MANITOBA PUBLIC UTILITIES BOARD

Re: MANITOBA HYDRO
COST OF SERVICE STUDY

Before Board Panel:

Graham Lane	- Board Chairman
Robert Mayer	- Board Member
Kathi Avery Kinew	- Board Member
Len Evans	- Board Member

HELD AT:

Public Utilities Board
400, 330 Portage Avenue
Winnipeg, Manitoba
May 10th, 2006
Volume V
Pages 904 to 1110

APPEARANCES

R.F. Peters		)Board Counsel
Patti Ramage		)Manitoba Hydro
Odette Fernandes		)
Bryon Williams		)CAC/MSOS
Myfanwy Bowman		)
Doug Buhr		)City of Winnipeg
Peter Miller		)TREE
Tamara McCaffrey		) MIPUG
Patrick Bowman		)
Andrew McLaren	(np)	)
Jurgen Feldschmid	(np)	) CCEP
Michael Anderson	(np)	) MKO

TABLE OF CONTENTS

LIST OF EXHIBITS

LIST OF UNDERTAKINGS

--- Upon commencing at 9:10 A.M.

THE CHAIRPERSON: Good morning everyone. We got a little bit of a late start but I'm sure we will make it, we've got a tail wind today. Mr. Buhr, do you want to continue with your cross-examination?

MR. DOUG BUHR: Thank you Mr. Chairman.

THE CHAIRPERSON: Before we start, I think we may have a few outstanding things. Ms. Ramage?

MS. PATTI RAMAGE: The one thing we wanted to bring to the Board's attention is that Mr. Warden has an appointment over the noon hour today and he will -- he intends to slip out of the Hearing at 11:30.

We're not asking to adjourn at that time, we can carry on but just to give the Intervenors the heads up that if they have questions they might direct them to him before that, if they need that answer to carry on or he will be back at the regular hour when we begin in the afternoon.

THE CHAIRPERSON: Very good. Mr. Peters, do you have anything?

MR. BOB PETERS: No we are ready to go. Mr. Lazar has revised and there is a circulation of a revised Exhibit that Dr. Miller has provided to me and I'll provide that to the Board more closely with the commencement of his cross-examination, so we will proceed.

THE CHAIRPERSON: Okay. Okay Mr. Buhr.

MR. DOUG BUHR: Thank you Mr. Chairman.

CONTINUED CROSS-EXAMINATION BY MR. DOUG BUHR:

MR. DOUG BUHR: Mr. Wiens, I want to go back and I'm going to try, believe me, to do this briefly -- to our discussion about RCC's yesterday and this history, actuals perspectives.

And I have -- I found a 1994 chart that Manitoba Hydro prepared. I'd ask -- I want to provide that to you and ask you to confirm that that is, in fact, the case. Mr. Chairman, I have copies, as well, for the Board.

THE CHAIRPERSON: Very good, thank you.

(BRIEF PAUSE)

CONTINUED BY MR. DOUG BUHR:

MR. DOUG BUHR: It's a 1994 chart, I couldn't find the one you guys prepared for me in 1996, to be honest with you. I take it you agree that those numbers are accurate?

MR. ROBIN WIENS: Well, we prepared them

so I'm not going to question them, Mr. Buhr.

THE CHAIRPERSON: Well, we'll give it an Exhibit number then.

MR. DOUG BUHR: Yes, Mr. Chairman, I think it's City Exhibit 3.

THE CHAIRPERSON: Yes that's correct.

MR. DOUG BUHR: I stand to be corrected on that.

THE CHAIRPERSON: Very good.

--- EXHIBIT NO. C-3: Chart from 1994 Prepared by Manitoba Hydro

CONTINUED BY MR. DOUG BUHR:

MR. DOUG BUHR: Sorry, Mr. Wiens that chart again confirms that whenever Manitoba Hydro has done an actual study the RCC for street lighting has been higher than what Manitoba Hydro's perspective cost of service study has shown?

MR. ROBIN WIENS: Yes.

MR. DOUG BUHR: And in fact the same was true at the 1996 Hearing, you'd agreed with me that if we updated that chart to include the '96, the same would be true then?

MR. ROBIN WIENS: I believe that's the

case, Mr. Buhr. I'd just point out that it becomes very apparent from Exhibit City-3 that Manitoba Hydro has not or up until 1991, all of the cost of service studies prepared by Manitoba Hydro were actual cost of service studies.

So in fairness, you can't compare those with prospective studies that occurred after. You would have to draw the comparison with prospective studies that were prepared at the same time. And, clearly, there were none.

So I just -- I just draw that to your attention.

MR. DOUG BUHR: Well, except -- except, Mr. Wiens, that for 1992 you did have a prospective and it was one nineteen (119), and when you did an actual study it was one twenty-three (123).

MR. ROBIN WIENS: I -- I'm not going to -- I'm not going to question that.

MR. VINCE WARDEN: Mr. Buhr, results are not surprising in those years in which water conditions are better than -- than the median, on which the prospective cost of service study is prepared. So these results are not surprising at all.

And, as I pointed out yesterday, you'll see the opposite when water conditions are below median.

MR. DOUG BUHR: So, Mr. Warden, I'm -- I'm having trouble understanding that answer.

Are you suggesting to me that every time Manitoba Hydro has done an actual study, water flows have been high, whereas when you've done a prospective you just used median?

MR. VINCE WARDEN: In the years that -- that we've reference here that is the case, yes.

MR. DOUG BUHR: Is Manitoba Hydro prepared to do another actual study today on street lighting, in 2006?

MR. VINCE WARDEN: Mr. Buhr, we're going to get the same result anytime water conditions are higher than median. We can do -- we can go through that process and we'll get a -- an RCC that's higher in this -- certainly this 2005/06 fiscal year because of water conditions.

We -- it might even be appropriate for us to normalise water conditions when we're doing our -- our actual cost of service study, for that very reason, because water conditions do in fact distort the results we get.

MR. DOUG BUHR: Correct me, sir, if I'm wrong. My understanding is when you do a prospective cost of service study you assume median flow?

MR. VINCE WARDEN: That's correct.

MR. DOUG BUHR: Are you prepared to do an actual study assuming median flow for the year 2006 for street lighting?

(BRIEF PAUSE)

MR. VINCE WARDEN: I think, as Mr. Thomas has testified previously, to do a -- a cost of service study takes a couple of months of time. We could not do a -- a street lighting study in isolation, it would have to include all -- all the classes in that -- in that study.

And for -- for all things we do at Manitoba Hydro we have to look at the benefit of the time we expend because if we're going to spend that amount of time, we -- something else would have to be sacrificed.

There would just not be, unless so ordered by this Board, there would not be -- that would not be a productive use of Manitoba Hydro's time, to go through an actual cost of service study for 2006.

MR. DOUG BUHR: In fact --

MR. ROBERT MAYER: Mr. Warden --

MR. DOUG BUHR: I'm sorry.

MR. ROBERT MAYER: -- Mr. Warden, I don't understand why -- could you explain to me how this high water or low water affects the cost of providing streetlights to the city of Winnipeg?

MR. VINCE WARDEN: Yes. Well, it all gets -- it all gets back to the share of the export revenue credit. So in a year of high water our net income is higher --

MR. ROBERT MAYER: I understand. Thank you.

CONTINUED BY MR. DOUG BUHR:

MR. DOUG BUHR: In fact, Mr. Warden, if I understand Hydro's evidence correctly, you're -- Manitoba Hydro is not proposing to do another actual study until about 2009 or 2010?

(BRIEF PAUSE)

MR. VINCE WARDEN: We do go through the process of a -- of an actual cost of service study about every five (5) years. It's mainly just to verify some of the assumptions we use in our prospective.

But, as I pointed out, the actual cost of service study does have that qualification around it that we have to always look at water conditions in that year in which the study is performed.

MR. DOUG BUHR: Sorry, sir. So is the answer to my question yes?

You're not prepared -- you're not going to do another actual cost of service study until 2009, 2010?

MR. VINCE WARDEN: Well, we, as I mentioned, it's every five (5) years but it's not on a rigorous schedule. We would have to look at what's -- what else is going on in that particular timeframe and if we consider it to be appropriate we would -- we would conduct it during that -- that period.

But I -- I cannot commit to that at this stage.

MR. DOUG BUHR: Would you agree with me, sir, that the results of your proposed method show that the results in the RCC for street lighting are going the wrong way; up?

(BRIEF PAUSE)

MR. DOUG BUHR: It goes from 105 to 107 as I understand it?

MR. VINCE WARDEN: Well, the -- actually as Mr. Wiens testified earlier there was a temporary increase because of the acquisition of Winnipeg Hydro in

2002. There has been some stabilization. The -- the RCC has come down. Again, I -- I like to look at the RCC before the export credit and as you can see it's -- it's below 100.

MR. ROBIN WIENS: Mr. Buhr, if I could just add to that, the change in methodology does appear to result in a slight increase in the revenue cost coverage in the street light class. But we would expect that the change in methodology is going to affect all the classes.

It -- so happens that it affects the street light class in that way. It -- it's, if anything, it's -- if the -- if the recommended method is approved what it's saying is that the cost causation of the street light class is slightly less than -- than the current method and that should be something that --

MR. DOUG BUHR: Excuse me, how is it -- how is it less than the current method when your current number is 105 and your study shows it going to 107?

MR. ROBIN WIENS: Mr. Buhr, I'm saying the cost causation with the recommended method. The revenues don't change but the costs do change and they're slightly less with the recommended method than they are with the current method.

And if anything that would be something

that your client would be able to come back at a rate hearing and say this new method is showing that our costs are less than they were previously and we would like that recognized.

MR. DOUG BUHR: So, just so I understand, is it Manitoba Hydro's position that this doesn't get corrected until there is a rate hearing? It's nothing to do with the cost of service methodology?

MR. ROBIN WIENS: Well, this hearing has everything to do with the cost of service methodology and a rate hearing will have to do with rates.

MR. DOUG BUHR: And -- and to reduce the RCC from 107 or whatever it is to 100, is it Manitoba Hydro's position that that has to be done at a rate hearing?

MR. ROBIN WIENS: Yes, it is.

MR. DOUG BUHR: And so until Manitoba Hydro applies for a rate hearing we're stuck paying too much?

MR. VINCE WARDEN: Again, I would emphasize, Mr. Buhr, you're not paying too much. The question relates to the sharing of export revenues. So you're -- you're paying your way before that sharing of export revenues, virtually equal to your costs. So you're in a good position in that regard.

MR. DOUG BUHR: You'll understand, sir, if I disagree with that conclusion?

MR. VINCE WARDEN: Certainly.

MR. DOUG BUHR: Mr. Wiens, I want to go back to I -- a comment I think you made yesterday that the 1996 RCC was 103?

MR. ROBIN WIENS: Pre-export it was 103. Post-export it was -- it was 112.5.

MR. DOUG BUHR: And in fact in the 1996 general rate application hearing I think you agreed with me that it was about 115 as being shown in your prospective study then?

The reference -- Mr. Wiens, let me give you the reference. It's page 2247 of the 1996 hearing.

MR. ROBIN WIENS: I'm sorry, Mr. Buhr, I don't have that with me today.

MR. DOUG BUHR: I can provide it to you, Mr. Wiens if you wish.

(BRIEF PAUSE)

MS. PATTI RAMAGE: Mr. Chairman, I think it might be a good idea. Because if Mr. Wiens is to answer the question I think he needs to have the transcript reference put to him because I'm fairly confident he doesn't remember what was said at the 1994 Hearings and --

MR. DOUG BUHR: And I'm not --

MS. PATTI RAMAGE: -- Mr. Buhr if you have it here that would be great.

MR. DOUG BUHR: -- I'm not suggesting that he should, I have one copy here I'm quite willing to provide it to him.

THE CHAIRPERSON: Mr. Barron, could you help Mr. Buhr? We will make more copies. It will only take a second.

(BRIEF PAUSE)

MR. DOUG BUHR: Perhaps I'll move on Mr. Chairman.

CONTINUED BY MR. DOUG BUHR:

MR. DOUG BUHR: I want to now go back to the discussion we were having yesterday about the number of customers. And at one point, Mr. Wiens, you used what I would call the gas station analogy, Domo, do you recall that?

MR. ROBIN WIENS: I do recall that, that was just yesterday.

MR. DOUG BUHR: And do I understand, sir, that your point was that for each Domo station, while there may be one bill to Domo, there would be different bills for each station?

MR. ROBIN WIENS: There's a different service provided to each station.

MR. DOUG BUHR: And there's a different usage of electricity in each station, different amount?

MR. ROBIN WIENS: That's correct.

MR. DOUG BUHR: Right. And I suggest to you, sir, that a street light in the north end uses the same amount of electricity as one in the south end of a similar size?

MR. ROBIN WIENS: That would be correct.

MR. DOUG BUHR: There's also different franchisees at each Domo station, correct, or there may be?

MR. ROBIN WIENS: There may be.

MR. DOUG BUHR: Whereas here you have one (1) customer the City of Winnipeg, correct?

MR. ROBIN WIENS: That's correct, yes.

MR. DOUG BUHR: And you send us one (1) bill, correct?

MR. ROBIN WIENS: I believe that's the case, yes.

MR. DOUG BUHR: And I think it's fair to say, Mr. Wiens, you haven't had any problem with collection or payment of the amount?

MR. ROBIN WIENS: I'm not aware of any.

MR. DOUG BUHR: In response to City/Manitoba Hydro 1-5(b) there is a reference to the fact that the PUB approved this method of counting, if I can put it that way, in 1992. You'll agree with me on that?

MS. PATTI RAMAGE: Mr. Buhr could you give me the reference again, I'm sorry?

MR. DOUG BUHR: Yes, City/Manitoba Hydro 1-5(b), very last line.

(BRIEF PAUSE)

MR. ROBIN WIENS: We have it.

MR. DOUG BUHR: My understanding, sir, is that Manitoba Hydro wants a change from what this Board approved in 1991/92?

MR. ROBIN WIENS: We're not asking for any change to that.

MR. DOUG BUHR: No, no not to that, sir, but in -- in its orders in '92 the Board approved a certain cost of methodology, you want that now changed, correct?

MR. ROBIN WIENS: No.

MR. DOUG BUHR: Not at all?

MR. ROBIN WIENS: Not that particular aspect of the --

MR. DOUG BUHR: My point, Mr. Wiens, is that simply because the Board approved it in 1992, is no reason not to look at it again now?

MR. ROBIN WIENS: I'm not suggesting that.

MR. DOUG BUHR: Thank you.

(BRIEF PAUSE)

MR. DOUG BUHR: And moving to City/Manitoba Hydro 1-5(c), just for your reference. The answer there says that treating the City as a single customer would have negligible effect.

Can you advise me whether that negligible effect -- first of all, what do you mean by negligible?

MR. CHIC THOMAS: Negligible being that -- that the effect on the overall RCC, taking into account these negligible effects, is minimal.

MR. DOUG BUHR: Sorry. Can you -- can you give me some kind of estimate, sir? I mean, is it one (1) point? Is it half a point?

MR. CHIC THOMAS: It's -- I did that calculation this morning as a matter of fact and from my calculation it would go to 107.4 to 107.1, which is, I believe, what we are reporting right now in our '06 study.

MR. DOUG BUHR: Now I'm confused, sir.

You're telling me that if you counted the City as one (1) customer the RCC goes down by three tenths (3/10) of a point and yet, that happens to be exactly where you're at now, when you haven't treated the City as one (1) customer?

MR. CHIC THOMAS: Sorry, Mr. Buhr, if I misspoke. The RCC will go up to 107.4 to one -- from the 107.1 that it is reported.

MR. DOUG BUHR: Thank you.

And about the -- you make a note -- there's a note in -- in that same answer that customer accounting cost would decrease slightly if we were treated as one (1) customer?

MR. CHIC THOMAS: I'm sorry, Mr. Buhr. Repeat that.

MR. DOUG BUHR: Under customer accounting:

"C-11 billings -- billings and C-12

collections, area and roadway lighting,
class share of allocated cost would
decrease slightly."

MR. CHIC THOMAS: Yes.

MR. DOUG BUHR: Can you tell me how much, sir, or can you give me an order of magnitude?

MR. CHIC THOMAS: Approximately two hundred and fifty thousand dollars ($250,000).

MR. DOUG BUHR: And in terms of RCC points?

MR. CHIC THOMAS: Oh, RCC points. Well, that would be the -- the three tenths (3/10) that I had mentioned earlier, from the 107.4 to the -- that had the biggest effect.

MR. DOUG BUHR: And the C-13 -- sorry, the C-13 marketing RND, again there's a -- a note that it would decrease; by how much?

I -- I need an order of magnitude, sir, I don't need an exact number.

(BRIEF PAUSE)

MR. CHIC THOMAS: Approximately, we -- we had answered that in the City MH-16-D, and the bottom there is forty-four thousand (44,000).

MR. DOUG BUHR: A -- a general question.

I'm correct in assuming that Manitoba Hydro can do this area in -- using the actual number of customers rather than counting poles?

MR. ROBIN WIENS: It can be done, Mr. Buhr. We don't believe that it should be done.

MR. DOUG BUHR: Can you tell me why, please?

MR. ROBIN WIENS: The street lighting in the City and anywhere else is connected at different points to the distribution system.

We talk about a customer. We're talking about really -- we're talking about defining a customer or the number of customers for the purpose of determining their impact on the distribution system, and that's the distribution system upstream of where the streetlights connect.

In our cost of service functionalization and classification we look at -- there's one (1) group of costs that is significant, that is required to bring the energy to the street lighting service and to all other customers, poles and wires.

And in our cost of service study, poles and wires are classified as being 60 percent related to the demand on -- that the different customer classes put on the system and 40 percent related to the number of customers.

So we need to have a definition of -- of what is a customer. And we believe it is an appropriate definition that a customer is a connection to the distribution system.

And on average, at the time we undertook that study that we filed with the Public Utilities Board in 1991/92, we determined that somewhere between eight (8) and ten (10) street lights were associated with one (1) connection to the distribution system.

So we took the higher number and we defined the street light -- and we defined a street light customer as being every ten (10) luminaires.

MR. ROBERT MAYER: Mr. Wiens, I'm having trouble with this calling ten (10) street lights a customer. You don't read a meter for every ten (10) street lights. You don't have -- I mean, part of your customer service staff deals with bodies, I understand. You deal with live bodies. You -- somebody runs around and reads a meter at some point in time; that doesn't happen with every ten (10) street light.

MR. ROBIN WIENS: And the street light class of customers is not allocated any cost related to metering in this study. These costs are related to the distribution system upstream of street lights.

MR. ROBERT MAYER: So all those other customer service costs that you would ordinarily rate -- or ordinarily assign to a residential user are not costed in to street light?

(BRIEF PAUSE)

MR. CHIC THOMAS: Mr. Buhr, if you go to the PCOSS 06, Section E, page 97, you'll notice that it's our classified costs by allocation table and between the two (2) methods it doesn't make a difference. This is showing the current method but as we've stated earlier the -- the distribution side and the customer service side does not change with our recommended method.

So the following tables are not allocated to street lighting and that would be tables C-25 through C-41. So it's distribution plant zone 1 services, distribution plant zone 2 services, and zone 3 services and then C-40 is meter investment and C-41 is meter maintenance.

Now, on the customer service side, on the next section below that, table C-14 inspections, table C-15 meter reading, and C-30 hot water tank program. None of that is allocated to street lighting.

CONTINUED BY MR. DOUG BUHR:

MR. DOUG BUHR: Mr. Thomas, you've agreed with me that there is some change, albeit minor, in the RCC if you treat the city as one (1) customer; correct?

MR. CHIC THOMAS: I did.

MR. DOUG BUHR: Then why -- and Manitoba Hydro can do it; correct?

MR. CHIC THOMAS: Can do what, Mr. Buhr?

MR. DOUG BUHR: Can -- can count customers, actual customers. So instead of a hundred and forty-seven thousand (147,000) you've got seven hundred (700); you can make the allocations based on a customer basis; correct?

MR. CHIC THOMAS: Yes, we could do it but now, again, as we've mentioned in the IRs though, it isn't -- not all tables are allocated based on just that customer count.

MR. DOUG BUHR: Mr. Thomas, I'm sorry. Why doesn't Manitoba Hydro simply want to do it right. Why don't you simply count the number of customers you've got, which is seven hundred (700), and do your calculations on that basis and stop, you'll excuse my words, screwing around counting ten (10) poles as one (1) customer?

MR. ROBIN WIENS: Because Manitoba Hydro believes that counting ten (10) poles as one (1) customer.

MR. ROBIN WIENS: Because Manitoba Hydro believes that counting ten (10) poles as one (1) customer is the right way to do it for the purposes of allocating customer related costs associated with poles and wires on the distribution system.

This is not like a residential customer which we count as one (1) customer in the cost of service study. A residential customer is at one (1) point and gets one (1) service from the distribution system. The street light system is connected at many, many points in the distribution system.

And so we believe that that is the correct approach to determining customer related costs of the distribution system.

THE CHAIRPERSON: Mr. Buhr, in the end you're going to be making your own closing arguments and statements. And you're going to be able to use your cross-examination to make your point and then Hydro is going to produce their closing remark and may presumably address some of these points.

As well, we're going to have a look at this 1991/92 statement of the methodology that's applied to arriving at this particular approach. So I'm just wondering -- there's clear difference of opinion between the position that you're staking out and the position that Hydro is seemingly fixated on.

MR. DOUG BUHR: I was preparing to move on, Mr. Chairman, if that's where -- if that's your suggestion.

THE CHAIRPERSON: Well, I'm just wondering how far we're going to get with the statement of one (1) position, a statement as to --

MR. DOUG BUHR: I'm prepared to move on, Mr. Chairman.

THE CHAIRPERSON: I do have one (1) comment though I'm wondering, the City is a very large customer of Manitoba Hydro. This item appears to have been unresolved, by the appearance of it, for a long period of time.

Have there been no discussions between the Hydro and the City with respect to this issue, to try and develop some sort of consensus view on these items?

MR. DOUG BUHR: Not that I'm aware of, Mr. Chairman.

THE CHAIRPERSON: Okay. Thank you Mr. Buhr.

MR. LEN EVANS: Mr. Chairman, I wonder if

I could ask for information? How does Manitoba Hydro and the City of Winnipeg situation, the counting, et cetera, compare with other cities and other utilities? Is your method similar or are you unusual, is there any comparison that you could give us?

MR. ROBIN WIENS: I can't give you a comparison today at this moment, Mr. Evans. We based the approach that we took to the treatment of distribution customer related costs from some work that was done for a consultant to Manitoba Hydro and filed with the Board, not this current membership obviously, but with the Board in and around 1991/92, in support of the position of the Manitoba Hydro took at that time.

I have had -- Manitoba Hydro has had no indication at all in the intervening period that this was even an issue. So it -- it has taken this long for us to recognize that with respect to the City, that they even find this to be an issue.

So, if -- as it appears to be it is an issue, we may need to engage in some discussions. But, I can say that we believe with some confidence, on the basis of the work that we did back then, that this is a reasonable approach.

Now, it may be appropriate to reconsider it, to reconsider from the perspective maybe we have a different number of lights in a single connection. Or maybe we should revisit the question of whether a single connection is the appropriate definition of the customer.

But we've had no indication to date that it's not appropriate.

THE CHAIRPERSON: Mr. Wiens, would you mind finding that study from 91/92? You might have an easier access to it that we would and you can provide it as an Exhibit, it would just help us.

MR. ROBIN WIENS: Mr. Chairman, I'm not saying this with certainty, but I believe we did file that study as part of the current proceedings. And we can in fairly short order, I think, identify the response in which it was filed.

THE CHAIRPERSON: Yes, it would be helpful and we can set it up as an Exhibit then we'll have it on this record.

MR. ROBERT MAYER: Mr. Wiens, before we leave this area, how many customers is INCO Limited Manitoba Division?

MR. ROBIN WIENS: One customer.

MR. ROBERT MAYER: Mr. Wiens, in addition to the service you provide to the INCO plant you also provide service to INCO in the City of Thompson and at least one (1) location and it used to be several more.

Why would they only be one (1) customer?

(BRIEF PAUSE)

MR. ROBIN WIENS: Mr. Mayer, I believe that INCO is billed for more than one (1) location. They may be one (1) customer, they do receive one (1) bill, but they're billed for the different locations.

THE CHAIRPERSON: You're not billing the City of Winnipeg for, you know, seventy thousand (70,000) separate bills for each streetlight, are you?

MR. ROBIN WIENS: No. We -- we send a single bill to the City of Winnipeg and --

MR. ROBERT MAYER: But doesn't -- okay, I heard what you said, but there seems to be an issue that the City of Winnipeg is treated not as one (1) customer but as a whole bunch of customers because it has service delivery to how many streetlights.

It seems to me that if INCO Limited Manitoba Division, and I recognized that the stuff that is delivered to the plant, they do their own distribution, but that service which is outside of the plant and in fact actually located in the City of Thompson, that has to come off your regular system.

If the same rationale applies, they would

be treated as at least two (2) customers, wouldn't they?
MR. ROBIN WIENS: And I believe they are, Mr. Mayer.
MR. ROBERT MAYER: You said they were billed for separate locations but you told me that they were treated as a customer --
MR. ROBIN WIENS: They receive --
MR. ROBERT MAYER: --- one (1) customer.
MR. ROBIN WIENS: -- they receive one (1) bill, as does the City of Winnipeg.
MR. ROBERT MAYER: Okay. I suppose then we're going to have to discuss what amount of customer service class is allocated to INCO Limited Manitoba Division. And I suspect very little of it, if any.
MR. ROBIN WIENS: Actually, that -- if you -- well, in -- in the cost of service study it -- it is not very little, it is actually quite a lot.
THE CHAIRPERSON: I think --
MR. ROBIN WIENS: There's --
THE CHAIRPERSON: I think one (1) significant point has to be made in all this. I mean, the whole idea of this process is that we're supposed to work in a cooperative fashion to arrive at, sort of, agreed upon criterions, fair and reasonable approach.
I don't have any indication to understand

Hydro has any other purpose than to arrive at a fair allocation. You brought forward your recommended method on the basis that you felt, in fact you said, represented a fair and reasonable way to go across the board.

Comments are made at this hearing and suggestions are made. I mean, you're fully able to go back and review the situation if you so choose and reconfirm your general view of things or not. And out of this process re-evaluations of many things may or may not occur.

But all I'm trying to say is that differences of view can arise. Through this process some of them can be sorted out and allow for either a reconfirmation of a particular approach that's followed to date or a change. But we're all involved in that same process, as well as, Mr. Buhr, yourself.

My understanding is -- and correct me if I'm wrong -- what you seek in the COSS is a reasonable method of allocating costs against the customer classes. You're not seeking to either unjustly benefit or unjustly cost any single customer. Are you?

MR. ROBIN WIENS: No, we're not, Mr. Chairman.

THE CHAIRPERSON: It is not in your best interest with your large customers. You have customer service reps and things like that to work with customers to arrive at a general understanding as to the fairness of the approach.

And if you came to the conclusion that the fairness approach does not exist, presumably and at a consensus, you'd represent that consensus in the applications that you make to the Board, would you not?

MR. ROBIN WIENS: Certainly, Mr. Chairman, if we had a consensus, that's what we would do.

THE CHAIRPERSON: I don't know if that helps, Mr. Buhr, but I just wanted to reconfirm the purpose of the entire exercise here.

MR. LEN EVANS: Mr. Chairman, just one (1) very brief question. Excuse me.

How does this approach compare with the City of Brandon, our other large -- the only other large, more or less, regional centre we have -- is this the same approach in the City of Brandon as you use in the City of Winnipeg?

MR. ROBIN WIENS: All the street light customers are treated in the same way, Mr. Evans. There are approximately a hundred and twenty thousand (120,000) street lights in the Province of Manitoba. The difference between that and the hundred and forty-seven thousand (147,000) number we talked about yesterday represents sentinel lights that are somewhat different from street lights.

Of the hundred and twenty-one thousand (121,000) street lights, there are approximately seventy-eight thousand (78,000) in the -- inside the boundaries of the City of Winnipeg. Some of those will belong to the Department of Highways, but virtually all are -- belong to -- are used to serve the City of Winnipeg.

So the seventy-eight thousand (78,000) we divide that by ten (10) and the number of customers that goes into the cost of service study for the purpose of apportioning the customer related portion of the distribution cost is seven thousand eight hundred (7,800).

And I don't have the numbers for the City of Brandon, presumably much smaller than that, but they're treated in exactly the same way.

MR. LEN EVANS: Thank you very much.

MR. ROBERT MAYER: You said, Mr. Wiens, used for -- it is my understanding Hydro owns all the street lights, is that correct?

MR. ROBIN WIENS: Pretty much, Mr. Mayer, there's probably some exceptions but I can't think of where they are right now.

MR. ROBERT MAYER: With respect to

municipalities I wouldn't expect you to be able to account for every government department that might have a street light stuck somewhere, but with respect to municipalities, the street lights themselves, the actual structure, is owned by Manitoba Hydro?

MR. ROBIN WIENS: Yes.

THE CHAIRPERSON: Okay, Mr. Buhr do you want to --

MR. DOUG BUHR: Thank you, Mr. Chairman.

CONTINUED BY MR. DOUG BUHR:

MR. DOUG BUHR: Mr. Wiens I want to move on to 1996/1997 study that you did in Brandon and Winnipeg of street lights. The reference is City/Manitoba Hydro 1-7.

(BRIEF PAUSE)

MR. DOUG BUHR: Do you have that, sir?

MR. ROBIN WIENS: I have the response here, yes.

MR. DOUG BUHR: Thank you. A couple of questions. Does the study reflect that all of the bulbs are now HPS and therefore use less energy?

MR. ROBIN WIENS: The study does not --

not all of the bulbs that were included in the study were HPS. But the study was not aimed at identifying the amount of energy a bulb took. The study was aimed at identifying the number of hours the bulbs were active.

We know pretty well for the different technologies and bulb sizes what their power draw is. What we needed to know was the number of hours.

MR. DOUG BUHR: So the purpose of the study was not to determine the amount of energy being used, the purpose was to study the number of hours that they were on?

MR. ROBIN WIENS: That's correct.

(BRIEF PAUSE)

MR. DOUG BUHR: And in terms of the type of lights it's said to be seventy (70) to four hundred (400), is that -- does that cover the range of street lights within the City?

MR. ROBIN WIENS: It would cover the vast majority of the lighting sizes that are in the City of Winnipeg.

MR. DOUG BUHR: And those that it doesn't cover are up or down from that?

MR. ROBIN WIENS: Mostly up I would say.

MR. DOUG BUHR: And therefore they would use more energy, is that the supposition?

MR. ROBIN WIENS: They would -- yes a four hundred (400) watt bulb uses four hundred (400) watts plus whatever is required to power the ballast. A thousand (1000) watt bulb would use a thousand (1000) watts plus whatever is required to power its ballast.

MR. DOUG BUHR: And if I understand your answer correctly then, that fact makes no difference because the only purpose of the study was to determine the hours of use?

MR. ROBIN WIENS: That's correct. We know the -- we know the power draw of the different technologies and the different sizes of bulb. So once we know the number of hours of use, we know the amount of energy that each of those bulbs will use in a year.

MR. DOUG BUHR: And just to conclude, Mr. Wiens, I take it those energy amounts are what have been used in your cost of service study in order to assign energy costs to the City?

MR. ROBIN WIENS: That would be correct.

MR. DOUG BUHR: Thank you. Mr. Chairman, those are my questions.

MR. ROBERT MAYER: Mr. Buhr, you -- we have been distributed with a piece of a transcript which

I believe you were going to refer to and ask Mr. Wiens about?

MR. DOUG BUHR: Well, all right.

CONTINUED BY MR. DOUG BUHR:

MR. DOUG BUHR: Sorry, Mr. Wiens, you have in front of you page 2247 of the 1996 transcript and I take it you would agree with me, sir, that the prospective RCC for 96/97 was shown to be 115.5 for street lighting?

MR. ROBIN WIENS: Well, that's not typically the way we depict them. In that -- that was a rate hearing. We brought a rate application before the Board and we had a proposal for a rate change to the street light class.

And the -- and the ratio that we would have shown in that proposal would have been based on that rate decrease. The 115 that is cited in here is if we had ignored the rate decrease and just gone ahead with the existing rate in that particular year; that's the derivation of the 115 percent.

MR. DOUG BUHR: And if -- but is not -- but you said it was 103 percent yesterday; is that correct?

MR. ROBIN WIENS: Well, first of all, the quote on page 2247 of the transcript that you provided me with refers to the cost of -- prospective cost of service study for 1996/97. So if you're going to do the comparison you would go to our 2006 PCOSS document on page 34 and you would look at the number for 1997 rather than 1996.

MR. DOUG BUHR: I'm sorry and that number is, sir?

MR. ROBIN WIENS: Before export, 99.8, after export allocation, 108.8.

MR. DOUG BUHR: Thank you. Those are my questions, Mr. Chairman.

THE CHAIRPERSON: Thank you, Mr. Buhr. We'll call that one Exhibit Number C-4 since we're making a reference to it.

--- EXHIBIT NO. C-4: Page 2247 of the 1996 transcript

THE CHAIRPERSON: We appreciate your cross-examination. A testy issue, no doubt.

I think, Mr. Williams, at one point we were going to come back to you. With your forbearance I think we'll move to Professor Miller and then come back to you later.

MR. BYRON WILLIAMS: Yes, Mr. Chairman.

I believe there's an exhibit that Mr. Wiens is going to present later on in the day in response to some of our questions so that would be a more appropriate time, in my view.

THE CHAIRPERSON: Professor Miller, rather than -- we have two (2) possible approaches. If you have some preamble that you want to enter into in the beginning we could hear that and then have the break.

Or we could take our mid-morning break right now and then you have -- totally free.

DR. PETER MILLER: As Mr. Peters mentioned, I have an exhibit which is an updated corrected version of the infamous JL-6 and I will be referring to that in some questions and so either now or --

THE CHAIRPERSON: Let's get the exhibit because that's -- that's probably a proper way to do it then we'll have our break and then when people come back they will have had the opportunity to have a look at it. Thank you.

(BRIEF PAUSE)

THE CHAIRPERSON: Mr. Peters, to help Professor Miller, do we have an exhibit number for this?

MR. BOB PETERS: I'll provide that right after the break. I think it's RCM/TREE number 4 but I'm just going to check my -- my notes and I'll confirm that after the break.

THE CHAIRPERSON: Okay, subject to check, that will be it.

Mr. Miller, do you have any introductory comments that you'd like to make before you begin the cross-examination?

DR. PETER MILLER: Yeah, sure. I appreciated Ms. Bowman's interrogation yesterday morning and the results and -- and your reference of that, your calling my attention to it. Sorry I wasn't here to hear it in person but I have read the transcript and that has affected the questions that I'll be asking. I'll pick up on a few points from that before moving on to other points.

THE CHAIRPERSON: That's helpful. I'm glad you were able to do that.

And, Mr. Peters, at one point maybe you could illuminate everyone here about some advantages we now have with the transcript service if information is required ahead of time. We can do that later. Or do you want to do it right now?

MR. BOB PETERS: Let's -- let's tackle

both of those -- those matters I had outstanding.

I've -- I've checked the exhibit list, Mr. Chairman, and I was wrong. I'm proposing that what has been circulated as a corrected version of Exhibit JL-6 be marked as RCM/TREE Exhibit number 6.

THE CHAIRPERSON: Very good.

--- EXHIBIT NO. RCM/TREE-6: Corrected version of Exhibit JL-6.

MR. BOB PETERS: And in terms of the transcript, with the good services of Ryan Pickering, who is quietly sitting around the pillar from the Board, with Digi-Tran Services, parties should be aware that a special request can be made, as they have been, of Digi-Tran to provide extracts from the transcript if it is something that will assist them, in short order.

And, for example, yesterday some of the cross-examination by CAC/MSOS was transcribed and made available to parties who wanted it within an hour of it being asked of the witnesses. So that exceptional service is appreciated. And I know it's -- in some circumstances it may be helpful. And we will continue to work with Mr. Pickering to use it when needed.

Thank you.

THE CHAIRPERSON: Thank you, Mr. Peters.

Okay. We'll take a break now. We'll come for 10:15. Thank you.

--- Upon recessing at 10:00 a.m.

--- Upon resuming at 10:20 A.M.

THE CHAIRPERSON: Okay. Mr. Peters?

MR. BOB PETERS: Thank you Mr. Chairman. I can indicate at the break I think both Manitoba Hydro and ourselves were trying to locate the context of the 1991/92 report that Mr. Buhr and Mr. Wiens were talking about. We might need just a bit more time to nail that down so to speak.

We do know that as part of the attachment to PUB/MH-I-29, there were extracts of what I take would be a very lengthy report and I'm just not sure -- the balance of the report I also think was included in the electronic filing which we are experimenting with in this Hearing.

And so the extracts to which Mr. Wiens referred, I'm going to ask My Friend, Ms. Ramage, to maybe take that as -- continue that as part of her undertaking on this issue, to find the extracts that Mr. Wiens and Mr. Buhr were referring to.

And then we'll take the liberty of producing some hard copies for the Board and other interested parties once we've sorted that out.

--- UNDERTAKING NO. 15: File 1990 report prepared by Manitoba Hydro regarding their review of cost of service issues

THE CHAIRPERSON: Very good. Professor Miller...?

DR. PETER MILLER: Thank you very much. Let me just say something that's not entirely relevant to the questions -- my questions, but, to the last set of questions maybe. There are philosophers that think that all problems can be solved by clarifying the meaning of words. I'm not one (1) of them, but sometimes it's a useful tool.

And I'm wondering if you just change the term, customer, for street lights to customer connection. Just a different word than customer which suggests a billing customer, if that wouldn't solve some of your problem. No doubt there are other issues, but I just leave that on the table.

MR. ROBIN WIENS: Dr. Miller, I appreciate your suggestion and I'm trying to restrain myself from saying anything more. Thank you.

CROSS-EXAMINATION BY DR. PETER MILLER:

DR. PETER MILLER: I do want to thank Ms. Bowman for her cross-examination yesterday and to the other participants, the Panel and the Board for a very interesting discussion. And I'll try to pick up on some of those points.

Bill Hamlin mentioned the voluntarily and Chicago Exchange commitments. I wonder if you could just briefly describe what those commitments are?

MR. WILLIAM HAMLIN: Our corporate voluntarily commitment made originally under the national voluntary challenge and registry program is to maintain our net emissions to 6 percent below our 1990 baseline. We originally made that commitment, I believe -- I believe that was in 1997.

And we have successfully managed our emissions within -- within that limit over the ensuing period. We have another binding -- binding voluntary commitment that we signed onto with our agreement with the Chicago climate exchange and in that case we take a historic baseline for our -- what was then the Selkirk coal units and the Brandon coal unit and commit to reducing the emissions from that baseline by an additional 1 percent for each year of the Chicago climate exchange pilot program.

DR. PETER MILLER: Okay. Thanks for that. And how do you manage to achieve those commitments?

(BRIEF PAUSE)

MR. WILLIAM HAMLIN: We have done a number -- take a number of actions that contribute to our success.

Since 1990, bringing on Limestone generating station in terms of significantly adding new renewable generation, adding our additional DSM resources, shutting down Brandon coal units one (1) through four (4), connecting several diesel communities onto our electrical grid, and converting Selkirk generation -- the Selkirk coal units to natural gas all significantly contributed to our -- our management of our emissions.

DR. PETER MILLER: Thanks for that. Would you say that closing the coal stations is perhaps the biggest component of that; the four (4) in Brandon and Selkirk?

MR. WILLIAM HAMLIN: Well, the -- those,

in conjunction with bringing on the -- the non-emitting resources, I would say the combination of bringing on the non-emitting resources and the shutting down of our emitting resources are some of the most significant steps in managing our emissions.

DR. PETER MILLER: And suppose -- you've been successful so far but suppose you actually generate more emissions than that baseline; do you have any options?

MR. WILLIAM HAMLIN: Yes, and that's where the word "net" comes into play. We have the flexibility to go to the marketplace and purchase -- well, under -- under the Chicago climate exchange we have the ability to either purchase additional tonnes from other emitters that have been successful in reducing their emissions below their baseline or purchasing from credit producing activities such as agricultural soil sequestration, landfill gas emission reduction projects and activities of that nature.

Under our voluntary commitment we have the flexibility to purchase offset credits from other entities and we also, in making that commitment, recognize that if we were successful in contractually obtaining from our export customers the right to claim the emission reductions coming from those purchases we could utilize those towards meeting our commitment.

DR. PETER MILLER: Thanks for that. Now, you spoke about 6 percent below, I think, 1990 baseline; that means that you still are producing or are permitted to produce 94 percent of what you were producing in 1990, is that correct? CO2 emissions?

MR. WILLIAM HAMLIN: Yes, and in fact to exceed that if we obtain additional offsets.

DR. PETER MILLER: Thank you. And when you count your emissions you're -- you're just talking about burning coal and gas and diesel oil and the exhaust from your vehicles and that kind of thing in Manitoba and you don't take into account the upstream emissions from getting those petroleum products or coal here?

MR. WILLIAM HAMLIN: In -- in various exercises we account for those things. But for the purposes of our commitment we are trying to track those activities for which we have direct control over and those are our own emissions not -- not upstream emissions associated with natural gas extraction or coal production, for example.

DR. PETER MILLER: Now, it is regularly argued that exports displace fossil fuel generation in the -- in the States. And that's -- I think Mr. Evans mentioned that yesterday as one of the very significant benefits in terms of climate change of Manitoba Hydro.

Is that correct?

MR. WILLIAM HAMLIN: Yes.

DR. PETER MILLER: And -- so whether it's from new generation or conservation, there are definite environmental benefits in -- to the - the exporting of electricity.

MR. WILLIAM HAMLIN: Yes.

DR. PETER MILLER: But you're not credited with all those benefits, is that correct, in terms of -- of making your baseline?

MR. WILLIAM HAMLIN: No. We have been successful in getting some flexibility to declare the environmental benefits for a portion that we've -- have contractual agreements with, and that's sufficient to meet our own voluntary commitment but, for instance, that's not a benefit that we -- we would likely be able to define as credits and sell on the open market.

DR. PETER MILLER: Although you can't sell them, they are benefits that you create, real world benefits?

MR. WILLIAM HAMLIN: Correct.

DR. PETER MILLER: In planning -- you're with Planning Resources? Or what is your department, maybe clarify Resource Planning?

MR. WILLIAM HAMLIN: I came out of Resource Planning and Market Analysis a - a few years ago, in which I worked with Harold Surminski. I now head a section called Emission -- Energy Policy and Emission Trading.

DR. PETER MILLER: Okay. Thanks. I -- I might be going back to your earlier job or a combination of your two(2) jobs then.

When you were planning new generation, for example, you would look at potential negative physical impacts of new reservoirs and - and that kind of thing. And -- is that correct?

MR. WILLIAM HAMLIN: Correct. We try to look at all the implications of the different options available to us.

DR. PETER MILLER: And that's your understanding of full cost accounting, to look at all of those implications?

MR. WILLIAM HAMLIN: Of the sustainable development principles including full cost accounting, yes.

DR. PETER MILLER: Okay. When you assess a thermal resource you do the -- the same kind of thing, looking at all the impacts?

MR. WILLIAM HAMLIN: Yes.

DR. PETER MILLER: Do you look, for instance, at potential negative physical impacts of contributions to greenhouse gases such as the next hurricane to hit the gulf coast, or inundation of coastal regions, or burning up the boreal forest, or the sinking of island nations, or the extinction of the polar bear?

MR. WILLIAM HAMLIN: We -- there are two -- two (2) possible approaches to -- to valuing the implications of greenhouse gas emissions looking at the -- and estimating the economic damage resulting from those. And I think that's more along the lines of -- of what you were describing in your list.

And an alternative method is to assess the potential constraint on those emissions and the emission trading values that might be applied to those.

The latter is what Manitoba Hydro relies on to -- to factor in the value of the -- the greenhouse gas implications.

DR. PETER MILLER: So you're essentially projecting market prices and a component of that projection is estimating the actual price impacts of mitigation procedures or fuel switching or whatever it is that might be driving those prices?

MR. WILLIAM HAMLIN: Yes the -- it would factor in several considerations. The level of constraint that governments might put on emissions. The mitigation technologies that you could apply to reducing those emissions. And the -- and such factors as the competing economics of alternative resources that don't have the implications.

DR. PETER MILLER: Would you agree that for the -- probably the foreseeable future and this may be optimistic given current regimes in Canada and the US, that those market implications would not reflect all the damage in my first list. That they would, say, optimistically reflect the 6 percent reduction rather than the other 94 percent?

MR. WILLIAM HAMLIN: I don't have any references for the -- for the estimates of the damage costs related to greenhouse gasses at my fingertip. But my recollection is that those range from something like five dollars ($5) a ton to twenty-five (25) thirty dollars ($30) a ton. And there's a considerable band of uncertainty about what the damage -- damages are.

We would assume that the initial constraints on greenhouse gas emissions would be -- result in greenhouse gas valuations that are lower probably than the damage costs. But, at some point they would probably become equal or even grow to be in excess of the damage costs.

Certainly when we were looking at the costs of the US meeting back in the days when it was planning to meet the Kyoto targets, we were looking at valuations in excess of fifty dollars ($50) a ton and higher to meet that obligation.

DR. PETER MILLER: Thank you. And I believe you said yesterday that you're -- although you don't know for sure, you think you're trading counterparts in the US may be making similar calculations and market forecasts based on similar factors?

MR. WILLIAM HAMLIN: Particularly in the last few years we have seen some American companies, particularly the very large emitting thermal companies in the US like AEP develop greenhouse gas strategic plans to manage the risks associated with that.

We haven't seen that kind of document come out of our immediate counter parties in the -- for instance in the Minnesota region. But we assume that they are also factoring in the risks that those types of policies will be there in the near future.

DR. PETER MILLER: Thank you. I'm going to move a little bit and I want to refer to the --

DR. KATHI AVERY-KINEW: Excuse me, Professor Miller, could I interrupt you for a minutes?

DR. PETER MILLER: Sure.

DR. KATHI AVERY-KINEW: I just wanted to clarify from Mr. Hamlin, when did Manitoba Hydro join the Chicago exchange? I got the date of the voluntarily national one but ...

(BRIEF PAUSE)

DR. KATHI AVERY-KINEW: You said 1997 for the national, the Canadian voluntarily commitment.

MR. WILLIAM HAMLIN: I believe the first year we -- we participated in the Chicago Climate Exchange in its -- in its design phase, before this, but I believe the first year of the Chicago Climate Exchange was 2003.

DR. KATHI AVERY-KINEW: And I took from your testimony yesterday that you didn't have to use that, you were managing the emissions without this net exchange.

Was I wrong in understanding that or you have had to use this?

MR. WILLIAM HAMLIN: We initially made purchases under the Chicago Climate Exchange, first to -- to demonstrate our -- our support for the market. We participated in the first -- the first auction of permits and we were the second largest purchaser, although the total amount was -- was quite modest.

And then we made one (1) purchase after that that was fairly modest as well, anticipating that in that year we might exceed our -- our baseline emissions. As it turned out, we -- we didn't exceed and in fact had a surplus in all of the years.

So those initial purchases plus the surplus we've accumulated over that period has accumulated in our CCX account and we're currently in the process of selling off a portion of -- of that surplus.

CONTINUED BY DR. PETER MILLER:

Okay. I'd like to turn to page 24 of the rebuttal. That's the place where you quote the definition of full cost accounting in the sustainable -- you have that?

MR. WILLIAM HAMLIN: Yes, I do.

DR. PETER MILLER: Okay. And I'm not sure whether -- whether you're the one who will be answering it or not, since it is --

MR. WILLIAM HAMLIN: I'm not sure either.

DR. PETER MILLER: I'll ask it and whoever thinks it's appropriate to answer, can.

In your quotation of the full cost accounting you bold the words "decision or action, the -- the economic environmental land use, human health, social and heritage costs, and benefits of a particular decision or action."

What is the reason for bolding those terms or that phrase?

MR. WILLIAM HAMLIN: To emphasize that that is what we do in our application of -- we consider to the extent practical into all of our decisions and actions those considerations.

DR. PETER MILLER: And the decisions and actions you have in mind are -- are the ones we were discussing earlier, resource acquisition, where you weigh the pros and cons of various resource options and consider all the implications of them, and -- and use that as a basis for decision-making within the Corporation as to which options to go ahead with.

Is that what you mean?

MR. WILLIAM HAMLIN: Those -- those are actions where we would do that, yes.

DR. PETER MILLER: Okay. Are there others?

(BRIEF PAUSE)

MR. WILLIAM HAMLIN: They are considerations that are built into -- beyond the -- the power resource decisions but they are also factors in decisions associated with other capital expenditures within the Corporation. They -- and they are considerations for our purchasing policy.

DR. PETER MILLER: Thank you. I think it was yesterday that Mr. Warden referred to wind as a marginal enterprise, but one (1), as I recall, you said you -- you engaged in for the benefit of the rural economy or that at least you weren't losing money on it.

And so although it might not, you know, in terms of the Corporation's bottom line be your first resource acquisition priority you nevertheless justified it in terms of provincial benefits; is that a fair paraphrase of what you said or, if not, please clarify?

MR. VINCE WARDEN: Well, no. At least I did not intend to imply that we justified it on the basis of provincial benefits. We looked at it as an economic decision within Manitoba Hydro and made our decision on that basis.

DR. PETER MILLER: Did you use, say, the same internal threshold that you would use for a dam?

MR. VINCE WARDEN: No. No. It would not pass the same hurdle rates that we use for the assessment of other -- other capital investments. This was not a capital investment but it, in terms of the price that we were prepared to pay for that purchase power, as I mentioned, I think, in my cross-examination previously that it was the price that we were to pay in accordance with the contract was somewhat marginal in terms of benefits to be derived therefrom.

DR. PETER MILLER: And by "marginal" you mean...?

MR. VINCE WARDEN: Well, strictly on a -- on a business case scenario whereby we're paying so much per megawatt hour for wind the return that we can expect to receive on that cost, you know, that we pay for power purchased was marginal. But we would expect to break even or slightly better than break even.

DR. PETER MILLER: Why would you do it if -- if you couldn't make money on it?

MR. VINCE WARDEN: Well, we're not losing money. So on the basis of the evaluation that we conducted internally it -- the Corporation was somewhat neutral in terms of the costs and benefits. On that basis we decided to proceed.

DR. PETER MILLER: Thank you.

MR. HAROLD SURMINSKI: I can add a little. Also we -- Manitoba Hydro wanted to gain experience with the new resource of wind energy, so that was one of the other justifications for starting out at a small level and gaining experience with the resource, the costs, the operation, the benefits and the integration of the resource into our system.

The integration of the resource into our system is -- is a big question. Being able to bring it into the system and have it operate jointly with our hydro resources; that is a big factor in wind energy.

DR. PETER MILLER: Thank you. We've been discussing examples of resource acquisition and the application of full cost accounting to that. The last answer stressed benefits to the Corporation, even if they're marginal.

What about rate setting? Is that a decision of the Corporation, what rates to propose, and is full cost accounting applied to those decisions?

MR. VINCE WARDEN: Professor Miller, the definition of full cost accounting that we just reviewed, I'm sure you're very familiar, includes costs that are not considered in our cost of service studies and therefore do not form part of the rate setting process.

DR. PETER MILLER: Can't we make a distinction between an accounting procedure which takes into account the costs and putting all those costs into the rates or into the price?

Let me give you an example. You do a full cost accounting, a la Jim Lazar or some refinement of it, and then determine your revenue requirement from the totality of your costs. And then determine what percentage that is of the full cost accounting, one way of which I think you mentioned was equal in marginal costs, or something like that. Equal percentage of marginal costs.

MR. VINCE WARDEN: Well, we've acknowledged that there are many, many approaches to cost of service. That is -- the one (1) you've -- the one you've referenced is one(1), that's not the one (1) that we employ at Manitoba Hydro.

DR. PETER MILLER: I guess maybe I lost the focus of my question in giving the example. The focus of the question was, do you recognize the distinction between full cost accounting in determining what rates should be and mechanically churning out a price that equals the full cost that you've accounted for?

(BRIEF PAUSE)

THE CHAIRPERSON: As usual, Professor

Miller, you're provoking thought.

MR. VINCE WARDEN: The debate we're having and we've had this internally before now and I'm not sure we have total agreement, is the definition of externalities and the Act doesn't help us in that regard, in terms of defining exactly what is included in externalities. You could and some may regard the mitigation payments we make as a result of our operations as being to compensate others for -- for the effects, the impacts, the environmental impacts or other impacts of our projects.

That could be -- come within the definition and I think it does come within some definition of externalities. There are other costs outside of the Corporation that will never been incurred as a direct cost which would also fall within that definition.

So that's a bit of the debate we're having and I'm not sure whether that's responsive at all to your question, Professor Miller, but perhaps if you'd like to pursue that then we can be more direct in our response.

CONTINUED BY DR. PETER MILLER:

DR. PETER MILLER: Great. Thanks. Let me try a characterization of what you do and you tell me if it's an appropriate one (1)?

Other departments than the rates department do full cost accounting in evaluating various resource possibilities and whittling them down and then ultimately making a decision when you need to acquire them. And then -- and then your legal department or whoever negotiates compensation agreements if that's part of the mitigation, and your engineering and the clean environment commission will indicate what physical alternations are need to mitigate the impacts further.

And then basically accounting and rates deal with the fallout of the decisions and actions that occur elsewhere in the Corporation; is that a fair characterization?

MR. VINCE WARDEN: Yes, I agree with that.

DR. PETER MILLER: Okay. That's what I thought. Now, what do you think we're doing here? Are there any -- or maybe more -- more particularly in a -- in a rates submission, and before that there would have been internal discussion in the Corporation as to what rates to propose and then that's presented in this process.

Does your Manitoba Hydro board make a decision as to what rate proposals to go forward with?

MR. VINCE WARDEN: Yes. The process at Manitoba Hydro is a recommendation is made to the Manitoba Hydro board as to rates that we should include in our application to the Public Utilities Board and the board certainly has their input into that -- that process.

DR. PETER MILLER: It's the Hydro board that you're speaking of?

MR. VINCE WARDEN: Yes, I'm sorry. The Hydro board, yes.

DR. PETER MILLER: Yeah, okay. And then you present it here and -- and the Public Utilities Board hears various evidence and do they not make a decision on what those rates should be?

MR. VINCE WARDEN: They do.

DR. PETER MILLER: And do not actions follow from that in terms of, you know, sending out bills and so on?

MR. VINCE WARDEN: Yes.

DR. PETER MILLER: So, it seems to me that in addition to receiving the fallout of decisions made in the legal and resource planning departments, channelled up to the board, that there is another area of decision and action which takes place in accounting and rates and before the PUB?

I think you've acknowledged all that. If you haven't, tell me where I missed out?

MR. VINCE WARDEN: I will acknowledge that's all part of the process of rate setting approval, yes.

DR. PETER MILLER: And then your further claim is that the Sustainable Development Act applies to resource acquisition but it does not apply to the rate setting process; is that correct?

MS. PATTI RAMAGE: With all due respect to Mr. Miller, now I think we've crossed the line into argument what each of the parties views the -- their views on the Sustainable Development Act might be better discussed in argument as opposed to cross-exam.

DR. KATHI AVERY-KINEW: I thought it was just clarifying, Mr. Miller?

DR. PETER MILLER: Yes, I was trying --

MS. PATTI RAMAGE: Maybe I misunderstood the question.

CONTINUED BY DR. PETER MILLER:

DR. PETER MILLER: Well, the -- well, the original -- the original rebuttal just talked about one (1) way of reflecting full cost accounting namely full cost pricing and hanging its argument on that and saying the Act doesn't require us to do full cost pricing.

So let's grant that. Now, the question is, I mean, an interpretation is offered here in which the words "decision" and "action" are bolded and -- and I guess what you're saying is that the decisions and actions of the rate department and presumably of the PUB do not need to reflect the Sustainable Development Act and if that's what you're saying then I'll drop it?

MR. VINCE WARDEN: No, Professor Miller, I don't think we said that at all really. I think in the operations of Manitoba Hydro we abide by the spirit and intent of the Sustainable Development Act.

I think we did draw a distinction between the costing methodology that was being used and our cost of service study that it is based on costs that are directly incurred by the Corporation or expected to be incurred by the Corporation.

DR. PETER MILLER: Thank you for clarifying your position.

Okay. Now I'd like to turn to the exhibit distributed today, earlier versions of which you said, and to Interrogatory RCM/TREE Manitoba Hydro 26-B. So get those out.

MS. PATTI RAMAGE: Was -- was that first round or second round, Mr. Miller?

DR. PETER MILLER: Second, 2-26-B. It's the -- the one pertaining to price elasticity, in -- in which you attached an earlier response from the 2004 hearing, to MIPUG.

MR. ROBIN WIENS: I have that in front of me, Dr. Miller.

CONTINUED BY DR. PETER MILLER:

DR. PETER MILLER: Okay. You'll probably be the one responding to this, so if we're ready.

Jumping right to the attachment, MIPUG/MH-2-9, this was from 2004. At the bottom of the page you cite ranges of short-term elasticities minus point one three (-.13) to minus point four five (-.45) for residential and so on. And then over on the last page you have long run elasticities ranging from minus point three five (-.35) to minus two point two three (-2.23) for residential and so on.

Can you explain, please, what do these numbers mean?

What is a price elasticity and what does that number signify?

MR. ROBIN WIENS: Fundamentally, the price elasticity refers to the relationship between a percentage change in price of a good or service and the percentage change in the quantity demanded of that good or service.

And because most goods and services, an increase in price can be expected to lead to a reduction in the quantity demanded, therefore these elasticities are expressed with a negative sign in front of them.

If you look to the bottom of the first page of the MIPUG response that you cited, Dr. Miller, we stated here:

> "Historic estimates of short run price elasticity show a range of minus point one three (-.13) to minus point four five (-.45) for residential."

And you can take that to mean that those particular studies would have identified broadly that for, say, a 10 percent increase in price of the good, in this case it's electricity, a reduction of 1.3 percent to 4.5 percent in demand by residential customers was identified in those studies.

DR. PETER MILLER: Okay. Thank you. And generally the long run elasticities all seem to be higher than the short run.

So could you give your example, say, for the industrial -- long run industrial, just to repeat the example so we understand it?

MR. ROBIN WIENS: Are you asking that I provide you some distinction between the long run and the short run or --

DR. PETER MILLER: Well, you can -- you can add that into the explanation.

What's -- what is -- first of all, what does it mean to say that the industrial is minus oh point seven six (-0.76) to minus two point eight seven (-2.87) in the long run, and how does that differ from the short run values?

MR. ROBIN WIENS: The short run is usually taken to mean a relatively short period of time between the introduction of the change in price and the measurement of the demand response.

I can't put any absolute time frame on it but I think it would be reasonable to infer that a short run response would occur within a period of -- immediately following the price change, say up to a year. And that a long run response would play itself out over periods of longer than a year, perhaps three (3), four (4), five (5) years, and even longer.

And the reason there is a distinction and the reason that typically the long run responses are greater than the short run responses, is in the long run there are more options to customers to respond to a change in price.

For a residential customer, for example, a change in price may initially be accomplished or the reaction may initially be that the customer will use less hot water, for example, if electric hot water heating is part of their stable of appliances.

In the long run, they may get rid of some appliances or get rid of some appliances or switch to different appliances or adopt some more energy efficient appliances if there's been a changeover in the stock of what's available in the marketplace.

So the ability to react is greater in the long run. Similarly an industrial customer can make choices in the short run that relate to reducing production, in the long run they can make choices that involve substituting goods that they may be able to substitute for electricity.

For example, it may be that they can replace electricity using equipment with gas using equipment for some of their processes. And of course, they have the option to cease production, as well, which, if they perceive that the price increase is going to persist into the long run that may be among the other options that they would take a look at.

DR. PETER MILLER: Thanks --

THE CHAIRPERSON: Or move production to a lower cost environment.

MR. ROBIN WIENS: Of course, that's another option that they have.

CONTINUED BY DR. PETER MILLER:

DR. PETER MILLER: Thanks that's very instructive. Now, Mr. Lazar used the rows aren't numbered, but I'm now going to the handout, the middle row there assumed arc elasticity of minus point two five (-.25).

Could you indicate, if you're familiar with it, the concept of arc elasticity and then also comment on whether that's reasonable. I realize you have an undertaking to do a more thorough evaluation, but what can you help us with here.

MR. ROBIN WIENS: Well, Mr. Miller if we -- if we play this right I may be able to -- I may be able to honour my obligation in our discussion. So let's carry on.

Arc elasticity is distinct from the other concept of elasticity which is point elasticity. Point elasticity refers to -- those of you who are familiar with some of the very basic tools that are used in economics will recognize a demand curve, which is generally a curve that slopes downward to the right in a system of coordinates and its in the positive coordinate for both prices on the 'Y' axis and quantities demand on the 'X' axis.

So your typical demand curve will show low quantities at high prices and greater quantities at low prices. And the curve will slope downward to the right in that space. The curve can have different shapes for the sake of simplicity we tend to view these as a -- as a straight line, but they can be curvilineal as well, they can even have kinks in them in some cases.

But let's just think of it as a straight line. The concept of elasticity at the point says that for an infinitely small change in price, what is the response and demand, whereas a concept of ARC elasticity which I think is intuitively more easily understood is that over a relatively wide range of changes in prices or at least some defined range, rather than an infinite point on the view, that that elasticity is expected to hold.

So what Mr. Lazar is saying here is that basically he's assuming, not unreasonably an elasticity of minus point two five (-.25), in other words 2.5 percent quantity response to a 10 percent price change.

And he's saying that in this example that

that .25 percent would apply over the whole range of the curve which he was describing. He's describing in some cases, a price change as high as 127 percent. And his assumption is that the elasticity is .25 over the entire arc covered by that price change. Is that helpful?

DR. PETER MILLER: Very much so. Thank you. Now, the implications that are drawn here of that and let me just say why I'm pursuing this, that your rebuttal spoke to a number of other sections of Mr. Lazar's testimony but didn't really tackle the elasticity and the outcomes of that elasticity so that's why I'm -- I'm focussing on this to try to evoke a little more comment in an area that wasn't really dealt with in the rebuttal.

So, if basically he is saying -- could you -- could you explain what the -- let's take the bottom right box there, cell, on this revision it's 388,474,000, how is that derived and is that a reasonable figure?

MR. ROBIN WIENS: Well, Dr. Miller, you suggested that we didn't treat this in our rebuttal evidence and there were a number of reasons for not doing so. One of them is that this exhibit gave me a lot of grief until today.

But I'm pleased to say that I can at least duplicate all of the numbers Mr. Lazar has created here so I am in a position to be able to lead you through the exhibit. It might, I guess, Mr. Lazar would probably have his own way of explaining this but this -- I will give you my take on what he's saying in the -- in the final row of this exhibit.

DR. PETER MILLER: That would be helpful.

MR. ROBIN WIENS: First of all --

THE CHAIRPERSON: We're hanging on your every word, Mr. Wiens.

MR. ROBIN WIENS: First of all, Mr. Lazar has correctly identified the current Manitoba Hydro retail revenues, excluding those from the surplus energy program which are a relatively small proportion, at about $1 billion; that's in the first row of the last column. And that doesn't change in any of the columns.

Then he's, in the second row, I'll maybe address some of the other columns here just to discuss how we got to the one in the fourth column. In the first row this is the cost that we have identified to serve retail customers in our recommended method in the cost of service study.

To which Mr. Lazar has progressively added adaptations to our recommended method to incorporate a cost adder for CO2 emissions and just to be very clear, these are not CO2 emissions, for the most part, that

Manitoba Hydro is responsible for.

Mr. Lazar wants us to consider the fact that every kilowatt hour that a Manitoba customer uses is a kilowatt hour that is not available to reduce emissions in Minnesota or North Dakota or Wisconsin, which is a concept that we have some difficulty with but, nevertheless, is included here.

In the next -- in the next column Mr. Lazar has layered upon that concept of cost a switch from the embedded cost of supply as included in Manitoba Hydro's recommended cost of service method to a marginal cost and he's used our indication in one of the IRs of the long run marginal cost of five point three five (5.35) cents per kilowatt hour.

So what he's done here is he's taken out the embedded cost and he's replaced it with the marginal cost. So now we have arrived at -- at approximately 2 billion. And then when you account in the last column for both the carbon dioxide adders and the marginal cost substitution Mr. Lazar, I believe, is suggesting that our real costs are in the order of $2.3 million rather than the $1.3 million that shows in the first column -- or billion. Thank you.

Next in the next row, and this is very simple, he has taken the difference between the costs that he's identified in row 2 and the revenues that the current rates provide as in row 1 and said, in order to make your revenues equal to your costs we have to increase the revenue collected from all Manitoba customers by that 1.29 billion, which was equivalent to -- in the fourth row -- an increase of 127 percent.

And this is the figure that Ms. Bowman referred to in the cross-examination of Manitoba Hydro yesterday. And she asked -- which I think is a very legitimate question -- When you're looking at an arc as wide as 127 percent, is it legitimate to assume that point two five (.25) elasticity will be maintained throughout that arc.

DR. PETER MILLER: And that's why you're taking -- your undertaking was to look at that.

MR. ROBIN WIENS: That -- that was my undertaking. And I -- I'll come back and -- and discuss that a little bit after I've moved through some of the other numbers in the fourth column.

When we go to the next row, that is simply the retail sales. That's identified the retail sales. So that is the quantity demanded in the elasticity equation.

So we've got the increase in the price and we've got the current quantity demanded. And then we've got the assumption here that quantity demanded will decline by 2.5 percent for every 10 percent increase in the price.

So I'll just take out my calculator for a minute so I can refer to that.

He's simply taking the point two five (.25) times 127 percent and he's saying, The quantity demanded will decline by 25 percent of 127 percent, which is 32 percent.

And if you apply 32 percent to the retail sales of 22.85 billion kilowatt hours, he is arriving at an estimate of the extent to which that will reduce. And that estimate is 7.26 billion kilowatt hours, or about one third (1/3) of the total amount.

Then he goes on to assume, in the following row, that that additional energy can be sold into the export markets at Manitoba Hydro's estimated long run marginal cost for supply of five point three five (5.35) cents.

And the product of that multiplication is the $388 million in additional revenue that he is suggesting is an approximation of what would be derived if Manitoba Hydro were indeed to follow his advice and increase the rates to domestic customers in the order of 127 percent.

DR. PETER MILLER: Excellent. Thank you. We may add you to our team next time.

THE CHAIRPERSON: Now, the 388 million that would get added -- additional revenue to Manitoba with the 127 percent increase in price and the 32 percent decrease in volume to domestic sales, does the $388 million additional revenue to Manitoba take into account the lost revenue on domestic sales?

Is there any reference to the effect --

MR. ROBIN WIENS: Well, that -- that is a step that properly should have been done in this analysis, that -- and normally the way this is done is that you would iterate the changes so that the -- the --

THE CHAIRPERSON: Mr. Wiens, I'm just suggesting, to cut through it, the key here, what he's aiming at, is the additional revenue to Manitoba, not to Manitoba Hydro.

MR. ROBIN WIENS: The additional export revenue that Manitoba Hydro could obtain of --

THE CHAIRPERSON: But calculating out the net effect to Manitoba Hydro's bottom line.

MR. ROBIN WIENS: No, he's not. And that would require some additional steps to follow through. Because the reduction in revenue to Manitoba Hydro from the reduction in usage is not going to be the full amount of the -- the 31 percent, because there's another iteration, prices would have to go up yet some more and we would find that we would settle at some equilibrium point here.

But the point that I think Mr. Lazar is trying to make is that by pricing your power the way you do, you're giving up the opportunity to earn considerably more on -- on the export market. And that -- that's a fair observation, but it's an observation that's subject, Mr. Chairman, to a number of caveats, not only the one that you've introduced here but to the whole question that we had the discussion with Ms. Bowman yesterday.

And in addition, of course there is -- there is a -- a price effect in the export markets related to the ability of those markets to absorb those additional quantities which is not taken into account here.

And first of all, although it's probably not significant there's likely going to be some price effect. But, more significantly from a very practical perspective Manitoba Hydro doesn't have the capability today to export those additional volumes.

THE CHAIRPERSON: You don't have the transmission connections.

MR. ROBIN WIENS: That's correct.

THE CHAIRPERSON: And this doesn't speak to the impact on the industrial participation in Manitoba?

MR. ROBIN WIENS: Well it does, but --

THE CHAIRPERSON: Elasticity is supposed to take that into account, I presume.

MR. ROBIN WIENS: The elasticity is supposed to be a large measure that may covered a multitude of different types of adaptation. And I was going to get into that by way, hopefully of addressing the concern that was raised yesterday by Ms. Bowman.

.25 percent is, I think, not an unreasonable estimate for short run, perhaps even some longer run adaptation by customers over a reasonable arc, if you will, in the demand curve. If you're talking 10 percent or 20 percent, or perhaps even up to 30 percent I wouldn't see that as being unreasonable.

Beyond that I -- you know I cannot -- I can't -- on the basis of what I have to analyze the information, give a whole lot more direction on this. But my suspicion is that you would be looking at more dramatic impacts on the reduction in consumption in Manitoba.

Certainly, if you move from just thinking of the full 22.85 billion kilowatt hours of usage of

Manitoba customers as some sort of an organic hole and you start looking at individual customer groups, some will react much more strongly than others.

And I suspect that the industrial customer base would react pretty much more strongly and probably more strongly than the 25 percent elasticity that you see here. Maybe not in the short run but within a matter of a few years, you would see some considerable reaction to that type of an increase.

And as suggested in here it's -- the intent here is that it would apply to all of the kilowatt hours. So some would be able to absorb it with little impact. Some would have -- there would be a great deal of impact on their operations within the Province.

Residential customers would be very likely seriously impacted, but they may have less options to address that type of a rate increase. So they may be required to absorb more of it in their budgets and they may display less elasticity of demand, 127 percent that might well be enough to motivate a lot of our rural electric heat customer to move off electric heat.

So they may be able to adjust that way. It's less likely that they would be able to adjust in terms of, you know, changing the way in which they light their houses or run their farms.

So it -- I mean directionally all of this is correct, but there's a lot that's left unsaid.

MR. ROBERT MAYER: Mr. Wiens, I'm somebody who doesn't have a lot of choice in how I heat my house, at least not right now. So, if I were to calculate my budget amount, let's call it my budget figure because I do use a budget, at two hundred and fifty dollars ($250) a month.

Would I have to multiply that by 227 percent or just 127 percent to arrive at this number?

MR. ROBIN WIENS: You would have add to 127 percent or multiply by 2.27 to arrive at what your cost would be to continue consuming at the same level.

MR. ROBERT MAYER: I'm well over five hundred dollars ($500) a month then.

MR. ROBIN WIENS: That sounds right.

MR. ROBERT MAYER: And under those circumstances maybe I could go back Stitco because at that point in time, Stitco would in fact probably be at least an option. But, I'm probably in a reasonable position to actually pay that. But --

THE CHAIRPERSON: Let's cut Mr. Mayer's per diems.

MR. ROBERT MAYER: Yeah. But, I can see significant problems for people who are just making it by and carrying significant mortgages.

MR. ROBIN WIENS: Well, of course that's true and this also provides a perfect illustration of the distinction we talked about earlier between short run and long run, Mr. Mayer.

If you decided to go to Stitco you may not have that option in the short run. You may have to -- you may have to invest in the capability to take propane in order to heat your house and that may take you a longer period than a year.

MR. ROBERT MAYER: As a matter of fact, that's exactly what I did in order to get to electricity. The first thing that happened is I blew my hot water tank and out went the gas-fired one and in went an electric one.

Sooner or later I ran into a problem with flex connectors and was told that that wasn't a really good plan and I could blow myself up and I decided that's enough of that and I got rid of the gas furnace and put in an electric one.

But that all happened over a number of years.

THE CHAIRPERSON: If I'm not mistaken we're into all sorts of forms of conjectures. But I don't imagine Professor Miller would mind one bit because what you want, presumably, is to stimulate discussion.

You get the point in Mr. Mayer's example if he did convert to Stitco, of course, then Stitco would have to have higher supplies of propane. And propane is a derivative of natural gas so there would have to be increased production of natural gas to be able to supply it.

So it's an extremely complex picture to -- to model it all the way out I would imagine.

DR. PETER MILLER: I would certainly agree with that conclusion.

CONTINUED BY DR. PETER MILLER:

DR. PETER MILLER: Just one question to you as our expert in this matter at present, wouldn't the impact on total rates be to take the one-third (1/3) -- basically take the -- the increased rate to 227 percent of the current one, times two-thirds (2/3) of the consumption because you've reduced the consumption by one-third (1/3) and wouldn't that give you the increase, not decreased, income from domestic customers?

MR. ROBIN WIENS: Well, I think that's just the point that the Chairman was -- was trying to make a few minutes ago that, yes, indeed, that -- that would be the case. And as I've tried to explain, perhaps we've got further than I intended, you -- you would have to deal with, in terms of your revenue requirement model, there are ways of doing this and you would, but certainly the first step would be, yeah, the revenue is -- the price may have gone up by 127 percent but the -- the revenue has gone -- has not gone up by that much because of the reduction in usage.

DR. PETER MILLER: Yes, but it's gone up?

MR. ROBIN WIENS: Yes, it will go up.

DR. PETER MILLER: And -- and that's on top of the export revenue?

MR. ROBIN WIENS: Yes, that's on top of the export revenue.

THE CHAIRPERSON: A quick off the top of the head, and believe me, that's exactly the way it is, just running these numbers through my head, your -- Manitoba Hydro's net income would rise by $1.4 billion a year and then you'd have the question that goes back to Mr. Lazar's, what use you'd make of it.

DR. PETER MILLER: I think that fits what I recall.

CONTINUED BY DR. PETER MILLER:

DR. PETER MILLER: There's one other aspect of -- of his testimony that I'd like to turn to.

It was, I think, page 2 of this exhibit but only page 1 had the mistakes, I hope.

And that was the example of an aluminum smelter and I think you agreed with Mr. Lazar that, you know, whether it's an aluminum smelter or some other electro-process, that searches out the globe for the lowest available rates; that this would negatively impact the other customers of Manitoba Hydro.

Is -- -- do you agree with that kind of a comment? I think in your rebuttal you -- you do.

MR. ROBIN WIENS: Well, there's no question, increases in load will certainly, in the short run, they will divert sales away from -- from the export market where Manitoba Hydro is receiving a higher price than the domestic rates. It will reduce -- it will reduce revenue.

And to the extent that that loss and revenue can't be absorbed, it will require Manitoba Hydro to come back to this Board and say, We need rate increases for domestic customers.

MR. ROBERT MAYER: And that whole issue that was taken by Mr. Lazar was challenged rather significantly by MIPUG's presentation yesterday. If I recall the discussion from Mr. Lazar, was that we really don't want these high energy use low employment industries in Manitoba because they're detrimental.

I think particularly Mr. Turner pointed out that they provided us with a study that shows what a great advantage to our gross domestic product the production of finished and exporting finished product out of the province in order to apparently argue or make the point significantly different than Mr. Lazar did.

At least that's how I understand basically most of MIPUG's production yesterday, is, Don't hit us, We provide a lot to the province, A lot more than just taking hydro away from export.

THE CHAIRPERSON: By the way, I'd just add to that, I don't recall Mr. Lazar's testimony at that time exactly the same. I think what he said basically was that you had to consider the implications of increased use with low employment resulting from it. Like, the risk in the end basically is building another dam and the effect that that could have on domestic customer rates.

I think it was a little more complex than just assuming that you didn't want to have the industrial base, it was the implications that might arise out of it, depending what the nature of it was.

In other words, it was a discussion, which is exactly what we're having right now.

CONTINUED BY DR. PETER MILLER:

DR. PETER MILLER: Wasn't -- wasn't the initial letter in the sequence that was filed this week saying that a surcharge is under discussion because other customers need to be protected from being prematurely subject to the cost of a new dam or losing that export revenue?

Obviously, I'm -- it's a very rough paraphrase but wasn't that the gist of the -- the whole debate that's reflected in those letters?

MS. PATTI RAMAGE: Mr. Warden is not here right now, so I'm a little loathe to -- to attempt to discuss those letters.

We might -- my own -- or from a legal standpoint they're not -- the subject matter isn't part of this hearing. And from a policy matter, because Mr. Warden isn't here, I -- I'm not really comfortable with the Panel getting -- going down that road.

Maybe we could put that over until after the lunch hour.

THE CHAIRPERSON: Professor Miller, maybe you want to hold that until Mr. Warden comes back. My recollection of what Mr. Warden said -- and I think I have a pretty good one -- was that the concern was, was that if the sales value was less than the value that could come from the export market, increased sales in domestic market would actually reduce the overall net income to Hydro and that could have rate implications.

That if you could sell the power elsewhere for a higher price, if you didn't, you actually sold it at a lower price, there was a loss, an opportunity loss, if you would, that would arise that could be a concern.

DR. PETER MILLER: Thanks. I'll accept that as a proxy for Mr. Warden.

MS. PATTI RAMAGE: I'm glad you did it, Mr. Lane, and not me.

CONTINUED BY DR. PETER MILLER:

DR. PETER MILLER: And just to spell that out, that means that the -- the steel company and the northern smelters and the pulp companies too would be hit by higher rates from that kind of incremental load.

Is that correct?

MR. ROBIN WIENS: Yes, that's correct. I mean, if -- if incremental load and the diversion of export revenues or the advancement of the construction of a new dam causes rates to go up, which is reasonable to believe, those rate increases would affect all customers of Manitoba Hydro, including other industrial customers.

DR. PETER MILLER: So as a matter of rate protection for other industrial customers, there is good reason to either deter further load or to charge it to something that would compensate for that?

MS. PATTI RAMAGE: Mr. Chair, now I think we're crossing over the line from cost of service to rates and I would suggest this might be a matter for another Hearing to ask Mr. Wiens the rate impacts.

THE CHAIRPERSON: Have another try at it, Professor Miller.

CONTINUED BY DR. PETER MILLER:

DR. PETER MILLER: All right. Alternatively, the cost of service traditionally has dealt, not just with costs but revenues, as well. And there might be a good reason within the cost concept of attributing somewhat higher costs to customer classes that might otherwise undermine the whole system.

MR. ROBIN WIENS: Dr. Miller, the proposal that Manitoba Hydro has put before this Board for this cost of service proceeding, is an attempt to find a little bit more balance in that respect. We recognize that for many of our sales, there is gap between marginal costs or opportunity value of power in the export market and the rate.

We believe that the proposal that we brought to the Board goes partway to addressing that gap. It doesn't go all the way and we're acknowledging that. We're also acknowledging that we may need to take other measures in order to deal with that, but we haven't brought those other measures before this particular proceeding.

So we're prepared to acknowledge that there's an issue. It's just -- I don't -- I don't know how far we want to talk about how we address that issue, at this proceeding.

DR. PETER MILLER: Thank you. I'd like to turn to page 4 of the rebuttal evidence, the last paragraph above regulated reserve fund proposal.

And I take it that at least one (1) implication of that is that, is that the PUB has as wide latitude in its determination of just and reasonable rates and the construction of a cost, that there's not just one (1) way to do that?

(BRIEF PAUSE)

MR. ROBIN WIENS: Yes, Dr. Miller, we believe that this Board is empowered to look beyond and Manitoba Hydro is empowered to propose beyond the simple strict historic cost considerations. I think, you know, when we're looking at the question of how we design rates an what role the cost of service study has in designing rates there are issues beyond simple historic costs that have to be considered.

Particularly, in this type of environment where we have a problem that -- while not absolutely unique in North America is probably close to being unique in its -- in its magnitude and that is the existence of another market with a different basis of pricing than the domestic market. So, yeah, that's why we made that statement.

DR. PETER MILLER: Thank you. And in fact you presented four (4) alternatives for consideration here, correct? Four (4) alternative ways of doing the costs?

MR. ROBIN WIENS: Yes we have presented four (4) alternatives and some of those alternatives do consider marginal cost relationships. But all four (4) of those alternatives are based on historic cost considerations. They're based on embedded costs derived from our history and from our accounts.

So they don't look at other cost concepts as a basis for the costs that are allocated in the cost of service study.

They look at other cost concepts as a way of assisting us to understand how we might shape those embedded cost concepts.

DR. PETER MILLER: Could we say that Mr. Lazar has presented three (3) more that you went over in JL-6 that -- so we have seven (7), I mean, obviously some more sketchy than others, but we have seven (7) ways of doing a cost before us?

MR. ROBIN WIENS: You know, I think I would prefer, in a way, that Mr. Lazar characterize what he is suggesting for this Board rather than trying -- you're trying to do it through me.

But I will say that the examples that Mr. Lazar has provided do invoke different cost concepts.

DR. PETER MILLER: And you quote our friend Mr. Bonbright as saying, at page 3, I think it is, at the bottom:

"A cost-based standard is subject to many different interpretations and the interpretation which would best comport with any single objective of rate making is almost sure to be ill-adapted to the attainment of other objectives."

And I think that was partly the grounds for recognizing that we can't be fixated on a single concept that we've used in the past.

MR. ROBIN WIENS: That quote's taken from what Mr. Williams has characterized as my favourite bedtime reading. And trying to interpret that statement, I guess I'll fall back on the three (3) key rate criteria that Mr. Williams incorporated into his cross-examination of our panel yesterday and perhaps the day before.

Just to give examples of objectives and one of those three (3) objectives is -- is recovery of the revenue requirement. So the historic cost concept comports quite well with that objective.

Another concept is the -- is providing an efficient price signal. The historic cost concept unmodified does not deal very well with that one. A marginal cost concept is more effective. It's the best cost concept to deal with that particular criteria.

And so, you see again in the -- in the discussion I had with Mr. Williams we talked about how you balance among different objectives. So you can see that a pure marginal cost concept addresses one or perhaps other objectives very well, but does not address the revenue requirement objectives so well.

So we -- we try to look at balance and this is the point we're trying to make here is that we don't feel we should be restricted. Even though ultimately we -- we're not trying to recover more than our revenue requirement, we don't feel that we should be restricted in order to deal with some of the other key criteria.

We don't feel that we should be restricted from looking at some of these other concepts and seeing how they may fit in and assist us in -- in carrying out our analyses based on historic cost.

THE CHAIRPERSON: Professor Miller, just to follow up on that, just one thing and we'll turn to another topic, we shouldn't forget that Manitoba Hydro, in all fairness, responded to the Board's directives. We asked them to provide us with the four (4) models and the fourth one being their recommended one.

In other words, it was the Board's directive that came out of the last time we were looking at this and we asked for those specific three models plus the one that they recommended. We didn't forbad them from speculating. We asked for four (4) specific models.

DR. PETER MILLER: Thanks. That was my understanding too.

CONTINUED BY DR. PETER MILLER:

DR. PETER MILLER: Let me just -- and, in fact, you have employed other models. You've used Mr.

Lazar's thing over against MIPUG, for example, and in other places.

You have played around with some of these other concepts to shed a different light on -- on some of the issues, that's part of your -- your response; is it not?

MR. ROBIN WIENS: If you're referring to Manitoba Hydro's rebuttal evidence?

DR. PETER MILLER: Yes.

MR. ROBIN WIENS: Yes, certainly we've -- we've taken some latitude. We're not -- we're not -- I don't think it was in the spirit of proposing a different cost of service methodology, but it was in the spirit of trying to understand where some of these concepts might lead us and how they might be dealt with.

DR. PETER MILLER: I think that was a very useful thing to do. Let me try out this idea.

Since you find a need to employ various concepts to clarify the issues, might not the -- the Board in future rate hearings similarly require that, and wouldn't logic -- the logic of that be not have a single form of costs but two (2) or more?

MR. ROBIN WIENS: When we get into some of these higher policy matters I miss my colleague to my left, but I will -- I will say that that presumably is for the Board to decide. That -- that's within the Board's purview.

And if the Board so directs Manitoba Hydro, of course we -- we would have to -- we would have to comply with that.

DR. PETER MILLER: In fact, they recently have directed you to do that in the case of the Centra Gas hearing, have they not, provide two (2) COSS's?

MR. ROBIN WIENS: They've asked us to look at a different pricing concept. They haven't necessarily asked us to look at a different cost of service study or to employ other -- other cost concepts in the cost of service study.

They've asked us to investigate the possibility of inverting rates in the natural gas -- if that's what you're referring to now.

DR. PETER MILLER: Not exactly. What I was thinking of was the -- I wish I knew the terminology -- but there's the one where you calculate in a dividend amount or -- or a rate base, rate of return I think it's called. And -- and then there is the financial target one that -- that you preferred. And -- and I believe the -- the Board asked you to continue to do both.

MR. ROBIN WIENS: Dr. Miller, I -- I guess I -- I don't see that in the same light as -- as a different cost concept. I see that as taking basically the same cost considerations and the same definition of costs and treating them in -- in different ways for the purpose of determining the appropriate net income for the Corporation.

DR. PETER MILLER: Okay. Thank you.

THE CHAIRPERSON: In fairness, Professor Miller, there was other considerations at play when it came to Centra, about the cost of service model as opposed to the rate of return, rate of base, other than issues such as environmental matters.

DR. PETER MILLER: No. I appreciate that. I'm just now talking about whether or not a rate setting exercise and hearing needs to be conducted on the basis of a single COSS or whether the perspective of more than one (1) can illuminate some issues, whether they are environmental or -- or any other issue. That was my point.

THE CHAIRPERSON: Thank you.

CONTINUED BY DR. PETER MILLER:

DR. PETER MILLER: In the RCM/TREE Manitoba Hydro 1-11 you -- I'm not going to refer to anything specific there, but you present a history of discussions and decisions regarding allocation of net export revenues, 100 percent of that to domestic customers.

Well, actually there are a few points that I -- I'd like confirmed. In that history I think you said there was no direction from government as to how to do it. I suppose it is more specific that I had thought originally.

MR. ROBIN WIENS: Thanks. I -- I normally prefer to have the reference document in front of me, and I have it now. Thank you.

DR. PETER MILLER: You have it. Okay. Thank you. I apologize for not having a -- a book of references. My secretary is on strike.

And another part of that was that the only public discussion or forums or technical analyses that pertain to that issue have produced technical analyses within Manitoba Hydro and public discussions in the PUB context, and there hasn't been any other forum or type of analysis for -- for discussion of this basic aspect of how export revenues are treated?

MR. ROBIN WIENS: Yes, we said that and I still believe that's correct.

DR. PETER MILLER: Okay. And I want to ask if issues of full cost accounting and elasticity were at all a part of -- of those discussions or whether this is essentially the first hearing in which those issues have been raised or discussed, at least to any extent, for which technical analyses have been provided?

(BRIEF PAUSE)

MR. ROBIN WIENS: Dr. Miller, this -- the response that Manitoba Hydro provided to this information request I think is probably -- we could spend a lot of time on detail but in broad outline and in terms of the concept considered I think this response is complete.

DR. PETER MILLER: What is that?

MR. ROBIN WIENS: Is complete. That -- that it deals with the -- with the gist of the discussions that have occurred on this subject.

DR. PETER MILLER: Thank you. I think I'll close with a few questions on embedded versus marginal cost. And I want to link that -- the notion of embedded costs to the notion of inter-generational equity.

Would you agree that inter-generational equity is one of the principles considering when -- when you consider fairness you also consider fairness to current customers and the next generation?

(BRIEF PAUSE)

MR. ROBIN WIENS: Yes, we do, Dr. Miller. But I think normally the way we do this is when we look at how we incur costs to pay for a plant and then how we take those costs into our financial statements over a period of time.

Our depreciation policy has a lot to do with dealing with inter-generational equity and that would explain why, for example, a plant that we know is going to be providing service for a hundred (100) years is not expensed over one (1) or two (2) or five (5) or even ten (10) years but that we depreciate that plant over the period over which it's going to provide service.

So treatment of costs in accounting policy is a large part of how we deal with inter-generational equity.

DR. PETER MILLER: Would the size of the debt in your -- or the proportion of debt be another factor in that? In other words, current customers could benefit from lower rates if they were slow in paying off their debt but someone will have to pay eventually?

MR. ROBIN WIENS: Yes, that would be fair to say as well. Yes.

DR. PETER MILLER: In connection with

that and -- and what about the notion of embedded costs; that's historically based and you've acknowledged that the next plant's going to cost more, so if you are only collecting costs related to your historic plant will you recover enough to pay down the -- the next investment that's needed or are you going to put too much of the load on the next generation of customers.

I'm wondering if you see an inter-generational equity issue there?

MR. ROBIN WIENS: Well, Dr. Miller, that speaks partly to why we -- why we have an objective related to debt equity ratio, is that we would like to be able to -- be able to, without incurring financial difficulty, be in a position to be able to finance additions to our plant, including major additions to our plant.

DR. PETER MILLER: So you view the accumulated equity as a basis for that next investment, kind of, a reserve fund contribution towards the more expensive plant that's coming up?

MR. ROBIN WIENS: It makes it possible -- among other factors, of course, the issue of drought is very much in our mind, as well. But among other factors it makes it possible for Manitoba Hydro to incur debt at reasonable costs to expand its system.

And that as that is included, as that is required that Manitoba Hydro would look to increasing its equity -- or maintaining the 25 percent equity ratio by increasing the quantity of equity.

DR. PETER MILLER: Why is it that your way of reporting on embedded costs only differ from, say, what's typically presented, well, by MIPUG's customers or others, a replacement cost value? At least in their accounting they talk about -- they revalue, if you will, the plant in terms what you'd have to pay to build it.

MR. ROBIN WIENS: Well, I'm not sure that they do that in their accounts, Dr. Miller. I don't believe they do. I think they're simply expressing for the benefit of making something public knowledge that this is the -- this is the value that they would have to invest today in order to continue operations.

And you know, the may look at questions such as replacement costs when evaluating future decisions which is exactly the same thing that Manitoba Hydro does.

(BRIEF PAUSE)

DR. PETER MILLER: Finally, you've made use of marginal cost concepts which -- as much as were available to you in some of your rebuttals and so on. And you indicated that you have some of them but not others, could you briefly describe, you know, if you were to go a marginal cost route in presenting a COSS, what you're lacking? What you have and what you're lacking?

MR. ROBIN WIENS: In order to assist us with our ongoing evaluations of supply options including demand side management, Mr. Surminski and his people regularly undertake to estimate the long run or long term marginal costs of expanding generation supply.

We do also from time to time, without the same frequency, examine the costs related to -- particularly the capital costs related to the expansion of the transmission and the distribution systems.

Although those studies are not undertaken with the same degree of regularity, they're fairly lengthy studies to carry out, they consume resources of the Corporation and they're not required with the same regularity as the studies that Mr. Surminski carries out.

So they may not, at any particular time be as current as we might like. So that's one (1) issue.

Another issue is that we -- some of the costs of the distribution system are not included, those would be operating and maintenance costs and those would also, I believe it involves some of the -- the cost of the secondary distribution system and connections of customers. So we don't have -- we don't have any data, dated or otherwise, on those materials.

And, finally, there are marginal operating and -- and maintenance expenses involved in the distribution system and in the customer service systems which is probably not as serious a deficiency since we do, on an annual basis, forecast those costs, operating and maintenance are current costs. So that's probably not that much of an deficiency.

So that -- that describes, I think, where we're at in terms of our ability to estimate marginal costs and where we think we would need to be to have a comprehensive marginal cost of service study.

DR. PETER MILLER: Do you have any directional sense of -- of where those further studies would -- would go? In other words, are there any areas in which the marginal costs are likely to be less than the embedded costs?

MR. ROBIN WIENS: It's -- it's certainly possible. If you're looking at, for example, a distribution system that's relatively new and that doesn't have to be upgraded or replaced until the very distant future you may be looking at a situation where the time value of money makes those costs less than --

than the embedded costs.

Generally speaking though you are -- if you're investing in distribution today you're doing so at a cost that's higher than your historically carried costs.

DR. PETER MILLER: Okay. Thank you. I think with that I'm -- I'm through and I certainly want to thank the panel, and Mr. Wiens and Mr. Hamlin in particular, for the forthright and informative answers. Thank you all.

THE CHAIRPERSON: Thank you, Professor Miller.

We'll have our lunch break now and we'll come back at 1:30 and we'll be with Ms. McCaffrey and MIPUG. Thank you.

--- Upon recessing at 12:04 p.m.

--- Upon resuming at 1:38 p.m.

THE CHAIRPERSON: Welcome back everyone. Particularly welcome back to Mr. Warden.

Mr. Peters, am I correct, the first thing, we have undertakings from Ms. Ramage?

MR. BOB PETERS: Yes, we do. I think we have two (2), and she can speak to both. And it may also be something that her witnesses may want to comment on as well, just so that we can make sure the Board and the other parties are aware of what's being filed and what's indicated on the filings.

THE CHAIRPERSON: Thank you.

Ms. Ramage, particularly with respect to Undertaking number 10, it would be helpful if someone in the Panel just quickly ran through it so we'd all have a common understanding.

(BRIEF PAUSE)

MS. PATTI RAMAGE: Well, first -- for -- begin by introducing them on the record. And Manitoba Hydro is filing answers to two (2) undertakings. The first, number 10, which I would suggest be entered as Exhibit MH-15, and that was the Summary of General Service Large Customer Class Curtailments Between 2001 and 04/05.

--- EXHIBIT NO. MH-15: Summary of General Service Large Customer Class Curtailments between 2001 and 2004/2005.

MS. PATTI RAMAGE: The second matter is a document, it's titled "Customer Weighting for Street Lighting." This is actually the -- an excerpt from the '91 report that was being discussed during Mr. Buhr's cross-examination this morning.

It has -- has been filed electronically already, and that's referenced in PUB/MH-II-30, and an -- an excerpt from the same -- same report was filed in PUB/MH-I-29, but the actual link you'll find in II-30, but so that the parties have a hard copy here, this is the excerpt dealing with street lighting.

THE CHAIRPERSON: Thank you, Ms. Ramage. So you've selected Mr. Wiens to give us a quick run through on this?

MS. PATTI RAMAGE: That's right. But before I turn it over to Mr. Wiens to run through Exhibit 15, Mr. Hamlin also had a response that he wanted to enter into the record in response to a -- a question Mr. Evans had posed yesterday.

THE CHAIRPERSON: Mr. Hamlin...?

MR. WILLIAM HAMLIN: Yes, with regard to how big Manitoba Hydro's emissions are relative to -- to provincial emissions, according to Canada's most recent National Greenhouse Gas Inventory in the year 2003, total emissions for the Province of Manitoba were 21.3 million tonnes of carbon dioxide equivalent emissions.

Manitoba Hydro's emissions from Brandon and Selkirk generating stations were less than 0.8 million tonnes. As such Manitoba Hydro's emissions made up about 3.7 percent of the total provincial emissions in 2003. This percentage would vary from year to year.

And to add a little further context, Manitoba Hydro's emissions are less than 1 percent of the total national greenhouse gas emissions from the electricity sector.

THE CHAIRPERSON: Thank you, Mr. Hamlin.

Mr. Wiens...?

MR. ROBIN WIENS: Yes, this is Exhibit MH-15, response to our undertaking -- fulfilment of our Undertaking Number 10 which was to file a summary of general service large customer class curtailments covering the period 2001 to 2004/05. I believe this was in response to Mr. Williams. And basically for the most part the exhibit appears to speak for itself.

It's telling you that during the fiscal year 2001/2002, we had only three point eight, eight (3.88) hours of curtailment during the course of the year and these affected only one (1) customer of the two (2) that were subscribed or enrolled in the program in that year.

That customer was enrolled under the option A as well as E so that the -- there were a number of possibilities for curtailment of that customer. These were clearly option A type curtailments which are limited to four and a quarter (4 1/4) hours in duration and it appears that there was one (1) curtailment only that covered close to four (4) hours in duration and the customer reduced 66 megawatts of their load that year.

There were no curtailments of any customers under the program during the fiscal year of April 2002 ending March 31st, 2003. In the following fiscal year there were a number of curtailments. This is fiscal 2003/2004. The infamous drought year. We see here that there are fourteen (14) curtailments for the option A customer.

And a somewhat lesser number of curtailments for some of the other customers. Significant curtailments totalled about a hundred and twenty (120) megawatts and they lasted, for the most part, up to the maximum of four and a quarter (4 1/4) hours.

All of these curtailments took place during the months of July and August. In fact, all but one (1) took place during the month of August and some people will recall that this was an -- this was an extremely hot month. It was one of the hottest months in recent record and that would have constrained the capacity resources of Manitoba Hydro due to air conditioning load.

And so consequently that would explain the large -- relatively large number of curtailments and their concentration in the month of August.

The following year, which is the last year for which this information was requested, shows that Manitoba Hydro carried out four (4) curtailments in total. Largely affecting one (1) customer. The total hours curtailed was about nine and a half (9 1/2) and the typical megawatt reduction was in the range of ninety (90) to a hundred and thirty (130).

All of these curtailments occurred at the opposite end of the year when it was very cold and Manitoba Hydro would have had perhaps capacity concerns with respect to high heating loads.

THE CHAIRPERSON: Thank you, Mr. Wiens.

MR. ROBERT MAYER: Mr. Wiens, am I reading this correctly, the August curtailments look like they were two (2) a day in the dates they happened, August 11th, two (2), August 14th, 15th, 18th, 19th and 20th, two (2) curtailments a day.

You say four point two five (4.25) hours is the top end and then, I take it, at any given time, because obviously they went to four point two five (4.25) on August 20th and then another two point six two (2.62) I'm assuming later that day.

MR. ROBIN WIENS: That's correct. The -- the terms and conditions allow for curtailments, more than one (1) curtailment on a single day, in fact, it I believe expressly contemplates that situation.

In a -- in a situation like this, a hot summer day, you're looking at the peak being fairly sustained from the period of about noon until getting past the supper hour, 7:00 or 8:00 p.m. So this would have been required probably in the earlier and then again in the later afternoon.

MR. ROBERT MAYER: I'm looking now at August 11th and curtailment is point zero three (.03) hours, which strikes me, if my calculations are correct, as one point eight (1.8) minutes. That strikes me as -- why would you do that?

MR. ROBIN WIENS: One moment, please.

(BRIEF PAUSE)

MR. ROBIN WIENS: Well, it was only supposed to be one (1) curtailment but it exceeded the --

it exceeded the maximum, so Manitoba Hydro had to treat it as a second curtailment.

MR. ROBERT MAYER: Thank you.

THE CHAIRPERSON: Thank you again, Mr. Wiens, Mr. Mayer.

Just before turning matters over to Ms. McCaffrey --

MR. BYRON WILLIAMS: Mr. Chairman, if --

THE CHAIRPERSON: Please.

MR. BYRON WILLIAMS: -- if I might. This was in response to a CAC/MSOS undertaking. So I just have two (2) or three (3) very simple questions that flow from -- from this response.

THE CHAIRPERSON: That's fine.

RE-CROSS-EXAMINATION BY MR. BYRON WILLIAMS:

MR. BYRON WILLIAMS: Just, Mr. Wiens, just so I understand it. In terms of the Option A Program, in the -- the summer months, the -- there's a maximum duration per curtailment of four point two five (4.25) hours and the maximum number of hours in a day in a summer month would be ten (10) hours in one (1) particular day?

MR. ROBIN WIENS: That sounds right.

MR. BYRON WILLIAMS: And, again, just so

I understand, for this Option A type customer, the maximum annual hours of curtailment would be sixty-three point seven five (63.75) hours; correct?

MR. ROBIN WIENS: That's correct.

MR. BYRON WILLIAMS: So even in this year, the drought year, they were at -- they were at forty-eight point three three (48.33) hours, so that would below the maximum hours of curtailment?

MR. ROBIN WIENS: That is correct. But there are a number of constraints on the curtailments, not only the total hours.

MR. BYRON WILLIAMS: Fair enough. Good point.

And just finally, I guess when -- when you look at this undertaking response in its entirety it points to the -- the fact that there's capacity constraints faced by Hydro sometimes in the summer, sometimes in the winter; would that be fair?

MR. ROBIN WIENS: Those are the times that they would most typically be faced, yes.

MR. BYRON WILLIAMS: Thank you, Mr. Chair.

THE CHAIRPERSON: Thank you, Mr. Williams.

Just for the benefit of Ms. McCaffrey and

Mr. Warden in particular, who weren't here, just before lunch, when Professor Miller was doing his cross-examination. Led by Professor Miller, we ended up in a fairly wide ranging discussion related to environmental matters.

And, Mr. Wiens, this caused us some thought over the lunch break. Mr. Wiens, reflecting on your discussion with Professor Miller before the break, you explained how different definitions of cost have different advantages and perhaps can be for different purposes.

Would you comment on the merit of considering conceptually, say, two (2) cost of service studies, perhaps one being your recommended model or, in any case, one based on historic cost, the other reflecting as well, if you like, deemed environmental costs, then weighing the two (2) studies to arrive at one (1) set of RCC, conceptually.

(BRIEF PAUSE)

THE CHAIRPERSON: Just conceptually, Mr. Wiens, and also in that of course the weightings wouldn't have to be the same.

MS. PATTI RAMAGE: Mr. Chairman, I'm

wondering if we could get back to you on that, just so that the Panel could have an opportunity to discuss it amongst themselves, maybe after this afternoon's break or later on.

THE CHAIRPERSON: Sounds more than fair since we mused on it for some time. Thank you.

Ms. McCaffrey?

CROSS-EXAMINATION BY MS. TAMARA MCCAFFREY:

MS. TAMARA MCCAFFREY: Thank you, good afternoon Mr. Chair and Members and of the Board. Just to start things off, I wondered if I might request two (2) undertakings from My Friends at Hydro.

One (1) of which Ms. Ramage and I chatted about earlier, we -- and I understand there wouldn't be any objection to providing but we haven't received it yet. And the other one (1) is just in relation to some of the things we're going to be talking about, it would just make it easier to have it on the record, it's nothing new.

But, the first was in the Manitoba Hydro rebuttal evidence at around page 41 there's that table, Ms. Ramage, that you and I looked at. And it talks about the impact of moving from a four (4) marginal cost period to a twelve (12) period.

(BRIEF PAUSE)

MS. PATTI RAMAGE: Yes, we have it.

MS. TAMARA MCCAFFREY: Okay. And underlying those costs or those calculations are the marginal cost by period, I take it, is that --

MR. ROBIN WIENS: Yes the marginal cost averaged over the twelve (12) periods and not just over the four (4) periods, yes.

MS. TAMARA MCCAFFREY: Right. Okay. And then the MIPUG witnesses have calculated for twelve (12) periods. Also underlying those calculations is the amount of energy used in each period by each class, is that right, sir?

MR. ROBIN WIENS: That's right.

MS. TAMARA MCCAFFREY: So in other words, in order to get these results you have to know how much energy each class uses in each of the periods?

MR. ROBIN WIENS: Yes.

MS. TAMARA MCCAFFREY: Can you provide that breakdown of customer class energy, including export class by firm and opportunity for each of the twelve (12) periods?

MIPUG witnesses had calculated it -- you used -- have calculated it before and then you've looked at -- or MIPUG witnesses used the twelve (12) period, you've compared them, the recommended method four (4) period classification comparing the twelve (12) periods, could we get it for each of the twelve (12) periods?

And while we're at it the -- a comparable thirty-six (36) period version, that would be for each of the twelve (12) months in each of three (3) periods?

--- UNDERTAKING NO. 16: Provide breakdown of customer class energy, including export class by firm and opportunity for each of the twelve (12) periods

MS. PATTI RAMAGE: While our witnesses are discussing this amongst themselves, I can indicate that we have been working on that. And I think there's a component of your -- of your request that either caused concern or they were having a little more difficulty getting that data.

So I think in a moment we'll --

MS. TAMARA MCCAFFREY: I wonder if -- is it a problem with the way I've asked the question, I can try it again.

MS. PATTI RAMAGE: No, I don't think it's a problem with the question, if you just give us one (1) moment I think Mr. Wiens will be able to give you the status of where that's at.

MR. ROBIN WIENS: We should be able to very shortly provide you with the information requested for the twelve (12) periods. I don't believe that within the timeframe of this proceeding, between now and final argument, we can do the thirty-six (36) periods.

We simply don't have a database that's set up to do that.

MS. TAMARA MCCAFFREY: Thank you, Mr. Wiens. Thank you. The second undertaking then that I'll be seeking from you deals with, again, MIPUG's evidence at page 15, you don't need to turn to it, but it sets out export revenues by total dollar value for each of the PCOSS '95, '97, '02, '04 and '06.

Since we've been talking about the unit price of exports in this proceeding, can you please provide the quantity of each of the firm and opportunity exports that was assumed for each of those PCOSS and that was '95, '97, '02, '04 and '06 and the reference is page 15 of the MIPUG evidence.

And here we're talking about the average unit price for firm and export opportunity -- firm exports and opportunity exports on a kilowatt hour basis if that -- could you get that for us?

MR. ROBIN WIENS: We will attempt to do this. You are aware, of course, that we have not proposed an export class in most of those cost of service studies so we have not made any assumptions in those studies about the distinction between firm and opportunity exports.

So it's a matter of going back into historical records that other people in the Corporation are responsible for to -- to try to be responsive to that part of your question.

MS. TAMARA MCCAFFREY: Would you be able to look at sales at the meter the -- basically what you sold. What the exports were; is that something that you can use. I understand from -- from the consultants that are assisting me that that would be useful.

MR. ROBIN WIENS: We can certainly obtain kilowatt hour data on exports during those periods. Whether we can effectively put them into the two (2) classes that we have in 2005/2006 cost of service study that's something we'll have to determine.

MS. TAMARA MCCAFFREY: Okay. So if we get the total dollar revenue and the kilowatt hours we can probably work with that, I think. If you could try and get us that we would really appreciate that, Mr. Wiens.

--- UNDERTAKING NO. 17: Provide the total dollar revenue and the kilowatt hours for '95, '97, '02, '04 and '06

CONTINUED BY MS. TAMARA MCCAFFREY:

MS. TAMARA MCCAFFREY: All right. Let's now move on to our conversation here. We're obviously looking at changes to the established cost of service study in this hearing and we're doing that, Mr. Wiens, because export revenues have grown significantly and by that I'm talking about the unit value, price per kilowatt hour has grown, not the magnitude of the exports; am I understanding your earlier evidence correctly, sir?

MR. ROBIN WIENS: Well, I think we said both but there is a -- there is a considerable degree of concern about the unit value as well.

MS. TAMARA MCCAFFREY: Well, I'd better -- I want to make sure I understand your evidence. Because what I understood you to say is that the magnitude you didn't think had actually grown that much. I believe that was in response to Mr. Peters' question, that the value -- the unit value is something that has -- that's the real driver?

MR. ROBIN WIENS: Yes, it is.

MS. TAMARA MCCAFFREY: And, of course,

what falls out of that is some of which Dr. Miller was talking to you about this morning and that is that you could sell a kilowatt hour for more money in the United States than you can in Manitoba?

MR. ROBIN WIENS: Sell a kilowatt hour for more outside Manitoba than in Manitoba.

MS. TAMARA MCCAFFREY: Not all your exports are to the United States. A big proportion of them are though, as I understand?

MR. ROBIN WIENS: That's my understanding as well.

MS. TAMARA MCCAFFREY: And you've said that this creates a problem for Manitoba Hydro from your perspective and that problem is a gap -- there's a gap between the market price and the domestic prices for power?

MR. ROBIN WIENS: Yes. It means that we're dealing with a situation where domestic load growth is -- has an implication for rate increases.

MS. TAMARA MCCAFFREY: Not as profitable?

MR. ROBIN WIENS: Well, definitely not as profitable, but it has an implication for rate increases for all customers. Domestic load growth results in a requirement to increase rates.

MS. TAMARA MCCAFFREY: So you -- so you

have a gap that's causing you this concern. The only way to actually close the gap though, sir, in reality, would be to charge market prices in Manitoba and Manitoba Hydro doesn't want to do that; correct?

MR. ROBIN WIENS: That's correct.

MS. TAMARA MCCAFFREY: And as an example in market jurisdictions like Alberta smaller customers are charged market prices to both power and to the distribution functions.

Are you aware of that?

MR. ROBIN WIENS: I'm aware that the supply is priced at market. I was not aware that the distribution function was priced at market. My understanding is that the transmission and distribution functions are regulated.

MS. TAMARA MCCAFFREY: They're -- they're also driven by -- by market cost, we're -- and we're not doing that in Manitoba; that's not on the map at all today.

Am -- am I right?

MR. ROBIN WIENS: Transmission and distribution costs are driven by market prices?

MS. TAMARA MCCAFFREY: You're -- you're not going to start charging market prices here, in this province, assigned to any...

(BRIEF PAUSE)

MS. TAMARA MCCAFFREY: I think you've answered the question actually already. I don't want to be muddling it further. My point simply is that in order to close the gap between market and domestic, you'd have to charge market prices here in Manitoba and -- and you're not going to do that. It's a fairly simple proposition, I think.

MR. VINCE WARDEN: There -- there's no application before the Public Utilities Board at this time to charge market prices.

MS. TAMARA MCCAFFREY: And so what I'm suggesting then is -- is Manitoba Hydro can live with that gap and it allows in fact Manitoba Hydro to boast about having the lowest cost hydro power in North America.

Would you agree with that, Mr. Warden?

MR. VINCE WARDEN: Well, I don't think we've ever said it's a gap we can live with indefinitely, no.

Can we boast about lowest prices in North America? We certainly can today.

MS. TAMARA MCCAFFREY: But you couldn't if you went to market.

MR. VINCE WARDEN: If we went to market, you're right, we wouldn't be able to do that.

MS. TAMARA MCCAFFREY: And having the lowest cost, of course, in North America is something to boast about because it's a good thing, it can attract industry to Manitoba and -- and new residents to Manitoba.

Would you agree with that? Are those good things?

MR. VINCE WARDEN: Well, we've always regarded it as a good thing in the past and we, to use your words, do tend to boast about it sometimes.

MS. TAMARA MCCAFFREY: So these are good things for Manitoba but not quite so simple for Manitoba Hydro because, of course, the more domestic sales you have, the more domestic load, the less for exports, which is what I think Mr. Wiens was talking about earlier.

MR. VINCE WARDEN: We like to think that what's good for Manitoba Hydro is good for Manitoba.

MS. TAMARA MCCAFFREY: Well, you know, and I'd like to think that too, Mr. Warden. And maybe I can -- you -- you would like to think that but the reality is -- the reality is, and I think everybody in this room knows it -- that new load means more sales on this side of the border, less for exports, and it does have an impact on Manitoba Hydro's bottom line.

Mr. Wiens said as much when he was talking about rate increases; right?

MR. VINCE WARDEN: It does have an impact on Manitoba Hydro's bottom line, yes.

(BRIEF PAUSE)

MS. TAMARA MCCAFFREY: Rate setting is not cost of service and we're looking at the -- the proposed change to cost of service. So I'd like to talk about that now.

And -- and just to start off, have you made efforts outside this hearing to -- to get input from customer classes with respect to the proposed change to cost of service?

MR. ROBIN WIENS: I would say that we have relied principally and almost entirely on this process to review the changes in cost of service.

MS. TAMARA MCCAFFREY: Thank you.

Now, Mr. Wiens or -- or Mr. Thomas, can we agree that at least some portion of export revenues should continue to be assigned to the bulk power functions?

Is that still reasonable?

MR. ROBIN WIENS: We're doing that in two (2) ways in our recommended method.

First of all, we are attempting to isolate and -- and we've had considerable discussion about the degree of success we had in isolating those costs associated with the bulk power system that can be attributable to exports.

And we have assigned those costs to the two (2) export classes. So, yes, there is a certain portion of export revenues that tracks back to the generation and transmission functions by virtue of the fact that we've created an export class.

Then there is a very, very significant portion of the remainder of the export revenue that is the net export revenue after allocation of costs to the export class, that is also credited back to domestic customers on the basis of generation and transmission costs.

Our proposal which says, let's do it on the basis of total costs, well generation and transmission costs are 70 percent of total costs, plus we have already isolated a significant portion of the export revenues and said, those have to come in the cost we apply to those classes.

So what we are recommending is probably

close to 85 or perhaps more percent of the export revenues received by the Corporation being allocated or benefiting Manitoba customers on the basis of their use of the generation and transmission system.

So, yes, we do agree that some of the costs should be credited back to generation and transmission and we believe we've gone very, very far in that regard.

MS. TAMARA MCCAFFREY: Thank you Mr. Wiens. You've just shortened a few of my questions with your answer, so I'm sure you'll be happy about that.

Cost of service helps achieve fairness, in the system right, would you agree with that?

MR. ROBIN WIENS: That's an objective that we try to attain, yes.

MS. TAMARA MCCAFFREY: It's kind of a road map for fairness that you look at when you get to the rate design portion, correct?

MR. ROBIN WIENS: That's correct.

MS. TAMARA MCCAFFREY: And of course, the reason why it serves that purpose is because it tracks costs to the customer classes based on the extent to which those classes use the different parts of the system. So there's a logical and objective connection, is that fair?

MR. ROBIN WIENS: That is the objective.

MS. TAMARA MCCAFFREY: In talking about different parts of the system I want to talk about the functions. And the big three (3) are generation, transmission and distribution.

We can agree on that, we know there's some ancillary ones, but those are the big -- the main functions of the system, correct Mr. Wiens?

MR. ROBIN WIENS: Those are the largest three (3).

MS. TAMARA MCCAFFREY: And obviously you're not going to disagree with me because you just said this is what you do, generally it's important to keep costs linked to the functions in order to maintain the integrity of the cost of service, would you agree with that, as well?

MR. ROBIN WIENS: It's important to understand how different classes incur costs in the different functions, yes.

MS. TAMARA MCCAFFREY: And just to really highlight this distinction between function and allocation let's take an example where there's three (3) utilities.

Utility A, is just responsible for generation, that's all it does. Utility B, transmission utility. Utility C, we've got distribution.

Now, I know Manitoba Hydro has all three (3) of those functions within it, but let's pretend there's three (3) separate utilities here. Are you with me so far?

MR. ROBIN WIENS: I'm with you.

MS. TAMARA MCCAFFREY: So we've got each separate utility performing a separate function. And we've got surplus power which is being sold in the export market at a handsome profit, just like we do in Manitoba. Which company is going to get that profit?

(BRIEF PAUSE)

MR. ROBIN WIENS: It really depends who owns the companies, doesn't it?

MS. TAMARA MCCAFFREY: Okay. Well, why don't we say, who do you think? There's generation -- is it going to be a generation utility? Does it makes sense that they're going to get profits on the export? They're the ones that are making the power that's being sold in the export market, does that make sense?

MR. ROBIN WIENS: Well, I yes -- it makes sense that the revenues and therefore the profits flowed back through the generation utility. But, you know, that only says which utility they reside in that doesn't say about how they're going to be used.

If we were talking, for example, about a private utility those benefits would accrue to the shareholders of that utility.

MS. TAMARA MCCAFFREY: I'm talking to you at a simple level because it's important, I think. When we talk about integrity of the cost of service, we talk about functions, I think it's important that we have a clear idea. Everybody in this room has a clear idea in its mind of how this works.

Okay, so if we did have three (3) separate utilities the export profits would go to the generation utility. Maybe some -- some percentage to the transmission utility. Those are the utilities that can provide the exports.

A distribution utility doesn't have exports. It isn't selling anything to exports and so I can't conceive of a situation in that scenario where the distribution -- distribution utility would get a cheque from the exports.

Can you, sir, in that example?

(BRIEF PAUSE)

MR. ROBIN WIENS: If -- if the distribution utility was part owner of the generation utility it would be entitled to receive some of the profit.

MS. TAMARA MCCAFFREY: But you're talking about the share -- a shareholder?

MR. ROBIN WIENS: Yes. Or a notional shareholder.

MS. TAMARA MCCAFFREY: That -- that's -- that's fine Mr. -- Mr. Wiens. I -- I just wanted to make the distinction between the functions clear as to which functions are making the exports happen. I think everybody knows that I asked you to look at it as three (3) separate utilities for the purposes of this discussion.

Because in Manitoba all those three (3) functions are, of course, within your Utility it makes the cost of service an essential tool, as you've already indicated, for tracking the costs of each component of the system; correct, sir?

MR. ROBIN WIENS: It makes the functionalization important.

MS. TAMARA MCCAFFREY: And, again, if someone were to ask you why does Manitoba Hydro bother with the cost of service, you or Mr. Thomas or Mr. Warden would say because it keeps the rates fair between customer classes; that's what it's designed to do, would you agree with that?

MR. ROBIN WIENS: It does that and I think more fundamentally we want to understand where we are incurring these costs.

MS. TAMARA MCCAFFREY: Which is important because, again, you have to have that link; right? That functional link between costs?

MR. ROBIN WIENS: We want to understand where the costs are being incurred.

MS. TAMARA MCCAFFREY: And similarly, and I'm not going to get into revenue cost coverage ratios in any great detail because it's been covered already but similarly the fallout from that, the revenue cost coverage ratios and a zone of reasonableness, these are all things, again, aimed at ensuring that rates are fair, taking into account the costs that the customers impose on the system as they're allocated to the functions of the system itself?

MR. ROBIN WIENS: Varying that, expressing in a simple way where we believe the costs reside on the system and how they relate to the revenues that the system is obtaining.

MS. TAMARA MCCAFFREY: If we didn't have

a cost of service study to do this then -- then what? How would we achieve that? Imagine with me what -- what that would look like; or can you?

MR. ROBIN WIENS: Well, I have never known a situation at Manitoba Hydro in which we did not have a cost of service study. But I understand that prior to about nineteen (19) -- the mid 1970's that we may not have had the level of sophistication that we have in the cost of service study today.

But the people that were responsible for the system and responsible for setting rates would have had other tools and they would have resembled the cost of service study. They would have been a rudimentary cost of service study.

They would have come from the accounting records of the Utility and from the revenue requirement of the Utility.

MS. TAMARA MCCAFFREY: Which illustrates how important it is for fairness?

MR. ROBIN WIENS: It's important for every business to understand its costs and how they're incurred.

MS. TAMARA MCCAFFREY: And I'm talking to you about your electric utility business and it's important, it's essential for fairness. If you didn't have that as a marker you could have rates going willy nilly all over the place; right?

You could have preferential treatment for some classes of customers over others. You would basically -- you wouldn't have anything to guide you. It could be subject to policy -- changing policies. There wouldn't be any -- any solid foundation?

MR. ROBIN WIENS: Or it would be more rudimentary. You can -- and I think anybody here could conceive and perhaps this is how the general public can best conceive of it is that we have a revenue requirement and we distribute a number of kilowatt hours and we -- we could simply price cost per kilowatt hour.

Now, we recognize that kilowatt hours aren't the only driver in the system. So with time we do become more sophisticated and with time we evolve the tools to match the level of sophistication that we're tying to employ in understanding our costs and in recovering them.

MS. TAMARA MCCAFFREY: And it reduces the subjectivity and the judgment, to a certain extent, having a cost of service tool as opposed to not having one at all?

MR. ROBIN WIENS: Yes.

(BRIEF PAUSE)

MS. TAMARA MCCAFFREY: Now, I know you probably won't like this, Mr. Wiens, but your new allocation of export revenue to a different function, that is not the bulk power function giving rise to the export, but the distribution function, it can't be justified on the basis of cost -- on the basis of functions, giving rise to the cost of exports, giving rise to the export revenues, though you are trying to justify it on -- on the basis of a different way, so I know you're going to jump into that.

Go ahead.

MR. ROBIN WIENS: If you make the assumption that the revenues themselves must be tied to the actual resources or functions that cause them to be achieved, to that very narrow extent you're correct.

But to go back to your example of the generating company, the generating company receiving all the profit. The generating company may or, depending on its circumstances, it may opt to do a cost of service study. It may opt to do a cost of service study and allocate costs to the different markets that it serves.

And if one market should happen to provide significantly greater profit than another market, the generating company, if it were a private company, would simply appropriate that profit and it would go to increase the value of the shares. It would not necessarily be returned to customers in the other market.

MS. TAMARA MCCAFFREY: Oh, no, it wouldn't in that example. And that -- that bears something thinking about. Maybe we'll talk a little bit more about that later, Mr. Wiens.

Your -- you indicate this is your preferred approach though that you're putting forward, this change in allocation, that's the big change. There's other things we're going to talk about but the change in allocation to the distribution function, is your preferred approach given the constraints of a cost of service model. Did you use the term "constraints?"

MR. ROBIN WIENS: It's our preferred approach looking around at the options that are available to us to threat these revenues in a cost of service study. There are many other approaches we could -- even within that particular limitation -- that we could have proposed, and we did not.

We proposed this approach as being straightforward, as benefiting all of the Utility's customers, maintaining some continuity, and improving a little bit in terms of the relative gap between marginal costs and embedded costs for the different classes.

So this approach is not chosen on the basis that one might analogously say to the generation company that appropriates the large profit from one market to its shareholders. There's any number of other basis on which it could return those. Those are -- those are not necessarily tied to the costs of the generation and transmission resources.

MS. TAMARA MCCAFFREY: Exactly. And that's why I'm wondering about this notion of being constrained within that cost of service box. There may be other ways of dealing with it, outside of cost of service. And -- and that's the point I'm really getting at, Mr. Wiens.

Would you agree?

MR. ROBIN WIENS: There are other ways of doing it and -- and those would involve other actors participating in the discussion.

MS. TAMARA MCCAFFREY: Well, I'm glad -- I'm glad to hear -- hear you say that, Mr. Wiens.

I just want to talk -- I don't think you necessarily need to turn to it, but the IFF that's been filed, Mr. Warden, the current PCOSS-06, it's based on an underlying IFF which is the IFF-04.

Is that right, sir?

MR. VINCE WARDEN: That's correct.

MS. TAMARA MCCAFFREY: Now, IFF, of course the financial forecast, it sets out the Corporation's various costs and forecast revenues.

Yes, sir?

MR. VINCE WARDEN: It does.

MS. TAMARA MCCAFFREY: Now, in the case of IFF/04, there's about $1.5 million in revenue -- this won't get too involved into this, but, there's about $1.5 million in revenues from exports and domestics?

MR. VINCE WARDEN: 1.5 billion? Yes it's billion.

MS. TAMARA MCCAFFREY: Just let me get out my red pen and just change that right now. In fact, let's get that IFF and have it in front -- it might help.

It's in the Public Utility Board book of documents and it's at Tab 3.

(BRIEF PAUSE)

MS. TAMARA MCCAFFREY: Who typed that question anyway -- okay it's 1.5 billion in revenues from exports and domestics. We've got it.

MR. VINCE WARDEN: I do have it, 1.5 billion and I think we're referring to the fiscal year

05/06, is that correct --

MS. TAMARA MCCAFFREY: Yes --

MR. VINCE WARDEN: So 1.5, 1.6 billion.

MS. TAMARA MCCAFFREY: That's absolutely correct. And about $1.3 billion in costs.

MR. VINCE WARDEN: 1.3 billion in expenses before net income which is also treated as a cost in the cost of service study.

MS. TAMARA MCCAFFREY: Right, of course I'm just using round numbers for the purpose of the discussion. So the forecast net income is about $200 million, correct sir?

MR. VINCE WARDEN: About right, yes.

MS. TAMARA MCCAFFREY: Now, from an IFF perspective, costs are intended to be the total accounting costs of the electricity operation, is that right, Mr. Warden?

MR. VINCE WARDEN: From an IFF perspective costs are -- yes -- I'll agree with that statement, yes.

MS. TAMARA MCCAFFREY: So if those costs increase for some reason the IFF would reflect the increases in the sum of costs. For example, if fuel costs go up the next version of the IFF will incorporate high fuel costs, is that correct?

MR. VINCE WARDEN: Yes.

MS. TAMARA MCCAFFREY: The same is true for other accounting costs such as depreciation. If it goes up, it gets reflected in the next IFF, is that right sir?

MR. VINCE WARDEN: Correct.

MS. TAMARA MCCAFFREY: And water rentals, they're reflected as a cost?

MR. VINCE WARDEN: Yes.

MS. TAMARA MCCAFFREY: And if there was a new tax or a duty on export sales it would be reflected there also?

MR. VINCE WARDEN: If there was a new tax, it would be reflected there, as well, yes.

MS. TAMARA MCCAFFREY: And if enough costs go up, the IFF starts to show lower and lower net income and longer and longer times to reach your debt equity target, correct sir?

MR. VINCE WARDEN: If it's not offset by higher revenues, yes, that's correct.

MS. TAMARA MCCAFFREY: If the costs are increasing in this way, Hydro will say that the achievement of sufficient reserves via the debt equity calculation may not be sufficient, in which case you'd come back and seek a rate increase from this Board, is that right sir?

MR. VINCE WARDEN: Debt equity is one (1) of the measures, yes.

MS. TAMARA MCCAFFREY: And of course, Hydro would expect this Board to assess the overall reasonableness of a rate increase largely based on that IFF, and that is whether the net income and the build up reserves and equity is proceeding at a sufficient pace? You're proceeding at a sufficient pace to achieve those debt equity targets.

MR. VINCE WARDEN: Yes, I think the Board takes that into consideration.

MS. TAMARA MCCAFFREY: Now, when you come to that rate increases then Hydro typically would provide a cost of service study which defines costs a little differently than the IFF. By that I mean the net income in the cost of service becomes a cost to be allocated to all customers, is that right sir?

MR. VINCE WARDEN: It is.

MS. TAMARA MCCAFFREY: And the cost of service study then is balanced since it takes net income as a cost and includes all revenues, it balances. Costs equal the revenues in this way. Do I have that? Mr. Thomas is nodding, so that's a good sign.

MR. VINCE WARDEN: Well, I would agree

with that, yes, we do balance revenues and expenses for the purpose of the cost of service study, yes.

MS. TAMARA MCCAFFREY: And based on the comments earlier, the cost of service study does serve to inform which customer classes ought to bear the overall dollar value of rate increases to be determined in the IFF step, is that right?

MR. VINCE WARDEN: Yes.

MS. TAMARA MCCAFFREY: And going back to the IFF, the concept of a cost in the IFF to record provisions for special purposes is not a new thing to Manitoba Hydro; is it?

Do you want me to be more specific?

MR. VINCE WARDEN: If you could please.

MS. TAMARA MCCAFFREY: I can. For example, you have thermal decommissioning reserves or thermal decommissioning provisions; right?

MR. VINCE WARDEN: We do, but that's reflected in the IFF as well.

MS. TAMARA MCCAFFREY: And that thermal decommissioning provision will be drawn down to pay for future costs associated with the end of life for thermal generating station as I understand it. Am I correct in that?

MR. VINCE WARDEN: Yes.

MS. TAMARA MCCAFFREY: Now, and you -- you tell me that it's reflected in the IFF; can you tell me the types of costs that get charged there?

MR. VINCE WARDEN: Yes. It's reflected in the depreciation line of the IFF.

MS. TAMARA MCCAFFREY: I didn't hear you. I'm sorry?

MR. VINCE WARDEN: Depreciation. The depreciation line captures that expense.

MS. TAMARA MCCAFFREY: And the types of costs that would go in there would be?

MR. VINCE WARDEN: Well, the -- into the depreciation line of the IFF go the normal amortization costs associated with plant assets as well as the item you referred to and that is provision for removal at some point.

MS. TAMARA MCCAFFREY: And when these types of costs are charged against the thermal decommissioning provision it means that in the year that they are incurred they aren't a cost to the income statement because they're charged to the provision, not the income; am I correct in that understanding, sir?

MR. VINCE WARDEN: Yes. The -- the objective is to match the benefits of any asset, not just thermal, but any asset over its useful life and to make sure we charge the appropriate ratepayers for those costs during that useful life.

MS. TAMARA MCCAFFREY: As opposed to when the time comes to take down a plant, hitting the existing ratepayers at that time with a really big bill?

MR. VINCE WARDEN: Exactly.

MS. TAMARA MCCAFFREY: Now, you also have a net salvage reserve provision for the future removal costs of major properties as well; is that right, sir?

MR. VINCE WARDEN: Yes. Similar to the item we were just discussing in terms of removal costs.

MS. TAMARA MCCAFFREY: And -- and in a similar way it's built up from a charge against operations in each year?

MR. VINCE WARDEN: A charge or a credit. In some cases there may be value -- residual value to the asset that's being removed in which case it would be a credit. But it's all factored in to the amount we would charge off as depreciation each year to -- to customers as a depreciation expense.

MR. VINCE WARDEN: Each of those charges against operations for the thermal decommissioning provision and the net salvage provision go to lower the net income otherwise available in the year that they're being built up and therefore they drive higher rates that would be the case without those provisions; is that fair?

MR. VINCE WARDEN: Yes. Yes, it is.

MS. TAMARA MCCAFFREY: So we know that the cost of the appropriation to these provisions or reserves is a cost that does show up in the IFF and the cost of service as well; correct?

MR. VINCE WARDEN: Correct.

MS. TAMARA MCCAFFREY: And as a ratepayer I feel better about that because the cost to build up the provision -- since the money spent to take down the plants in the future won't be a cost, we're just setting aside the funds for when they will be needed in the future. It's, sort of, a better way of handling it.

Sort of ameliorates the impact over time; is that right?

MR. VINCE WARDEN: Yes. Setting aside the funds isn't exactly done but, in effect, it's making sure that we're not going to charge the ratepayer in the future for a benefit that is derived today.

MS. TAMARA MCCAFFREY: Now, those two (2) provisions -- they're not the same thing as equity reserves though; is that right, sir?

MR. VINCE WARDEN: No.

MS. TAMARA MCCAFFREY: And they're often referred to as reserves and, for example, some utilities call their future removal item a reserve for future removal. But you can't just draw down those provisions whenever you want; is that right, sir?

You have to have some clear rules about how to use them?

MR. VINCE WARDEN: Sure. Exactly.

MS. TAMARA MCCAFFREY: You can't use those reserve funds, even though you don't do technically a reserve is what you're saying, but you can't -- the reality is they're -- they're protected, they're built in. So you can't just use those funds for whatever purpose you want.

Is that right? They've got to be -- they're identified for their specific purpose, i.e., decommissioning.

MR. VINCE WARDEN: Well, the funds aren't tagged for that purposes. The funds that are generated through depreciation are used for the purposes of the Utility.

MS. TAMARA MCCAFFREY: It's a sub-purpose within -- within that umbrella, though, of depreciation. Like, you -- you can't take money out that you've planned to be used for depreciation and use it for something else.

Is that right?

MR. VINCE WARDEN: No, it isn't right. We -- we do use funds. As I mentioned, the funds that are generated through depreciation expense are used for the purposes of the Utility, the general purposes of the Utility.

So we don't tag those funds for using -- using in the future to remove, in your example, thermal facility.

MS. TAMARA MCCAFFREY: You have a mechanism to ensure that the funds are there. What do you call it?

MR. VINCE WARDEN: Well, the provision is there. The monies are another matter. How we obtain those -- those monies to perform that removal to -- when that day arrives is another matter. But the provision is there. Such that it will not affect ratepayers on the day that those facilities are removed.

MS. TAMARA MCCAFFREY: And that's -- that's really all I'm getting at, Mr. Warden. Thank you.

MR. VINCE WARDEN: Then I guess we agree.

MS. TAMARA MCCAFFREY: Mr. Warden, I heard something in your opening statement that I hadn't heard before and I was a little bit surprised.

A couple of years ago we were here talking about the drought and Manitoba Hydro was saying that the biggest -- single largest risk it faces was drought. And -- and it estimated that a five (5) year drought might cost somewhere around $2 billion.

In your opening statement, however, you said that it was not the biggest risk that Hydro faces. Correct, sir?

MR. VINCE WARDEN: Yes, I did say that.

MS. TAMARA MCCAFFREY: I -- I think you talked about a catastrophic risk to infrastructure.

MR. VINCE WARDEN: Yes.

MS. TAMARA MCCAFFREY: What were you talking about there?

Are -- are you talking about dam bursts, dam breaks, or wind bursts; what -- what are you talking about?

MR. VINCE WARDEN: Well, we -- we have over something like $10 billion in -- in assets. Those assets are vulnerable to various risks. If we were to lose one (1) or more of those key assets for -- for whatever reason, the impact on the Corporation could be much more significant than -- than $2 billion.

MR. ROBERT MAYER: Mr. Warden, the way the HBDC lines are presently configured, I would perceive that your probably biggest risk, when you take into account the possibility of it happening, is like what happened at one point where that little tornado took out both bi-pole lines and left you with 70 percent of your hydroelectric power unavailable to the city of Winnipeg.

Would that not be one of the biggest risks, a more significant destruction to your high voltage DC lines or your convertor stations, which would remove a good portion of your high producing generation unit?

MR. VINCE WARDEN: I think that's the point that was being made, Mr. Mayer.

THE CHAIRPERSON: Just to confirm, Mr. Warden. Earlier in this proceedings you indicated that you were self-insured.

MR. VINCE WARDEN: We are for -- for a risk over a -- a certain minimum.

THE CHAIRPERSON: That's for either property damage or business interruption for example?

MR. VINCE WARDEN: Yes. We do have certain insurance for fire and -- and other hazards. But once we get into talking about losing transmission lines or convertor stations, we're not insured for those risks.

THE CHAIRPERSON: Would you happen to know whether Hydro Quebec or BC Hydro insures their assets of similar ilk?

MR. VINCE WARDEN: I know we were at one

time -- it's not something I've checked on in recent -- recent years, but we can certainly get that information if you -- if you like.

THE CHAIRPERSON: Thank you, Mr. Warden.

--- UNDERTAKING NO. 18: Does Hydro Quebec or BC Hydro insure their large assets (eg. Dams, HVDC) or do they self insure their assets in the same manner as MH

CONTINUED BY MS. TAMARA MCCAFFREY:

MS. TAMARA MCCAFFREY: So we know that these risks affect essentially the bulk power functions, right, generation and transmission?

MR. VINCE WARDEN: They affect all customers really.

MS. TAMARA MCCAFFREY: They would. But they're respect to -- to those -- the assets in those functions, transmission lines, power stations and they would affect all customers but they relate to those functions; would you agree with that?

MR. VINCE WARDEN: They -- the major risks that we were discussing with the Vice Chairman are primarily the generation and transmission risks, yes.

MS. TAMARA MCCAFFREY: And would you

agree then that your risks that the Corporation faces are higher these days?

MR. VINCE WARDEN: I would.

MS. TAMARA MCCAFFREY: And would you agree that Manitoba Hydro's debt is similarly higher?

MR. VINCE WARDEN: Higher than the past?

MS. TAMARA MCCAFFREY: Growing, yeah?

MR. VINCE WARDEN: It's growing because we're a growing company. There's -- there's reasons for that growth.

MS. TAMARA MCCAFFREY: So debt higher? Come on, just say it, yes?

MR. VINCE WARDEN: I thought there was more to that question.

MS. TAMARA MCCAFFREY: Export revenues also higher?

MR. VINCE WARDEN: Export revenues are higher, largely due to the conditions we talked about earlier, the unit price and volumes due to good water conditions.

MS. TAMARA MCCAFFREY: Okay. So if we've got risks higher, debt higher and export revenues higher, wouldn't you agree that it would be possible, at least, to consider using or making a provision -- some export revenues being used for a provision to -- to guard against those risks and, at the same time, pay down debt?

Wouldn't you agree that it's -- I know you're not advocating that at the moment, but wouldn't you agree that that's something that could be looked at in this circumstances?

MR. VINCE WARDEN: Well, I can certainly agree with part of your statement. The -- that is the purpose of the equity. Equity is to provide protection against risks faced by the Corporation. That's why we've been advocating for many years to have a minimum level of equity and we've -- we've determined that to be seventy-five (75) debt and 25 percent equity and that's what we're striving to achieve.

To pay down debt is an entirely different question though and it would not make sense, as I indicated in my earlier remarks, to have a special fund for that purpose.

MS. TAMARA MCCAFFREY: It's a good idea to have monies available and especially given that you self-insure, to help guard ratepayers against the risks that the Corporation faces? I mean, you want to make sure that money is there if you need it; that's a good idea though, right, Mr. Warden?

MR. VINCE WARDEN: That's the purpose of us having an adequate level of equity.

MS. TAMARA MCCAFFREY: So I think your answer is yes, that's a good idea, but I think your position is that you've got that covered already with the way that Manitoba Hydro already does things; is that what you're saying?

MR. VINCE WARDEN: No, no. We don't have it covered. We have approximately 19 percent of equity at this time, at the end of March '06. We need -- we're striving to get to 25 percent equity to cover off what we determine -- we have deemed to be -- or consider to be the major risks of the Corporation.

MS. TAMARA MCCAFFREY: I didn't mean you'd achieved your debt equity ratio, but your position seems to be that you feel you do that but you would agree that it's a good idea, it's important to have provision available to guard against those risks should they arise?

MR. VINCE WARDEN: The risks are there. The -- and it's important to have a plan to deal with those risks.

MS. TAMARA MCCAFFREY: I take it you didn't look at non-cost of service approaches, treatment of exports? You concentrated on the -- on the cost of service options; is that right, Mr. Wiens?

MR. ROBIN WIENS: Yes, we did. We did not look at options outside the cost of service study.

MS. TAMARA MCCAFFREY: Mr. Wiens, would you agree with me that the -- that -- that there is some difficulty associated with looking within the confines of cost of service here? And I'll -- I'll tell you where I'm going with it.

The heart of the problem here, it seems to me, with dealing with cost of service is on the one (1) hand Manitoba Hydro says that to continue to solely allocate export on the basis of generation and transmission causes a problem, which is your position right?

MR. ROBIN WIENS: Yes.

MS. TAMARA MCCAFFREY: Yet on the other hand within the cost of service context, if you don't allocate the revenues on the basis of generation and transmission you have to allocate them somewhere else, you put them to the distribution, a proportion of them to the distribution function?

(BRIEF PAUSE)

MR. VINCE WARDEN: I guess we might not totally agree with your statement that you have to allocate them somewhere else. You don't have to allocate those export revenues. I think we've indicated you could look at revenues cost ratios prior to the export revenues allocation and make a determination of how future rate increases could be allocated on those pre-export allocation RCCs.

MS. TAMARA MCCAFFREY: Well, you could do that, but that's kind of artificial though because you don't do that and you're not doing that. But, Mr. Warden what's I'm talking about though, is in the terms of the cost of service box, okay, if these export revenues are going to stay in this box, they have to go somewhere, that's what I'm saying.

MR. VINCE WARDEN: That is the -- I was responding to your point made earlier that they have to go somewhere. They don't have to go somewhere, we could take this alternative approach and it would be logical as well.

It's not our recommended method, but you certainly could do that and --

MS. TAMARA MCCAFFREY: Now, given the -- I'll give you a minute, do you need a minute?

MR. VINCE WARDEN: We're fine.

MS. TAMARA MCCAFFREY: Now, looking at what you did here though in the cost of service, what you did do was you did allocate a proportion on the basis of distribution and what that does is it does break the integrity, so to speak, of the cost of service.

It may be good reasons for that, I know that's not your position but you would agree with that? That's the other option you've got?

MR. ROBIN WIENS: Any allocation of export revenues over and above the embedded costs of the exports themselves, risks something with the integrity of the cost of service study, if you want to define it that way.

MS. TAMARA MCCAFFREY: Do you want to define the threshold that way?

MR. ROBIN WIENS: I guess the point that I'm making here is that if -- and I'm not suggesting that this is the case, this is one (1) of the reasons why we're here.

But, if this Board were to be satisfied that the allocation of costs against the export classes were complete and was appropriate, I don't think there's anything that says that there's any way that you could return those export revenues to customers, that is necessarily more principled or more -- or has more integrity than any other way.

You could say, Manitoba Hydro has five hundred thousand (500,000) customers, we will return those in the cost of service study on the basis of the number of customers. Because we've got the costs of our exports covered off.

This is a windfall. A windfall -- there is nothing that says that returning them on the basis of generation and transmission is more principled than returning them on the basis of customer count.

MS. TAMARA MCCAFFREY: I like what you're saying and I don't think I want to get into a fight with you about this because we've talked a lot about the functions giving rise system and we spent a lot of time on that.

So I'll thank you for your comments and I'm going to just -- just finish this piece by saying that when I talk about breaking from functional integrity, I'm simply saying that you're getting away from assignment of revenues on the basis of the components that give rise to them.

Which is something, Mr. Wiens, you would agree that Manitoba Hydro did resist in 1996, didn't come back to the Board seeking relief for. In fact, the Board brought you back in 2002, and is it something that this Board has defended against and resisted for over a decade.

That's all I'm saying and is anything that I've said inaccurate?

MR. VINCE WARDEN: We've talking earlier though throughout these proceedings about the increasing distortion caused by the growth in export revenues over that period of time.

So where -- whereas the allocation methodology has served us well in the past, the time has come to review and change as necessary.

MS. TAMARA MCCAFFREY: And -- and that's why we're so pleased to have the opportunity to participate in this review at this time in this hearing, and hopefully we'll -- we'll come to something that -- that makes sense.

I'm going to move on to a different area now. If I may just have a moment. I'm wondering whether it might be a good time for a break or if -- if you just give me a moment, Mr. Chairman, to --

THE CHAIRPERSON: There's seems some enthusiasm up here for having a break, so. Just before we leave, Ms. McCaffrey took us to Tab 3 in our book of documents, if you like, and just to confirm the understanding, this is the Integrated financial forecast MH-04-1.

When you go down to the line "Non-controlling interest," this goes right back to our earlier discussions in the proceedings. Is this not the minority share of the Wuskwatim partnership?

MR. VINCE WARDEN: This is the Wuskwatim partnership coming back in.

THE CHAIRPERSON: Thank you.

Okay. We'll shut down now until three o'clock.

--- Upon recessing at 2:45 p.m.

--- Upon resuming at 3:05 p.m.

THE CHAIRPERSON: Okay, Ms. McCaffrey

CONTINUED BY MS. TAMARA MCCAFFREY:

MS. TAMARA MCCAFFREY: Thank very much.

Now that we're back from the break, I wanted to take you through a -- a MIPUG exhibit. It looks like Mr. Warden may have -- may need a moment to --

MR. VINCE WARDEN: Well -- sorry, I didn't mean to interrupt your line of thought there at all -- I -- I just thought that I would respond more fully to the question that was raised by the Chairman just before the break with respect to --

MS. TAMARA MCCAFFREY: Sure.

MR. VINCE WARDEN: -- NCN. I don't think my answer was entirely clear, it was pointed out to me.

And I do think it is important to be clear on that question.

We were looking at Tab 3 of the book of documents and the line that's labelled "non-controlling interest" I think we did agree was NCN; that was the NCN partnership reference.

To be clear though, with respect to Wuskwatim all the 100 percent of the revenues and expenses associated with Wuskwatim have been included in the IFF. The amount that's shown on the projected operating statement as a non-controlling interest is the share of Wuskwatim profits that's going back to NCN.

THE CHAIRPERSON: That was our understanding. That's just a projection at this early date?

MR. VINCE WARDEN: It is. Okay, I just wanted to make sure that was clear.

THE CHAIRPERSON: Yes. Thank you.

Ms. McCaffrey...?

MS. TAMARA MCCAFFREY: Thank you very much, Mr. Chairman. We're ready to move on. We've had an exhibit distributed and does everyone have a copy of a three (3) page table with the heading "summary of existing NERA and proposed cost of service study methods from PUB/MH/I-45?

Does everyone have a copy of that table now?

MR. ROBIN WIENS: I can't speak to everyone, but I do.

THE CHAIRPERSON: The Board does.

MS. TAMARA MCCAFFREY: Good because as long as you have one, Mr. Wiens, that's great. I'm going to proceed. I'd like to have that marked as an exhibit. I'm not sure what number we would be at now.

THE CHAIRPERSON: Number Six.

MS. TAMARA MCCAFFREY: MIPUG Exhibit 6?

THE CHAIRPERSON: MIPUG-6.

MS. TAMARA MCCAFFREY: Thank you.

--- EXHIBIT NO. MIPUG-6: Three (3) page table with the heading "summary of existing NERA and proposed cost of service study methods from PUB/MH/I-45

CONTINUED BY MS. TAMARA MCCAFFREY:

MS. TAMARA MCCAFFREY: All right, just to summarize what's on this table, it's extracted from the PUB/MH/I-45 and in that response it dealt with bulk power, generation and transmission and ancillary services in Part A, dealt with the distribution and customer service functions in Part B of that IR and offsetting export credits in Part C of the IR.

It didn't deal with sub-transmission in that IR. It did not and therefore the consultants have endeavoured to assist me by calculating that in this table. So if there's an error you can let us know.

Just so that we're on the same page as to what we're looking at on this table.

MR. ROBIN WIENS: Yes, with respect to sub-transmission I would say that your consultants appear to have done a pretty good job. I think Mr. Thomas had one (1) small correction to offer but I'm not sure that it's material.

MS. TAMARA MCCAFFREY: Go ahead, Mr. Thomas.

MR. CHIC THOMAS: On the general service small, non-demand on the -- on the -- we're showing zero point four seven (0.47).

MS. TAMARA MCCAFFREY: Page 1.

MR. CHIC THOMAS: And all the other pages are also the same for the sub-transmission cost.

MS. TAMARA MCCAFFREY: Line 4.

MR. CHIC THOMAS: Line 4. Thank you. I had calculated zero point five one (0.51). But, again, I don't think it'll materially make a difference.

MS. TAMARA MCCAFFREY: Thank you. We'll make a -- we'll make a note of that. For the purpose of this discussion I don't -- I don't think it will.

THE CHAIRPERSON: So the additions just go up by four (4) cents; is that correct?

MR. CHIC THOMAS: Point zero four (.04).

MS. TAMARA MCCAFFREY: Point -- point zero four (.04), yes.

CONTINUED BY MS. TAMARA MCCAFFREY:

MS. TAMARA MCCAFFREY: This table is in cents per kilowatt hour and that's because as I understand it that is the unit value; is that right? When we talk about unit value we're talking about cents per kilowatt hour; is that right?

MR. ROBIN WIENS: Yes.

MS. TAMARA MCCAFFREY: Now, the table -- we're going to just walk through this table now, Mr. Chairman. It shows four (4) sample customer classes across the top and it has the costs set out at the top of the table in rows one (1) to six (6). And more rate information at the bottom of the table rows seven (7) to twelve (12).

The first page is the current cost of service method and the following sheets deal with the other methods.

All right, now I don't know who's going to be the best person to go through this with me but perhaps, Mr. Thomas, row one (1) shows the bulk power costs from PUB/MH/I-45(A); correct?

MR. CHIC THOMAS: Yes.

MS. TAMARA MCCAFFREY: And the generation, transmission and ancillary services; these are the bulk power costs, is that right, sir?

MR. CHIC THOMAS: Yes.

MS. TAMARA MCCAFFREY: So the calculation starts with the total costs for these functions allocated to each class.

Is that right?

MR. CHIC THOMAS: Yes.

MS. TAMARA MCCAFFREY: Then you see there that they've divided by the total metered energy.

You follow me?

MR. CHIC THOMAS: I do.

MS. TAMARA MCCAFFREY: Which represents the average cost of delivered energy for the bulk power function.

Is that reasonable?

MR. CHIC THOMAS: So far so good.

MS. TAMARA MCCAFFREY: Now, sir, when we

look at this table it shows that there's a higher cost to residentials than to industrials.

Can you confirm that?

MR. CHIC THOMAS: Yes.

MS. TAMARA MCCAFFREY: Can you explain why that is?

And I'm thinking about them having more losses to serve here -- but I think it sounds better coming from you.

(BRIEF PAUSE)

MR. ROBIN WIENS: The reasons for the difference, there's a couple at least and, you're quite correct, losses is indeed one -- one of those. The general service large over 100 kV is served at transmission voltage, so there are no distribution or sub-transmission losses associated with it.

But subject to check, the largest reason for the difference is -- has to do with the fact that the capacity costs related to transmission and to generation are spread over a larger number of kilowatt hours for the general service large over 100 kV class than for the other classes.

MS. TAMARA MCCAFFREY: And the

residential customers, they -- they don't have a demand charge.

Is that right?

MR. ROBIN WIENS: No, they do not.

MS. TAMARA MCCAFFREY: The industrial class, however, does.

Do you know what that demand charge is, roughly?

MR. ROBIN WIENS: It varies depending on the voltage at which the customer is served. But for over 100 kV it is five dollars and forty point one cents ($5.401) per kVA.

MS. TAMARA MCCAFFREY: Thank you.

Now, this is the existing methodology. So there's no export class reflected here. And this means that almost all bulk power costs are assigned to domestic ratepayers, other than water rentals, fuel costs, et cetera, that are totally variable with the export sales.

Is that right?

MR. ROBIN WIENS: That's right.

MS. TAMARA MCCAFFREY: Now, let's look at row 2, that's the export credit. And under the existing methodology, which, as we all know, allocates on the basis of the generation and transmission costs, it shows residentials are getting two point three (2.3) cents per kilowatt hour of exports for each kilowatt hour delivered to their metre.

You confirm that's correct?

MR. CHIC THOMAS: Yes.

MS. TAMARA MCCAFFREY: General service small similarly gets two point two eight (2.28) cents per kilowatt hour. General service medium gets two point one eight (2.18) cents per kilowatt hour.

Correct?

MR. CHIC THOMAS: Yes.

MS. TAMARA MCCAFFREY: And general service large greater than 100 kilovolts gets one dollar -- or one point eight eight (1.88) cents per kilowatt hour.

You see that in the last column?

MR. CHIC THOMAS: I do.

MS. TAMARA MCCAFFREY: Now, the important point here is that we seem to have been left with an impression that the GSL greater than 100 kilovolts gets more exports than the other classes. But when you look at this table this class gets the least export credits on a per kilowatt hour basis.

Isn't that correct, Mr. Thomas?

Go ahead, Mr. Wiens.

MR. ROBIN WIENS: Well, that simply

reflects the basis on which the export credit is allocated in this methodology.

MS. TAMARA MCCAFFREY: Right.

MR. ROBIN WIENS: If you go through and -- and do what I've just done, which is take the percentage that the second line is, first, you will find that they're all pretty close to 43 percent.

So, yes, the unit credit is less for general service large over 100 kV and it reflects the lower cost that's allocated to that class per kilowatt hour.

MS. TAMARA MCCAFFREY: Thank you, Mr. Wiens.

Moving on to line 3 we have the net volt power costs of the export revenues, that's what reflected in that line, is that -- would you agree with that?

MR. ROBIN WIENS: Well, the bulk power costs net of the export revenue credit that's assigned by that method.

(BRIEF PAUSE)

MS. TAMARA MCCAFFREY: And if you were a generation utility row 3 would be what you'd have to recover in rates, to cover those costs?

MR. ROBIN WIENS: All other things being equal, Ms. McCaffrey.

MS. TAMARA MCCAFFREY: Well, I know, but if we took everything into account, we had to have a conversation Mr. Wiens, I'm not trying to distort -- this is supposed to be useful. Walk with me.

MR. ROBIN WIENS: I know but some of the -- some of those other things are more important than some of the other, other things.

MS. TAMARA MCCAFFREY: Thank you Mr. Wiens.

MR. ROBIN WIENS: We would have to recover the top line, if we didn't have any export revenues, for example.

MS. TAMARA MCCAFFREY: Right. But we do have export revenues so that was the purpose of the third line.

MR. ROBIN WIENS: Or if the generation utility appropriated those profits we would have to recover the top line.

MS. TAMARA MCCAFFREY: Okay. Thank you Mr. Wiens. Let's look at line 4, it shows the costs related to sub-transmission on a per kilowatt hour basis. Now, again we've heard from you there was a slight variation with respect to the general service small non-demand.

But these costs are allocated only to some customers and not others and I think you've explained why other customers they don't use that sub-transmission component, is that right?

MR. ROBIN WIENS: That's right.

MS. TAMARA MCCAFFREY: Line 5 shows the distribution and customer service functions on the same basis. Can you explain why there's the major difference in the different customer classes allocations here?

MR. ROBIN WIENS: In line 5?

MS. TAMARA MCCAFFREY: Yes, for the same reason I take it? Go ahead --

MR. ROBIN WIENS: Probably a little more complicated than the others beginning with these distribution and customer service related costs are allocated on the basis -- typically a portion of them allocated on the basis of the non-coincident demands of the customer classes. We've got a significant portion of them actually.

And another rather significant portion are allocated on the basis of the number of customers. So clearly the more customers you have, the higher those costs are likely to be.

Almost 90 percent of our customer are

residential customers so that would account for the higher number for residential than for the other classes, general service small non-demand, about sixty thousand (60,000) of our customers are in the group. So they would -- they're similarly fairly high. There's more complexities than that, but that's a big part of the reason.

MS. TAMARA MCCAFFREY: So when we focus on the residential or the general service small rates, we have to keep that in mind, that more than half of their costs are paying for that low voltage system, is that right Mr. Wiens?

MR. ROBIN WIENS: Well, they're paying for sub-transmission, distribution and customer service.

(BRIEF PAUSE)

MS. TAMARA MCCAFFREY: And again, just for the purpose of our discussion, if we were dealing with the utility that had a functional cost of service solely dealing with distribution, the cost shown in row 5 would recover that function's distribution revenue requirement, all things being equal, correct Mr. Wiens?

MR. ROBIN WIENS: That's correct.

MS. TAMARA MCCAFFREY: Let's move down to the rates portion, the lower portion of the page. And let's think about rates now as opposed to cost. Lines 7, 8 and 9 show the current average rates paid by each customer class and line 10 shows the current RCC ratio under the current cost of service study approach.

You've had a chance to look at that, you agree that's reasonably reflected there, on that table?

MR. ROBIN WIENS: Well, line 10 looks right.

MS. TAMARA MCCAFFREY: You agree that residentials under that approach are about 92 percent revenues cost coverage, that's row 10 I'm looking at now?

MR. ROBIN WIENS: Certainly looks close.

MS. TAMARA MCCAFFREY: And general service small about 103 percent moving across that line 10?

MR. ROBIN WIENS: Yes.

MS. TAMARA MCCAFFREY: As is general service medium?

MR. ROBIN WIENS: Yes.

MS. TAMARA MCCAFFREY: General service large greater than 100 KV is at 114 percent respectively; you've got that?

MR. ROBIN WIENS: That's correct using the current cost of service method.

MS. TAMARA MCCAFFREY: That's what this page deals with. We'll deal with the other ones in a moment. So the average rate paid by residentials for a kilowatt hour is about six point five eight (6.58) cents and I'm looking at line 9; would you agree with that?

MR. ROBIN WIENS: I think we can agree with that.

MS. TAMARA MCCAFFREY: Similarly for industrials it's three point one zero (3.10) cents for the average rate paid?

MR. ROBIN WIENS: Yes.

MS. TAMARA MCCAFFREY: Now, calculating the revenue cost coverage ratio is not as simple as just simply taking row 9 divided by row 6; can you explain how you would do it, Mr. Thomas?

(BRIEF PAUSE)

MR. CHIC THOMAS: The way we do it is we -- we add it to revenue as opposed to subtracting it from cost. So that would be the primary difference.

MS. TAMARA MCCAFFREY: And would you agree that the revenue cost coverage ratio reflected in line 10 does arrive at the correct result?

MR. CHIC THOMAS: More or less. Yes.

MS. TAMARA MCCAFFREY: Now, let's have a look at row 11; that's the difference between row 9 and row 6; that is that's the difference between the rates and the cost under the current cost of service method; correct, sir?

MR. CHIC THOMAS: Yes.

MS. TAMARA MCCAFFREY: So, compared to the current cost of service method residentials are paying point seven five (.75) cents per kilowatt hour less than their cost; would you agree with that?

MR. CHIC THOMAS: Yes.

MS. TAMARA MCCAFFREY: General service small are paying point three one (.31) cents more than their cost; correct?

MR. CHIC THOMAS: Yes.

MS. TAMARA MCCAFFREY: And general service medium and general service large greater than 100 KV are over by point one nine (.19) cents for the general service medium and point six three (.63) cents respectively for the general service large greater than 100 KV; correct?

MR. CHIC THOMAS: That's what this sheet is showing, yes.

MS. TAMARA MCCAFFREY: And as far as you can tell the numbers are accurate. The RCCs coming out of that are accurate?

MR. CHIC THOMAS: Yes.

MS. TAMARA MCCAFFREY: And that just falls out of the fact that our rates today do not reflect the costs based on the current cost of service study, that takes into account --

MR. ROBIN WIENS: Yes, it reflects the fact that they're not at 100 percent of costs.

MS. TAMARA MCCAFFREY: In row 12 for the industrial customers can you understand how someone looking at this table would say that it isn't correct that they are receiving one point eight eight (1.88) cents from the exports which is the -- I'm getting that from line 2, because they never actually see decimal six three (.63) cents of this on line 11?

They don't -- they don't actually see that because the rates don't reflect that. They don't actually see that benefit. Can you -- do you understand where I'm coming from there, Mr. Wiens?

MR. ROBIN WIENS: Well, if -- if you accept the current method as absolutely correct and infallible that would be what you would draw on, yes.

MS. TAMARA MCCAFFREY: Well, I -- I'm just talking about the current -- current method. I'm not debating it at the moment with you. Looking --

looking at this objectively you could see that they don't actually -- they don't actually see that benefit; that's all I'm saying?

MR. ROBIN WIENS: Sure.

MS. TAMARA MCCAFFREY: And if that customer really received that much benefit they would expect -- they would have expected to be seeing rates at about two point forty-seven (2.47) cents on average as opposed to what they do have, three point one (3.1); you agree with that?

MR. ROBIN WIENS: Yeah. If we accept this method as being definitive and we accept that we're going to be at 100 percent of costs for all customer classes. Your conclusion invariably follows.

(BRIEF PAUSE)

MS. TAMARA MCCAFFREY: I have a few more questions but I'm not sure I need to ask them, if you just bear with me for a few seconds.

(BRIEF PAUSE)

MS. TAMARA MCCAFFREY: We're going to -- we're going to put this table aside for a moment and we're going to talk about income effect.

Mr. Thomas or Mr. Wiens, we know that three point one (3.1) cents, which is shown on line 9 of that table, is the average price paid by industrial customers today, or at least pretty close, depending on the load factor.

Correct?

MR. ROBIN WIENS: Yes.

MS. TAMARA MCCAFFREY: And for customers here today, if they increase they load in general they will pay about three point one (3.1) cents per kilowatt hour, for every extra kilowatt hour that they use?

MR. ROBIN WIENS: Yeah. This appears to be -- I'm not absolutely precise on this but this appears to be looking at something in the eighty (80) to 85 percent load factor range. So that when you pro-rate the demand charges over the number of kilowatt hours that are associated with that load factor, you arrive at about three (3), three point one (3.1) cents a kilowatt hour.

If the -- if a load expansion is -- is of a similar load factor, that is the price that they're going to pay. If they increase their demand without increasing their energy, well, that's -- that's another story.

MS. TAMARA MCCAFFREY: Sure. If they

participate in DSM or choose to generate some of their own power themselves, they will save about, on average, three point one (3.1) cents for each kilowatt hour that they reduce their consumption of.

MR. ROBIN WIENS: Assuming that the self-generation and the DSM programming is at a similar load factor to the load itself, yes.

MS. TAMARA MCCAFFREY: And that's a function of the single -- single block rate design.

Is that correct?

MR. ROBIN WIENS: Well, there's one (1) single block of demand and one (1) single block of energy.

MS. TAMARA MCCAFFREY: That's the type of rate design the industrial class has, though?

MR. ROBIN WIENS: Yes, it is.

MS. TAMARA MCCAFFREY: In some of the evidence put forward by Mr. Lazar on behalf of RCM/TREE, Mr. Lazar commented on aluminum smelters, and I just wanted to give you an opportunity to comment on them for a moment.

First of all, there's no aluminum smelters in Manitoba today; correct?

MR. ROBIN WIENS: No.

MS. TAMARA MCCAFFREY: And for the

aluminum industry, the cost of power is a key factor in their production costs.

Would you agree with that?

MR. ROBIN WIENS: I understand that to be true.

MS. TAMARA MCCAFFREY: And I assume that you're aware aluminum smelters are present in Quebec and BC.

MR. ROBIN WIENS: Yes. Those are the locations of the Canadian aluminum industry.

MS. TAMARA MCCAFFREY: I'm wondering if you're also aware that there is currently some competition now in BC and Quebec over who will get the next Alcan expansion.

Are you -- are you familiar with that at all, or is that something you can comment on?

MR. ROBIN WIENS: No, I can't comment on that.

MS. TAMARA MCCAFFREY: Mr. Wiens, do you recall some time ago, it may have been in the 1980's, there was a fair bit of discussion about bringing an aluminum smelter to Manitoba?

MR. ROBIN WIENS: That's -- that's happened on more than one (1) occasion and at least one (1) of those was in the early 1980's, yes.

MS. TAMARA MCCAFFREY: So despite some significant efforts, that ultimately wasn't successful though. There -- there's not an aluminum smelter here.

Correct?

MR. ROBIN WIENS: No, there's not.

MR. LEN EVANS: Excuse me. I wonder if I could ask a supplementary question to that, because it's a very interesting point. I just want to see if my historical recollection is correct or not.

But the aluminum plants in Quebec and BC, were they not built, the hydro facilities not built by the industry itself and for its own purposes, rather than a Utility building the generating facility for the production of aluminum? It wasn't an industry investment 100 percent.

MR. ROBIN WIENS: Well, I don't know about 100 percent. It's my understanding that in both BC and Quebec, that the aluminum industry does own at least some of its own -- some of the power that it uses.

I -- I wouldn't -- I'm not able to comment on what percentage of the industry's power is self-generated.

MR. LEN EVANS: Because as I recollect, again from reading some many years ago, that the aluminum industry really depended on very cheap, cheap, cheap power and you had to find yourself a really good hydro site where you could produce electricity at a very low cost.

And those locations were found in BC and Quebec. I'm not saying there aren't elsewhere in the country but those two historically were built there for those -- for that purpose.

MR. ROBIN WIENS: That's certainly true, Mr. Evans. I think there's probably other -- other qualities that they look for in a site as well but that's certainly one of them.

(BRIEF PAUSE)

MS. TAMARA MCCAFFREY: Thank you. If I might just have a moment. You short circuited some of my questions as well. I have a little more time left and I thought I might so if you'll just give me a moment.

(BRIEF PAUSE)

CONTINUED BY MS. TAMARA MCCAFFREY:

MS. TAMARA MCCAFFREY: All right, let's go back to the table. I think we're going to be able to finish -- finish up with this today so let's turn now if we could to page 2?

MR. ROBIN WIENS: Yes.

MS. TAMARA MCCAFFREY: Now, this is the table under the NERA cost of service study method. It keeps the same basic structure as the page 1, the first table, but it's now moved the export credit from the bulk power function at line 2 in the last table to being credited off the bottom line which is found at line 5 of this table.

Does that fairly represent the type of approach that -- that NERA took?

MR. ROBIN WIENS: Yes, I think that does.

MS. TAMARA MCCAFFREY: Let's just walk through the table then. At line 1 we have the bulk power costs of those four (4) classes, again, residential, general service small, general service medium, general service large greater than 100 KV; you see that?

MR. ROBIN WIENS: Yes.

MS. TAMARA MCCAFFREY: And, again, we have the same basic relationship between customer classes. Smaller -- smaller customers -- sorry, I have a -- I have a wayward note here.

Again, the smaller customers have a slightly higher charge with respect to bulk power costs and their -- their rates -- or I should say the costs that they have in the sub-total at line 4 are higher and that's, again, I take it due to this same reason as we talked about on the first page, that is the losses associated with the -- the distribution sub-transmission and so on?

MR. ROBIN WIENS: It reflects the same factors as on the first page. Their relative significance may change with the change in methodology. But -- but those are the reasons, yes.

MS. TAMARA MCCAFFREY: Also line 1 incorporates the other NERA suggestions like generation classification 100 percent to marginal weighted energy.

Would you agree with that?

MR. ROBIN WIENS: I'm taking from this that all of the -- all of the methods that were incorporated into the NERA type report are -- are included in here. You're drawing it from our -- our data provided in response to PUB-I-45 and there's no reason why it would be otherwise.

MS. TAMARA MCCAFFREY: Line 2 and 3 haven't changed and the export credit under NERA effectively comes off now at line 5 from the total costs and that's what the NERA approach was; correct?

MR. ROBIN WIENS: Yes.

MS. TAMARA MCCAFFREY: So if we look at

that then, we see the effective cents per kilowatt hour that NERA's approach proposes in line 5 as being one point four two (1.42) cents per kilowatt hour for residential, down to point six (.6) cents per kilowatt hour for industrial --

MR. ROBIN WIENS: Yes.

MS. TAMARA MCCAFFREY: -- would you agree with that?

MR. ROBIN WIENS: Yes.

MS. TAMARA MCCAFFREY: And now, compared to the first page we have a new line 7 which just reflects the change between the NERA approach and the existing approach.

And would you agree with me, sir, just to sum up that the winners in this approach would be the residential class who have less costs, point four (.4) cents less cost and the losers if I could frame it that way with respect to this approach would be the general service large, greater than a hundred (100) kilovolts with point four two (.42) cents cost per kilowatt hour more?

Would you agree with that?

MR. ROBIN WIENS: Well, you're characterizing a relative change. The relative change is objective. The cost that's allocated to the residential class is less by 40 percent than it is in the current method. And similarly the cost allocated to the GSL over 100 kV is forty-two (42) cents higher than in the current methods. So that is objective, yes.

MS. TAMARA MCCAFFREY: Now, let's move down to the rates section, line 8 to 12 of this table, we again see the current average rates paid by Manitoba customers and again those are the same as in the first page, they haven't changed, you see that?

MR. ROBIN WIENS: Yes.

MS. TAMARA MCCAFFREY: At row 11, we see the resulting revenue cost coverage ratios under the NERA approach and at row 12 the variance between rates and costs measured using this NERA cost of service study approach. Would you agree with that?

MR. ROBIN WIENS: It looks -- yeah -- it looks right to me.

MS. TAMARA MCCAFFREY: Would you agree with me that the NERA approach continues to indicate that industrials are paying rates that exceed costs measured in this NERA -- in the way that they've done it. Is that correct?

They continue to pay rates that exceed their costs, even under this approach?

(BRIEF PAUSE)

MR. ROBIN WIENS: They continue to pay rates that exceed their allocated costs under this approach minus the credit that is given to them which, as we've discussed before, is probably not as objectively related to costs as some of the other components. So total -- total bulk power costs minus net export credit is less than the rate that the general service large over 100 kV is paying.

MS. TAMARA MCCAFFREY: Right and we're looking here at the difference between the two point eight nine (2.89) cents per kilowatt hour average allocated costs and the average three point one (3.1) cents per kilowatt hour rate that they're paying today. That's what we're talking about here, right?

MR. ROBIN WIENS: Well, I could just as well look at the allocated cost of three point four nine (3.49) cents and the rate of three point one (3.1) and say that they're paying less than their costs.

The export credit is -- especially when now we're looking at the NERA method, which, the NERA method allocates a full share of embedded cost to every kilowatt hour sold on the export market.

So our position is and which is why we

came to the recommended method, our position is that in fact, the NERA method without modification probably over-allocates a share of embedded costs to the export market.

So if -- if you assume that we at least we recover all our embedded costs from the export market then the position that you describe as a shortfall is only such because the method that we've chosen to allocate back the remaining net export revenues.

It's not a cost. It's a revenue. It's a revenue that, in our system and in this cost of service study, we have chosen to credit our customers. If we had chosen another method of crediting that cost, you would have had a different result.

If the order had appropriated that revenue over and above the cost to serve the export revenue, we would have had a different result. So I'm not objecting to the fact that the net costs -- your statement that the net costs arrived at by the NERA method are less than the rate that's charged to the general service large.

But I would just want to caution everybody here that that is not necessarily a pure cost. That's what I'm saying.

MS. TAMARA MCCAFFREY: Thank you. And I think I have your point there. Let's move on now to page 3. Now, we're looking at Manitoba Hydro's recommended approach.

Again the same table structure used with NERA, we kept export credits off the bottom line, rather solely to the bulk power class.

Having a look at it, would you agree that it's a fair representation of your proposal, Mr. Wiens?

MR. ROBIN WIENS: Yes, it is.

MS. TAMARA MCCAFFREY: All right. Now, let's walk through this table again. Line 1, the bulk power class now are higher than NERA's but they retained the same relationship between the customer classes, that is residential still higher and general service large is still lower.

Correct?

MR. ROBIN WIENS: That's correct.

MS. TAMARA MCCAFFREY: At lines 2 and 3, we keep the same sub-transmission distribution class. And, again, moving to line 7, the Manitoba Hydro proposed approach creates an even more -- well, you don't like the way I've characterised it but you'll -- you'll agree the difference is even more extreme than under the NERA method.

MR. ROBIN WIENS: No. I say it's characterised as a difference between two (2) methods. It's entirely appropriate.

MS. TAMARA MCCAFFREY: I just -- you seem to have taken issue with my winners and losers discretion before.

MR. ROBIN WIENS: That's a different --

MS. TAMARA MCCAFFREY: And I don't want to fight with you.

MR. ROBIN WIENS: -- that's a value judgment passed on the difference. That's a different --

MS. TAMARA MCCAFFREY: I'll let the members of the -- the Board draw their own conclusions from that.

And just for the record then, line 7, just showing the change from the existing approach, we see the residentials getting point four nine (.49) cents per kilowatt hour less in their costs, whereas general service large greater than a hundred (100) kilovolts, the industrials, are getting point five one (.51) cents per kilowatt hour more, for the record.

MR. ROBIN WIENS: Than the existing -- yes.

MS. TAMARA MCCAFFREY: In the Manitoba Hydro recommended approach; correct?

MR. ROBIN WIENS: Yes.

MS. TAMARA MCCAFFREY: And as we look -- look now at line 11, the approach still indicates the residential customers are below unity and general service large greater than one hundred (100) kilovolts above.

Is that correct?

MR. ROBIN WIENS: That's correct.

MS. TAMARA MCCAFFREY: So even in your proposal we're not talking about driving rates for bulk power to the market levels referenced at other times in this hearing.

Is that right, sir?

MR. ROBIN WIENS: No, that's -- yeah, we're -- we're -- I mean, within the zone of reasonableness, we're talking about effectively at or close to 100 percent.

MS. TAMARA MCCAFFREY: Thank you. I -- I've completed this table now and I -- I have a couple more areas. I'm not going to be able to finish them in fifteen (15) minutes at all.

So if -- if I might have about thirty (30) seconds, I'd like to just sort out what area -- I -- I think I can deal with one (1) more area in my cross before the end of the day.

THE CHAIRPERSON: Of course.

MS. TAMARA MCCAFFREY: Okay.

(BRIEF PAUSE)

CONTINUED BY MS. TAMARA MCCAFFREY:
MS. TAMARA MCCAFFREY: I think we tackle generation classification and allocation in the time remaining. So I'd like to turn to -- to that topic now when you're ready.
MR. ROBIN WIENS: Sure.
MS. TAMARA MCCAFFREY: In regard to generation classification you can confirm then that Hydro's current proposal is to classify 100 percent of generation to energy and none to demand or coincident peak.
Is that right, Mr. Wiens?
MR. CHIC THOMAS: Not quite. As we have mentioned, there is that small curtailable credit that we do allocate on -- on demand, but essentially it's --
MS. TAMARA MCCAFFREY: And the energy is proposed to be allocated based on weighted marginal costs?
MR. CHIC THOMAS: Yes.
MS. TAMARA MCCAFFREY: Now, as I understand it, this approach in effect is intended to catch some degree of peak responsibility by putting more weight on the on-peak periods, is that right, attaching more value to them?
MR. ROBIN WIENS: Yes, it does.

MS. TAMARA MCCAFFREY: Now, can you confirm that Hydro was original recommending using four (4) time periods for weighting the marginal costs? Is that right?

MR. CHIC THOMAS: That's what we've used in our study, yes, four (4) periods.

MS. TAMARA MCCAFFREY: Okay. So since there are eight thousand seven hundred and sixty (8760) hours in a year, there would be just over two thousand (2000) hours in each of the time periods, roughly?

MR. CHIC THOMAS: Sure.

MR. ROBIN WIENS: That's an average. Some of the periods are longer than others, so that's not precise, but --

MS. TAMARA MCCAFFREY: Right --

MR. ROBIN WIENS: -- we can work with that.

MS. TAMARA MCCAFFREY: Okay. We recognize that too. It's on average, it's for the purposes of the discussion. And those time periods would be, winter on peak, winter off peak, summer on peak and summer off peak, correct?

MR. CHIC THOMAS: Yes.

MS. TAMARA MCCAFFREY: Now, I think I understand that you're amenable to expanding the number of time periods to twelve (12)?

MR. ROBIN WIENS: We want this method to work and for the Board and the stakeholders to be comfortable with it. This is a modification that can be made without a great deal of difficulty.

I don't think that we would want to try to increase the periods without limit to eight thousand seventy hundred and sixty (8760), we start to run across quite a bit of trouble there and I believe I gave some evidence to that effect early on in these proceedings.

But certainly we would be prepared to look as far as twelve (12) periods, yes.

MS. TAMARA MCCAFFREY: And if we took the eight thousand seven hundred and sixty (8760) hours and took twelve (12) time periods that would be more like about seven hundred (700) hours each. It would be a refinement to the approach that you've taken, would you agree with that? Seven hundred (700) hours versus two thousand (2000) hours?

MR. ROBIN WIENS: Again, you know you're taking eighty seven sixty (8760) divided by twelve (12) is approximately seven hundred (700). I think here we probably foreshortened the peak period more than we foreshortened the other periods.

So we're probably looking at less than

five hundred (500) hours in each of the four (4) peak periods depending on the season. And more time into the shoulder periods. But, you know, we're in the -- you know the four hundred (400) to seven hundred (700), eight hundred (800) hour type of frame, yes.

MS. TAMARA MCCAFFREY: And I have your point that again you are amenable to using a twelve (12) coincident peak period?

MR. ROBIN WIENS: Yes.

MS. TAMARA MCCAFFREY: Mr. Surminski, Mr. Williams went over with you the system planning criteria used by Hydro and he talked -- I'm referring to Tab 12 of his exhibit books. Do you recall that discussion?

MR. HAROLD SURMINSKI: Yes, I recall that.

MS. TAMARA MCCAFFREY: As I understand it he discussed with you there are two (2) criteria used with system planning. One (1) that ensures you must meet peak loads plus capacity reserves and one (1) that ensures you must meet your energy commitments for dependable energy, is that correct sir?

MR. HAROLD SURMINSKI: Yes it is.

MS. TAMARA MCCAFFREY: So if the system is failing in either of these two (2) criteria, capacity or energy, it means new plant is required, is that right?

MR. HAROLD SURMINSKI: Yes that's correct.

MS. TAMARA MCCAFFREY: And when we talk about capacity related criteria, it's presumably based on the highest peak Manitoba Hydro expects to achieve, is that what you mean by that?

MR. HAROLD SURMINSKI: Yes, that's correct.

MS. TAMARA MCCAFFREY: And the term used in the capacity planning criteria is firm annual peak demand, can you tell us if this is instantaneous peak or average hourly peak over the highest hour of the year?

(BRIEF PAUSE)

MR. HAROLD SURMINSKI: Can you -- what were the two (2) options again?

MS. TAMARA MCCAFFREY: The term used in the capacity planning criteria is firm annual peak demand. Can you indicate if this is an instantaneous peak or average hourly peak over the highest hour of the year?

MR. HAROLD SURMINSKI: I'm not sure if it makes too much of a difference here, but the -- because we would have to -- we'd have to check our generation capability relative to that -- you know, to -- to be able to either supply it instantaneously or -- or in the average. So I don't think it really makes a difference.

MS. TAMARA MCCAFFREY: Okay. Maybe -- maybe -- maybe not. But in any event, sir, your recommended system planning methodology isn't enough to ensure the system can meet the peak on average over the winter? By that I mean it must meet that peak day or peak hour or peak instant; would you agree with that?

MR. HAROLD SURMINSKI: Our system must meet the peak as it actually occurs.

MS. TAMARA MCCAFFREY: Because the system can't simply be designed to meet the average peak over seven hundred (700) varying hours? You couldn't -- yeah, it wouldn't work.

MR. HAROLD SURMINSKI: In the extreme, it surely would not work.

MS. TAMARA MCCAFFREY: You would agree that in the cost of service language this is what we would call a coincident peak; that is the highest sum total of the system peak when all class loads plus losses are considered?

MR. HAROLD SURMINSKI: Yes, I would agree with that.

MS. TAMARA MCCAFFREY: Now, with respect to the NERA study on generation and transmission you may need to -- to refer to that and you may not, but it's in the Manitoba Hydro -- do you have the NERA study handy? Page 21.

(BRIEF PAUSE)

MS. TAMARA MCCAFFREY: Page 21 of the NERA study?

(BRIEF PAUSE)

MS. TAMARA MCCAFFREY: You know what, you might not even need to turn to this when you hear this question so I -- I'm going to put it to you.

I'm just trying to spin away a couple of extra minutes. No, I'm just kidding.

Can you confirm that NERA did do a survey of ten (10) utilities that it considered to be similar to Manitoba Hydro?

MR. ROBIN WIENS: Well, we attempted to find a number of utilities across North America that had some -- that most closely could be taken to resemble Manitoba Hydro. As I think everyone here can appreciate, we didn't find an exact match.

MS. TAMARA MCCAFFREY: No, but looking essentially at regularly utilities, non-market based?

MR. ROBIN WIENS: No, we weren't necessarily looking for regulated utilities; that wasn't one of the criteria for the comparison. As it turns out most of the --

MS. TAMARA MCCAFFREY: What criteria did you use then? What criteria would you use that would be key -- key characteristics of Hydro's Utility versus other utilities.

MR. ROBIN WIENS: As it turns out most of the utilities that were selected and included in the comparison are regulated utilities, but what we considered to be more important were that they had significant hydraulic capability and if you look at the ten (10) not all of them do. Not all of them are even close to Manitoba Hydro but they may have been a better match than some of the other criteria.

But they -- so that they -- significant hydraulic capability was one (1) of the considerations. Another consideration was we were looking for utilities that had significant off-system sales. You know, outside of their what they call native load.

And what was the third? You know, I'll

have to get back to you on that. There was -- there was a third one and it just eludes me momentarily.

--- UNDERTAKING NO. 19: Provide criteria looked at in NERA Report to determine whether a utility was considered to be similar to MH

CONTINUED BY MS. TAMARA MCCAFFREY:

MS. TAMARA MCCAFFREY: Of the ten (10) utilities was there any regulated utility in that survey that classified 100 percent of generation costs to energy?

MR. ROBIN WIENS: I don't believe that there was. I should probably go back and look at them again. But my recollection is that there -- there were not regulated utilities.

We did identify a least one (1) and possibly more where the -- the implicit effect was to look at -- in terms of the rate that the customer saw at the and of the -- at the end of the chain that -- that was based on an energy -- 100 percent energy consideration. A per kilowatt hour rate in every hour of the year.

And certainly Ontario Hydro, if -- if

that's not what they're doing now, that's what they're trying to do. That's the endpoint they're trying to achieve, and Alberta is another one.

MS. TAMARA MCCAFFREY: Both of them are market jurisdictions, right, Mr. Weins?

MR. ROBIN WIENS: They're both market jurisdictions but the point is that the supply -- the flowthrough to those customers is priced on an energy basis.

MS. TAMARA MCCAFFREY: But of the regulated utilities that are not market jurisdictions, nobody else did that; right?

MR. ROBIN WIENS: Again, not -- not that I'm aware of.

MS. TAMARA MCCAFFREY: If you -- you want to go through this sometime you're certainly welcome to. They're -- they're listed at pages 21 through 23, the different companies that they looked at.

But, quickly, Hydro Quebec, Idaho Power, Newfoundland Hydro, Salt River Project, they're all using the system load factor.

Are you aware of that?

MR. ROBIN WIENS: I'm not conscious of it but I would accept that that's the case.

MS. TAMARA MCCAFFREY: You can accept it

subject to check. And BC Hydro and Northern States Power are using what they call a cap-sub method.

Do you know what that is?

MR. ROBIN WIENS: It may mean different things to different analysts but I suspect what it means is that they price out the domestic load in -- it would be something similar to what, in fact, we're doing, except that they would have included some sort of proxy for capacity. Perhaps the -- perhaps the cost of a combustion turbine in that. They may have taken that approach. That's what it sounds like.

(BRIEF PAUSE)

MS. TAMARA MCCAFFREY: Mr. Chair, I do have a couple of more areas to cover but I -- it's four o'clock and it looks like we're going to have to come back after -- after the break.

THE CHAIRPERSON: How long will it take?

MS. TAMARA MCCAFFREY: I may have an hour, an hour and a half.

THE CHAIRPERSON: Okay. We'll hold it over then for the next time we come together.

Mr. Peters, do you have any closing remarks? Do you want to bring us up together on the schedule and MKO's intentions with respect to the presenters and things of that nature?

MR. BOB PETERS: I can indicate, Mr. Chairman, that in light of the schedules of the parties and the Board, the next time that has been set aside for our hearing is to come together Tuesday morning, the 23rd of May, at nine o'clock, in this room. And at that time My Friend Ms. McCaffrey will continue and conclude her cross-examination in the morning.

Then we have matters to be tidied up by My Friend Mr. Williams. He has a couple of undertakings and some matters that he's in discussion with the Company on, and I suspect he'll be able to tidy those up as well on the 23rd.

And then at that time we will also be expecting MKO's representative and any questions they may have to come on that date.

I -- in response to your question of me with respect to MKO's presenters, I have sent communication to Mr. Anderson and I am awaiting reply, and on receiving that I'll -- I'll determine and bring to the Board some options to include in the schedule, if necessary, in terms of when the presenters would be heard.

MR. ROBERT MAYER: Mr. Peters, we are

running slightly behind. And if Mr. Anderson does in fact arrive or does in fact have three (3) or four (4) presenters, I suspect we're going to have a problem.

MR. BOB PETERS: That may be possible. And until I hear, I won't know, of course. And when I do know we'll come back to the Board to see if there are some available dates.

I can remind the Board that -- I know there's been some discussion about adding an extra day or two (2) to the schedule in lieu of the 30th and 31st of May. And I will discuss that with -- with the Board and communicate with the parties probably early next week to find out what is available.

And if we have to delay things or push things back, Mr. Mayer, and I'm sensitive to that, My Friend Mr. Williams has been gracious enough to indicate that his expert witness could be stood over from the date that's shown on the schedule and it may bump things back, although we would leave the TREE witness, Mr. Lazar, to come in on the 25th.

But Mr. Williams has indicated his witness does have some flexibility and we may end up taking advantage of that. I think that would be called a variable cost that will be incurred because it's not fixed yet.

THE CHAIRPERSON: You got the lingo down.

MR. BOB PETERS: So that's all my comments at this point in time, Mr. Chairman, in response to those points you raised and barring any questions from anybody else we will reconvene on Tuesday, the 23rd of May at 9:00.

THE CHAIRPERSON: Mr. Williams?

MR. BYRON WILLIAMS: Mr. Chairman, just so -- to give the Board some sense of how much time we may be occupying after Ms. McCaffrey finishes. To my knowledge there is a three (3) matters outstanding.

One (1) is an undertaking to Ms. Bowman and I don't expect there will be much, if any, follow up to that. There -- I was pursing a line of inquiry regarding purchase power and there was some questions of clarification which we needed to get from Manitoba Hydro on that area. And I had some follow up cross on that theme that I anticipate certainly will take thirty (30) to forty-five (45) minutes.

The third item is some of the -- what I call the Harperism questions, the Bill Harper questions which Hydro's agreed kindly enough to look at and provide some written responses next week.

There may be a few questions of follow up on that, I don't anticipate a lot. What I thought I might do in terms of those questions, just for transparency purposes I kind of handed over my notes to Ms. Ramage yesterday, she kindly returned them today. But I might transfer those questions that I posed kind of off line just in the form a letter to Manitoba Hydro so that everyone is aware of the questions that I've posed. Just so the Board has that for its records.

THE CHAIRPERSON: Thank you, Mr. Williams. I'm just going to pause for one (1) second. I want to consult with my colleague.

(BRIEF PAUSE)

THE CHAIRPERSON: Mr. Peters, just so that you're aware when you're in discussions with Mr. Anderson, the Panel is prepared, if it makes it easier for Mr. Anderson and his clients, to hear the presenters on Wednesday night, if it makes it easier for him.

MR. BOB PETERS: I'll relay that message, Mr. Chairman and thank you and I will also indicate because I'm sure Mr. Feldschmidt is monitoring the transcript, I did neglect to mention that he did want to have the opportunity on -- starting the week of the 23rd for any questions he may have.

And at this point in time, it's premature to indicate how long or how many he would have but I'll try to nail that down between now and then, as well.

THE CHAIRPERSON: Thank you. Thank you everyone. We will see you in approximately ten (10) days.

--- Upon concluding at 4:06 P.M.

Certified Correct

____

Ryan Pickering