

LEGISLATIVE ASSEMBLY OF MANITOBA
THE STANDING COMMITTEE ON PUBLIC UTILITIES
AND NATURAL RESOURCES
Thursday, 29 May, 1986

TIME — 10:00 a.m.

LOCATION — Winnipeg, Manitoba

CHAIRMAN — Mr. C. Santos (Burrows)

ATTENDANCE — QUORUM - 6

Members of the Committee present:

Hon. Ms. Hemphill, Hon. Mr. Schroeder.

Messrs. Brown, Dolin, Enns, Maloway,
Manness, Santos, Scott, Smith (Ellice)

APPEARING: Mr. Marc Eliesen, Chairperson, Board
of Directors - Manitoba Hydro Electric Board
and Chairperson and Executive Director -
Manitoba Energy Authority

Mr. Art Derry, Manitoba Hydro

MATTERS UNDER DISCUSSION:

Annual Report of the Manitoba Hydro-Electric
Board

Annual Report of the Manitoba Energy
Authority

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MR. CHAIRMAN: The last time before we dismissed, there was a question as to what would be the focus of today's meeting and we agreed, unless there is a change of mind, that it will be on the Manitoba Energy Authority.

The Member for Lakeside.

MR. H. ENNS: Mr. Chairman, it's a pleasant morning. I don't want to take issue with your direction, although it is normal that the committee members choose their topics themselves. It is true we want to deal with the Energy Authority, and get into some of the pricing formulas which, I understand, is more properly under that jurisdiction.

But I have one question that I just wanted to clean up because I wish to pursue it with other Ministers involved in the House on the question that I was dealing with last Tuesday, the negotiations with respect to Northern Flood Committee. That is simply, can Manitoba Hydro tell me from their point of view, is there any reasons why, from Manitoba Hydro's position, that the land transfers which were committed under that agreement, the exchanges, why they haven't been proceeded with? Well, I should inform Manitoba Hydro that they have not been proceeding with all that satisfactorily. My question really is: Is Manitoba Hydro in any way responsible for holding those transfers up, either by way of power reserves that they may have in some of those areas or any such other reasons?

MR. CHAIRMAN: Mr. Eliesen.

MR. M. ELIESEN: Mr. Chairman, I believe we did attempt to answer this particular question at one of the previous committee meetings. Our position, as we articulated it then was, this really was a matter with the Government of Manitoba, that Manitoba Hydro itself is not actively involved in the negotiations and therefore, we ourselves certainly aren't holding up.

We do understand that there have been meaningful discussions and significant movements on positions have taken place. But that is more properly a question that should be addressed to the Government of Manitoba and, specifically, the Department of Northern Affairs.

MR. H. ENNS: Mr. Chairman, I appreciate that, and the Chairman is quite correct, but I'm also aware that Manitoba Hydro in many instances has considerable amounts of land under what used to be called preservation for their use and I just want to re-ask the question. Are some of the lands that have been identified by the Indian Bands involved, do they fall into that category and in that way making it difficult for the government to respond until the matter of Hydro's interests in these lands has been resolved?

MR. M. ELIESEN: Mr. Chairman, that's not my understanding. I will check to reconfirm that, but my understanding is Manitoba Hydro itself is not any major obstacle in the context of those discussions or negotiations on line exchange going ahead.

MR. J. WALDING: Mr. Chairman, just before we get to the chairman's presentation, can I ask if the questions which Mr. Eliesen took as notice last Thursday and Tuesday are available to the committee?

MR. M. ELIESEN: I regret, Mr. Chairman, that they are not yet available. We will try to get them to the committee as soon as possible.

MR. CHAIRMAN: Mr. Eliesen, are you ready for the presentation?

MR. M. ELIESEN: Yes.

MR. CHAIRMAN: The Member for Inkster.

MR. D. SCOTT: Last week, or on Tuesday, excuse me, I was following some line of questioning in regard to the hydro rate stabilization and I think I have got a fair understanding on how the process works now. I am wondering, when you are getting additional information back to the committee, if it would be possible to work with the Department of Finance to give some us idea of the outstanding commitments we have for future

years with the stabilization plan because of the guaranteeing of the borrowings in the last five years.

Because if we just shut off the stabilization fund, like if in this year's Budget, for instance, it was stopped, there would still be money in the Estimates of the Province of Manitoba for hydro rate stabilization because of past commitments. I'm wondering if we can get some idea of what the future liabilities are as well from the province to Hydro.

MR. M. ELIESEN: Mr. Chairman, we will check with the Department of Finance to see what information can be made available to members of the committee.

MR. CHAIRMAN: We will now proceed to the Manitoba Energy Authority.

MR. M. ELIESEN: Mr. Chairman, I welcome the opportunity again to present to members of the Public Utilities Committee a review of the Manitoba Energy Authority's activities over the past year. As members are aware, the Authority was established by an act of the Legislature which took effect July 2, 1980.

The Manitoba Energy Authority negotiates the export and import of electrical energy from and into the province. As well, the Manitoba Energy Authority acts in energy-related fields as directed by the Minister of Energy and Mines or the Lieutenant-Governor-in-Council.

In addition to a small professional staff that it employs directly, the board is assisted in its activity by the staff of the Manitoba Department of Energy and Mines, and Manitoba Hydro.

Over the past year, the Manitoba Energy Authority has actively pursued electricity export negotiations, continued to coordinate government policy related to the Limestone Generating Station, and promoted energy-intensive industry investment in this province.

In my presentation today, I will focus on our work in the area of power exports since this has been the principal emphasis of the Authority's work. I would be happy, however, to answer any questions members might have on the MEA's other fields of responsibility.

Following the successful contract of 500 megawatts signed with Northern States Power of Minneapolis, Minnesota, and the subsequent approval by both the National Energy Board and the Government of Canada, discussions and negotiations continued with a number of Canadian and American utilities regarding future export sales.

This included ongoing discussions with the Western Area Power Administration of Golden, Colorado; the Wismintoba Group, about eight utilities primarily in Wisconsin; the Upper Mississippi Power Suppliers Group, six utilities operating in the mid-west USA; Saskatchewan Power Corporation; and Ontario Hydro.

Our strategy has been to pursue a number of options and, in this way, avoid putting all our eggs in one basket. As mentioned to the committee last year, we have felt that by having a number of competing sales options in play, Manitoba has established a solid bargaining position that would bring the largest possible benefits to Manitoba Hydro and the Province of Manitoba.

In February of this year, the Premier of Manitoba and the Minister of Energy and Mines announced three

new export arrangements. The first is with the Upper Mississippi Power Group which will purchase 550 megawatts of firm power over 16 years, beginning in 1996.

The second arrangement is a 20-year 500 megawatt seasonal diversity exchange, also starting in 1996. Three hundred megawatts of the diversity exchange will be with the Upper Mississippi Power Group and 200 megawatts of the diversity exchange will be with the Northern States Power Company of Minneapolis, Minnesota.

The third export arrangement is with Northern States Power Corporation and involves the sale of 200 megawatts during the summer months for four years from 1993 to 1996.

At the time of the February announcement, it was indicated that Manitoba's agreements were in the form of a signed, detailed Memorandum of Understanding and letters of exchange.

The contract for the third export arrangement of a 200 megawatt summer sale with Northern States Power has been finalized. Details have been provided recently by the Minister of Energy and Mines and the contract has been tabled in the Legislature.

I would like to provide the committee now with as much information as possible regarding the other export arrangements. I am sure it is appreciated that until final contracts are signed, which is anticipated within the next four to five months, a detailed description of the arrangement can not be disclosed until the two parties have finalized all matters. When that takes place, the contracts will be made public. They will, of course, also be subject to the regulatory approval by the National Energy Board and the Government of Canada, which involves public hearings.

Regarding the 550 firm power sale, the following information can be provided:

First, the Upper Mississippi Power Group is composed of six utilities operating in seven mid-western States. Its members service customers in Minnesota, Michigan, Wisconsin, North Dakota, South Dakota, Iowa and Illinois. The member utilities are:

1. Dairyland Power Cooperative - a wholesale supplier of electricity to 29 rural electric distribution cooperatives in Wisconsin, Minnesota, Iowa, Illinois and Michigan. It serves about 169,000 customers and has a generating capacity of 1,035 megawatts principally accounted for by coal-fired plants in Wisconsin.
2. Interstate Power Company - an investor owned utility, headquartered in Dubuque, Iowa distributing electricity directly to 156,000 customers in 254 communities in Iowa, Minnesota and Illinois. Its generating capacity of 950 megawatts is predominantly accounted for by coal-fired plants in Iowa and Minnesota.
3. Northern States Power Company - an investor owned utility with headquarters in Minneapolis, Minnesota. It provides service to almost 1.2 million customers in Minnesota, North Dakota, South Dakota, Wisconsin and Michigan. Northern States Power has a generating capacity of 6,065 megawatts mostly accounted for by coal-fired and nuclear plants in Minnesota and Wisconsin.
4. Otter Tail Power Company - an investor owned utility based in Fergus Falls, Minnesota serves

about 270,000 customers in Minnesota, North Dakota and South Dakota. The company has a generating capacity of 570 megawatts, principally accounted for by coal-fired units in North and South Dakota and Minnesota.

5. Southern Minnesota Municipal Power Agency — is a state agency with head office in Rochester, Minnesota. It delivers power to 18 municipalities and has a generating capacity of 330 megawatts — mainly made up of a large number of smaller coal and gas-fired plants throughout Minnesota. The Southern Minnesota Municipal Power Agency owns 41 percent of the Sherco 3 coal-fired generating station now scheduled to come into service in 1987. Northern States Power owns the other 59 percent.
6. United Power Association — is a cooperative comprised of 15 local and regional suppliers in Minnesota. Its head office is located at Elk River, Minnesota and it has a generating capacity of about 675 megawatts, principally accounted for by coal-fired plants in North Dakota and Minnesota.

In summary, the generating capacity of these utilities in 1985 totalled 9,650 megawatts. In the same year, the generating capacity of Manitoba's integrated system was about 4,100 megawatts.

I would like to briefly review with the committee some of the main characteristics of this recent export sale arrangement with the upper Mississippi Power Group including some comparisons with the previously negotiated firm power sale of 500 megawatts with Northern States Power.

First, the pricing of the firm sale with Upper Mississippi Power Group is similar to the Northern States Power pricing structure; that is, the price of the firm sale will be related to the cost of building and operating a coal-fired plant in the Upper Mississippi Power Group area.

The sale is estimated to generate about \$4 billion in revenue for Manitoba. We fully expect it together with the diversity arrangement, which I will describe in a moment, to be at least as profitable as Manitoba's 1984 announced sale of 500 megawatts to Northern States Power.

The Upper Mississippi Power Group sale is somewhat larger and somewhat longer than the Northern States Power sale. Over its life the Upper Mississippi Power Group firm sale will involve the export of some 51 billion kilowatt hours. The Northern States Power sale will involve the export of some 40 billion kilowatt hours.

The new arrangement with the Upper Mississippi Power Group includes a firm sale similar to the Northern States Power sale; it also includes a diversity exchange which was not part of the earlier Northern States Power arrangement.

The Upper Mississippi Power Group firm sale has a floor price — the one which Northern States Power did not. The floor price was added since the arrangement with the Upper Mississippi Power Group is longer than that with Northern States Power and because the plant, on which the price will be based, has not been built.

Finally, the Upper Mississippi Power Group sale and diversity exchange will require a new interconnection to the United States from the vicinity of Winnipeg to the vicinity of Minneapolis, Minnesota. Transmission

discussions between Manitoba and Upper Mississippi Power Group are now under way.

The second major export arrangement announced was a 20-year 500 megawatt diversity exchange starting in 1996, 300 megawatts with Upper Mississippi Power Group and 200 megawatts with Northern States Power. For the benefit of committee members, it may be useful to briefly describe the concept of diversity exchange.

If one utility has its peak load in the winter, for example, Manitoba Hydro, and another has its peak load in the summer, for example, Northern States Power, due to its heavy air-conditioning load, and if the utilities are interconnected, the opportunity exists for each to benefit by a diversity exchange. In the case of the announced 200 megawatt diversity exchange with Northern States Power, for example, Manitoba makes 200 megawatts available to Northern States Power during the summer and Northern States Power makes 200 megawatts available to Manitoba during the winter. The exchange permits each utility to have 200 megawatts less generation on its system, thus saving each whatever such capacity would cost to build.

In recognition of this, in the late 1970's Manitoba Hydro and a Nebraska utility, Nebraska Public Power District, began to negotiate a major diversity exchange which would have necessitated the construction of the MANDAN line. Since the collapse of negotiations last year, Manitoba has been actively seeking other possible diversity partners, and we have now been successful.

Major problems experienced with the MANDAN line are not anticipated in this transaction mainly because the required transmission will be constructed in the state where these utilities operate as compared to the MANDAN line which was required to go through states not directly benefiting from the arrangement.

These two new export arrangements may have implications for the construction of the 1,400 megawatt Conawapa Generating Stations. Without these arrangements, Manitoba Hydro has advised that first power from Conawapa would be required to meet Manitoba's own needs in 1997. In light of the fact that the new arrangements contain a significant diversity exchange component as well as the firm sale, Manitoba Hydro has been asked to determine the most economic construction schedule for its next source of generation.

I would be pleased now to answer whatever questions the committee may have.

Thank you, Mr. Chairman.

MR. CHAIRMAN: Thank you, Mr. Eliesen. Are there some questions?

The Member for Lakeside.

MR. H. ENNS: Mr. Chairman, I note that the chairman indicates the one significant change in the pricing formula of the arrangements arrived at with the Upper Mississippi Group as containing a floor price. Without divulging the kind of information that you would think is detrimental to concluding the sale, what does that entail?

The NSP sale had a formula fixed to specific costs which were yet to be determined, along with the coal component cost. You have indicated in your statement that while it is much the same arrangement, the fundamental difference is a floor price to it. Is that a fair assessment?

MR. M. ELIESEN: Mr. Chairman, I apologize to members of the committee but it is, unfortunately, not possible for me to go into more detail regarding this specific transaction until the actual contract has been signed.

The only added remarks I can make in the area that the member is asking additional information, is simply to point out that with the Northern States Power sale, we had priced our arrangement on the basis of a plant which currently was under construction and, in fact, will come into operation next year, in 1987.

In the case with the Upper Mississippi Power Group, there is no plant, no coal plant currently under construction. It is anticipated by that group that they will put into place a coal plant upon which pricing can be based.

However, in the absence of any new coal plant being put into place, Manitoba, obviously, and Manitoba Hydro, and the Manitoba Energy Authority will have to assure themselves that there will be something to price against. In that connection, there are special kinds of arrangements which will be included in the contract, giving us that security for such a pricing reference.

I regret I can't provide any more information in this particular area at the present time.

MR. H. ENNS: What general remarks can the chairman or the director of the Manitoba Energy Authority give us with respect to the concern that I'm sure he must have and certainly the people of Manitoba have every right to have, about the long-term problems that could arise in the event that upon completion of these agreements — I note some are 20 years; some are 4 years; some are 12 years and that includes even the original NSP agreement that runs, I believe, for 12 years.

We are building towards a substantial capacity to service these arrangements, these contracts. I add up just very roughly the megawatts — we're talking 1,700 megawatts. The capacity for 1,700 megawatts could be required at some peak time if all these arrangements come to fruition.

The question that I'm really asking is what kind of signals are you getting from the people that you are negotiating these arrangements with about proonging the life of some of these contracts? What happens after the year 2005, or after the year 2020, if some of the power corporations that are currently interested in our power, for whatever reasons of their own, no longer are interested down the pike and Manitobans are left with a capacity far in excess of what we would project our own load growth to call for?

MR. M. ELIESEN: Mr. Chairman, I can make a number of observations with regard to the question posed by the member. First of all, we are not considering long-term transactions which have been undertaken in the past or even considered to be undertaken in the past by other provinces in Canada. We are not looking at, for example, 60 or 65 year sales. We are not, in fact, consummating any arrangements which had been considered earlier in Manitoba; for example, a 35-year sale which was part of the Western Power Grid.

We are looking at much shorter transactions and we find that we are able to negotiate successfully these shorter transactions which don't put us — that is

Manitoba and Manitoba Hydro — at risk with regard to long term. The sales that we are contemplating obviously are in the 12 and 16 year range, and we find that we are able to satisfy ourselves, as well as satisfy the customers with those kind of term transactions. So it isn't 60 or 65 years or even 35 years that we are finalizing arrangements.

No. 2, is really related to our own competitive position. Manitoba Hydro right now has the lowest rate structure in Canada and the United States. Because of the tremendous hydro resources we still have in this province, we have a tremendous opportunity, clearly, to take advantage of our hydro resources and make significant profits and a significant economic rate of return, as well as increased economic activity in the province, as a result of these export sales. That is the main criteria upon which we are looking at these transactions.

We are not looking at selling power at cost, for example, solely to obtain the associated economic activity that takes place in the province related to additional generating construction activity. We are looking at arrangements which are highly profitable and, we note in comparison between our hydro system and specifically the coal systems that exist in the United States, that we are very, very competitive. We do know in the context of the future, that we will become even more competitive.

So there is an environment for which Manitoba and Manitoba Hydro can make significant return from these export sales. I can only refer back to the earlier sale that we had negotiated with Northern States Power, where, admittedly there's always some element of risk when you're trying to forecast the future, in particular even 12 years into the future and that's why you do undertake significant sensitivity analyses and try to ascribe conditions which are high, low, in-between, even things that you wouldn't even anticipate, but you deliberately put it down to see how the formulas work out. In each specific case, even the worst kind of scenario that you would try to forecast for the future, in each particular case Manitoba and Manitoba Hydro ends up earning a profit on these export sales. That wasn't our own analysis. That was independently evaluated by the National Energy Board, by their staff, by their commissioners, and confirmed really our own timetable.

When we compare notes, for example, with other utilities in Canada, particularly the Hydro utilities in Quebec and British Columbia, we note that so far we are the only ones who have been able to successfully negotiate sales which include not only energy but also capacity charges. Those are fixed and they're take or pay contracts. In other words, regardless what happens in the United States with those utilities, whether they need the additional imports from Canada or from Manitoba Hydro, they are obligated to take them. This has been confirmed independently by financial institutions who are willing, in fact, to assume lender risk utilizing solely the contract as a basis of financing.

My last comment would really relate to our impact in the adjacent area that we're exporting the power. Clearly, there is always some element of risk if you are servicing another country with a large load component of that particular state's or country's total requirement. We are not though servicing, for example, Northern

States Power or the utilities adjacent in that area even with all these transactions that we currently either have completed or are about to put to bed, talking about 20 percent or 30 percent or 40 percent or 50 percent of the requirement of those utilities' needs. So the concern, which obviously is a real one from time to time of nationalism taking place in the United States, of the dependency factor raising its head as to whether or not these arrangements perhaps are less reliable than the U.S. would like it to be.

In this context, we are happy to note that a report just released last week by the United States General Accounting Office on Canadian power imports, a growing source of U.S. supply, comments and evaluates very favourably in this particular area. If members of the committee are interested, we can certainly xerox copies and make them available. But the General Accounting Office in the United States, in fact, came up to Canada and interviewed numerous people in Manitoba. There is a listing there which includes Manitoba Energy Authority and Manitoba Hydro and the Consul General of the United States, a member of the Opposition Party, I note, the Minister of Agriculture, etc., reviewed and analyzed all the information and observations that were made on these transactions, and has commented very very favourably. In other words, they are not concerned about the dependency factor, given the kind of arrangements that we now have under way and what we are looking at in the future.

So in summary, Mr. Chairman, we believe that the arrangements that we either have committed ourselves to or are about to commit ourselves to are highly profitable, are not risky and involve a substantial economic rate of return to the people of Manitoba.

MR. H. ENNS: If I could comment, the chairman offered and indicated a willingness to share that information from the United States General Accounting Office. Yes, we would be interesting in receiving some of that information.

MR. M. ELIESEN: Fine. Mr. Chairman, we will xerox copies and make it available to members of the committee.

MR. CHAIRMAN: The Member for Inkster, briefly.

MR. D. SCOTT: Briefly?

Mr. Chairman, I've got a couple of questions in regard to the Energy Authority and it's looking down the road, I guess. I note in your report of the difference between the — the first question in regard, I guess, to your figure of \$4 billion. Is that only in relationship and total revenue for the firm power sale, or does that also include the net of the diversities?

MR. M. ELIESEN: Mr. Chairman, that's an estimate of the firm power sale to Upper Mississippi Power Group. That is a 16-year sale of 550 megawatts.

MR. D. SCOTT: I don't recall there being any numbers in regard to the diversity exchanges. I understand that the utilities here will save somewhat in having to build the extra capacity with those diversity exchanges. Do

you see us in Manitoba moving more towards a higher demand in the summer with the significant increase, especially in the City of Winnipeg, of people installing air conditioning, because that's the reason, I understand, in the midwest for its high demand. I don't know what different heat degrees they have 100 or 150 miles south of here compared to what we have here, but the last couple of days have been real stinkers.

I'm wondering, have you been tracking air conditioner sales in Manitoba and the number of new homes constructed with air conditioners in them to be able to get some idea as to how much we will be able to offer as far as the summer diversity exchanges.

MR. M. ELIESEN: Mr. Chairman, Manitoba Hydro has undertaken substantial analysis of this particular area, and clearly we do not see ourselves peaking in the summer given our kind of climate and the conditions here in Manitoba. Minneapolis, in particular, in Minnesota is quite a large industrial, financial office structure, and really is responsible for the extensive heavy load associated with that kind of air conditioning.

While it's true, as the member notes, that the air conditioning load in the City of Winnipeg has increased over the last number of years, we certainly don't envisage a situation for Manitoba Hydro, which services obviously part of the load of the City of Winnipeg, where we will be peaking in the summer. Our peaking period will remain, as far as we can see for many decades, into the winter, unless there is a dramatic change that takes place with massive population movements or greater industrialization than has taken place in the past.

So our peaking period is in the wintertime, and we will have maximized with this arrangement, with the Upper Mississippi Power Group and with Northern States Power, the kind of diversity arrangements that could be entered into. In other words, what I'm saying is that right now there is no further room for additional diversity arrangements with other utilities adjacent to us and obviously in the south, since Saskatchewan and Ontario have the same kind of peaking periods as we do.

MR. D. SCOTT: This figure on the bottom of Page 8 of Manitoba requiring first power out of Conawapa by 1997, I believe, hits me with some surprise. I don't know if I wasn't aware of this when we were discussing previous to the Hydro report, and I know that you're not responsible in the Energy Authority for what Hydro's forecasts are themselves, but it seems to me that with Limestone coming on in 1991 or 1992 with full power available — by what year was it — '96 or '94 that full power is available out of Limestone?

MR. M. ELIESEN: A full operation in 1992, all 12 units.

MR. D. SCOTT: All 12 units, okay. That in a matter of only four or five years from then that all of the excess capacity from that, over and beyond the NSP sale, would be gobbled up in Manitoba?

MR. M. ELIESEN: Mr. Chairman, that information was provided during the Manitoba Hydro deliberations, and Manitoba Hydro indicated on the basis of their current

load growth, which is 2.8 percent over the next 10 years, that the next generating station required would be in 1997; and the most economic generating station, which is a sequence by which Manitoba constructs these particular plants, is Conawapa, and that's slated for first power, that is November and December of 1997, with the full operation of the plant coming in by 1999. So those are current Manitoba Hydro figures solely related to Manitoba's own domestic load growth without any additional export sales whatsoever.

MR. D. SCOTT: Or including the existing sales?

MR. M. ELIESEN: Yes, Mr. Chairman, including our existing commitment to Northern States Power which takes place between 1993 and 2005.

MR. D. SCOTT: With this additional sale now, which is another firm 550, looking even further down the road, what kind of impact will that have on a station post, Conawapa, which I guess would be Gull Island or else into the Burntwood District? Just what I'm looking for is the impact that the hydro sales, are we going to have to go ahead and build additional power sources that may be far more expensive sources if we get into long-term arrangements which we're now into 16 years starting — it takes us up to what year, 2010 or thereabouts? — that we could ourselves end up having to build additional capacities to supply Manitoba's needs at a time when it's going to be far more expensive than building these plants at the current time.

MR. M. ELIESEN: Mr. Chairman, the current Manitoba Hydro sequence generating schedule is such that after Conawapa the next plant scheduled is — and I'll have to check, I recall from memory — 2012 or 2015 would be the next plant and would be the Wuskwatim Plant, which is a 300 megawatt unit, keeping in mind that 500 megawatts of the Northern States Power sale is returned back to Manitoba after the year 2005 and that becomes part of Manitoba's own opportunity to utilize; so following Conawapa, really, unless there are additional major sales, one would not anticipate any additional generating construction.

I want to emphasize the point that the sale to the Upper Mississippi Power Group, and the reason why it is as advantageous to us as the Northern States Power sale, is because given the large units that we have to bring on stream when we require it for Manitoba's own use, as in Limestone, when you can take up 500 megawatts at a chunk of a 1,280 megawatt station or 550 of a 1,400 megawatt station, since they're not indivisible, that's a very attractive kind of economic arrangement for us because our own load requirements, as I've mentioned in the past, may be, let's say 150, 200 megawatts or thereabouts. Because these stations, as I mention again, are not indivisible and, therefore, we have all this surplus, and we will be either spilling water or trying to sell it in the interruptible market at less rates, that's what makes these kinds of arrangements beneficial to us, profitable to us, as well as obviously good economic arrangements for the people purchasing the power.

MR. D. SCOTT: The total capacity of our system is like if it's fully developed when our last power hydro-

electric plant is built is what — around 6,000 megawatts?

MR. M. ELIESEN: Well, we currently have, Mr Chairman, 4,100 megawatts as part of the integrated system. We are building Limestone now, which is another 1,280 megawatts. We have another about 5,000 megawatts on the Nelson system itself that could be developed, plus we have an estimated 3,000 megawatts elsewhere in the province. So we still have in Manitoba a large amount of undeveloped, untapped hydro potential. In our context, it really is our, what the economists refer to, comparative economic advantage. It is safe, it is renewable, the technology is proven. We don't face any of the risks or uncertainty that exists in other jurisdictions, either in the context of nuclear generating activity or coal, and the questions dealing with SO₂ emissions or acid rain, and it is renewable.

I want to emphasize, as long as the water flows and we do have the benefit of being impacted through four major watersheds, so if one water shed is impacted by a drought, then we always rely on the other three, and there are only rare cases where all water sheds are being severely impacted. So as long as the water flows it is a renewable source of generation and it is an area, obviously, where we believe, and a lot of other people believe, is a source of wealth for the Province of Manitoba.

MR. D. SCOTT: Those figures you gave on a total capacity in the province are strictly engineering figures, so that's the capacity if you were to dam every flowing river and major river or significant river in the province; it doesn't take into consideration the aesthetic or the possibilities of environmental implications in going for additional plants, especially if you get on the east side of Lake Winnipeg.

MR. M. ELIESEN: Mr. Chairman, no, we can make copies of these, our charts which Manitoba Hydro has had for some time now, which really show the Manitoba Hydro system. Our system, and this is the fortunate characteristic of really where we're at as opposed to Quebec or British Columbia, which, if they undertake more generation construction activity, they have to flood massive amounts of land to build up huge reservoirs in order to have the kind of flows to generate the electricity.

In our case, our system is already in place with Lake Winnipeg regulation, with South Indian Lake as the two main reservoirs, with Jenpeg control regulating the flow; so the reds are the ones, quite frankly, that have already been built; the whites are the points where additional generating capacity can put in place.

It is, as I've mentioned before, we have what is called a run-of-the-river system. The walls of the Nelson itself are tall enough that you don't have any massive flooding that takes place. With Limestone, you have just the immediate area of one square mile. So all those places that have been identified really don't involve massive environmental damage. The water flows through one generating station on to another, on to another, on to another, and that's really the beauty — if I can describe it that way — of our system

MR. CHAIRMAN: Does that satisfy the Member for Inkster?

The Member for Inkster.

MR. D. SCOTT: As one gets further down the Nelson, you get into more and more flooding, though, one must recognize, with the topography of the land changing and going into a much flatter landscape. I haven't seen any detail on Conawapa to any extent, but I understand Limestone has probably the least flooding of any station that one can build on the Nelson; but you get into Conawapa, there'll be substantial flooding and, once again, we'll get into the difficulties that we had in South Indian Lake of flooding permafrost.

MR. M. ELIESEN: Mr. Chairman, we can make available to members of the committee the detailed reports that Manitoba Hydro made public three or four years ago related to the construction of the plants on the Nelson River, including Conawapa, and the degree to which flooding will or will not take place. Certainly, while the detailed work is yet to be done on Conawapa, the major studies that were undertaken in the past clearly point to no major flooding.

MR. D. SCOTT: On Conawapa as well.

MR. M. ELIESEN: On Conawapa as well. Now we can get more details and provide that for members of the committee, but we are not looking at any major flooding that takes place related to the Conawapa Generating Station.

MR. D. SCOTT: Okay, I would appreciate receiving that.

Mr. Chairman, last couple of questions, one of them in regard to the conclusion of sales that tie us into perhaps speeding up the construction of Conawapa, going for a plant that large next on the system. Does it not put somewhat behind the eight ball any kinds of studies, environmental analysis and environmental impact studies on a plant when you have a sale signed before you start your impact studies?

MR. M. ELIESEN: Mr. Chairman, forgetting about any export sales, Manitoba Hydro right now would require Conawapa for Manitoba's own load requirements in 1997. That is the date. What we are doing with the export sale is we are certainly not advancing it. There are no advancement costs whatsoever. The sale comes into play in 1996, and the full power starts in 1997. So we are not looking at any advancement of Conawapa related to making the sale with the Upper Mississippi Power Group.

We do have sufficient time and we are required, obviously, by the licensing process to undertake the detailed kind of studies that the member refers to. There is a large body of knowledge already that has been made available on Conawapa which I referred to earlier. So we are certainly not looking right now at advancing Conawapa more than normally would have to take place for Manitoba's own load requirements.

The reference to the most economical time schedule that I referred to in my remarks, obviously, one would want to look at, given the fact that we are currently building Limestone, whether or not it makes any economic sense, whether there are any economies of

scale, so to speak, of activities associated with Limestone and activities associated with future activities associated with the Conawapa construction schedule. That's what Manitoba Hydro have been asked to look at, and that's what they are looking at at the moment.

MR. D. SCOTT: Just a final comment; I don't think there is any limit on questions, Mr. Chairman, but as a last comment, I would like to, I guess, commend the chairman of the Authority, and staff. It's a pretty keen and, I think, capable bunch. I have my own reservations, seeing things somewhat on a different perspective rather than just building power — I mean, not building power for the sake of building power plants. I fully appreciate that.

But I don't have a great amount of faith in our ability to forecast what's going to happen 20, 25 years down the road as far as for alternative sources and forms of electricity, be it through fuel cell developments which I don't understand anything about, but Japan has put their money into fuel cell developing rather than into nuclear plants, and seem to be probably going to take a quantum leap over nuclear technology within the next decade or so. They're looking at 30,000-some megawatts worth of power production from those for Japan. There are other technologies coming on stream as well.

If we can build power plants and have someone else pay for a significant part of those power plants in the first few years or the first decade of the life of those plants, it makes economic sense, I believe, to go ahead and to try and do that. On the other hand, when we extend ourselves too far down the road, economic times being what they are, the only thing that we can be certain of is uncertainty. I am maybe a little too cautious in my own outlook on things, but I am cautious and somewhat, not exactly worried, but just like to be really assured that the moves that we're making and that we are contemplating making in the next few years will not have repercussions for us years down the road.

For people to invite comparisons between this and Churchill Falls, I think is a bit ridiculous because I see no comparisons. I think that the lessons that were learned by Joey Smallwood and the Newfoundland Government and other governments with be it power sales — the Columbia River Treaty is another prime example — have been learned and are well-appreciated by your staff in the analysis that you do. So I don't have worries of those sorts of things happening again, but I do have, I guess, worries over a very long term to make sure that we are not building infrastructure with associated debt costs with it that will, in 10, 15 years time, severely impact the ability of Manitobans to pay for their Hydro system. It's a superb system now, and I think along the line of getting someone else to pay for major components of it almost up front in the first few years of a 70-year life of the plant makes good sense.

So I would just like to commend you on your work and, with a word of my own caution, wish you all the best.

Thank you.

MR. CHAIRMAN: The Member for St. Vital.

MR. J. WALDING: Thank you, Mr. Chairman.

I'll try not to take too much time. I was sorry to see on Page 8 here that you say the MANDAN negotiations have broken down. Is that project now dead, or is there any possibility that it could be proceeded with?

MR. M. ELIESEN: Mr. Chairman, unfortunately, as was announced last year by Nebraska Power District, after they spent — I believe I mentioned this at the previous committee hearing — about \$35 million U.S., which is about \$50 million Canadian these days, Manitoba Hydro spent about 5 million or 6 million on the project.

They came to a conclusion that they didn't have the financial resources. They couldn't attract the necessary other utilities to the project, and they were running into increasing legal difficulties with the line having to pass through the states of North Dakota and South Dakota. As far as they have informed us, and to the best of our latest intelligence reports, the MANDAN line unfortunately is dead.

Following that, we quickly took action to stimulate activity in this area, recognizing the benefits of a diversity exchange. That's why I mentioned in my remarks this morning to the committee, we are very happy that we have been successful in a very short period of time of having the same kind of 20-year 500 megawatt exchange that previously had been the basis of the MANDAN line. We believe that there are obviously less difficulties involved in putting this transaction to bed, so to speak. In fact, we anticipate we're going to sign contracts in four or five months, whereas in the MANDAN line no contracts were ever signed whatsoever over a six or seven year period. So we are encouraged by this latest development.

It certainly provides to Manitoba and Manitoba Hydro a very positive benefit of having this kind of interchange with a group of utilities which are closer to us in a geographic nature and which do not necessitate going through a number of other states which had caused significant delays in furthering the MANDAN line at that particular time.

MR. J. WALDING: Thank you, Mr. Chairman.

If we number those three contracts that you've mentioned as 1, 2, 3 in the order that you've put them in, the third one which has been signed mentions 200 megawatts during the summer months and that's a four-year sale. What is the price of that power that they're selling?

MR. M. ELIESEN: Mr. Chairman, all the details, as well as the actual contract of that sale, were made public by the then Minister in the House, on May 16.

Northern States Power agreed to purchase 200 megawatts, and this is summer peaking, for the months of May through October, from 1993 to 1996; and the contract, which was made public at the time, indicated that the 200 megawatts of summer peaking capacity are available to NSP at a 20 percent monthly capacity factor. The pricing factor formula for the power sale had two components, a demand charge for the capacity and an energy charge.

Now if the member wants additional information I can go into it, but let me stop at that for the time being.

MR. J. WALDING: I recall a global figure was given. My recollection is that it was \$40 million, but there was

no price on a kilowatt hour basis and no mention of a demand basis, as I recall, although I didn't read the contract.

MR. M. ELIESEN: Yes, Mr. Chairman, as was made public at that time, the estimated revenue over the four years was, as the member indicated, \$40 million for the four-year period. Also made public was the actual contract where those prices are listed and I can simply go through here.

"The price of the capacity delivered shall be 2,000 per megawatt per month in U.S. funds, escalated from May 1, 1986 to April 30, 1993, as determined using the Handy Wittman Index on public utility construction costs for fossil steam production plants, identified as total steam production plants in the North Central Region, assuming a uniform daily escalation rate between reporting dates of the index," and that's on the capacity.

And on the energy, "The price of energy associated with this capacity shall be the greater of \$16.5 megawatt hours in U.S. funds, multiplied by the ratio, A over B, or 110 percent of Manitoba Hydro's incremental costs where . . . — and there's more detail given to the characteristics of that pricing formula.

MR. J. WALDING: What does that work out per kilowatt hour?

MR. M. ELIESEN: Let me seek some additional input from one of my technicians, Mr. Chairman.

MR. J. WALDING: The arithmetic is beyond me. You tell me.

MR. CHAIRMAN: Mr. Derry.

MR. A. DERRY: Mr. Chairman, in 1993 the estimate of the mills per kilowatt hour for the capacity and energy would be 41.4 mills per kilowatt hour, in U.S. dollars. In 1996, the last year of the contract, 44.8.

MR. J. WALDING: How much of that would be energy?

MR. A. DERRY: About 50 percent energy and 50 percent capacity.

MR. J. WALDING: In energy terms, just over 2 cents U.S. a kilowatt hour. Is that about right?

MR. A. DERRY: That's correct, Mr. Chairman.

MR. J. WALDING: Thank you.

On the second contract, which seems to be entirely a diversity arrangement — I take it that it is.

MR. M. ELIESEN: Yes, Mr. Chairman, the diversity arrangements though are with two groups, the Upper Mississippi Power Group, 300 megawatts; and Northern States Power, 200 megawatts.

MR. J. WALDING: On the same terms and under the same conditions for both, is it just one contract or is it two separate ones that you're lumping together?

MR. M. ELIESEN: No, it's two separate contracts, the contract of 200 megawatts with Northern States Power will be separate and will be going over existing lines. The 300 megawatts, plus the 550 firm power sale with the Upper Mississippi Power Group will be going over the new line to be constructed between the vicinity of Winnipeg to the vicinity of Minneapolis.

MR. J. WALDING: Will the conditions of both sales be the same? Are they both getting the same deal and is Manitoba Hydro getting the same deal?

MR. M. ELIESEN: Yes, Mr. Chairman.

MR. J. WALDING: Although you don't say so, you suggest on a later page, that a diversity exchange will be summer and winter, an equal exchange of power over those two different periods. Is that the diversity exchange that you're talking about in this second contract, these two separate contracts?

MR. M. ELIESEN: Yes, the notion of the diversity arrangement, both with Northern States Power and with the Upper Mississippi Power Group, means that we will receive from them 300 and 200 or a total of 500 megawatts during the winter period, and we will ship to them 500 megawatts during the summer period.

MR. J. WALDING: Is that strictly a six months and six months, when it flows one way in one six months and the other way in the other six months, or is it a more flexible arrangement where it can vary?

MR. M. ELIESEN: No, Mr. Chairman, it's a six-month arrangement.

MR. J. WALDING: Okay. There's something here that I don't understand, that the first contract, the firm power for 550 megawatts over 16 years, seems to be the same time period as the second contract. Why would the . . .

MR. CHAIRMAN: The assumption is not correct, they said.

MR. M. ELIESEN: Mr. Chairman, if the member will note, both the diversity arrangement and the power sale start in the year 1996. The firm power sale though is for 16 years, the diversity is for 20 years.

MR. J. WALDING: So they would be different on the last four year, whenever it is. But for those 16 years, why would the Power Group be purchasing power from Manitoba Hydro at the same time that they are exporting and sending back, under the diversity arrangement, 300 megawatts?

MR. M. ELIESEN: I'm not sure I fully understand the member's question. The firm power sale is a year round sale, 12 months of the year.

In addition, we are committing ourselves to sending them diversity power for six months and they are committing themselves to send back to us the same amount during our peaking period, which is the winter period.

Now, maybe if the member can follow up from there.

MR. J. WALDING: So when they are sending us power in the summertime, why are they also buying power from us under the firm arrangement, which operates on a 12-month basis? I don't understand.

MR. M. ELIESEN: Well, they are buying power from us because their load forecast indicates that they require additional energy and capacity in the future; and their option or alternative is to build coal plants in their adjacent area.

The diversity arrangement, though, allows them — now not all of the six utilities peak in the summer, but the majority do, particularly Northern States Power, can use that diversity during the summer months. Therefore because that's their higher peaking period, they can make available to us in their lower peaking period which is the winter and receive it in the higher period which is the summer.

MR. J. WALDING: I realize why a diversity arrangement is in effect, but I am still trying to grasp the idea of buying power in the summer months at the same time that you are selling power.

MR. CHAIRMAN: Mr. Eliesen has already answered the question.

MR. M. ELIESEN: I'll try again, Mr. Chairman.

MR. J. WALDING: Perhaps you understand, Mr. Chairman, but I'm afraid I don't and that's the reason I asked the question again. Mr. Eliesen has said that he will try to explain it to me again.

MR. CHAIRMAN: Mr. Eliesen will attempt to clarify.

MR. M. ELIESEN: Yes, Mr. Chairman.

Let me try it this way then. The member is asking, why would they be interested in a diversity and a firm power sale? Why would they buy power from us as well as during the period of time when they are shipping power to us during certain particular months?

I think both these areas have to be looked at on their own particular merits. Their overall requirements year round requires them to either add additional generating capacity to meet that future load or buy it from us regardless whether or not they did a diversity. Let's assume they didn't need the load from us, they still would be interested in a diversity arrangement because of the characteristics of their peaking period which is in the winter compared to our summer, just like in Nebraska. Whether their load was increasing or not, that meant they could defer 500 megawatts in the future in order to meet their peaking period just as well as make available to us 500 megawatts during our peaking period.

MR. J. WALDING: I follow that, and if at some time they would be buying power on a firm basis and buying power on the diversity exchange, I can understand that, and I understand how they would need to build the generating stations to provide them with that power. But at the time when they are exporting power at the

same time as they are importing power, would it not be simpler just to close down one, two or three generating stations for the six months of the summer and just buy the power in whatever the time that they need it?

MR. A. DERRY: I think maybe the answer to this is that we wanted a year-around sale when we negotiated the contract. We didn't want to just be selling to them in the summer time.

MR. CHAIRMAN: It's part of the bargain.

MR. M. ELIESEN: But, Mr. Chairman, just to add more to that. Really it's a price that we get for a firm power sale as opposed to a diversity arrangement. We demand both a capacity and an energy charge related to that firm power sale and the economic attractive nature of such an arrangement for us, as well as for them, because they are guaranteed at less than the cost of their alternative source of production. So there is an incentive obviously for us to try to work out an arrangement which gives us the highest prices possible and that's why we want to sell them firm power sale. But from their particular vantage point, they still require, whether they get it from us or build it themselves, they still have to meet a particular load requirement, notwithstanding the fact that their load is higher in one particular season than another.

MR. J. WALDING: I will read Hansard and try to understand.

Can you assure me then, that on a diversity exchange, it doesn't cost Hydro anything and it doesn't cost the utility anything on a year-round basis?

MR. M. ELIESEN: That's correct.

MR. J. WALDING: One other question that I wanted to ask you, with the present opinion in the U.S. being of a protectionist nature, can you foresee any countervailing duties being put on the import of energy and how would that affect any contracts or sales that Hydro might make?

MR. M. ELIESEN: If there were such import duties applied that they would be the responsibility of the utility importing that power and therefore Manitoba Hydro itself, or Manitoba, does not have any risk or any burden related to the imposition of those duties. It would be the utility and this obviously is one of the risks that they take when they enter into these take or pay contracts for the future.

Now with regards to whether or not there is a current environment for such to take place, in a general way, as I mentioned earlier in the context of the report released by the United States General Accounting Office, plus all the statements being made out of the executive authority as well as the congressional branch have been very very positive with regards to these transactions. No one has suggested any kind of curtailment or any major concern. Clearly there are — how shall I refer to it? — coal lobby interests in the United States who are seeing the results of these transactions under way and realize that there will be

less coal units being built as a result of these transactions. Clearly they have attempted to generate some concern, particularly in the context of the so called dependency factor, that the U.S. may be over dependent. But as I have pointed out, and as U.S. documents and U.S. statements themselves point out current Canadian exports do not take up large amount of the U.S. market or the U.S. requirement, and certainly in our particular case, a much smaller percentage than that serviced by Quebec Hydro which services the eastern seaboard.

MR. J. WALDING: One final question, Mr. Chairman. You mentioned that future firm sales will be negotiated on the same basis as the last Northern States Power sale, that is on a basis of a proportion of the costs of producing energy, but you don't mention that it would be the same 80 percent that is in the present sale. I think that because it is not yet concluded or are you prepared to come to some other figure than the 80 percent?

MR. M. ELIESEN: Mr. Chairman, it has been concluded and I regret to repeat again that it would not be appropriate for me to make these figures available until the actual contract is signed but they will be made public. As soon as the contract is signed, the contract itself will be made public and as I have mentioned will be subject to the National Energy Board and public hearings.

MR. J. WALDING: Thank you, Mr. Chairman.

MR. CHAIRMAN: The Member for Morris.

MR. C. MANNES: Thank you very much, Mr. Chairman.

Firstly let me begin by saying how much again I enjoyed the review of the system, particularly the natural resource that has been bestowed upon us and its great potential. Over the next few minutes, I would like to be reassured that all these billions of dollars of profit described at whatever dollars in the future, are going to materialize. So I guess I'm seeking some reassurance Mr. Chairman.

I'd like to begin by asking some specific question: on the Northern States Power, even though I know it was introduced in the Legislature over two years ago it was reviewed in this committee firstly, almost two years ago.

I'd like to begin by asking the chairman, Mr. Eliesen who houses the forecasting model of net cash flow associated with the Northern States Power sale?

MR. M. ELIESEN: Mr. Chairman, Manitoba Hydro, — excuse me, if I understand the question correctly — Manitoba Hydro makes an application to the National Energy Board for the approval of the past sale or intended sales. When they make their application, they provide detailed forecasts with regard to the future or what they anticipate will take place over the length of the sale. They also include a whole variety of sensitivity analysis related to those forecasts.

In other words, there's a base forecast as to what the utility believes will take place in the future. But, as we all know, our expectations of the future are no

always entirely right. We look at what is in your current forecast of 2.8 percent load growth. What happens at 3? What happens at 4? What happens at 1.8? Similarly, you've assumed 12 percent interest or 7 percent inflation. What if it isn't that? What if it's higher or lower? Exchange rates - you've made certain assumptions about exchange rates. You've assumed — and again I'm going back to the Northern States Power sale — we've assumed an 82.5 cents dollar — what would be taking place in the future. We may be wrong there. What happens if it's 70 cents, around the 70 cent level, which it is today?

So all these forecasts and tests are provided to the National Energy Board and the particular cash flows that emulate from the base case of the sale are also provided in the public record and in the material supplied to the National Energy Board. The same thing will take place when the contract is finalized with the Upper Mississippi Power Group.

MR. C. MANNES: Mr. Chairman, I understand that fully well . . . two years ago initiated a major discussion on sensitivity analysis, so I well understand what the chairman is indicating but my question was more specific than that. Obviously to make that type of forecast, there's a mathematical model in place somewhere that takes into account all the variables that are necessary — I mean there's been some arithmetic forecasting model in place to come to the conclusion, that bases the assumptions — whatever their value is, over a period of time, whatever weight has been given to them — that this sale to Northern States Power would generate in terms of 1984 dollars, \$385 million? I'm asking where this model is housed?

MR. M. ELIESEN: I'm sorry, Mr. Chairman, I thought I indicated that. That's Manitoba Hydro and that model is housed in Manitoba Hydro. That's the model that was presented to the National Energy Board at that time.

MR. C. MANNES: Something I guess concerns me a little bit, the chairman has been saying certainly over the last number of committee meetings we've had, when questions have been posed with respect to various factors, it seems like the chairman has indicated that inflation and interest rates of course have dropped from the forecast; I was well aware of that and yet the Sherco costs are only down 7 or 8 percent. I know the Canadian dollar was fitted into the model at roughly 82 cents and of course it's at 73 today. I found it passing strange that in spite of the fact that most of the variables which the chairman of the energy authority has addressed have seemed to change in a positive light, but still he is indicating to us — members of the committee — that the net profit associated with the Northern States Power agreement hasn't changed in two years. I'm intrigued by that.

I would like to know the answer to one or two questions. Is it a fact that even though all these variables have changed around — a lot of them positively — a couple of them negatively — that they've all come out again to the same value; or secondly, has the model not been run in two years?

MR. M. ELIESEN: Mr. Chairman, just for the record, while I have at previous committee meetings reviewed

some of the factors in this area, and while a number of them have been very, very positive, I have mentioned some negative factors and that's coal prices specifically. I mentioned specifically that we had forecasted during the period of time a real decrease in coal of 1.1 percent during the contract period. Current forecasts today indicate maybe it's 1.4 percent decrease in real terms. So obviously that goes slightly against us.

On the other hand, as the member has noted correctly, I have mentioned other factors such as we assumed an 82.5 cent dollar and right now it's 70 to 71 cents. Capital costs, yes, Sherco are down 7 percent, but Limestone is down 25 percent or so.

To answer the member's question specifically, we have not done any recalculation since we introduced the model before the National Energy Board and the various sensitivity tests, but you can look at the sensitivity tests and take whatever kind of scenario you believe will take place in the future and that will show you really the degree to which there will be profit emulating from the sale. The only point — the reason why we haven't done it and certainly at the present time it's a useful exercise to go through again — is because we've done all these 15 scenarios and we can bring back before the committee and show exactly what happens if your current forecast of inflation — a 12 percent interest or 7 percent inflation — when that comes down to 6 percent inflation, or 5 percent inflation and 9 or 10 percent interest, now there's the real interest rate reduced significantly over the period. All that information is already on the public record and was included in the Manitoba Hydro application. So really we believe the sale is very, very profitable. All the sensitivity analyses confirms that sale; the National Energy Board confirms it, and we haven't done any recalculations.

MR. C. MANNES: Mr. Chairman, I could accept that argument. I did accept it two years ago. I have some difficulty in accepting it today, because it isn't an onerous task to run the model; it is sitting somewhere in a computer, requiring not the change, or again looking with sensitivity of altering any one of, I believe, 15 variables, I think you have indicated have gone into making up the forecast.

What I am asking is how long it would take, given the fact that you plug in today's rate of exchange, 73 cents, today's inflation. Certainly that can't take any longer than 10 minutes to enter, and results coming out would take probably three seconds.

I am curious to know why, two years later, we do not have an updated forecast of the net revenues associated with the Northern States Power sale.

MR. M. ELIESEN: Mr. Chairman, let me perhaps relate my answer to the time sequence of what has taken place.

We applied to the National Energy Board for an export licence in August of 1984. We had hearings on our application in October and November of 1984, and in 1985, the National Energy Board came down with its decision. So a little more than a year after, a decision has been released.

I have no problem going back to what they call MOSES, which is the model at Manitoba Hydro, and

plugging it in and making available to members of the committee, any revised forecast on profit scenarios. I have no problem with that whatsoever and if members of the committee are interested, we certainly can make that available to the them.

The sensitivity analysis that we had undertaken earlier confirmed that the sale is going to be profitable and generally the range of the benefits to the costs are two-to-one, and any revised model today will reflect that.

If members are interested, we'll go back to the model and bring it back before the committee and make that available, without any difficulty.

MR. C. MANNES: Mr. Chairman, the Chairman of the Energy Authority says that any revised run of that model that will give us the results are the same. Now, is he just assuming that or has it been run? How can he make that statement with some degree of certainty?

MR. M. ELIEN: Mr. Chairman, I can make that with a considerable degree of certainty because the world hasn't changed that dramatically over the last couple of years. The assumptions in our base model haven't changed that dramatically and the factors that I mentioned are more positive than negative. I have no difficulty in making that kind of statement and moreover in the context of our own priorities, it wasn't a matter that, really, we were interested in doing per se, other than noting some of the existing trends.

We just obviously got the final information from Northern States Power as to what they believe the capital costs would be now in 1987 compared to the original estimate, and that just came in over the last couple of months, so whether or not we had a different appreciation before than now, that's a recent phenomenon.

We more or less anticipated that because we saw what was happening with Limestone. We saw with Limestone that our capital costs there have come down dramatically, by greater than three times now than what has taken place with Sherco.

Those are the factors why I am quite confident in what I have stated but I am certainly prepared to rework the model and bring back the results to members of the committee on the basis of the more up-to-date information.

MR. C. MANNES: The logic escapes me as to why the government — I guess the Minister may want to answer this — would not, in fact, have wanted and insisted that that model be re-run because if, indeed, these variables are changing, some of them by 25 percent; you have indicated that the cost of building Limestone has dropped to that degree. I would have to think that the profitability associated with this sale would have to be substantially increased.

Now, unless two or three of the variables that have turned against us have such major impact upon that sale, even though they have only changed in percentage terms maybe 5 percent or 6 percent, they have such impact upon that model that, indeed, maybe it isn't creating a two-to-one benefit, as has been suggested.

MR. CHAIRMAN: The Minister would like to answer that question.

HON. V. SCHROEDER: I think that the chairman has indicated he is prepared to run the model and come up with the numbers. It seems to me that the notion of not counting your money until the dealing is done makes a little bit of sense.

We made a decision to go on the basis of total input that we had last year. We went to the National Energy Board; we had a whole set of circumstances run out before us. The Opposition had the opportunity to question any of those inputs, to put in new inputs, to put in alternatives. Based on the best possible knowledge we had, we said we are now proceeding with Limestone.

We are proceeding with Limestone. We were told by the National Energy Board that to proceed with Limestone and with this agreement would mean a profit of \$365 million if we started one year early, and \$385 million if we started two years early.

Based on that knowledge, it would make no sense whatsoever so say, no, we will not proceed, and wait until next year and see what the numbers look like next year.

Based on what we knew then, we proceeded. The member is now saying that one year later, because there are some changed circumstances, we are supposed to have done something terrible by not rerunning the numbers, which will change again by next year.

What we do know, overall, is that the National Energy Board, which ran its own calculations, came to the conclusion that it would be better for Manitoba to go ahead than not to go ahead.

Again, those numbers will change during the years. I wouldn't be surprised if the numbers were more positive now than they were a year ago. But that's really not the issue. Next year, they might be back to where we were when we made the decision. What we know is that we have a lot of room to get back to the position where we would — and that's why we made the decision. We felt we would have a good solid cushion. Of course, it is planning. It was a good cushion we had.

We would have been foolish to listen to the advice of the Conservative Party not to proceed. The Conservative Party has not shown any evidence to this committee, to the National Energy Board, or to the people of Manitoba, that it would have been better not to proceed. The Member for Morris still hasn't put forward any evidence to indicate that we would have been better off not to proceed. Yet he, and members of his party, have been suggesting to the people of Manitoba that by proceeding, we are putting a burden on schools and farms and small businesses in this province, when he knows perfectly well that we are saving schools and farms and small business money because we are being prudent in terms of our investment in hydro-electric generating stations. We will continue to be prudent.

MR. C. MANNES: Mr. Chairman, I don't want to make this committee discussion into a political harangue but I guess I've been invited to do so by the Minister . . .

HON. V. SCHROEDER: That's what you are doing.

MR. C. MANNES: . . . in his comments just offered.

My question was very specific. I wanted to know whether or not the Government of the Day can continue to use the figure \$1.7 billion net profits generated from this sale. Maybe it could be larger. I will give him that benefit. I have to think that when the cost of Limestone, starting at \$3 billion, dropping to 2.5 then to 1.9 — that factor alone would cause a net result which would be even more favourable than the figures that have been presented by the government, indeed, by Manitoba Hydro and the Energy Authority. I can't believe for one moment that these factors aren't plugged in on a monthly basis at least, to find out where we stand.

The Minister says to me in his first comment, why deal with the numbers, we've got lots of cushion built in, accept it.

We have before us today an Energy Authority statement made at the beginning, indicating that the Energy Authority is working to the conclusion of another sale that is going to generate \$4 billion. And the Minister is asking me to sit here and to accept that type of figure.

All I'm asking him and the Energy Authority is to tell us where and what figure today, given today's set of circumstances, today's variables, what that sale would generate. Because if he doesn't, and he can't tell us that, then I'm led to believe that the profitability associated with that sale is not as great. The government has been trumpeting for the last two years. That's simply all I'm asking.

MR. M. ELIESEN: Mr. Chairman, as I have indicated to the member, I have no difficulty going back and making that information available. I tell the member quite frankly that the Manitoba Energy Authority did not, and still does not regard this as a high priority.

I'll give the member reasons why. We can make public again before members of the committee the specific kind of sensitivity analysis that was undertaken at the time and made public and evaluated by the National Energy Board, which showed all sorts of benefit-cost ratios and all sorts of expected profits. Maybe I can quickly take a moment of the committee's time just to review. We had a base analysis of a cost of 305 and a revenue of 707. Those are discounted 1984 dollars for a total benefit of about 400 million.

Okay, we said, what if we had high load growth of 4 percent? Well the benefit is down; it's 274 million. What if it's low load growth? Well, it's at 2 percent; that's 448. What if you have interest and escalation which are different than our base case? What if the interest in the future is 14 percent and the escalation is 9 percent? Well, our profit is down a bit; it's 366 million. What if the interest is 11 percent and the inflation is 3, in other words, a very high real net interest rate, real interest rate? The profit is down considerably; it's 185. What if we have low interest and escalation? Well, the interest is 8 percent and escalation at 5; it increases to 504 million. What if we have high interest, high escalation, low load growth — 14 percent of interest, escalation 9 percent and load growth at 2 percent? About the same, 428 million. What about low interest, low escalation and high load growth? That means interest of 8 percent, inflation at 5 percent, load growth of 4 percent; about 411 million. What if we have 10 percent capital costs for the plants of Manitoba Hydro

more than what we are anticipated? Our profit will be down to 378 million. What if it's 10 percent less? Then it's 370 million. What if the fuel escalation, some of the basis which we price our sale on, what if it's reduced by 2 percentage points per year? It's reduced to 376 million. What if the fuel escalation is reduced by 50 percent? The net benefit is now down to 361 million. What if the fuel escalation drops 10 percent over the life of the NSP agreement? It's 318 million. What if our export market is reduced by 20 percent? Then the benefit is down to 382 million. What if the export market rate is increased by 20 percent? It's up to 411, and so on.

So what we presented publicly to the National Energy Board, evaluated it independently, is that in all the scenarios we looked at — and anyone else who had different scenarios could have done, and the National Energy Board obviously looked at it and came to their own conclusion which, if members would like, I could repeat for the record what the National Energy Board said — and we had looked at them in a most serious way and we had carefully undertaken an excellent look at all the risk factors involved of making the sale.

A year later, basically, we are — and I'll be very frank with the member, we have a limited staff and we have about four or five professionals on our staff, really. Our priorities have been dealing in a variety of areas, mainly with new efforts and new negotiations and we've been very active in our prioritization. Whether or not we're going to be down a bit or up a bit after one year, quite frankly, wasn't a matter of high prioritization. But if there is interest, we'll certainly run it through the model and make it available to members of the committee.

MR. C. MANNES: Mr. Chairman, yes, I would formally request of the Minister and of this committee that indeed that be done. It's not an onerous task. The Chairman of the Energy Authority knows it isn't an onerous task. There are 15 numbers to plug in to that model; there are 15 variables, and I'm asking whether or not . . .

HON. V. SCHROEDER: How many times do you have to be told we will do it? Do you have to be told 14 times or 30 times?

MR. C. MANNES: That's fine. The Minister interrupts. Mr. Chairman . . .

MR. CHAIRMAN: Order please.

MR. C. MANNES: . . . I don't have to go through the whole analysis that the chairman just went through with respect to the sensitivity analysis. I have gone through it. I buy his argument. I buy the fact that they laid it before the National Energy Board and it was accepted. There is no argument with that and for the fourth time though, he continues to bring that up. That's not in dispute here.

What is in dispute is whether or not the government and Hydro are prepared to run the model and tell us what today, in today's terms, that sale is going to produce. Because that sale, as I understand it, can be depicted in a mathematical form. It's in a model and therefore the time needed to find out what it'll return to Manitobans in the form of net generated profit is miniscule and that's all I've asked for.

I would ask also, when we could expect it at the committee?

HON. V. SCHROEDER: What I was objecting to is the member asking for about the fourth time for a number which we had already told him several times we would be providing to him. He has now asked an additional question, which is not an unreasonable question: when can you have it? That's something I would defer to the

MR. M. ELIESEN: Mr. Chairman, I will not commit myself right at this moment saying that it will be made available tomorrow. I will check and we will try to have it done as quickly as possible.

I just only mentioned in passing again, if this exercise had been done two or three months earlier, I couldn't have plugged into the model a 7 percent decrease in the Sherco capital costs. I did not know at that time. Those are some of the ongoing kinds of developments that take place which clearly impact the degree to which you have a current appreciation of whether or not the profits will be X or whether the profits will be Y.

The point that I am making and the point which obviously I have repeated with a considerable degree of certainty is that there are going to be profits. There are going to be profits in any kind of scenario that anyone would want to depict. We will, as quickly as possible, run through the model, provide our latest best guesstimates of what the future will be during the running of the contract and provide it to members of the committee.

MR. CHAIRMAN: I suppose there is a meeting of the minds here. They ask a question and it will be done. The Member for Morris.

MR. C. MANNES: I hope my mind was included in that, Mr. Chairman. I would ask also that a run then be done using today's factors without any forecast of where they may be in the future, just using today's, what we know about today's exchange rates, today's costs associated not only with Limestone but also with Sherco 3.

I would also ask Mr. Eliesen whether or not he can share with the Opposition the formal model, and also if he can share with us the regression analysis that has been used to determine the importance of each invariable.

MR. CHAIRMAN: The Member for Morris is assuming it's a multiple regression model. It may not be.

MR. C. MANNES: Well, then a linear. Give us the linear regression model.

MR. M. ELIESEN: Yes, Mr. Chairman, we will make it available. What we can make available, the description of the model of what we've utilized was included in the submission before the National Energy Board, and I will check the degree to which regression and linear equations are included in the description; but the model itself, the Moses model, I will check to ascertain from Manitoba Hydro what can be made public related to that whole model itself.

MR. C. MANNES: Just a final question. My reason for wanting some of the corresponding regression analysis was to know — and I don't have to know the part — but what I would like to know, in general, is: what factors, what variables carry the most important weight within the model? That's my only reason.

MR. M. ELIESEN: Mr. Chairman, we can attempt to answer that question. I just want to mention, so there is no confusion, when we're running through the models there is the suggestion, use current denominators. You have to make certain assumptions, not currently, what you anticipate the future. I will show to the member particular information what coal prices are right today I will also show what coal prices have been for the last 20 years. And the question is, what assumption do you make about coal prices in 1993? What assumption: do you make on the basis of what's happened over the last year and a half, and what assumptions do you make, given what has taken place over a 20-year period? Is your assumption of the future conditioned — that is, what will take place in 1993, conditioned by, hypothetically, a short-term operation, or is it conditioned by what has taken place over a 20-year term?

These are some of the factors that go into it and that's why, when we presented our information to the Energy Board, we didn't want to be conditioned by what's happened over the last 20 years or so. We wanted to say, well, what if the future is not like the past? So we made assumptions which bear no relationship to the past. In fact, the coal prices, which was one of the most important variables because it represents about one-third of the total capital, operating and fixed costs of the total arrangement, we assumed a decrease of 1.1 percent, notwithstanding the fact: over the previous 10 years coal prices have escalated 5.8 percent in real terms. Why? Because we believe coal prices will decrease in the future, and so we assumed that, as part of our model.

So we will try to present that information to the best of our ability. Where we make assumptions, we will identify the kind of assumptions that we are making in terms of the future benefit cost ratio.

MR. C. MANNES: That's a most responsible thing to do, Mr. Chairman. Naturally, the assumptions will have to be built in, but I would also ask the Chairman to assume, as one of the assumptions, that in 1993 the factors will have the very same weight that they have today, because we've been just taught over the last half a year what can happen with oil prices — we've just been talking about what happened in oil prices — and if we don't know for sure that in 1993 the variables will not have the very same values that exist today, that's my only question to you.

MR. CHAIRMAN: Okay. Other questions?
The Honourable Minister.

HON. V. SCHROEDER: I should just say that I don't perceive any difficulties in meeting the member's request, that last request for having all the variables in the same proportion as they are today for 1993, as I understand it.

MR. CHAIRMAN: Are we ready to approve the report?

HON. V. SCHROEDER: Sure.

MR. H. ENNS: Mr. Chairman, I would like to go through the pricing formula with some greater detail, for which we were provided some details. I'm speaking of the 200 summer-peaking contract that was recently tabled with us in the House.

My understanding is that there's a — I'll see if I get this right, because I'd like to get at the price that was determined per kilowatt hour. The formula works on a 20-percent monthly capacity factor, the capacity price of \$2,000 per megawatt per month is factored in as an energy price of the greater of which being either the 6.5 mills a kilowatt hour multiplied by the ratio AB, which I understand to be Northern States 1993 steam generation cost, divided by 1988 steam generation costs. Hence, it's a measure of NSP's incremental costs. That's what the AB ratio stands for in that formula, right?

MR. A. DERRY: Mr. Chairman, the A and B are the ratios that will be used to define the escalator of the 16.5.

MR. H. ENNS: Okay. The first question, is this formula similar to that which will be used to price sales from Limestone?

MR. CHAIRMAN: The question again, please.

MR. H. ENNS: Price sales from Limestone.

MR. M. ELIESEN: We make sales, Mr. Chairman, out of our system, and we have no dedicated sales, per se. When we make sales, interruptible sales, which we have been making, it comes out of the Manitoba Hydro system. So there is no pricing related, per se, to any one particular generating station.

MR. H. ENNS: Is the ratio A and B based on actual costs or are these estimates?

MR. A. DERRY: These will be actual costs as they are given by NSP to the FERC accounts, so they will be actual costs.

MR. H. ENNS: But at this point, they're estimates? I'm having trouble. You've arrived at firm prices in the contract and you've indicated those prices to be, in 1993, \$41.4 U.S. per kilowatt hours, \$44.8 U.S. in '96. It leads me to believe that you must be working at current systems and Northern States systems actual costs.

MR. M. ELIESEN: Maybe, Mr. Chairman, to summarize, there are two charges — one in capacity and one in energy. The 2000 megawatt per month capacity charge is a negotiated number which is escalated from 1986 to 1993. The \$2,000 per megawatt number relates to the demand charges in effect for this type of sale in the MAPP area, the mid-continent area power pool in which NSP is located.

The energy charge, the NSP, the 16.5 mills per kilowatt hour is also a negotiated number, but also subject to

escalation, and it's close to the rate received for interruptible sales; although of course, with interruptible sales, there's no demand for that. So the combined demand, plus energy charge, works out about twice that for the interruptible sales as mentioned earlier. It's approximately 50-50 in terms of the total revenues that we would be receiving over the four-year P'.

MR. H. ENNS: What are Manitoba Hydro's incremental costs as you relate it to this formula?

MR. M. ELIESEN: They're negligible, Mr. Chairman. We have surplus obviously in the summer, which is our non-peaking period, and we don't have to add additional generation in terms of making the sale.

The benefit to us is that we receive a benefit of about two to one, because we assume that we would have been making this sale during this period of time on the interruptible market. We are happy to conclude a transaction which will give us about double the revenue during that period of time because it's a summer sale and it's a period during which we know that we will have surplus.

So even if Northern States Power don't even require this particular energy at that particular time, under the contract they are committed to paying the demand charge. So in that sense it's a take or pay contract.

MR. H. ENNS: That's what demand billing is all about, eh?

MR. M. ELIESEN: Indeed, Mr. Chairman.

MR. H. ENNS: Mr. Chairman, through you to the Chairman of the Energy Authority, the costs or selling price indicated to the committee earlier of 41.4 and 44.8 are firm prices, or estimated prices, that we will be receiving in 1993 and 1996.

MR. M. ELIESEN: Yes, Mr. Chairman, those are estimated . . .

MR. H. ENNS: Estimated. Well, I suppose that's what I am trying to say.

MR. M. ELIESEN: Yes. Because, Mr. Chairman, keep in mind these are subject to escalation, and again it depends on your assumptions of escalation, but whatever that escalation will be taking place, whether it's high, low or in-between, those basic figures that have been negotiated, both on the capacity and energy charges, are subject to that escalation.

MR. H. ENNS: I would just ask one further question. What rate did they assume A and B, or the escalation rate to be, to get to the 41 mills per kilowatt hour? Just doing some of our own homework, we found out that with a 20 percent increase, we'd end up with about 35 mills per kilowatt hour. Do you understand what I'm saying?

What rate, assuming that A and B will be approximately equal to 20 percent, between 1988 and 1993, then the former yields about 35 mills per kilowatt hour, so you must have used a different rate, a different escalator rate. What was that rate?

Thursday, 29 May, 1986

MR. M. ELIESEN: Mr. Chairman, maybe I can provide the following information to the member.

The demand component of 2,000 per megawatt per month is escalated from 1986 to 1993. At a 6 percent escalation, this produces a charge about 3,000 megawatts per month. For 200 megawatts in six months, this works out to about \$3.6 million per year in U.S. dollars.

The 16.5 mills per kilowatt hour, which is the energy rate produced at a 20 percent capacity factor, escalated from 1988 to the year of delivery at 5 percent per year, produces revenues of about 3.7 million in 1993, growing to 4.3 million in 1996. The total revenues are about \$40 million in Canadian dollars for that period of time.

Based on those actual figures and estimates on the escalation, you receive the scenario of the mills per kilowatt hour, which go from 41.4 to 44.8.

MR. CHAIRMAN: Are we ready to pass both the reports of the Manitoba Hydro and Manitoba Energy Authority? The Member for Lakeside.

MR. H. ENNS: Mr. Chairman, Manitoba Hydro officials earlier and the Chairman of the Energy Authority has committed themselves to providing committee members with some additional information this morning, principally the information requested by the Member for Morris, we'd expect from model readouts.

There are some further bits and pieces of information that Hydro officials indicated a willingness to respond to with respect to some of the questions that I put or the record — I have received some of them.

I would be prepared to pass the report and the Energy Authority at this time on the undertaking from the Minister that the other information be made available to us in the House, or privately.

HON. V. SCHROEDER: Yes, Mr. Chairman, you have that undertaking. The questions asked, which are now on the record, will be provided by the Energy Authority and Manitoba Hydro and we will pass them onto the Opposition at the earliest possible opportunity.

MR. CHAIRMAN: What is the pleasure of the committee?

MR. D. SCOTT: Committee rise and pass the reports.

MR. CHAIRMAN: The committee reports have been passed.

Both the Manitoba Hydro and the Manitoba Energy Authority Reports—pass.

Committee rise.

COMMITTEE ROSE AT: 11:57 a.m.