAN: Well, I can't answer that definitively. He may have visited our library — I could quickly ask the librarian we have on duty to determine whether Mr. Dennison identified himself. You see, we have a number of people, contrary to the policy adopted by the two newspapers that now have a closed library, you can't go to the Free Press Library and get information out of their library, but you can go to our library and get information out of it. Our librarian will gladly give you information if it is a *bona fide* question. My understanding is that both newspaper, now have a closed library; they found it too costly to maintain that service.

MR. JOHANNSON: I see.

MR. BATEMAN: We believe a library is a very important part of the operation of Manitoba Hydro in that it provides our staff with very valuable information about current items that are going on within the country that may have a bearing upon the work that we are doing.

MR. JOHANNSON: That is rather interesting. The Manitoba Hydro has a library open to the public and the Free Press has a closed library. Now, Mr. Bateman, I would like to get on to one of the major concerns that has been placed before the people of this province by the Conservative Party. I quote a newspaper article, the Tribune, Tuesday, January 25, 1977: "Mr. Lyon charged that the annual rate increases," that is Hydro rate increases, "were the inevitable result of the mismanagement and political interference with the affairs of Hydro under the Schreyer Government."

Now last year before the Public Utilities Committee, Mr. Bateman, Mr. Green asked you a question and I would like to quote the question to you and your response, and this is from June 1, 1976, the excerpts from the hearings of the Standing Committee on Public Utilities: "Mr. Green: Mr. Chairman, a little earlier it was indicated that there is no criticism of Manitoba Hydro expertise, its officials, its staff. My understanding is that the Manitoba Government asked that the Manitoba Hydro calculate an allowance for the resource value that would be affected by the Churchill River Diversion. Other than that, are all of the decisions that have been made to proceed in the way in which you have been proceeding, entirely consistent with the officials, the expertise, and the staff and the program planning of Manitoba Hydro? — Mr. Bateman: Yes." Does this answer of yours still stand today?

MR. BATEMAN: Absolutely. There is no question in my mind at all but in the review of the resource values and don't forget Manitoba Hydro hired consultants to obtain the best engineering and ecological environmental social, recreational and other factors. The advice in those areas were obtained from a consultant who hired the best people in North America to get that type of information, so we could apply some realistic values to those other factors in the evaluation of the effect of raising the water of Southern Indian Lake.

MR. JOHANNSON: Mr. Bateman, would you consider a threat to replace the top management of Hydro as an act of political interference?

MR. BATEMAN: Well, I think that's an unfair question, but I must point out that the top management of Manitoba Hydro is engaged by the Board of Manitoba Hydro. The Board is in turn appointed by the government by Order-in-Council. Now, I think that in the true tradition of British

parliamentary practice the paid arm, if you like, the Civil Service and I'm likening Manitoba Hydro Staff to Civil Service in this example, although they are not under the same rules entirely because they do report to a Crown agency which operates under statutes which are approved by the legislature.

Nevertheless, within that tradition of British parliamentary practice and Canadian parliamentary practice, I think that normally the politicians can argue and if they criticize a member of the Civil Service, the Deputy Minister or the head of a Crown Corporation, then in the true spirit of British parliamentary practice, the Minister responsible for the utility should defend the Deputy Minister or the Crown Corporation, and I think that's the procedure that we have followed. We have very specifically avoided entering into what I think you are referring to as a political controversy relating to the development of Hydro resources in this province. I think that my own advice would be that the sooner we quit arguing about how we are developing them and start bragging about the fact that we have them, and how valuable they are to the province, the better it will be for all Manitobans, and particularly the staff of Manitoba Hydro.

MR. JOHANNSSON: I entirely agree with your sentiments, Mr. Bateman, but the Opposition obviously doesn't. Did our government, the present government ever threaten to replace the top management of Hydro Hydro?

MR. BATEMAN: Not that I am aware of Mr. Johannsson.

MR. JOHANNSSON: Not that I'm aware of either. I want to read again from this article, The Tribune, Tuesday January 25, 1977, and this is a quote from Mr. Lyon, and I quote: "He added that if the Conservatives form the government after the next provincial election he will examine the possibility of replacing the senior management personnel of Hydro."

Now, Mr. Bateman, in my view that is pretty blatant political interference in the affairs of what I consider a great Crown Corporation. Would a threat like this affect the morale of the corporation?

MR. BATEMAN: I think I'd be wrong in saying it wouldn't affect the morale of the corporation.

MR. JOHANNSSON: Yes. Is this kind of threat consistent with the political tradition in this province and in the British parliamentary system?

MR. BATEMAN: No, but we must recognize that again the government appoints the Board and, as Chairman of the Board, I'm subject to appointment by the Lieutenant-Governor-in-Council.

MR. JOHANNSSON: I want to move on to another point that has been made by the Opposition, and I would like to again quote something that was said in last year's Public Utilities Committee. Again I would like your confirmation on this. April 13th, 1976, Public Utilities Committee: and I quote Mr. Green, "Well, then I want to put this quite plainly because I want to — and if it is wrong, Mr. Bateman, and if there are credible engineering authorities criticizing you it wouldn't be unusual, that is true in any profession — but again, are you aware of any credible engineering advice to the effect that we are wasting between \$200 million and \$400 million on the existing program for the development of the Nelson River." Mr. Bateman: "No, I am not."

Now, does your answer to that still hold?

MR. BATEMAN: Yes, it would still hold.

MR. JOHANNSSON: The anti has been upped, Mr. Bateman. Now you are accused, Hydro is accused and the government is accused of wasting \$600 million, — Oh, \$605 million, I'm sorry — it's going up still more, next week it's going to be \$800 million. Can you tell the Committee if there is any credible engineering advice to the effect that Hydro is wasting \$600 million or more on the existing program for the development of the Nelson River.

MR. BATEMAN: I'll have to refer you to the transcript of the first hearing of this Committee where your Premier asked that same question and I gave a rather extensive answer. I don't think it necessary to repeat it at this point if that's agreeable to the Chairman.

MR. JOHANNSSON: Yes, I've read through it, but Mr. Bateman, I'd like a little more detail please. The Leader of the Opposition, in his statement on the Throne Speech, claimed that Hydro was wasting \$600 million dollars and he went into some specifics. He said, for example, that Jenpeg, and I'm quoting from page 29 of Hansard of this Session: "Jenpeg and Lake Winnipeg controls won't work very well and we didn't need them in the first place." Mr. Speaker, my honourable friends opposite want some demonstration, which I know they've had, of the \$600 million of waste. Well, they can just start with Jenpeg and the Water Control at the top end of Lake Winnipeg, both of which are in excess of \$300 million and neither had to be built, and that's an example of \$300 million of waste. I'm concerned about this because I am a member of the Legislature and I am accused also' of wasting \$600 million of the people of Manitoba's money.

The assumption to my mind in this statement is that Lake Winnipeg Regulation and Jenpeg have no economic value at all. Would you spell out for me the economic benefits, the values of Lake Winnipeg Regulation and Jenpeg?

MR. BATEMAN: Well, I could spell them out for you. The values of Lake Winnipeg regulation go back to the time when this country experienced its first flood, after the twenties when we had some flooding in 1916 and 1920. I think the flood of 1927 was the last major one. In 1950 there was a major flood.

The government of the day appointed a Lakes Winnipeg and Manitoba Flood Control Board to examine how to control the flooding on Lake Winnipeg. That Board concluded, among other things, that it was too expensive to control Lake Winnipeg for flood purposes until you could bear the cost of that flood control measure on power development on the Nelson River. Now, in the 1960s when the government of the day worked with the federal government to study, and share the costs of those studies, on a loan basis to Manitoba, to determine whether or not the Nelson River was a viable economic source of power for Manitoba. The emphasis of that study board's report, again is contained in a report that you have access to — it's the Programming Board Report — and the Programming Board Report emphasized the value of power and did not mention flood control on Lake Winnipeg. The solution was dictated by the power benefits. The solution was to pump the water out of Lake Winnipeg on the low end and pump out the additional water needed under ice conditions in the winter time to get the water that would justify the regulation of Lake Winnipeg.

Now, in 1969 Manitoba Hydro had indicated a delay, in Lake Winnipeg to 1978, was possible with a high level diversion. That was in service in 1978, looking at the load growth that was occurring in 1968 that appeared like a reasonable thing to do. In 1970 the rate of load growth in this province was significantly higher than was used in the Programming Board Report studies. Consequently it became imperative, and I mentioned this in the forward to the Task Force Report that I was the Chairman of, I mentioned that it was imperative that we protect the integrity of the power supply to this province by having these projects in place in time to meet the anticipated load that we were postulating based on the rate of growth that was occurring. I outlined what the year's growth had been. It was almost double what the programming board report had assumed. The program board had said, and it is very clear in the tables and charts in this report and the studies that were done to support that report, that when the load on the Manitoba system reached 8.8 billion kWh, it would be necessary in order to supply it to have Lake Winnipeg and Churchill River diversion in service. Now this year the load on the Manitoba Hydro system is just in excess of 12 billion kWh. That is significantly above the load that was assumed to be the case in the programming board report when both these projects would be necessary.

Rather than argue about which one should have come first, it happened to be by chance that the accomplishment of the Churchill River diversion was thought by the engineers and the programming board to be more easily accomplished, but I am sorry to say that that has not turned out to be the case. It has turned out to be the more difficult to accomplish.

The Lake Winnipeg regulation project which was put into place first on the recommendation of the board of Manitoba Hydro turned out to be more easily achieved than the Churchill River diversion. And it is very imperative to the system that we are supplying power from this next winter that we have both those projects in place and operating at full capability or we will not be able to supply the firm load next winter. It is as simple as that, gentlemen. And all the engineering studies that have been done before, that have been done now, and that will be done tomorrow proving one way or the other whether what has been recommended and what has been proceeded with is right, will justify the course of action that Manitoba Hydro has taken.

MR. JOHANNSON: Mr. Bateman, in the first presentation you made before the committee this year, you stated, I believe, the Lake Winnipeg regulation enabled Hydro to put 50 percent more water through the Nelson River plant. Am I stating your position accurately?

MR. BATEMAN: Yes, I think that that states it reasonably well. I showed the committee the picture of the two-mile channel in operation and that channel is a significant channel; it was carrying, last winter, 30 times as much water as was flowing down the Red River last winter. Now without that channel, the Warren's Landing Channel which is the natural channel, with the low level of Lake Winnipeg, would have produced something in the order of 30-odd thousand cubic feet per second. This is a very complex hydraulic system from Lake Winnipeg to Jenpeg and I couldn't, and I don't think any engineer other than being able to refer to specific measurements in a point in time, can tell you precisely how that flow is going to divide in those multitude of channels. We are actively measuring those channels this last winter to try and determine how close the actual project as completed came to the design criteria that we laid down for that job and we feel that some of the channels are performing better than we had thought they would and others are performing worse than we thought they would. But give us another year or two and we will be able to tell how that job relates to what we designed.

But with 30-odd thousand in the estimated normal outflow from Lake Winnipeg and getting close to 30,000 out of the two-mile channel, we had in excess of 50,000 and this has been dropping off a bit as the ice formation occurred during the winter, but we have had enough water to supply the generation installed at Kelsey and just about all of Kelsey. There has been no spilling at Kelsey since late last fall and so therefore we have used all the water there out of Lake Winnipeg.

Now if it had been a state of nature, we would perhaps have been back to where we were in 1961 when the International Nickel established a multi-million-dollar investment in the Town of Thompson. Manitoba Hydro was asked to provide power for that development. We worked on the Kelsey plant and had it ready to supply power, despite the disastrous fire we experienced during the

construction phase, we were able to supply power to Inco and the Town of Thompson in June of 1960, which was when we had contracted to supply it.

In 1961 the flow on the Nelson River got down to around 28,000 cubic feet per second. It would have been impossible to supply the load that Inco had contracted for if they had geared up their requirements as they had thought they would. It was only by a fortuitous situation that Manitoba Hydro did not have to ration power in Thompson or to Inco in 1961.

Now you know you can't make power out of waterwheels that haven't got water to run them. You have got to have the water. And the Lake Winnipeg control this winter has provided the water for Kelsey plant at full capacity which it wouldn't have done because Lake Winnipeg is worse this year than it was in 1961. records will show you that. So I think summing it up, it is essential to the integrity of Manitoba Hydro and the Province of Manitoba that we have both these projects in service for next winter at their full capability based on the present estimated water available.

MR. JOHANNSON: I gather that, I am under, at least, the impression that, in Ontario there may be power rationing next year. Is this accurate?

MR. BATEMAN: Well, no, I don't think that is likely to happen unless they have some major catastrophes again such as they almost had last winter. They have had some difficulty in the northwestern system. We have a contract with them to supply them 150 megawatts next year and we have transmission capability that would provide more than that and if necessary we could buy power from the Americans and sell it to Ontario, as we were doing on occasion last winter.

MR. JOHANNSON: Can I get one thing very clear. I am a layman, I know very little about hydro engineering. If Hydro had proceeded only with high-level diversion, could they have guaranteed the integrity of the power supply?

MR. BATEMAN: No, we could not have guaranteed the integrity of the power supply with only high-level diversion with the current flows that are available in the Nelson River and knowing what we know today about the difficulties that we have run into in the mitigation works on the Burntwood route. There are far more difficulties that we have encountered than we knew about in 1969.

MR. JOHANNSON: I believe you made the point at the first meeting of this committee this year that the cost of power at Jenpeg would compare favourably with any future plant on the Nelson. The Conservative Party has been saying that Jenpeg is a total waste of money and they are making the claim that, I believe I am accurate, it is a waste of \$150 million. Is this an accurate statement?

MR. BATEMAN: Well, I would say as I said before, Jenpeg will provide us with close to a billion kWh a year of energy. You can assign what value you like to it. That is the value it is going to be worth to us. It is going to be worth close to two cents or more a kWh in this system of ours. significant number of dollars, each year.

MR. JOHANNSON: So it is worth a significant number of dollars to Hydro?

MR. BATEMAN: And on top of that it will be cheaper if we are going to continue to experience the inflation that we have before us now and there is not much sign of letting up. The energy from the next Nelson River plant will cost more than the energy from Jenpeg.

MR. JOHANNSON: So then in your opinion the charge that \$300 million has been wasted on Lake Winnipeg regulation and Jenpeg doesn't make much sense?

MR. BATEMAN: Well, in my opinion Manitoba has a bountiful water resource. Part of it happens to be associated with Jenpeg. If we are going to use that water resource and use it effectively to Manitoba's benefit, then for heaven's sakes let's get on with the development of it and quit arguing about how and when.

MR. JOHANNSON: I agree with you again, Mr. Bateman, but unfortunately I cannot control the behaviour of the opposition.

The Leader of the Opposition also stated, Mr. Bateman, that Hydro has wasted \$130 million on the Churchill River Diversion because the costs, and I quote him from Hansard again, "escalated from \$45 million to \$175 million." Did Hydro waste \$130 million on Churchill River Diversion?

MR. BATEMAN: No. Hydro happens to be caught in the same spiralling cost situation that all other utilities are caught into. I think I have a reference or two here about the increased costs in other utilities. B.C. Hydro, for example, their costs are going up very comparable to ours. Quoting from Quebec Hydro's Prospectus for the \$250 million loan that they put out last fall, September 1976, they make some interesting comments about how costs are affecting them. For instance in 1972 in order to meet the estimated in demand for electricity in Quebec, a decision was made to construct four generating stations on the La Grande River with an installed capacity of 8,330,000 kilowatts estimated at \$5.8 billion. That's based on 1972 costs. In 1974 the project was increased by approximately 2,000,000 kilowatts up to \$8,330,000, and was estimated at \$11.9 billion dollars based on the then current costs, an assumed average inflation rate of seven percent and an assumed average cost of funds of ten percent for the years 1974 and 1975. Labour and material costs in Quebec increased 19 percent and 21 percent, respectively, as compared with increases of 17 percent and 16 percent for hydro-electric construction in Canada as a whole, taking all provinces into account. So in August of 1976 the estimated cost of the project with a current planned capacity of

approximately 10,190,000 kilowatts was revised to approximately \$16.2 billion including \$1.3 billion for technical changes, improved living conditions for workers, and higher environmental standards. The revised estimate includes an increase in the provision for inflation of \$2.4 billion, consisting of \$1 billion for the additional increase in current cost since 1974 and \$1.4 billion for an increase in the assumed average annual inflation rate to eight percent for the period 1976 through 1985. And they have assumed 9.9 percent for 1976, 8.7 percent for 1977, and declining thereafter to 6.1 percent for 1985.

Now the cost of that project is going to be entirely dependent upon the rate of inflation and in our case we have assumed certain inflation rates ourselves.

Well, we haven't wasted any money, we've just been caught in the same problem that has affected everything else in Canada. We, I think, have done some of these things as economically and efficiently as it is possible to do anywhere in Canada. And as a matter of fact if you compare the 1977 to 1979 costs for Long Spruce which is going to be close to \$500 million — our estimate was \$501 million — we hope we can beat it but we're on target with it at \$501 million now, first power expected this summer, and if you compare that on a unit cost basis with Kettle we have actually built — and I think Mr. Wilson, the director of our Generation Projects Division, would concur with this — we have actually built the Long Spruce Plant more economically than the Kettle Plant. And the reason is that we've got some experience. We know what the pitfalls are. This is the second one we've built. And on the same basis when we build Limestone which is presently estimated to cost \$1.1 billion for in service in 1983 through 1985, that on a per unit cost based on 1970-72 dollars is cheaper again than Kettle. It's inflation that has affected our costs but one of the important points to remember, we, in Manitoba, although we're paying more money to develop these plants on the Nelson River, and they're going to cost us money, we know from then on what the cost is going to be for energy. We fix the cost. Once you close all the contracts, finish the job, and close your books on the cost, you know then what the cost of power is going to be. All it's going to do in the next sixty-five years is decrease down to be some of the lowest cost energy anywhere in the world. That is the advantage of a hydro system.

Where else in the world can you say that that's going to be the case, except in the provinces in Canada like Quebec, Manitoba and B.C. where they have hydro resources yet to develop. Anywhere else you're going to be tied to the price of oil, and gas is going to follow and costs are going to go up. We're going to be in a preferred position. In a few years, I would wager that Manitoba Hydro rates won't be second on that chart I showed you last week, they'll be first. They'll be the lowest rates in Canada.

MR. JOHANNSON: Mr. Bateman, I happen to be proud of the performance of Manitoba Hydro but, as I say, it's a bit difficult for me to control the behaviour of the opposition.

Over the past couple of months there have been three pieces of literature distributed in my constituency all of which accuse Manitoba Hydro of wasting millions of dollars, and the last piece just was delivered to my door yesterday. It says, and I quote, "This is not your hydro bill. Thank heavens. But this letter has a lot to say about how much electricity is costing you." And it starts, "Dear Hydro Customer: In the last eight years Hydro has wasted more than \$600 million."

Now, Mr. Chairman, as I say, I am proud of the performance of Hydro and I am confident that the future will prove Mr. Bateman correct, but I cannot control the behaviour of the Official Opposition. Thank you.

MR. CHAIRMAN: Mr. Dillen.

MR. DILLEN: Yes, Mr. Chairman, I want to follow up on a couple of things that were said by the Chairman of Manitoba Hydro and through you I would like to ask the Chairman of Manitoba Hydro if he feels that since through the parliamentary process that he has no recourse but to come forward or bring information to this committee and he also, you know, believes that his position has to be protected and defended by the Minister responsible for the Utility, whether or not there is not one other recourse available to him and that is through a legal process, in order to have the false accusations and the integrity of the entire engineering staff of Manitoba Hydro brought into question; whether or not he feels it important enough to pursue that issue through the courts.

MR. BATEMAN: Well, Mr. Chairman, I don't think it important to pursue it through the courts. I think that the staff of Manitoba Hydro are a dedicated group of people. We've had the questions at this committee and Mr. Craik, who unfortunately is not here today, has assured us that he is not questioning the integrity of the engineers of Manitoba Hydro. The Association of Professional Engineers have likewise indicated that the engineering work that the engineers of Manitoba Hydro have done is without question professional engineering work. Now I think that the staff, fortunately, are dedicated enough to serving the citizens of Manitoba that as long as they feel what they're doing is right they're going to keep on doing it.

MR. DILLEN: But they're continuing to do this, and I respect them for it, in the face of growing opposition from, I suppose . . .

MR. CHAIRMAN: Mr. Dillen, I do not know if this is the kind of question that you should be proceeding with. I don't see the relevance of it directly with the Annual Report. Could you have

questions on the matters before us. You're trying to enter into debate that I think you can go into in the House, in the Legislature.

MR. DILLEN: Well, I want to rephrase the questions then. Because the accusations that are being made, Mr. Chairman, are in direct contravention of the report that was put forward to this Committee, there is reference being made to a tremendous waste of money and the people in the country are now coming forward and saying there has been no response, no response from the professional engineering staff or the Professional Engineering Association, to the wild accusations of \$600 million in waste.

MR. CHAIRMAN: Mr. Dillen, again, I cannot see how it is possible for the staff to come out, and some statements which are made in the House, in the Legislature, to come to be able to respond to those statements. We are dealing with the annual report. Would you please direct questions on the matters before us. We cannot see how the staff of Manitoba Hydro can get into that type of public debate.

MR. DILLEN: I'll only ask questions that are of interest a little bit closer to home. Is there a possibility that we may get an update on the work that is being done on the Burntwood River in the area of Thompson?

MR. CHAIRMAN: Mr. Bateman.

MR. BATEMAN: Yes, Mr. Chairman, we can have some information for the Committee on that. Perhaps we could ask either Mr. Tishinski who has been the director of System Planning up until April 1, and is now director of System Operations. We've rotated these three senior people within the organization for additional training, but perhaps Mr. Tishinski, you could report, if you'd take a seat and tell the Committee what work has been done in the last year or is currently being done on the Burntwood River.

MR. CHAIRMAN: Mr. Tishinski.

MR. TISHINSKI: We're currently reviewing the Hydro potential on the reach of the river from Notigi to Sipiwesik Lake. In the earlier reports, there were three plants which were identified as potential hydro sources, this was at Wuskwatim and Manasan and First Rapids. We are now re-examining the reach and . . . to backtrack a bit, and there seems to be no alternatives to First Rapids as far heads and the size of plant is concerned, and we're now engaged in the conceptual stage and preliminary design work to proceed with that plant. But in the stretch in the reach between Notigi and Thompson, we are carrying out further studies to determine whether it would be desirable to build three plants rather than two. In other words, instead of Wuskwatim and Manasan being the only plants in that stretch, we might build an additional plant with lower heads and less associated flooding. Now these studies are currently in progress.

MR. DILLEN: For Wuskwatim and Manasan Falls?

MR. TISHINSKI: Yes. Now we are examining an area which is called, another site which is called . . . Falls and if a third plant was established there, this would make the head at Wuskwatim and Manasan lower than what had been envisaged to date.

MR. DILLEN: But there is still active consideration being given to the establishment of yet another plant at First Rapids, or has that been set aside.

MR. TISHINSKI: Well, no. First Rapids is a viable plant site and we're considering that as well, yes.

MR. DILLEN: At what stage of Hydro development will the possibility of those plants come into being?

MR. TISHINSKI: The next plant that will be coming in line would be Limestone as Mr. Bateman had mentioned, and the alternatives are still wide open beyond Limestone. And we feel that with the current rate of load growth that we would have to bring in another plant, at the earliest 1986 and possibly, 1987. And at that stage, it could be one of the plants in the Burntwood River or a plant downstream from Limestone, which is Conawapa. So that decision has not been made and these studies are presently in progress. One of the reasons that we are doing these studies on the Burntwood River is to get a better handling cost. A lot of these costs now are out of date, they're about 10 years old and with more experience in the northern country, we feel now that we should redo these costs, re-examine our concept and having better costs, we can make a better decision on what is the most economic plan to follow Limestone.

MR. DILLEN: There is very much work being done in the Thompson area now that's been ongoing for about a year and I would like to have, for the record, a description of what is occurring from Manasan Falls through the area of Thompson, starting perhaps with the pumphouse and pumphouse relocation, pumphouse protection and so on.

MR. CHAIRMAN: Mr. Bateman.

MR. BATEMAN: Well perhaps, Mr. Chairman, we can relieve Mr. Tishinski, that's out of his area and perhaps we could ask Mr. Harris Wilson who is the director of Generation Projects to come forward and give the Committee an update of that information of the work that's going on on the Burntwood River.

MR. CHAIRMAN: Mr. Harris Wilson.

MR. WILSON: Mr. Chairman, the areas of mitigation on the Burntwood River in the Thompson

area are basically a pumphouse, the new pumphouse being built at Thompson by Peter Leitch Construction, the construction work is proceeding well, the sheet steel piling that has been installed to protect the pumphouse location is to the elevation where it will not interfere with our projected increased flow of the Churchill River Diversion this coming summer. So we will be able to cope with that in that area. There is a new pumphouse being constructed at the Birch Tree Mine location, serves the Birch Tree Mine. Again it's being built by Peter Leitch Construction. That construction work is proceeding well and our schedule indicates there will be no problem with our summer diversion flows in the Churchill River this summer in that area.

We have undertaken to relocate the float plane bases of the Manitoba Government Air Division facilities at Thompson and Lambair facilities and Northland Air All that work is under way. Again it is basically 95 percent complete now and we see no problem with a holdup in that area that would prevent us from increasing our Churchill River Diversion this coming summer.

There has been some reconstruction work in the area of Thompson, some diking, some diking in the vicinity of the cemetery in Thompson. There's various miscellaneous works there going on, and that is virtually completed. I think that covers fairly well the areas where work is under way in the immediate Thompson area.

MR. CHAIRMAN: Mr. Dillen.

MR. DILLEN: Could I ask you if any arrangements are being made with the Water Ski Club for any assistance. They use the area of the river in vicinity of the pumphouse.

MR. WILSON: Yes, we've had discussions with them and there has been a satisfactory arrangement made with the Water Ski Club.

MR. DILLEN: You now have an agreement with them?

MR. WILSON: I don't have the details of that but I am aware that they have spoken to the club and that there is no area of conflict there. We're going to look after some improvements for the relocation of some of the facilities.

MR. DILLEN: Right now, there is an area of Thompson that I'm getting questioned on, and that is an area on the north . . . I am sorry, northwest slightly of the airport beyond the sand or the gravel pit beyond the airport. There seems to be a tremendous amount of clearing and raising of the road. Is that in relation to the flooding?

MR. WILSON: It is in relation to the increased flow of the Churchill River diversion. There are some areas of highway grade has to be raised. that have to be raised, the They're working on that now.

MR. CHAIRMAN: Mr. Bateman.

MR. BATEMAN: I believe, Mr. Chairman, that's where the Churchill River water in the Burntwood will raise the backwater effect on the Birch Tree Creek which flows up around, through the highway there and off the end of the runway of the airport.

MR. DILLEN: I see. I want to ask how many cubic feet per second has the flow been increased over the winter?

MR. WILSON: Well the present flow through the Notigi control structure is 11,000 cubic feet per second.

MR. DILLEN: And that will be increased. . . ?

MR. WILSON: The plan is to increase that to 20,000 when the ice comes off the river. And we anticipate 30,000 by November of '77.

MR. BATEMAN: That has been basically flowing, Mr. Chairman, at the 11,000 cfs all winter long.

MR. DILLEN: Can you give us an estimate of the cost of mitigation, the cost to Manitoba Hydro for mitigation in the Thompson area?

MR. WILSON: I'll just get my records. Mitigation works aren't broken down into the immediate Thompson area. I'd have to refer to the details, but our current estimate for mitigation works is \$21,221,000.00.

MR. DILLEN: That's on the Churchill Diversion only or does that include mitigation works with respect to Lake Winnipeg regulation.

MR. WILSON: No, this is Churchill River Diversion only figures I'm giving you. In that figure will be mitigation works at the Town of Churchill itself, on the Churchill River. So these mitigation accounts — there are probably 30 or 40 different sub accounts in this and I don't have that detail available.

MR. DILLEN: Can you possibly give us an update of what is occurring at Nelson House at the present time?

MR. WILSON: Well at the present time at Nelson House, within a week there will be tender closing for the reconstruction of the highway into Nelson House. We're undertaking building houses. The community at Nelson House, the band there are doing some clearing and there's clearing going in the Footprint River. Basically that's the main item.

MR. BATEMAN: Mr. Chairman, perhaps I could just enlarge upon that briefly. The Band Council has passed resolutions requesting the elevation increase on the road which would contemplate the higher water levels of Footprint Lake. They have also passed a resolution on the school water pumphouse intake which will be improved. I think those are just supplementary comments.

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MR. DILLEN: Is there any discussion going on with respect to the transfer of land or any other discussions with the Band itself?

MR. WILSON: Well, I'm in the area of construction and those discussions would be outside my area.

MR. DILLEN: We'll carry on then with construction and costs. I understand there is a certain amount of difficulty with respect to the mitigation work that is occurring on the Churchill River Diversion with respect to a 35,000 cubic feet a second flow. I want to ask you if you can give an estimate of the additional costs and impact of a flow that would have exceeded 50,000 cubic feet per second?

MR. WILSON: As it refers to mitigation work?

MR. DILLEN: Yes.

MR. WILSON: I couldn't speculate on that off the top of my head. You'd have to study the various flows and stages. There are some detailed cost studies done but I couldn't give it to you off the top of my head.

MR. DILLEN: But the impact would have been far greater at 55,000 than it would at 35,000.

MR. WILSON: It would be greater. I don't know how much greater.

MR. CHAIRMAN: Mr. Lyon.

MR. LYON: Thank you, Mr. Chairman. I'll forewarn Mr. Bateman I have a number of questions that will probably extend beyond today's sitting. So if he wanted to make himself more comfortable, he's quite free to do so.

MR. CHAIRMAN: Proceed, Mr. Lyon.

MR. LYON: Mr. Chairman, first of all I'll ask a question of Mr. Bateman with respect to certain projections which I presume he won't have at his hand at the present time, but if he could obtain them for the next or a subsequent meeting of this committee it would be helpful.

Could we obtain ten-year projections of revenues and costs for the period 1969 to 1979 and also for the current period, that is 1977 to 1987?

MR. BATEMAN: I'll undertake to provide that information when the Committee meets next.

MR. LYON: Thank you.

MR. BATEMAN: I'm not sure, I'm just trying to visualize what you mean by the '69 projection. What you're asking for there is the '69 dollars as contained say in our ten-year capital budget program.

MR. LYON: A ten-year period with your revenues, your capital . . .

MR. BATEMAN: Wouldn't have included inflation of course in 1969. That was prior to inflation occurring, so those costs would look quite different than they would say now.

MR. LYON: Well I'd take it, Mr. Bateman, you can build in whatever . . .

MR. BATEMAN: No, we'll put them in the dollars of the day and as long as you and the Committee recognize that they are in the dollars of the day that, I think, is the important point.

MR. LYON: Now, Mr. Bateman, just a few questions arising out of some of the examination, some of the answers that were given this morning before we move on to other areas. I have in my file, somewhere, a list of the proceedings before the Water Commission in 1969 at which time, I believe, you were the General Manager, or Assistant General Manager of Manitoba Hydro. During the course . . .

MR. BATEMAN: Not in those days, Mr. Lyon. For the record, I believe I was Director of System Planning. In August of 1970 I believe it was, the Board appointed me as Assistant Chief Engineer as a successor to Mr. Storey who was to retire in early '71.

MR. LYON: In those hearings before the Water Commission in 1968 and the first half of 1969, you I take it were one of the principal witnesses on behalf of Manitoba Hydro, defending the concept of what was then the program of Manitoba Hydro for the high level diversion and the Churchill River Diversion and that sequential development.

MR. BATEMAN: Which hearings are you referring to? The Lake Winnipeg hearings?

MR. LYON: No, public hearings. Mr. Weber was I believe the Chairman of the . . .

MR. BATEMAN: Oh yes, yes. That was the hearing authorized by the Minister of Natural Resources into the application that was before the Minister for a license to develop the Churchill River. Right.

MR. LYON: I'm not trying to put words in your mouth. If I'm wrong I'm sure you'll correct me. You were at that time advocating the high level diversion of the Churchill River and that sequential development which had been part of the planning of Manitoba Hydro for some six or seven years.

MR. BATEMAN: No, not six or seven years, because when I was appointed Director of System Planning in May of 1967 Manitoba Hydro was not in a position to define what level diversion was going to be undertaken. I was a strong advocate. I saw benefits in a high level diversion and I did recommend a high level diversion, but the high level diversion that I recommended did not take into account any of the resource, recreation or social benefits that were part of the studies that were done subsequently.

MR. LYON: Nonetheless before that Commission you were one of the principal advocates of that case for the sequential development that had been announced by Manitoba Hydro by Mr. Stephens

before this very Committee in 1966.

MR. BATEMAN: No, I'd like to correct that. The Premier of the Province of Manitoba, Mr. Roblin, announced in the House, in the Manitoba Legislature, the plan that was contained in the Programming Board Report which did not define the level of Churchill River water diversion. It indicates in that Programming Board Report — and I'd commend you to read it — that there were benefits to be achieved by getting a higher flow down the Burntwood River. And those same benefits are there today. There are benefits to be obtained by a slightly higher flow down the Burntwood River providing we don't have these ice problems and so on. Now the scheme that I was recommending in all its simplicity did not have the engineering background that was necessary in order to make what I would call good engineering judgment in those days.

MR. LYON: Mr. Chairman, Mr. Bateman nonetheless — and we can produce those records if it's necessary — nonetheless I think it's a safe generalization to say that you were an advocate of that sequential development of the Churchill-Nelson System which had been part of the planning of Manitoba Hydro for the better part of that decade.

MR. BATEMAN: I was an advocate of development of the plan that was announced by the government of Manitoba and the government of Canada that is to let's recognize the very important asset that we have in Manitoba and let's develop it for the good of Manitobans and that's what we are proceeding with.

MR. LYON: That plan was a plan developed by Manitoba Hydro with its consulting engineers over a period of a number of years.

MR. BATEMAN: That plan, Mr. Lyon, was developed by the Programming Board.

MR. LYON: And approved by Manitoba Hydro.

MR. BATEMAN: Manitoba Hydro participated in it, yes. They did participate in it and worked closely through consultants as members on the Programming Board representing the Province of Manitoba.

MR. LYON: So that when Mr. Stephens appeared before this Committee as Chairman of Manitoba Hydro in 1966, 1967, he was speaking on behalf of the top engineering team of Manitoba Hydro including yourself. He was speaking on behalf of himself and advocating that sequential development of the Churchill-Nelson System.

MR. BATEMAN: Mr. Stephens was not an advocate of the high level diversion. There are Minutes of Meetings of the officials of Government and Manitoba Hydro that indicate Mr. Stephens' concern about the high level diversion.

MR. LYON: But nonetheless that sequential development including the high level diversion was the policy, the recommendation propounded by Manitoba Hydro and you were part of that planning team.

MR. BATEMAN: I'll tell you, Mr. Lyon. . .

MR. LYON: Were you not part of the planning team?

MR. BATEMAN: I was, and I convinced Mr. Stephens that we should go to the high level diversion.

MR. LYON: Right and you defended that position on behalf of Manitoba Hydro through the hearings before Mr. Weber and the Water Commission up until, well those hearings terminated as I recall sometime in the spring of 1969, and you remained a firm advocate of that sequential development?

MR. BATEMAN: I did until we were asked to take into account the resource values of the diversion and South Indian Lake and the route. When those resource values which I can tell you Manitoba Hydro hired consultants to review, those resource values and their report cost Manitoba Hydro close to \$800 and some odd thousand, and that report on the basis of the data contained in it does not justify a high level diversion.

MR. LYON: Mr. Chairman, can Mr. Bateman fix a date as to when he changed his own engineering attitude, his own advocacy attitude with respect to the sequential development of the Churchill-Nelson system that had been prepared over the period of the better part of that decade. When did that change take place in your thinking, Mr. Bateman.

MR. BATEMAN: It's very well documented, Mr. Lyon. It's in the Task Force Report.

MR. LYON: The Task Force Report, I see.

MR. BATEMAN: And let me emphasize that the Task Force Report is a professional engineering report done by a group of professional engineers whose integrity is without question. I've been assured of that point by your colleague. It also was not a report that made any recommendations at all. It was a report that made some very profound engineering conclusions. The Board of Manitoba Hydro took that report and recommended the action that would be pursued.

MR. LYON: Can you tell us, Mr. Bateman, what it was that caused the Task Force to be established? I'm looking for a time factor. When did this change take place? I know it was coincidental with the change of the government, but other things occurred. Mr. Cass-Beggs for instance was brought in as a consultant by the new government of Manitoba.

MR. BATEMAN: Well, Mr. Chairman, in view of the information the government asked Hydro to review its position. They also asked the Water Resources people to provide additional information.

The Crippen Report which the government commissioned and which I have a copy of here — I have one volume of it — was a very solid engineering report on the Lake Winnipeg regulation and the conclusions in this report were that Lake Winnipeg had a benefit to cost ratio in excess of one and consequently should be proceeded with.

Now it was no different in that than the studies that had been concluded by the Programming Board Report which indicated that Lake Winnipeg was a viable operation. The Programming Board saying, you pump the water out; Crippen saying you put structure at Whiskeyjack. NOO, HRE IN ITSELF, TWO REPUTABLE ENGINEERING REPORTS, BOTH RECOMMENDING DIFFERENT SOLUTIONS. Manitoba Hydro had also engaged another consultant, the Underwood-McLellan group to examine the resource implications and the viability of the Churchill River Diversion and its full resource potential. Now that report in itself gave different answers than the Programming Board; gave different answers than Crippen although we tried to consolidate these two reports through joint meetings of the engineering consultants with Manitoba Hydro. But the job remained then, for somebody — and who better than Manitoba Hydro — to take all of these various engineering reports and put them together and come up with some facts on the best method of developing Manitoba's water resources, bearing in mind that the cost of the resources had to be taken into account and the task force report is the result of that work. The conclusions of that report are very well known.

MR. LYON: Just to back-track a little bit on a topic that you've raised. You mentioned that Lake Winnipeg regulation was part of the original programming, part of the report of the original Programming Board, but is it not a fact that in 1967, Mr. Stephens again came before this committee and subsequently in 1968, Mr. Fallis came before this committee, and advised that the sequence including Lake Winnipeg, was going to be deferred possibly until the late '80s or '90s?

MR. BATEMAN: No, he did not say that. I think the official record will show that Mr. Fallis wrote to the Water Commission, the late Mr. Bonnycastle who was chairman of the Manitoba Water Commission, and said that Manitoba Hydro could defer Lake Winnipeg regulation until 1978. And remember the time that was written was when the load growth on the Manitoba system was in the order of 6 to 7 percent a year. Subsequent to that, it mushroomed. We had several years when it was in excess of 10 percent and one year even in excess of 12 percent.

MR. LYON: But in any case, you wouldn't argue with the proposition, Mr. Bateman, that for all practical purposes the recommendation of Manitoba Hydro from 1967 until 1969 and all of the senior officers there including yourself, Sir, was to defer Lake Winnipeg regulation.

MR. BATEMAN: Only based on that information and I would not like it to be construed that the officers of Manitoba Hydro were politically influenced one way or another' by one government or another, and the facts are that in order to provide and maintain the integrity of the power supply system, Manitoba Hydro had to either build thermal plants and one of the advocates of deferring Lake Winnipeg regulation has casually mentioned that thermal is necessary but the Programming Board Report shows what thermal is necessary if you defer Lake Winnipeg. The Task Force Report shows how many thermal plants you would have to build if you deferred Lake Winnipeg.

MR. LYON: But for the period in question, 1967-69, I don't think there is any question that it was the established policy and recommendation of Manitoba Hydro, based on engineering reports then available to them, that Lake Winnipeg would be deferred — you say at least until 1978 — my recollection is until the '80s but we'll . . .

MR. BATEMAN: No, 1978 is what the record shows because I've been asked to check that recently and I have recollections of that. It can be produced. But to have it in 1978 means that you start construction five years before, a minimum of five years.

MR. LYON: You mentioned subsequent studies were done by Crippen and Associates, by Underwood-McLellan & Associates and so on, there's one other report that you haven't mentioned, Mr. Bateman, and I would like your comment upon the significance of it and that is the report of the Proposed Churchill River Diversion and Associated Problems — Report to the Minister of Mines and Natural Resources, Government of Manitoba, by David Cass-Beggs dated 9 September 1969. Can you tell me and the members of the Committee the effect that that report had on the attitude, the advocacy, the engineering planning and so on that you and your colleagues in Hydro had been developing over that previous decade.

MR. BATEMAN: It had no direct effect on the attitude. That report — and I think if you read that report in its entirety and appreciate that here was a man who had an engineering reputation who was asked to review the Programming Board Report and the program that Manitoba Hydro had outlined. We had many discussions with Mr. Cass-Beggs in the preparation of that report and I might say many arguments and he was just astute enough to recognize that there was some time — all he was recommending in that report is that the government re-examine the Churchill River diversion and make sure what you do is right. That's what that report says. In the meantime, it says that since the Programming Board recommended Lake Winnipeg and Churchill River diversion, why don't you get on with the one that you can do without all of this controversy — I don't think he recognized that it was going to be as controversial as it was — but that little report, which has been misconstrued many times, I think is just a simple little engineering report by an engineer who understood what the

contents of these other reports really meant. And that's all it is.

MR. LYON: And you honestly believe that?

MR. BATEMAN: Oh, I do.

MR. LYON: Did not this innocent little report as you describe it, fundamentally change all of the recommendations of Manitoba Hydro that had been arrived at by consultants' advice, engineering advice from the top staff of Hydro and so on? Did this not fundamentally change all of those concepts, the concepts that you had been advocating up until the time of the change of government and so on?

MR. BATEMAN: It didn't change all of them, Mr. Lyon. It did change the level of the diversion, the level of South Indian Lake, and it wasn't that report that changed it, it was the recommendation arising out of that report that suggested to the government that Manitoba Hydro be asked to re-examine the Churchill River diversion with due regard for the resource values that were contained in or would be demolished by raising South Indian Lake to elevation 869 as opposed to 847 or 850 which is what I advocated.

MR. LYON: But is it not a fact, Mr. Bateman, and I am not trying again to put words in your mouth, isn't it a fair assumption that this report and what flowed from it, changed the whole sequential development of the Churchill-Nelson system?

MR. BATEMAN: Well, I don't think that you can construe that it changed the whole development because, let's face it, . . .

MR. LYON: I'm talking about the sequential development.

MR. BATEMAN: Well, the sequential . . . but what is important about sequence? The Programming Board Report . . . —(Interjection)—

MR. CHAIRMAN: Let Mr. Bateman answer the question, Mr. Lyon. Order please. Order please. Mr. Bateman. Order please. Mr. Green. Let us proceed, Mr. Bateman.

MR. BATEMAN: Well, Mr. Chairman, I think that we have to recognize the fact, Mr. Chairman, that the Programming Board Report did recommend both of these projects. It did point out the assumption that the load growth was going to be six percent and it does clearly point out that you cannot supply the load in the Manitoba Hydro system without having both these projects. Now, you say money is the effect. Let's look at your hypothesis that if we had gone to the Churchill River diversion, the high level diversion, we would have saved money. If we had started it in 1969, sure we would have saved some escalation dollars. I'm not arguing that, it would have been cheaper for that particular type of structure but that was a tall structure. We ended up with not as tall a structure. We ended up with a lower structure. So it didn't cost as much in the same dollars. There are many differences like this. We would have had great difficulty resolving — as a matter of fact, I would wager that if Manitoba Hydro had proceeded only with the Churchill River diversion at the high level, and had run into the same difficulties with the Nelson House Band that we have now been working our way through very effectively, we would have been in trouble had this drought occurred with only the Churchill River diversion to fall back on. We must have Lake Winnipeg in order to maintain the integrity of power supply in this province and we can't argue it any other way.

So cost-wise, your hypothesis is that if we had proceeded on the Churchill River, we would have built some lower valued plants, smaller capacity on the diversion route and would have left the Nelson River. I have pointed out this morning, Mr. Chairman, that the costs of Nelson River plants if we look at the Kettle plant that has gone from \$324 million for 1,200 megawatts, 1,270 megawatts, to roughly \$280 a kilowatt to the Long Spruce project at \$500 million for 970 megawatts or roughly \$520 a kilowatt — give or take a few dollars — and the Limestone plant that we are now doing some preliminary work in order to maintain a 1983 inservice date, our present estimate is \$1.1 billion for about 1,100 megawatts or just \$1,000 a kilowatt. Now from \$286 to \$1000 a kilowatt, the earlier we build those plants in this inflationary period, the cheaper they are going to be and had we not been at the point where we are now with Long Spruce and we're starting it in order to meet these requirements of added load growth on the Manitoba system, we would have been faced with close to the \$1 billion figure. Now you can develop the argument both ways.

MR. CHAIRMAN: Mr. Lyon.

MR. LYON: Yes, I was just waiting for the end — I didn't want to interrupt Mr. Bateman when he was answering a question.

Isn't it a fact, Mr. Bateman, you mentioned that there were a number of arguments within Manitoba Hydro presumably with Mr. Cass-Beggs who was subsequently appointed by the new government of Manitoba as chairman of Manitoba Hydro, were these not very serious and fundamental arguments about his plan to change the sequential development of the Churchill-Nelson system?

MR. BATEMAN: The arguments weren't about maintaining one plan opposed to another. The principal arguments were the integrity of the power supply system and if you look at the recommendations made, it wasn't until 1972 when the last recommendation came up for going ahead with Lake Winnipeg and the thermal unit. I wanted a thermal unit to protect the integrity of supply of

this system without knowing that we were going to get Churchill River diversion and Lake Winnipeg, not sure that we could get it by 1974. As it turned out we did get it by 1975, it's a longer construction job than we had anticipated — I just wanted to make sure that we weren't going to have to turn the lights out on somebody. Those were the principal arguments.

MR. LYON: Well, if you had proceeded — and just by way of correction of terminology — you mentioned something in the course of your answer about "my hypothesis," — is it not a fact that my hypothesis, as you dub it, was really Manitoba Hydro's planning up until July 1969?

MR. BATEMAN: Well, your hypothesis I was referring to, Mr. Lyon, related to the alleged waste of money or the preferred cost advantage. There's no way of knowing, as I told the Committee the first morning it met, there's no way of knowing what your proposal or what the plan that you are referring to would have cost because it hasn't been built.

MR. LYON: Well, the only point I'm trying to make, Mr. Bateman, I think it is clear to most people and I think it is clear to you, is that up until approximately July 15, 1969, there was a firm development plan worked out by Manitoba Hydro, by its top engineering staff, agreed to by yourself which was being advocated and recommended to the Government of Manitoba. Now what I am trying to ascertain from you, Mr. Bateman, is what caused the fundamental change in that plan? Did it begin with this report of Mr. Cass-Beggs on 9 September 1969 and, if so, what was there in that report that caused such a fundamental change in Hydro's approach to this northern development?

MR. BATEMAN: Really, Mr. Lyon, what changed the program that Manitoba Hydro was recommending and was prepared to embark upon was the failure to achieve a license from the government that you represented. We just didn't have a license.

MR. LYON: You didn't have the license?

MR. BATEMAN: No.

MR. LYON: Did you recommend to the new government that that license be sought?

MR. BATEMAN: Yes, as a matter of fact, we had recommended that but the government said that application you're making does not recognize the resource values which a lot of people — and you know the public storm that occurred around the raising of South Indian Lake that 35 feet or whatever it was — and the government wanted to make sure that we properly assessed those resource values.

MR. LYON: Just a small point, Mr. Bateman. There was some question this morning by one of the members of the committee about Manitoba Hydro being attacked by the opposition. That's not a new position for Manitoba Hydro; indeed, it was attacked by the very same people was it not, in 1967, '68, '69 who now form the government on the basis of the high level diversion which you were advocating?

MR. BATEMAN: There were other attacks too, Mr. Lyon, as you well know.

MR. LYON: Was that not one of them?

MR. BATEMAN: That was one of them.

MR. LYON: Yes. Well, can you tell us, Mr. Bateman, in the subsequent planning and recommendations of either the government or Manitoba Hydro, in what degree has this report and recommendation of Mr. David Cass-Beggs ever been altered? Has this fundamental plan or framework ever been altered at all, the sequential change that he recommended?

MR. BATEMAN: That's not a sequential change, it's not a fundamental plan, it's merely an assessment of some reports and recommending that the government has time to examine the situation.

MR. LYON: Yes. Ah, but Mr. Bateman, and I am at a disadvantage, I am a layman, but did not Mr. Cass-Beggs elevate the priority of Lake Winnipeg regulation away beyond what you and the other planners had ever considered doing when he made this report on the 9th of September, 1969?

MR. BATEMAN: Mr. Cass-Beggs recognized that the Programming Board Report had recommended Lake Winnipeg as well as Churchill River diversion. Mr. Stephens had told us not to leave Lake Winnipeg regulation too long because it will be more difficult to develop the longer you leave it. Now, I can vouch for that, there are several people in this room that were there at the time he made that statement.

MR. LYON: And do you recall Mr. Stephens ever making that statement to this committee or to the ministers of the previous government?

MR. BATEMAN: I cannot vouch for what he made to the ministers of government; I know that he was an advocate of Lake Winnipeg control when he was chairman of the Lake Winnipeg and Manitoba Flood Control Board that was set up to establish the damages around Lake Winnipeg and Manitoba. He was an advocate of control of Lake Winnipeg but the conclusions of that report and that board were that you couldn't afford it until there were some benefits like power to justify the regulation of Lake Winnipeg.

MR. LYON: Do you recall the 1967 meeting of this committee when Mr. Stephens appeared before the committee and announced the change in priority of Lake Winnipeg Regulation.

MR. BATEMAN: No, I must admit, Mr. Lyon, I don't remember specifically any announcement such as you refer to but I could read the transcript of it and try and . . .

MR. LYON: Those transcripts, if they are in existence, I take it are in your library. They are not in

the provincial government library.

MR. BATEMAN: I haven't asked to see any of those as long as I can remember but I could undertake to see if one is available and refresh my memory on that committee meeting. That was a rather important meeting because it pointed out to this committee, and I remember the one point in particular, that it pointed out to this committee, the overall scope of the plan, the value of Lake Winnipeg Regulation, the value of Churchill River Diversion, the fact that to go the Nelson River route for Manitoba's future energy requirement was going to cost Manitobans more money than the thermal route.

MR. CHAIRMAN: Mr. Green on a point of order.

MR. GREEN: Mr. Chairman, it's been referred to as "transcripts" of the meetings. Prior to 1969, there were no transcripts. As a matter of fact, Mr. Chairman, at the last meeting in 1969 the Conservative majority voted against transcripts, and voted against any member having a tape recorder in the meeting to transcribe what was occurring — (Interjections) —

MR. CHAIRMAN: Let's proceed. Mr. Lyon.

MR. LYON: Just on the point of order, we are going from memory. The Premier raised this question a week or so ago, I don't think it is of any particular import except that there are a number of us, and I presume Mr. Bateman is among that group, who recall that Manitoba Hydro did make transcripts of the hearings of this committee — I don't say on all occasions, but certainly on the important occasions. I don't think it is a point of any great moment, and I am relying only on memory because I can't put my hands on the transcripts, but Mr. Bateman says he can and I would like him to bring them to the next meeting.

MR. GREEN: I am referring to official transcripts of the meeting of which there were none, and which the Conservative opposition voted against having, when Hydro was before the committee in 1969, and prohibited Mr. Molgat from bringing a tape recorder into the meeting.

MR. CHAIRMAN: There is a reference made to 1967. Mr. Bateman indicated that he has not had any copy of it but he will check to see if it is available.

MR. BATEMAN: Mr. Chairman, let me ask Mr. Goodwin, who is our Corporate Planning Officer and who may have some recollection of this transcript, if he has seen such a transcript or would know whether it is available. Would you like to tell the committee that Mr. Goodwin?

MR. CHAIRMAN: Mr. Goodwin.

MR. GOODWIN: Mr. Chairman, I don't know of the existence of such a transcript of the 1967 meetings of this committee.

MR. CHAIRMAN: The Premier on a point of order.

MR. SCHREYER: Yes, Mr. Chairman, since the Leader of the Opposition, Mr. Lyon, has made reference to me, I would simply make this point, that he indicates that between 1966 and 1969 that transcripts with respect to Hydro utility meetings were made. I wasn't here then and I take his word for it. I guess the real point of order here that Mr. Green raises is whether in fact there was an official transcript, as a matter of government determination that there should be, and I gather there wasn't, but in the specific context of the Hydro utility meetings only, that there may well have been. That should be determined so we can ascertain the facts and not prolong the procedural point.

MR. LYON: That's a fair explanation.

MR. CHAIRMAN: Mr. Green on a point of order.

MR. GREEN: Yes, on the point of order and I wish to clarify my position. I am not saying that somebody did not take a record of the meeting. I am saying that Legislative committees, to which reports were made by Hydro, Telephone System, and other Legislative committees, had no transcripts and there was no transcribing of them prior to 1969 as a Legislative function. That is the point that I make.

MR. LYON: You are quite right, but transcripts were made by Manitoba Hydro at some of those meetings.

MR. BATEMAN: Mr. Chairman, if I could assure the committee that if we can find these transcripts, we certainly will have them here or will make copies for you if you wish to have them. And that, Mr. Chairman, is in keeping with the statement that I have made at every meeting of the committee so far, and that is that Manitoba Hydro is here to provide the answers to the questions that your committee wants to ask.

MR. LYON: Thank you. In that connection, just one minor point, Mr. Bateman. I wonder if it would be possible at the next meeting of the committee if you could bring to the committee the draft report of the Task Force.

MR. BATEMAN: I have it here, Mr. Lyon, if you would like to see it.

MR. LYON: No, the draft report.

MR. BATEMAN: The draft report.

MR. LYON: And the final report?

MR. BATEMAN: And the final report.

MR. LYON: Thank you. Yes, if you could make them available that would be helpful.

MR. BATEMAN: Now what is it in the draft report you would like to see?

MR. LYON: Well, after I see the draft report I will be in a position to tell you.

Mr. Bateman, there are a couple of questions arising out of your comments this morning with respect to Jenpeg that I would like to get cleared before we adjourn. I note from the prospectus of Manitoba Hydro of June 24, 1976, and then the subsequent prospectus of December 1, 1976, that different values or different costs are ascribed to the Jenpeg plant in the two documents, which are of course six months difference in age. In the report of — and I am referring to Page 12 in the prospectus of June 24, 1976, at the top of Page 12 — it is indicated under two headings, Jenpeg, Estimated Cost in Millions of Dollars, it says \$176.9 million; Estimated Cost Per Kilowatt, \$1,404. Then in the prospectus of December 1, 1976, where the same table is included, it shows under the heading Jenpeg, Unit No. 6. There is some variation. In June it says unit, 654 for 1977 and then unit, 321 for 1978; and in the December report it says unit, six, for 1977 and then numbers five, four, three, two, one for 1978. But in any case, the total amount of cost, estimated cost, shown in the December document is \$159.1 million, and the estimated cost per kilowatt in December is shown at \$1,263.00. I wonder if you could reconcile those figures for us, Mr. Bateman.

MR. BATEMAN: I will ask Mr. McKean, as our assistant general manager in charge of finance, if he can reconcile those figures for you, Mr. Lyon.

MR. McKEAN: Mr. Chairman, unfortunately I haven't got the first prospectus but I was asked this same question previously. I think you have got to understand that we built Lake Winnipeg control and Jenpeg, or Lake Winnipeg control and generation as one project and I think accounting-wise you can discover 35 different ways to break that down between the two.

On this second one, and I had this question asked me by a newspaperman, if you add the two together, between the Jenpeg and the Lake Winnipeg control figure that comes up in the preceding page, between the June and the December we have had a re-estimate of the project, and the project costs went up \$25 million. In addition to that the one in December is showing Jenpeg at the incremental cost of generation.

All I can say is that you can break this down in a number of ways. We had done a change in our accounting in the six months but the basic project went up in estimate \$25 million. I was maybe a little surprised to see the significance that was played up in this one, but I think I have got to argue that if you are looking at the cost of the project the significant figure is the total of the two.

Now I haven't got the June one with me but I did do this for the newspaper at one other time. I think if you add

MR. BATEMAN: I think, Mr. Chairman, I presented the committee with a fairly comprehensive breakdown of the costs of the Jenpeg project last year showing the six contracts that had been met for the various portions of the job, and the portion of the job that is subject to judgement is those indirect costs which relate to the airstrip, the roads, the camp, and the interest during construction and so on. And any delay in the in-service date of course will have a bearing on the cost of the project. But the Lake Winnipeg portion, all the diking, channels and so on that are associated with it, are on the operating accounts now.

MR. LYON: So, Mr. Chairman, what Mr. McKean is saying is that if we can find, and I have seen it too but I can't readily put my hand on it,

MR. McKEAN: There was an item

MR. LYON: There was, and I was looking for it and couldn't find it.

MR. McKEAN: See the \$207 million up above there. Oh, I'm sorry, that's . . . diversion. I'm sorry.

MR. LYON: The control, it's in the middle of the paragraph.

MR. McKEAN: The \$126 million.

MR. LYON: Yes, \$126 million is shown for the structure and diversion channels. That is in the report of December. And in the report of June, "to control water flows from Lake Winnipeg into the Nelson River, control structure and diversion channels have been substantially completed with an estimated final cost of \$83 million" it says six months earlier.

MR. McKEAN: That's right.

MR. LYON: So if you add those two together

MR. McKEAN: If you add them together, you will find that the project estimate went up \$25 million in the interval. I might say the second estimate became more significant to us because we were assessing how much we should bring into our operating account, and we have brought into our operating account \$126 million rather than the lower amount that was earlier, leaving the generation incomplete.

MR. CHAIRMAN: Order please. Possibly, Mr. McKean, you can have the other information available for the next committee. —(Interjection)— You are still on the list, Mr. Lyon.

The time of adjournment has arrived. The Committee on Public Utilities will meet again on April 12th. That is next Tuesday, I believe. Committee rise.

MR. LYON: Mr. Chairman, could we have some indication as to when these committees will be meeting somewhat more in advance of the indication you are giving?

MR. CHAIRMAN: I have at this particular time April 12th and also April 19th as the next possible date after the 12th.

MR. LYON: Thank you.